PUBLIC REVIEW DRAFT

ALAMEDA POINT
GENERAL PLAN AMENDMENT

ENVIRONMENTAL IMPACT REPORT

SCH #: 2001012057

LSA

December 2002

City of Alameda • California

December 10, 2002

NOTICE OF AVAILABLITY OF A
DRAFT ENVIRONMENTAL IMPACT REPORT
AND PUBLIC HEARING
FOR THE
ALAMEDA POINT GENERAL PLAN AMENDMENT

NOTICE IS HEREBY GIVEN of the availability of a draft Environmental Impact Report (DEIR) pursuant to the California Environmental Quality Act for proposed adoption of an amendment to the City of Alameda General Plan. The project consists of a General Plan Amendment to change the land use designation from Federal Facilities to Mixed Use, Medium-Density Residential, Low-Density Residential, Public/Institutional, Neighborhood Business, General Industry, Parks & Public Open Space, and Open Space/Habitat; and adoption of a General Plan policy chapter, Chapter 9: Alameda Point.

The DEIR examines the potential impacts to the environment that may result from implementation of the General Plan Amendment as well as alternatives to the project.

Applicant: City of Alameda

Project Title: Alameda Point General Plan Amendment

Public Review: All persons interested in the DEIR are invited to review it at the City Planning and Building Department office between the hours of 8:30 a.m. and 5:00 p.m. Monday through Friday, in Room 190, 2263 Santa Clara Avenue, Alameda, California 94501 or at any of the City's three libraries. The DEIR is also available upon request by calling Andrew Thomas, Supervising Planner at (510) 748-4600 ext. 2457. The DEIR may also be viewed on the City of Alameda website at: http://www.ci.alameda.ca.us.

Public Hearing: A public hearing before the Planning Board is scheduled for Monday, January 27, 2003 at 7:00 p.m. in the City Council Chambers, 2263 Santa Clara Avenue, Alameda.

Comment Deadline: Comments on the DEIR may be submitted at the Public Hearing on January 27, 2003 or submitted in writing to the Planning and Building Department. All comments must be received no later than 5:00 PM on Friday January 31, 2003.

Cynthia Eliason

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Planning Manager

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GENERAL PLAN AMENDMENT

ENVIRONMENTAL IMPACT REPORT

SCH #: 2001012057

Submitted to the:

City of Alameda

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LSA Project No. CIA230

LSA

December 2002

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

I. INTRODUCTION

In November 2001, the City of Alameda issued a Draft Environmental Impact Report (EIR) for a proposed Alameda Point General Plan Amendment designed to implement the 1996 Alameda Naval Air Station (NAS) Community Reuse Plan. After circulation the 2001 Draft EIR for public comment and considering the comments received from Alameda residents, neighboring jurisdictions, and regional transportation agencies, the City of Alameda decided to revise the project description by reducing the development intensity proposed in the General Plan Amendment (GPA). The proposed development intensity in the GPA was reduced in response to concerns about capacity of the existing roadway network in Alameda and Oakland to accommodate full buildout of the NAS Alameda *Community Reuse Plan* prior to consideration and implementation of alternative transportation solutions to improve the capacity of the roadway network and estuary crossings. Consequently, in March 2002, the City of Alameda issued a new Notice of Preparation (NOP) with a new project description that corresponds to the environmentally-superior alternative identified in the 2001 EIR (referred to in the 2001 Draft EIR as "the mitigated Reuse Phase I"). The new GPA, which is the subject of this EIR and is described in more detail in Chapter III, Project Description, generally differs from the previous 2001 GPA as follows:

- The total amount of light industry/business park/office use that would be allowed is reduced by approximately 2.96 million square feet to reduce traffic generated by reuse of Alameda Point;
- The total amount of marina-related industry that would be allowed is reduced by approximately 121,750 square feet to further reduce traffic; and
- The total number of housing units is increased by 456 to improve the jobs/housing balance at Alameda Point, ensure conformity with the City's draft Housing Element, and further reduce the potential number of commuter-based "off-island" trips.

At full buildout, the new GPA may result in approximately 6,126 jobs and 1,928 housing units at Alameda Point. In 1997, immediately prior to base closure, NAS Alameda had a work force of approximately 18,800 and 343 housing units on the main base.[1] Currently, there are approximately 1,000 jobs and 268 occupied housing units at Alameda Point. For comparison purposes, the 2001 GPA would have resulted in approximately 16,636 jobs and 1,472 housing units at full buildout. For the purpose of determining the significance of potential environmental impacts from the GPA, the baseline condition used by this EIR generally reflects current or year 2002 conditions. This is intended to provide the most conservative (most environmentally-protective) assessment of project impacts.

[1] The 343 housing unit figure does not include the 582 units at Coast Guard Housing or the 590 units known as "East Housing:.

A. PURPOSE OF THE EIR

In compliance with the California Environmental Quality Act (CEQA), this Draft EIR describes the environmental consequences of the amendments proposed to the *City of Alameda General Plan* to accommodate the reuse and redevelopment of much of what was the former Alameda Naval Air Station (NAS Alameda). The property that is the subject of this EIR is illustrated in Figure I-1 and is referred to herein as "Alameda Point", or "The Alameda Point Planning Area," or "The GPA Planning Area." The EIR assumes development of Alameda Point consistent with the proposed GPA policies through a buildout year of 2020.

This EIR is a Program EIR. The *CEQA Guidelines* state that "...a Program EIR may be prepared on a series of actions that can be characterized as one large project and are related geographically, as logical parts in the chain of contemplated actions, in connection with issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways."[1] This Program EIR identifies general effects of the proposed GPA. It does not consider any specific development proposals. It assumes that individual development projects proposed at Alameda Point will receive project-specific environmental evaluation, as necessary, during the development review process. This Program EIR is not tiered from any previously certified environmental document(s).

This EIR analyzes the environmental effects of the GPA and is intended to inform City staff, the Planning Board, City Council, the Alameda Reuse and Redevelopment Authority (ARRA), other responsible agencies, and the general public of the potential environmental effects of the proposed GPA. The EIR also examines alternatives to the proposed GPA and recommends mitigation measures to reduce or avoid potentially significant impacts of the GPA.

B. PROPOSED PROJECT

The proposed project is an amendment to the *City of Alameda General Plan*, the principal policy document for guiding future development of the City. The GPA would support the reuse and redevelopment of the NAS Alameda properties, now referred to as Alameda Point, which are being transferred from the US Navy to the ARRA through the base disposal process. The GPA is comprised of three primary components:

- *Adoption of a New Alameda Point Element.* The City is proposing the adoption of a new General Plan element. The Alameda Point Element is included as Appendix A of this EIR and is proposed as Chapter 9, Alameda Point Element, of the *General Plan*. The Element implements many of the goals and objectives identified in the 1996 *Community Reuse Plan*, but it also includes some refinements to the vision identified in the *Community Reuse Plan*. The

[1] *CEQA Guidelines*, 1998, Section 15168.

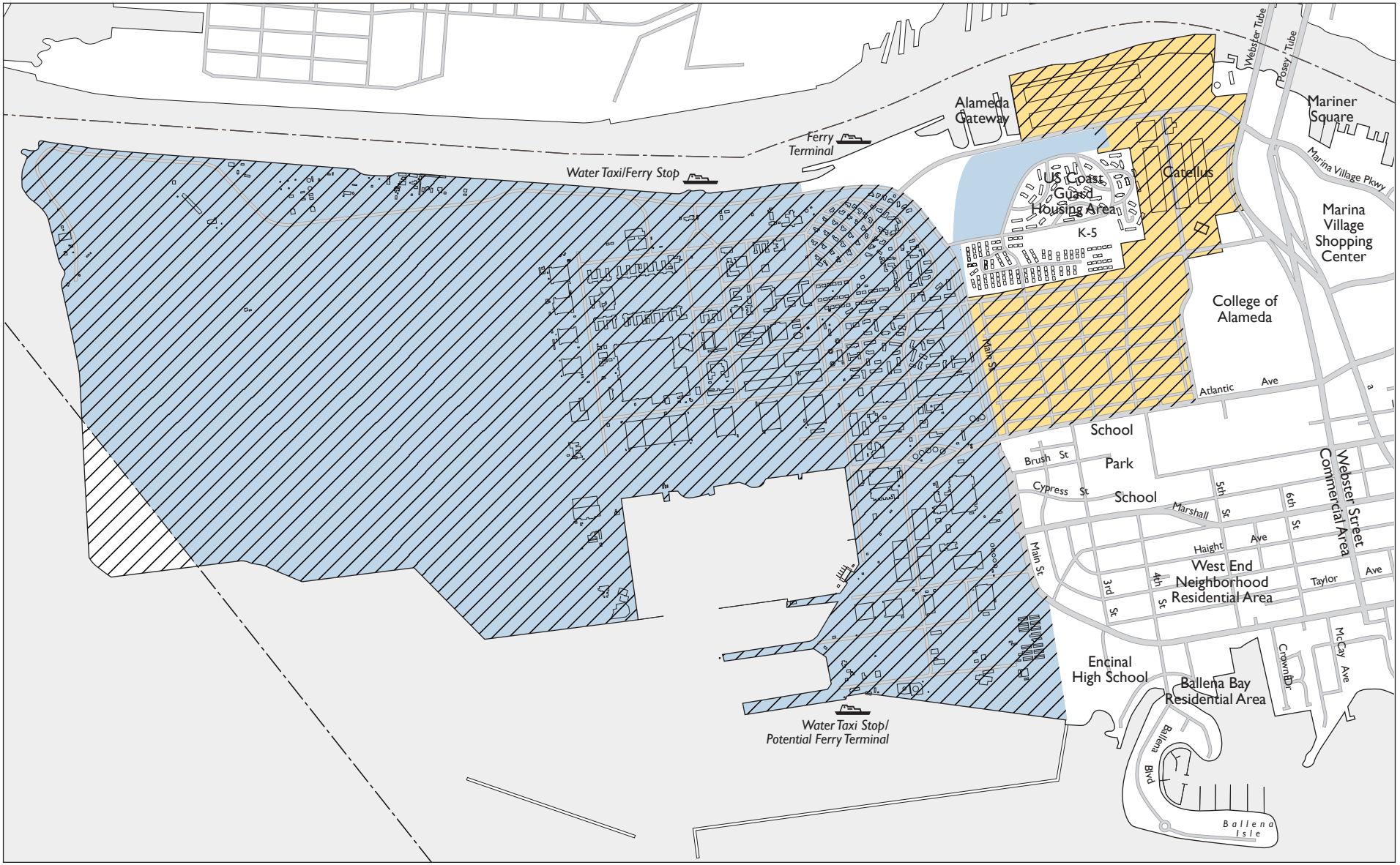

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FIGURE I-1

Alameda Point GPA EIR

Planning Areas for Prior Environmental Documents

LEGEND

- NAS REUSE EIR
- ALAMEDA POINT GPA EIR
- CATELLUS MIXED USE DEVELOPMENT EIR

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0 1250 2500

FEET

SOURCE: DYETT & BHATIA, 2001

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refinements reflected in the new element resulted from the city-wide public involvement process, as summarized in Table I-1, that occurred since completion of the *Community Reuse Plan*.

Table I-1: Highlights of the Public Involvement Process Associated with Preparation of the Alameda Point General Plan Amendment

Date	Milestone
January 1996	Community Reuse Plan adopted by ARRA and accepted by the City as a guiding document after extensive community involvement.
September 2000	Visioning workshop for the Citywide *General Plan* Update process. Visions for Alameda Point provided by civic and other interested groups.
November 2000	Public workshop to present and take comment on the draft Alameda Point Element. The Element borrows heavily from the Community Reuse Plan.
April/May 2001	City staff works with Alameda Point Advisory Committee (APAC) to modify and refine Alameda Point Element. APAC endorses document.
May 2001	Planning Board holds workshop to take public comment on draft Alameda Point Element, which contains changes recommended by APAC. Planning Board directs staff to prepare an EIR on the document.
November 2001	Alameda Point GPA Pubic Review Draft EIR available for public review and comment.
March 2002	The City decides to revise the GPA and prepare a new Draft EIR. New NOP issued.

Source: City of Alameda Planning and Building Department, 2002.

The Element identifies challenges and issues associated with the redevelopment of Alameda Point and includes guiding and implementing policies that address the following topics: land use; transportation; open space, conservation and cultural resources; and health and safety. The Element also establishes a buildout scenario for Alameda Point that would permit the following:

- 1.14 million square feet of light industry/business park/office;
- 430,500 square feet of industrial/warehousing;
- 44,250 square feet of marina-related industry;
- 130,000 square feet of civic/institutional;
- 104,000 square feet of commercial;
- 130,000 square feet of visitor-serving recreational;
- A mix of recreational/visitor uses including a golf course, marina, sports complex, and hotel; and
- 1,928 residential units.

- *General Plan Diagram Revisions.* Revisions to the General Plan Diagram are proposed to change the designation of the Alameda Point area from Federal Facilities to designations that will support redevelopment of the area with a mix of residential, commercial, industrial, public and institutional, and parks and open space uses.
- *Other Miscellaneous General Plan Revisions.* Revisions to select text and policies included in the existing General Plan Elements (Chapters I through VII) are proposed to provide for internal consistency. These revisions are also provided in Appendix A.

C. RELATIONSHIP OF THIS EIR TO OTHER PROJECTS

The reuse of both NAS Alameda and the Fleet Industrial Supply Center (FISC) was initially considered by the Alameda Reuse and Redevelopment Authority (ARRA) in the *Community Reuse Plan* adopted by ARRA and accepted by the City as a guiding document in January 1996 and amended in 1997. The *Community Reuse Plan* was prepared after an extensive public involvement process to outline a vision for Alameda Point. In March 2000, the City certified the *Final EIR for the Reuse of the Naval Air Station Alameda and the Fleet Industrial Supply Center, Alameda Annex and Facility* (*NAS Reuse EIR*). The *NAS Reuse EIR* analyzed the significant effects on the environment of the City's acceptance of conveyance of NAS Alameda and FISC properties from the US Navy and the reuse of these properties consistent with goals and objectives of the *Community Reuse Plan*.

Specific amendments to the City's *General Plan* necessary to implement the *Community Reuse Plan* were not evaluated in the *NAS Reuse EIR*. As a result, this EIR is being prepared to evaluate the amendments being proposed to the *City of Alameda General Plan* for Alameda Point. It has not been prepared as a subsequent or tiered document to the *NAS Reuse EIR*.

In the Spring of 2000, the City approved a General Plan Amendment and Master Plan for the reuse and redevelopment of the FISC Facility and East Housing properties (the portion of the former NAS Alameda located east of Main Street) as a separate project, referred to as the Catellus Mixed Use Development. The project-level *Catellus Mixed Use Development EIR* was certified by the City in May 2000. Figure I-1 illustrates the portions of Alameda that are the subject of the Alameda Point GPA and the portions of NAS and FISC Alameda that were the subject of the Catellus Mixed Use Development EIR.

In 2001, the City formally requested competitive proposals from developers for the reuse and redevelopment of the Alameda Point planning area. After considering each of the proposals submitted, the City entered into exclusive negotiations with Alameda Point Community Partners (APCP) granting them the role of master developer for Alameda Point. The Master Plan that ultimately may be developed and implemented by APCP is not evaluated in this EIR; it would be the subject of a subsequent environmental review process consistent with the requirements of CEQA. The consideration of such a project in this EIR would, at this time, be speculative.

D. EIR SCOPE

The City of Alameda circulated a Notice of Preparation (NOP) for this Draft EIR on March 20, 2002. Comments received by the City on the NOP were taken into account during the preparation of the EIR. A copy of the March 2002 NOP and the written comment letters that were received are provided in Appendix B.

The following environmental topics are addressed in this EIR:

A. Land Use

B. Population, Employment, and Housing
C. Visual Resources
D. Public Services
E. Water Resources
F. Historic and Cultural Resources
G. Biological Resources
H. Geology and Soils
I. Utilities
J. Transportation and Circulation
K. Air Quality
L. Noise
M. Hazards

E. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter I – Introduction,* provides a summary of the proposed action and environmental review process; identifies potentially significant issues and concerns; and discusses the overall purpose, use, and organization of the EIR.
- *Chapter II – Summary,* provides a summary of the significant impacts that would result from implementation of the proposed project and describes mitigation measures recommended to reduce or avoid significant impacts.
- *Chapter III – Project Description,* provides a description of the GPA.
- *Chapter IV – Setting, Impacts and Mitigation Measures,* includes a description of existing conditions setting and the environmental analysis (impacts and mitigation measures) for each environmental technical topic. The setting includes a list of applicable regulatory policies (federal, State, and local). The environmental analysis section for each environmental topic describes the elements of the proposed GPA that are applicable to the subject environmental topic; provides an analysis of potential environmental impacts and their level of significance; and recommends mitigation measures to mitigate significant impacts. Potential impacts are identified by levels of significance, as follows:

  SU: Significant and Unavoidable
  S: Significant
  LTS: Less than Significant

  Each impact is categorized *before* and *after* implementation of any recommended mitigation measure(s). Potential significant impacts that will require the implementation of mitigation measure(s) to be reduced to a less-than-significant level are identified as significant prior to mitigation and less than significant after mitigation. Potentially significant impacts that cannot

be mitigated to a less-than-significant level are identified as significant and unavoidable after mitigation.

- *Chapter V – Alternatives,* provides an evaluation of alternative development scenarios to the proposed GPA.
- *Chapter VI – CEQA-Required Assessment Conclusions,* provides an analysis of growth-inducing impacts; significant irreversible and unavoidable impacts; and cumulative impacts for the environmental issues found to have significant effects.
- *Chapter VII – Report Preparation,* identifies the reference documents, publications, and literature reviewed and cited, and provides a summary of those involved in report preparation.

II. SUMMARY

A. PROJECT UNDER REVIEW

This Draft EIR has been prepared to evaluate the environmental impacts of the Alameda Point General Plan Amendment (GPA). The GPA is comprised of three primary components:

- *New Alameda Point Element*. The City is proposing the adoption of a new General Plan element. The Alameda Point Element is included as Appendix A of this EIR and is proposed as Chapter 9, Alameda Point Element, of the *General Plan*. The Element identifies land use designations for properties located at Alameda Point and policies that address the preservation and redevelopment of the area.
- *Revisions to General Plan Diagram*. Revisions to the General Plan Diagram are proposed to change the designation of the Alameda Point area from Federal Facilities to designations that will support redevelopment of the area with a mix of residential, commercial, industrial, public and institutional, and parks and open space uses.
- *Miscellaneous General Plan Revisions.* Revisions to some of the text and policies included in the existing General Plan (Chapters I through VII) are proposed to provide for internal consistency. These revisions are also provided in Appendix A.

Table II-1 provides a detailed list of the land use categories to which Alameda Point acreage will be redesignated from Federal Facilities. A more detailed description of the proposed project is provided in Chapter III, Project Description.

Table II-1: Alameda Point General Plan Amendment Land Use Acreage

Land Use Categories	Total
Low-Density Residential	21
Medium-Density Residential	108
Alameda Point Mixed Use	432
Neighborhood Business	4
Industrial	6
Public/Institutional	24
Parks & Open Space	340
Wildlife Habitat*	515
Total	**1,444**

* Wildlife refuge comprises 565 acres total: 515 acres in Alameda and 50 acres in the County and City of San Francisco.

Source: City of Alameda Planning and Building Department, 2002.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter IV, Setting, Impacts and Mitigation Measures. CEQA requires a summary to include discussion of: 1) potential areas of controversy; 2) significant impacts; 3) significant unavoidable impacts; and 4) alternatives to the project.

1. Potential Areas of Controversy

The potential areas of controversy surrounding the GPA that were identified as part of the NOP process and are evaluated in Chapter IV of this EIR include: land use; population, employment, and housing; visual resources; public services; water resources; historic and cultural resources; biological resources; geology and soils; utilities; transportation and circulation; air quality; noise; and hazards.

Specific areas of potential controversy include traffic generation; population, employment, and housing; utilities; and hazardous materials. Traffic is a concern throughout the Bay Area and requires special consideration in Alameda due to the limited access points onto the Island in the Project vicinity. Development that may occur as a result of the GPA would generate substantial new jobs and housing for the City of Alameda. Also, military base reuse raises questions and requires extensive analysis of existing—often antiquated—utilities, and further requires that any potential on-site hazards be addressed prior to reuse of affected portions of the property. There are many other areas of analysis included in this document, but these are the issues that have created the greatest interest.

Potential impacts related to agricultural resources and energy and mineral resources were determined to be less than significant and have not been further analyzed in this EIR. A more detailed discussion of why these topics were found to be less than significant is provided in Chapter VI, CEQA-Required Assessment Conclusions.

2. Significant Impacts

Under CEQA, a significant impact or effect 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 or aesthetic significance."

Implementation of the GPA has the potential to generate environmental impacts in several areas. Impacts in the following areas would be significant without the implementation of mitigation measures, but would be reduced to a less-than-significant level if the mitigation measures set forth in this report are implemented:

- Water Resources
- Biological Resources
- Utilities
- Transportation and Circulation (construction period and transit impacts)
- Noise

Impacts in the following areas would be considered less than significant based on the identified criteria of significance and/or the implementation of existing policies and regulations and/or policies proposed as part of the GPA that would reduce any potential impacts to a less-than-significant level:

- Land Use
- Population, Employment and Housing
- Visual Resources
- Public Services
- Geology and Soils
- Hazards
- Historic and Cultural

3. Significant Unavoidable Impacts

As discussed in Chapter IV of this EIR, buildout of the GPA could result in significant unavoidable impacts in the following topics:

- Transportation and Circulation
- Air Quality

The project would also result in a cumulative regional housing impact as discussed in Chapter VI, CEQA Conclusions.

4. Alternatives to the Project

The following alternatives to the GPA are considered in this EIR:

- The **Preservation** alternative assumes the continuation of the existing conditions on the site, and would not involve any improvements to existing buildings or infrastructure within the GPA Planning Area. This alternative also assumes that no new leases would be issued and the number of employees and residences would remain at a level similar to what existed in March 2002 (when the NOP for the Revised Draft EIR was issued). Based on a survey of occupied structures, it assumes a maximum of approximately 1,000 employees and 268 occupied residential units in the year 2020.
- The **No Project** alternative assumes the continuation of the existing conditions on the site, and would not involve any significant improvements to existing buildings or infrastructure within the GPA Planning Area. This alternative assumes that existing low-intensity employment uses will be replaced by more employee-intensive uses over time. This alternative would include the increased intensity of leasing of a portion of the existing buildings located within the GPA Planning Area, consistent with the City's 1997 Master Use Permit (MUP) and Interim Lease

Program for Alameda Point which established a cap of 5,420 employees for interim uses and allows for the occupation of 268 residential units.

- The **Mixed Use** alternative (*the Reduced Intensity alternative in the 2001 Draft EIR)* assumes 1,544 more residential units and 5,722 more jobs than the GPA (current Project) and 2,000 more residential units and approximately 4,740 fewer jobs than the Reuse Plan alternative (2001 GPA).
- The **Reuse Full Buildout** alternative (*the Project in the 2001 Draft EIR)* assumes a commercial development intensity that is nearly double that of the GPA. This alternative assumes 456 fewer residential units, but 10,512 more jobs than the GPA (current project).

Based on this analysis, the Preservation alternative is the environmentally superior alternative. The Preservation alternative would result in fewer impacts and fewer significant unavoidable impacts than any of the other alternatives. It would also minimize the effects of some of the impacts that would result from the other alternatives and the GPA.

C. SUMMARY TABLE

Information in Table II-2, Summary of Impacts and Mitigation Measures, has been organized to correspond with environmental issues discussed in Chapter IV. The table is arranged in four columns: 1) impacts; 2) level of significance prior to mitigation measures; 3) mitigation measures; and 4) level of significance after mitigation. Levels of significance are categorized as follows: SU = Significant and Unavoidable; S = Significant; and LTS = Less Than Significant. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific discussions in Chapter IV.

Table II-2: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
A. LAND USE			
No significant impacts related to land use would result from implementation of the proposed General Plan Amendment.			
B. POPULATION, EMPLOYMENT, AND HOUSING			
POP-1: Implementation of the GPA would result in substantial population, employment and housing growth.	LTS	POP-1: No mitigation measures are necessary. Implementation of the existing and proposed policies detailed in Chapter IV (for this impact) would reduce this impact to a less-than-significant level.	LTS
POP-2: Implementation of the GPA would impact the City's ratio of jobs to employed residents.	LTS	POP-2: No mitigation measures are necessary. Implementation of the existing and proposed policies detailed in Chapter IV (for this impact) would reduce this impact to a less-than-significant level.	LTS
C. VISUAL RESOURCES			
VIS-1: Buildout of the GPA would significantly alter scenic or sensitive views from and into Alameda Point.	LTS	VIS-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
VIS-2: Increased light or glare from development may affect views.	LTS	VIS-2: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
D. PUBLIC SERVICES			
SVCS-1: Buildout of the GPA would increase the demand for fire and emergency medical services and police protection.	LTS	SVCS-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
SVCS-2: Buildout of the GPA would increase demand on AUSD schools.	LTS	SVCS-2: No mitigation measures are necessary. Implementation of the existing policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
E. WATER RESOURCES			
WATER-1: The proposed project may result in placement of housing within the 100-year flood hazard area or exposure of people or structures to flooding.	LTS	WATER-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
WATER-2: Maintenance dredging that may be undertaken to serve future uses in the vicinity of the piers and Seaplane Lagoon may cause impacts to water quality at the dredging and disposal sites.	LTS	WATER-2: No mitigation measures are necessary. Implementation of the General Plan policy described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
WATER-3: Construction activities and post-construction site uses could result in degradation of water quality in the Oakland Estuary and the San Francisco Bay by reducing the quality of storm water runoff.	S	WATER-3: Implementation of the existing and proposed policies described in Chapter IV (for this impact) will help minimize this impact. In addition, all development projects shall be required to submit and comply with an operations and maintenance plan. These plans shall include stormwater treatment controls to manage the quantity and quality of stormwater runoff.	LTS
WATER-4: Existing wells at Alameda Point could potentially become conduits for surface and groundwater contaminants to affect deeper aquifers.	S	WATER-4: Implementation of the existing and proposed policies described in Chapter IV (for this impact) will help minimize this impact. In addition, all water supply wells that are not proposed for future use shall be properly abandoned in accordance with the California Department of Water Resources Well Standards (Bulletin 74-90).	LTS
F. HISTORIC AND CULTURAL RESOURCES			
HIST-1: New development that may occur under buildout of the GPA could impact the character of the Historic District.	LTS	HIST-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
G. BIOLOGICAL RESOURCES			
BIO-1: New development adjacent to the wildlife refuge could lead to increased predation of the California least tern.	LTS	BIO-1: No mitigation measures are necessary. Implementation of the existing and proposed policies and the Biological Opinion described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
BIO-2: The GPA could result in an increased presence of people and domestic animals in the Northwest Territories sub-area, which would impact the California least tern and the California brown pelican.	LTS	BIO-2: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
BIO-3: Buildout of the GPA would result in increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, and western gull nesting, as well as the haul-out site for the harbor seal near Breakwater Island.	LTS	BIO-3: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
BIO-4: Berthfront sediment dredging and in-water construction activities in the Marina District sub-area could impact fish and other aquatic organisms.	LTS	BIO-4: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
BIO-5: Stormwater runoff from the golf course, paved areas, construction, and marina-related activities could create an adverse impact on wildlife and sensitive habitats.	LTS	BIO-5: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
BIO-6: Development that may occur under buildout of the GPA could impact pallid bats and western mastiff bats that may roost in the abandoned buildings on-site.	S	BIO-6: Within a 6-month period prior to any demolition of abandoned buildings, a qualified biologist familiar with bats shall conduct a survey to determine the status of these bat species on the project site. If special-status bat species are found, a biologist familiar with relocating bats shall be consulted regarding the best methods to remove bats from the buildings, and such methods shall be implemented. All relocation plans would be subject to review and approval by the California Department of Fish and Game. If suitable roost sites are not present in the area after demolition of the existing roost, a plan to construct artificial roost sites would be developed and submitted to CDFG for approval. Artificial roosts should be constructed at least 6 months prior to demolition of the existing roosts. This could include removing sections of the walls and roofs, which would discourage bats from continuing to roost in the buildings. If a maternity colony of any bats is found, the building and the bats shall not be disturbed until the young have dispersed.	LTS
H. GEOLOGY AND SOILS			
GEO-1: The number of people and structures exposed to seismic shaking would increase under buildout of the GPA.	LTS	GEO-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
GEO-2: Structures, roads, and utilities that may be developed under buildout of the GPA could be adversely affected by liquefaction.	LTS	GEO-2: No mitigation measures are necessary. Implementation of the existing policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
GEO-3: Differential settlement may occur and impact development under buildout of the GPA. Differential settlement could damage foundations, tilt or buckle structural supports, and mis-align horizontal features, such as doorways, utility connections, or other rigid transitions.	LTS	GEO-3: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
GEO-4: Flooding of the interior of Alameda Point could occur if the perimeter dikes were breached.	LTS	GEO-4: No mitigation measures are necessary. Implementation of the proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
GEO-5: Expansive soils could cause damage to foundations or pavements.	LTS	GEO-5: No mitigation measures are necessary. Implementation of the existing policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
GEO-6: In the event of a dike failure, lateral spreading may occur upslope of the dike failure.	LTS	GEO-6: No mitigation measures are necessary. Implementation of the proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
I. UTILITIES			
UTIL-1: Buildout under the GPA would increase water demand.	LTS	UTIL-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
UTIL-2: Buildout of the GPA would contribute to peak wastewater flows that could exceed the capacity of existing sewage transport facilities.	S	UTIL-2: Should the City determine that it needs to further reduce its overall peak flows into the WWTP, each future specific development project shall either provide facilities to reduce peak flows or contribute its fair share of the costs associated with the design and development of a sewer retention facility or an enhanced West Alameda I&I Program.	LTS
UTIL-3: Increased generation of solid waste as a result of buildout of the GPA could jeopardize the City's compliance with State and county waste diversion requirements.	S	UTIL-3: Adopt a solid waste management plan consistent with *NAS Reuse EIR* Mitigation UTIL-1. Plans for managing construction debris from subsequent specific projects shall be developed that promote separation of waste types and recycling, and provide for reuse of materials on-site for reconstructing infrastructure. This plan shall be prepared in coordination with City staff, the specific Projects' sponsor(s), and demolition subcontractors, and shall be approved by City staff prior to issuance of a demolition permit. The City and sponsors of projects shall work with organizations able to provide funding and technical assistance for managing and financing deconstruction, demolition, and recycling and reuse programs, should those programs exist at the time of site clearance.	LTS

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
J. TRANSPORTATION AND CIRCULATION			
TRANS-1: Development allowed by the GPA could generate additional truck traffic and temporarily close lanes during construction periods which could impede local circulation.	S	TRANS-1a: Each development project shall prepare a Traffic Control Plan (TCP) to address the impacts of construction vehicles on regional and local roadways. The TCP shall address construction truck routes and access as well as needed local lane closures. Where bus routes, bike routes, sidewalks or emergency routes are affected, appropriate signage to indicate detour routes should be provided. Bus stops that must be temporarily relocated shall also be identified and presented in the TCP. The TCP may recommend installation of directional signs for trucks and designate time periods when construction truck traffic would be allowed. The TCP shall be reviewed and approved by the City of Alameda Public Works Department after consultation with the City of Oakland prior to issuance of any building or grading permits.	LTS
		TRANS-1b: Construction truck traffic shall be restricted to designated truck routes within the cities of Alameda and Oakland.	
TRANS-2: Buildout under the GPA would contribute to significant traffic impacts at the intersections of Jackson Street/6th Street and Brush Street/12th Street in Oakland.	S	TRANS-2a: The City of Alameda will work with the City of Oakland, the CMA, and Caltrans to consider various improvement options, which could include signal timing improvements or additional lanes on the ramp leading to the intersection of Brush Street/12th Street.	SU
		TRANS-2b: The City of Alameda will work with Caltrans, the CMA and the City of Oakland to consider various improvement options, which could include signal timing improvements, dedicated lanes, or additional lanes to relieve congestion at 6th Street/Jackson Street. The City of Alameda will also take the lead responsibility for managing completion of the Broadway/Jackson Phase II study identified in the Countywide Long Range Transportation Plan as "SR260 to I-880 Connection Improvements" to determine mutually acceptable, technically feasible means to relieve congestion resulting from peak hour traffic entering and exiting the Posey Tube, as those improvements would benefit conditions at 6th Street/Jackson Street.	

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-2 *continued*		TRANS-2c: The City of Alameda will amend the City of Alameda *Guidelines for the Preparation of Traffic Studies* to ensure that all future major project development proposals within Alameda Point GPA planning area and other areas of the City prepare a traffic analysis that includes an assessment of the proposed project's contribution to anticipated unacceptable levels of service at Brush Street/12th Street, and Jackson Street/6th Street. Based upon this assessment, the City shall require each future development to fund, on a fair-share basis, any improvements to these two intersections that have been mutually agreed to by the cities of Alameda and Oakland pursuant to Mitigation Measures TRANS-2a or TRANS-2b.	
		TRANS-2d: Prior to approval of development entitlements implementing the GPA for Alameda Point, the City shall create and maintain a Transportation Demand Management Plan (TDM Plan) for Western Alameda, designed to reduce demand for single-occupant, peak hour trips, and to increase access to transit opportunities. The plan shall differentiate between commuter (both work and school) and recreational/shopping trips and provide for strategies focused on both types of users. The plan shall identify funding needs and sources associated with the cost of implementing strategies. The plan should provide a variety of strategies that address all available transportation alternatives. These strategies may include financial incentives for alternative mode use; preferential car/van pool parking; parking charges for SOVs; ridematching services; flexible scheduling; telecommuting and improvements to public transit such as queue jump lanes for transit/HOV at the tube entrance; provision of Transit Signal Prioritization; subsidized shuttles to/from BART and/or increased AC Transit service; and subsidies for enhanced transit connections between ferries and major destinations. Major project area developers shall fund the TDM Plan on a fair share basis. The TDM Plan shall be funded at a level that would enable the goal of a 30 percent reduction in single-occupancy, peak hour ridership for commercial uses and 10 percent for residential uses.	

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-2 *continued*		TRANS-2e: To ensure that development at Alameda Point considers traffic, air quality, and noise impacts identified in this EIR, it is recommended that the proposed GPA Policy 9.2.j shall be amended as follows: 9.2.j Maintain overall development in Alameda Point in accordance with Table 2-7 while permitting flexibility in the location and mix of development types in the three mixed use areas. Establish zoning regulations for Alameda Point that regulate future development consistent with the development intensity and density assumed in the Alameda Point GPA EIR.	
		TRANS-2f: The City shall work with the City of Oakland, BART, AC Transit, and other local and regional agencies to complete feasibility studies for a new alternative transportation corridor between Alameda and Oakland, such as a gondola between Alameda Point and West Oakland BART or other acceptable terminus.	
TRANS-3: Development under buildout of the GPA would contribute to an unacceptable level of service (LOS) F within the Posey Tube in 2020.	S	TRANS-3a: Adopt Mitigation Measure TRANS-2c (TDM Plan).	SU
		TRANS-3b: The City of Alameda shall work with Caltrans, the CMA and the City of Oakland to consider various improvement options, which could include signal timing improvements, dedicated lanes, or additional lanes to relieve congestion at the Posey Tube. The City of Alameda will also take the lead responsibility for managing completion of the Broadway/Jackson Phase II study identified in the Countywide Long Range Transportation Plan as "SR260 to I-880 Connection Improvements" to determine mutually acceptable, technically feasible means to relieve congestion resulting from peak hour traffic entering and exiting the Posey Tube.	
		TRANS-3c: The City of Alameda will amend the City of Alameda *Guidelines for the Preparation of Traffic Studies* to ensure that all major project development proposals within the Alameda Point GPA planning area and other areas of the City include a traffic analysis in accordance with the City's Traffic Capacity Management Procedure (Resolution 13345) that incorporates an assess	

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-3 *continued*		ment of the proposed project's contribution to the anticipated unacceptable levels of service at the Webster and Posey Tubes. Based upon that assessment, the City shall require that each future development reduce peak hour trips through the tubes by at least 10 percent for residential and 30 percent for non-residential development. (The TCMP ordinance is designed to allow the City to monitor Tube capacity and limit future development based upon remaining available capacity.) The City will require each future development to fund appropriate trip reduction measures to reduce the project's traffic impact on the Posey Tube (consistent with Mitigation Measure TRANS-3a) and fund, on a fair-share basis, any mutually-agreed-to improvements to the Posey Tube/I-880 connection that have been established through Mitigation Measures TRANS-3b.	
		TRANS-3d: The City shall adopt Mitigation Measure TRANS-2e (Intensity- Based Development Regulations).	
		TRANS-3e: The City shall adopt Mitigation Measure TRANS-2f (Gondola/Alternative Transit Corridor Feasibility Studies).	
TRANS-4: Development under buildout of the GPA would increase the V/C ratio by more than 3 percent on roadway segments that are projected to operate at LOS F in 2020 without the GPA.	S	TRANS-4a: The City shall adopt Mitigation Measure TRANS-2c (TDM).	SU
		TRANS-4b: The City of Alameda will work with Caltrans, the CMA, and the City of Oakland to consider various improvement options, which might include signal timing improvements, dedicated lanes, or additional lanes to relieve congestion within the Posey Tube and on Alameda Avenue and High Street in Oakland.	
		TRANS-4c: The City of Alameda will amend the City of Alameda *Guidelines for the Preparation of Traffic Studies* to ensure that all future major project development proposals within the Alameda Point GPA Planning Area and other areas of the City prepare a traffic analysis that incorporates an assessment of the proposed project's contribution to the anticipated unacceptable Levels of Service at the Posey Tube, High Street, and Alameda Avenue. Based upon that assessment, the City shall require that	

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-4 *continued*		each future development fund appropriate trip reduction or other measures to reduce the project's impact on the MTS segments.	
		TRANS-4d: The City shall adopt Mitigation Measure TRANS-2e (Intensity-Based Development Regulations).	
		TRANS-4e: The City shall adopt Mitigation Measure TRANS-2f (Gondola/Alternative Transit Corridor Feasibility Studies).	
TRANS-5: Buildout of the GPA could significantly impact the existing regional transit system.	S	TRANS-5a: The City will work with AC Transit, BART, and the Blue and Gold Fleet to monitor ridership levels and develop mutually-beneficial route and service changes when necessary to maintain adequate service levels.	LTS
		TRANS-5b: The City will work with AC Transit, BART, the Blue and Gold Fleet, and the Water Transit Authority to advocate for additional County, State, and federal funding to support increased services.	
		TRANS-5c: The City of Alameda shall require that all future project development proposals within the Alameda Point GPA planning area prepare a transportation analysis that includes an assessment of the proposed project's impact on transit services and supplemental services necessary to ensure that transit service capacity is not exceeded by new ridership. Supplemental transit services may include financial support for additional AC Transit service or options for innovative alternative transit modes including but not limited to a gondola, amphibious buses, bus barges, water taxis, group rapid transit and/or light rail. Based upon that assessment, the City will require that each future development fund, on a fair-share basis, supplemental service required to support the proposed development.	
K. AIR QUALITY			
AIR-1: Construction and demolition activities associated with new development under the GPA would generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions.	S	AIR-1: Contractors shall implement all BAAQMD dust control measures included in Appendix G of this EIR.	LTS

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-2: Buildout of the GPA would contribute to exceedance of the BAAQMD threshold for NOx.	S	Mitigation Measure AIR-2: Major developers shall fund on a fair share basis BAAQMD-recommended feasible TCMs for reducing vehicle emissions from commercial, institutional, and industrial operations, as well as all CAP TCMs the BAAQMD has identified as appropriate for local implementation. Each major developer of development under the GPA shall fund its fair share toward some or all of the following TCMs: • *Rideshare Measures:* Implement carpool/vanpool program (e.g., carpool ride matching for employees, assistance with vanpool formation, provision of vanpool vehicles, etc.) (Effectiveness 1 percent – 4 percent of work trips, BAAQMD *CEQA Guidelines*). • *Transit Measures:* (i) Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc. (Effectiveness 0.5 percent – 2 percent of all trips); (ii) Design and locate buildings to facilitate transit access (e.g., locate building entrances near transit stops, eliminate building setbacks, etc.) (Effectiveness 0.1 percent – 0.5 percent of all trips). • *Services Measures:* (i) Provide on-site shops and services for employees, such as cafeteria, bank/ATM, dry cleaners, convenience market, etc. (Effectiveness 0.5 percent – 5 percent of work trips); (ii) Provide on-site child care, or contribute to off-site child care within walking distance. (Effectiveness 0.1 percent – 1 percent of work trips). • *Shuttle Measures:* (i) Establish mid-day shuttle service from work site to food service establishments/commercial areas (Effectiveness 0.5 percent – 1.5 percent of work trips); (ii) Provide shuttle service to transit stations/multimodal centers (Effectiveness 1 percent – 2 percent of work trips).	SU

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-2 *continued*		• *Parking Measures:* (i) Provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles (Effectiveness 0.5 percent – 1.5 percent of work trips); (ii) Implement parking fees for single occupancy vehicle commuters (Effectiveness 2 percent – 20 percent of work trips); (iii) Implement parking cash-out program for employees (i.e., non-driving employees receive transportation allowance equivalent to value of subsidized parking) (Effectiveness 2 percent – 20 percent of work trips). • *Bicycle and Pedestrian Measures:* (i) Provide secure, weather-protected bicycle parking for employees (Effectiveness 0.5 percent – 2 percent of work trips); (ii) Provide safe, direct access for bicyclists to adjacent bicycle routes (Effectiveness 0.5 percent – 2 percent of work trips); (iii) Provide showers and lockers for employees bicycling or walking to work (Effectiveness 0.5 percent – 2 percent of work trips); (iv) Provide secure short-term bicycle parking for retail customers or non-commute trips (Effectiveness 1 percent – 2 percent of non-work trips); (v) Provide direct, safe, attractive pedestrian access from Planning Area to transit stops and adjacent development (Effectiveness 0.5 percent – 1.5 percent of all trips). • *Other Measures:* (i) Implement compressed work week schedule (e.g., 4 days/40 hours, 9 days/80 hours) (Effectiveness 2 percent – 10 percent of work trips); (ii) Implement home-based telecommuting program (Effectiveness 0.5 percent – 1.5 percent of work trips). Implementation of the existing and proposed policies including the TCMP together with measures detailed in Chapter IV (for this impact) would help minimize this impact, but not reduce it to a less-than-significant level.	
AIR-3: Adoption of the GPA would result in a General Plan that is not consistent with the population assumptions used in the *Bay Area 2000 Clean Air Plan (CAP).*	S	AIR-3: No feasible mitigation is available. This impact would remain significant and unavoidable.	SU

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
L. NOISE			
NOISE-1: Buildout of the GPA could result in demolition, construction, and remodeling activities which could impact neighboring land uses.	S	NOISE-1: Developers and/or contractors shall develop and implement development-specific noise reduction plans. This measure shall be enforced via contract specifications. Each developer and/or contractor should be contractually required to demonstrate knowledge of the Alameda Noise Ordinance, and to perform construction activities in a manner such that noise levels do not exceed Alameda Noise Ordinance criteria. Contractors may elect any combination of legal, non-polluting methods to maintain or reduce noise to thresholds levels or lower, as long as those methods do not result in other significant environmental impacts or create a substantial public nuisance. The developer and/or contractor shall perform a site-specific acoustical analysis, and, if necessary, shall develop and implement a noise reduction plan subject to review and approval by the City. The plan for attenuating construction-related noises shall be implemented prior to the initiation of any work that triggers the need for such a plan.	LTS
NOISE-2: Buildout of the GPA could result in traffic-related noise impacts along the Tinker Extension through western Alameda.	S	NOISE-2: The following noise attenuation measures for the Tinker Avenue segment should be required to reduce noise levels at existing or planned adjacent uses: • Prior to the roadway's operation, measures which reduce the operational noise of Tinker Avenue should be provided, such as additional vegetation adjacent to Tinker Avenue from the western property line of the U.S. Coast Guard housing complex to the easternmost residence, and the use of soft road surfaces like rubberized asphalt, to meet either the 60 or 65 dBA standard for usable outdoor space. As a last resort, a noise wall should be provided on the north side of Tinker Avenue from the western property line of the U.S. Coast Guard housing complex to the easternmost residence of that housing development. If necessary, the noise wall should be of a height sufficient to interrupt the noise propagation path	LTS

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
NOISE-2 *continued*		(approximately 6 feet, depending on location of the wall relative to final elevation differences between source and receiver) and to meet either the 60 or 65 dBA standard for usable outdoor space. • Prior to roadway's operation, glazing which reduces interior noise to 45 dBA (CNEL or Ldn) and supplemental mechanical ventilation should be provided in the upstairs rooms of U.S. Coast Guard residences located adjacent to the proposed Tinker Avenue and with upstairs windows facing the street. Provision of supplemental ventilation would allow for window closure. Of the 30 units located immediately adjacent to the proposed Tinker Avenue alignment, nine of these units have no windows on the southern facade (facing the roadway) and no mitigation would be required in these units. Four units have windows facing Tinker Avenue, but they are located on the first floor only where the recommended noise wall would provide sufficient noise protection. However, there are 17 units with at least one upstairs window facing Tinker Avenue and mechanical ventilation would need to be provided in these units if the affected rooms have no other means of ventilation when the windows are closed. If the affected rooms have windows on other sides (not directly facing Tinker Avenue), mechanical ventilation could consist of a room fan. Otherwise, mechanical ventilation would involve a suitable ventilation system. • Planned residential and school uses with frontage along the proposed Tinker Avenue shall comply with the 60 dBA (CNEL) City Land Use Compatibility Standard for residential and school uses. If they would be exposed to higher noise levels (due to smaller setbacks), noise attenuation measures will need to be incorporated into their design to ensure that City standards are met.	

Table II-2 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
M. HAZARDS			
HAZ-1: Construction workers, future site users, and sensitive ecological receptors could potentially be exposed to contaminated soils and groundwater.	LTS	HAZ-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
HAZ-2: There is a potential for contaminated subsurface materials to be discovered during development of the project site. These materials could potentially present a health risk to construction workers and/or future workers and residents at the project site.	LTS	HAZ-2: No mitigation measures are necessary. Implementation of the existing and proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
HAZ-3: Demolition or renovation of the buildings at Alameda Point could release lead dust and asbestos fibers, potentially affecting construction workers.	LTS	HAZ-3: No mitigation measures are necessary. Adherence to existing regulations requiring abatement of lead and asbestos hazards and worker health and safety procedures during demolition and renovation activities and the policies discussed in Chapter IV (for this impact) would reduce this impact to a less-than-significant level. No additional policies or mitigation measures are necessary.	LTS
HAZ-4: Implementation of the GPA could result in human exposure to surface emissions of subsurface gases during routine use of and development in areas where surface emissions of hazardous soil gas occur.	LTS	HAZ-4: No mitigation measures are necessary. Implementation of the proposed policies described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
HAZ-5: Future land uses at the project site could include the use, storage, transportation, or generation of hazardous materials. If these materials were improperly used, stored, transported, or generated, human health and/or the environment could be affected.	LTS	HAZ-5: No mitigation measures are necessary. Implementation of the proposed policies and regulations described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS
HAZ-6: Construction workers, future site users, and/or ecological receptors could potentially be exposed to residual contamination in soils and groundwater.	S	HAZ-6: The following implementing Policy shall be added to the Environmental Cleanup section of the GPA: "At the time of property transfer from the Navy to the City, the City shall ensure that environmental restrictions (i.e., deed restrictions) regarding Marsh Crust/subtidal zone excavation and shallow groundwater use are recorded." Implementation of the existing and proposed policies and the mitigation measure described in Chapter IV (for this impact) will ensure that no significant impact results.	LTS

III. PROJECT DESCRIPTION

The General Plan Amendment (GPA) consists of policies and diagrams to guide the reuse of the former Naval Air Station (NAS) Alameda, now referred to as Alameda Point. The GPA amends the land use designation from Federal Facilities to a mix of uses that will result in a vibrant mixed-use neighborhood integrated and compatible with the rest of the City. New policies that address future development of Alameda Point and revisions to existing General Plan policies to provide for consistency throughout the *General Plan* are included in the GPA.

A. REGIONAL LOCATION AND PLANNING BOUNDARIES

The City of Alameda consists of three islands—Alameda Island (approximately 75 percent of the City's land area); Ballena Island; and Coast Guard Island—as well as Bay Farm Island (which is actually a peninsula adjacent to Oakland International Airport). The proposed GPA Planning Area is positioned on the western shore of Alameda Island (the main island) between the Oakland Estuary and San Francisco Bay. The boundaries of the proposed GPA Planning Area are shown in Figure III-1.

Alameda Point encompasses the majority of the former NAS Alameda properties including the main portion of the base located west of Main Street, as well as a small portion of property located on the east side of Main Street (which includes Estuary Park, the Northern California Power Agency (NCPA) Plant, Alameda Mini-Storage, and a small part of Alameda Gateway). The remaining piece of NAS Alameda—East Housing—was transferred together with the Fleet Industrial Supply Center (FISC) property to the City in July 2000, and was the subject of a separate EIR for the Catellus Mixed Use Development project.[2] The Planning Area's northern edge is formed by the Estuary, while its southern and western edges are formed by San Francisco Bay. The Planning Area's eastern boundary runs generally along Main Street. The Planning Area encompasses approximately 1,500 acres of land, roughly one-fourth of the land area of the main island.

B. BACKGROUND AND CONTEXT

Until 1997, Alameda Point was known as NAS Alameda. It was a federal facility, with approximately 60 military tenant commands for a combined military/civilian work force of over 18,000 personnel. The base was closed in 1997 and is now in the process of being transferred to the City of Alameda.

[2] City of Alameda, 2000. *Catellus Mixed Use Development FEIR.* April.

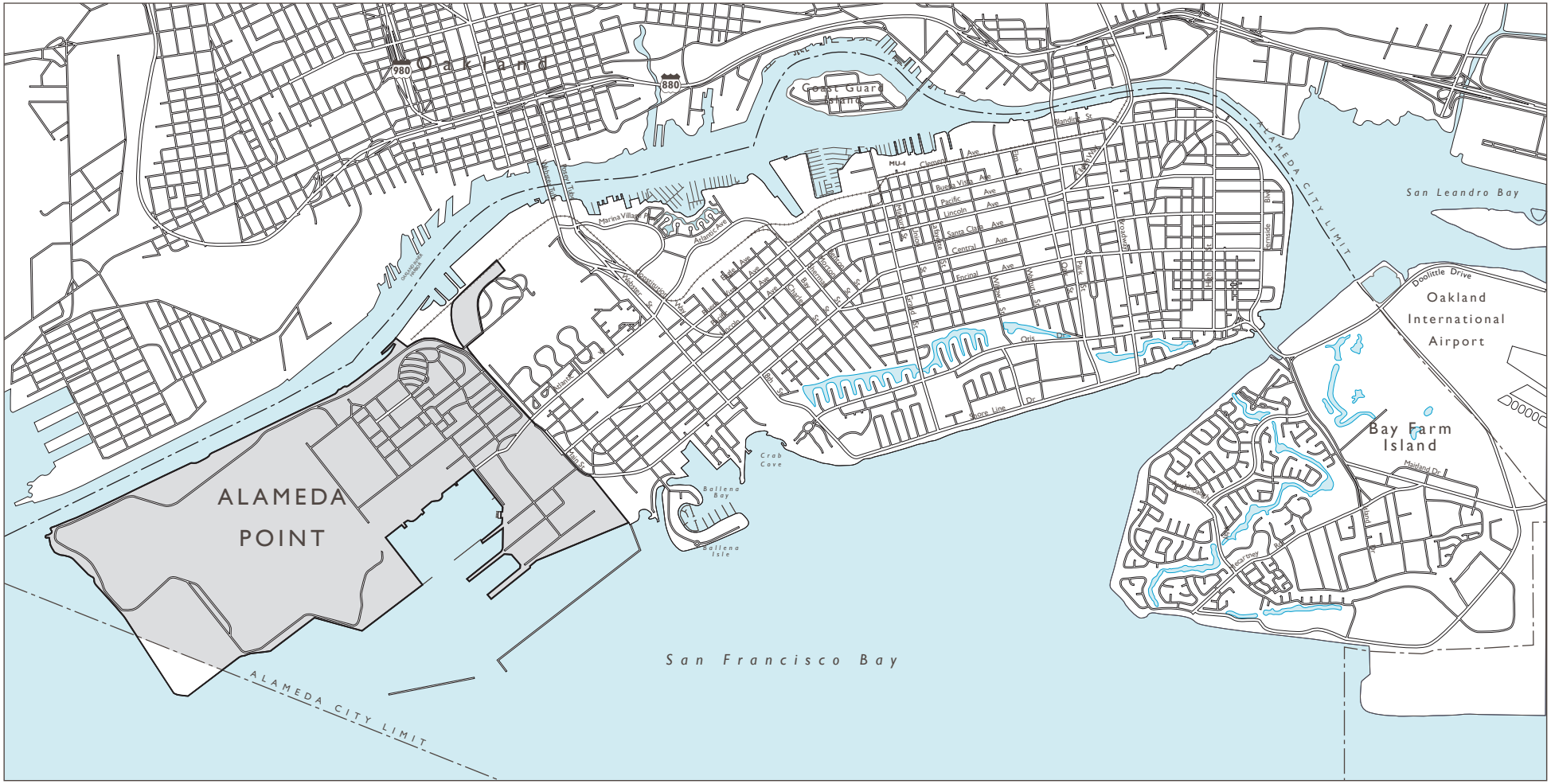

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FIGURE III-1

Alameda Point GPA EIR

Alameda Point Planning Boundaries

SOURCE: DYETT & BHATIA, 2001

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1. Current Uses

The City currently leases Alameda Point from the US Navy under a Lease in Furtherance of Conveyance (LIFOC), and subleases it to a variety of tenants under the City's Interim Leasing Program. Since 1997, Alameda Point has attracted a variety of tenants to the former base, including environmental incubators, film industry uses, industrial and commercial uses, and various affordable housing providers. As of 2002, Alameda Point has become home to approximately 1,000 employees[3] and 268 households.[4]

Buildings at Alameda Point are leased under the City's Interim Leasing Program. A 1997 Master Use Permit (MUP) for Alameda Point establishes an employment cap of 5,420 employees (37 percent of the previous total employment during full operation of the NAS). The MUP allows the City to administratively approve new leases for interim uses complying with all the standards and requirements of the MUP. Under the MUP, tenants cannot make any major improvements to the buildings except as required by the Uniform Building Code.

The western portion of Alameda Point, formerly used as an airfield, will be transferred directly to US Fish and Wildlife Service (USFWS) and used as a National Wildlife Refuge. The central and southern portions of the site are intensely developed, with an extensive road system serving administrative and industrial buildings, warehouses, and piers. Existing buildings currently house City administrative offices, filmmakers, and environmental technology incubators. Approximately 921,000 square feet of the prominent large-scale industrial buildings and expansive hardscape areas that exist on-site are being leased and occupied by research and development (R&D) and industrial uses.[5] Approximately 178,000 square feet of the existing piers are being leased to marine-related industrial uses [primary lessee is the Maritime Administration (MARAD)].[6] The USS Hornet, moored on one of Alameda Point's piers, is being used as the USS Hornet Museum. A significant number of vacant buildings also exist in the Planning Area, including buildings formerly used as barracks.

The northeastern portion of the site is developed with former US Navy housing. Some of the existing homes, known as the "Big Whites," are spacious, historic homes previously occupied by higher-ranking US Navy personnel. Approximately 68 of these units are currently leased at market rates. The Alameda Point Collaborative has contracted long-term leases for some of the multi-family structures, and have improved approximately 268 units for rentals at below market rates. There are currently 268 households living at Alameda Point.

[3] Alameda, City of, Planning and Building Department, 2002.

[4] Ibid.

[5] Alameda, City of, 2002. Revised Notice of Preparation for Alameda Point GPA. March 20.

[6] Alameda Point Community Partners, 2002. APCP Leases and Tenant Occupancy Schedule. June 27.

2. Related Planning and Environmental Studies

Several planning and environmental documents have been completed over the last 5 years to guide the reuse and redevelopment of lands at Alameda Point, the East Housing Area of the former NAS Alameda and the FISC. The applicable documents are summarized below and portions of them are incorporated into this document as appropriate.

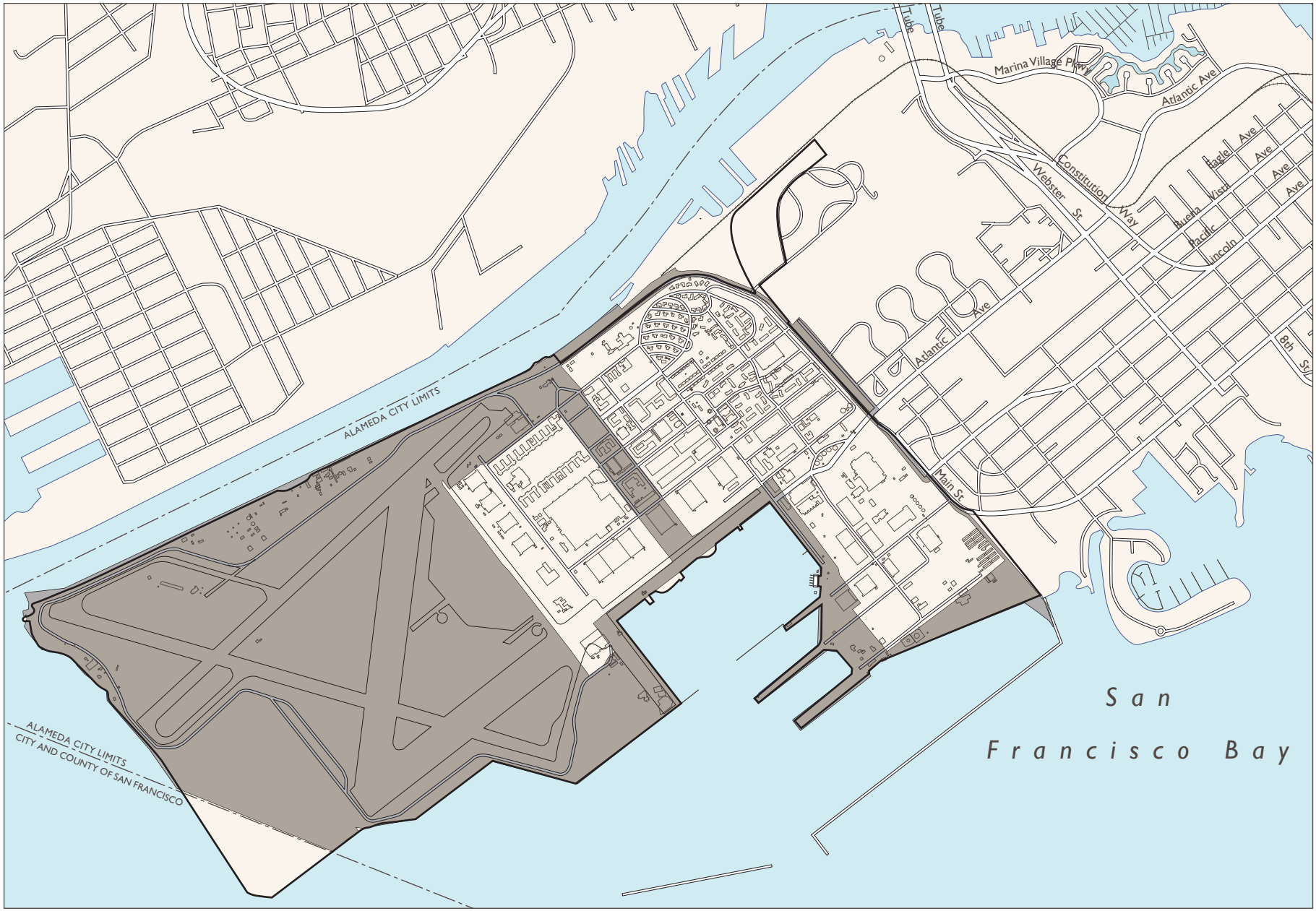
a. Community Reuse Plan. In 1996, the Alameda Reuse and Redevelopment Authority (ARRA) adopted the *NAS Alameda Community Reuse Plan*, which was amended in 1997. The ARRA was formed as a Joint Powers Authority to direct the reuse process for NAS Alameda. Members of the ARRA originally included representatives from the City of Alameda, the 9th Congressional District, Alameda County, the City of Oakland, and the City of San Leandro. At present, the ARRA is an Alameda City Council function.

The *Community Reuse Plan* was written to address the closure of NAS Alameda and FISC and the transfer of those properties from the US Navy to the City of Alameda. Themes of the *Community Reuse Plan* include emphasizing Alameda's island character, economic development opportunities, historical resources, transit orientation, mixed-use development, open space network, and sustainable design. Although not formally adopted by the City, the *Community Reuse Plan* was the first step in integrating Alameda Point into the general framework of the City of Alameda, and serves as the principle basis for the policies and land use diagram that constitute the GPA.

b. Alameda National Wildlife Refuge Designation and Biological Opinion. Approximately 565 acres of land and 413 acres of water at Alameda Point are planned to be transferred from the US Navy to the USFWS, and will remain in federal ownership. This area, located on the western portion of Alameda Point and including land within the City and County of San Francisco, is being preserved as a National Wildlife Refuge for the protection and enhancement of migratory birds, endangered species, and other wildlife habitat.

The USFWS issued a Biological Opinion to the Navy on March 22, 1999. The Biological Opinion responds to the Navy's request for consultation regarding the disposal of NAS Alameda by the US Navy and community reuse by the City of Alameda. The Biological Opinion studied the effects of the proposed disposal and reuse on the endangered California least tern and endangered California brown pelican. The terms and conditions of the Biological Opinion include land use restrictions in specified areas near the refuge in order to decrease the impact of new development on wildlife within the refuge. These restrictions are reflected in GPA policies. A copy of the Biological Opinion is included in Appendix D.

c. Public Trust Land Redesignation. One of the most significant changes in Alameda Point's regulatory context has been the redesignation of Public Trust Lands, as illustrated in Figure III-2. Senate Bill No. 2049, which took effect in 2000, enacts the NAS Alameda Public Trust Exchange Act (PTEA). The purpose of the PTEA is to facilitate the productive reuse of the former base lands for commerce, navigation, and fisheries by reconfiguring the Trust through land exchanges. Under



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Public Trust Lands

Alameda Point Planning Area

FIGURE III-2

Alameda Point GPA EIR

Alameda Point Public Trust Lands

SOURCE: DYETT & BHATIA, 2001

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the PTEA, salt marshes, tide and submerged lands, harbors, estuaries, bays, and inlets within the present boundaries of the City are granted to the City for the purposes stated within the Act, including:

> "…the establishment, improvement, and conduct of a harbor, and…the construction, maintenance, and operation therein of wharves, docks, piers, slips, quays, warehouses, factories, storehouses, equipment, parking areas, streets, highways, bridges, pedestrian ways, landscaped areas, public buildings, public assembly and meeting places, convention centers, parks, museums, playgrounds, public recreation facilities (including, without limitation, public golf courses, marinas, restaurants, hotels, commercial recreation facilities, entertainment facilities and attractions)…"

Public Trust lands may not be utilized for such uses as general purpose industrial, warehousing, or commercial, nor for housing. An exchange of Public Trust lands within the NAS property will ensure that all Public Trust lands have access to navigable waters, and that other lands that have been filled and/or cut-off from the waterfront are not restricted to Public Trust uses. An exchange agreement between the City and the State Lands Commission is the next step in implementing the PTEA. Lands removed from the Public Trust will include areas designated Mixed-Use under the GPA.

d. Redevelopment Plans. The City has adopted two redevelopment plans for the Alameda Point area–the Alameda Point Improvement Plan (APIP) and the Community Improvement Plan for the Business and Waterfront Improvement Project (BWIP).

- The *APIP Plan* is a redevelopment project for an area encompassing NAS Alameda, the East Housing area, and the southern portion of the FISC Facility. The *APIP Plan* was adopted by the Alameda Community Improvement Commission (CIC) in April 1998.
- The *BWIP Plan* applies to a redevelopment project area which encompasses the area of Alameda Point east of Main Street, the City of Alameda northern waterfront area bordering the Oakland Estuary, as well as the Park Street and Webster Street business districts. A small portion of the BWIP area located west of US Coast Guard Housing is located within the GPA Planning Area. The *BWIP Plan* was adopted by the CIC in March 1991.

Figure IV.A-2 in Chapter IV illustrates the boundaries of each redevelopment area.

e. Housing Element Update (2001). As required by State law, the City is in the process of updating the General Plan Housing Element, which will apply citywide. Because Alameda is mostly built-out, except for Alameda Point and FISC, many of the new sites that will accommodate the City's "fair share" housing will be located at Alameda Point. Adoption of the GPA will facilitate the City's efforts to provide for the State-mandated "Regional Housing Needs Determination" for Alameda.

Alameda Point is currently designated "Federal Facilities" on the General Plan Diagram. The proposed Alameda Point GPA will change the land use designations at Alameda Point to include designations such as "Low Density Housing," "Medium Density Housing," and "Mixed Use," within which new housing would be an allowable use.

Upon adoption of the GPA, substantial additional land at Alameda Point will be properly designated for future residential use.

f. Related Environmental Studies. Alameda Point has been the subject of much environmental study in recent years both by the US Navy and the City. An overview of each study is provided below, and the study area boundaries are shown in Figure I-1.

- *Draft and Final EIS for the Disposal of NAS Alameda and FISC, Alameda Annex and Facility Alameda (NAS Disposal EIS)*, 1999, prepared by the US Navy. This EIS addresses disposal of the property by the US Navy, under the specifications of the National Environmental Policy Act (NEPA).
- *Draft and Final EIR for the Reuse of NAS Alameda and FISC, Alameda Annex and Facility (NAS Reuse EIR),* March 2000 (SCH # 96022105), prepared by the City of Alameda. This EIR addresses the City's acceptance of conveyance and reuse of the property, formation of the Alameda Point Improvement Project, and the Local Agency Military Base Reuse Authority (LAMBRA) designation. The impacts and mitigation measures from this document are listed in Appendix C. A description of how certain mitigation measures from the Reuse Plan EIR have been incorporated into the GPA is also provided in Appendix C.
- *Draft and Final Catellus Mixed Use Development EIR (Catellus Mixed Use Development EIR),* April 2000 (SCH # 1998112078), prepared by the City of Alameda. This project-level EIR analyzed the impacts of the reuse and redevelopment of the former Fleet Industrial Supply Center Alameda Annex and Facility (FISC Facility) and the East Housing area of the former Alameda Naval Air Station (NAS Alameda). Since the approval of this project, the City has revised the project to include an additional 60 units of multi-family housing. This revision was analyzed in an Addendum issued by the City in November 2001. Catellus is currently evaluating a change from office/R&D space to retail uses for a portion of the project site.
- *Draft Alameda Point General Plan Amendment EIR*, November 2001 (SCH # 2001012057) prepared by the City of Alameda. This Draft EIR addressed a GPA for Alameda Point, which was initially considered by the City and would have permitted an intensity of development similar to what was envisioned in the Community Reuse Plan.
- *Alameda Point Golf Course Draft EIR,* 2002, is in preparation by the City of Alameda. This EIR will analyze the development of an 18-hole golf course and practice course, a clubhouse, a 300-room hotel, and a 300,000 square-foot conference center proposed on 215 acres of the northwestern portion of Alameda Point. The proposed Alameda Point Golf Course would include development of public access lands along the water's edge consisting of a public park, including a hiking and bicycling trail, parking, and restrooms. Project facilities would include

a domestic water supply and irrigation system, water recycling system with an open pond, utilities, lighting, and fencing along the Alameda National Wildlife Refuge to prevent public access. Approval of the GPA would allow for the proposed land use designations necessary for the golf course/resort project.

This document incorporates by specific reference much of the information contained in the *Draft and Final EIR For the Reuse of the Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility* and the *Draft and Final Catellus Mixed Use Development EIR.* Copies of these documents are available for review at the City of Alameda Planning and Building Department. Although these environmental studies have been reviewed as part of this EIR, this EIR contains an independent analysis of the impacts of the GPA and the alternatives considered in Chapter V. This EIR reflects Alameda Point's current setting, incorporating new information that has become available since the *Community Reuse Plan* was completed, such as changes in the economic, environmental, and regulatory context. This EIR is not tiered from any of the previous EIRs.

C. PROPOSED GENERAL PLAN AMENDMENT

The proposed project is an amendment to the *City of Alameda General Plan,* the principal policy document for guiding future development of the City. The GPA is comprised of three primary components:

- *Adoption of a New Alameda Point Element.* The City is proposing the adoption of a new General Plan Element that includes policies to guide the future redevelopment of Alameda Point.
- *General Plan Diagram Revisions.* Revisions to the General Plan Diagram are proposed to change the designation of the Alameda Point area from Federal Facilities to designations that will support redevelopment of the area with a mix of residential, commercial, industrial, public and institutional, and parks and open space uses.
- *Miscellaneous General Plan Revisions.* Revisions to some of the text and policies included in the existing General Plan Elements (Chapters I through VII) are proposed to provide for internal consistency.

Additional details of the GPA and its associated approvals are provided below.

1. Objectives

The City objectives for the GPA are detailed below.

- *Seamlessly integrating Alameda Point with the rest of the City.* Policies in the GPA encourage development that is community-oriented and in keeping with Alameda's character and scale.

- *Fostering a vibrant new neighborhood.* The GPA seeks to create new and energetic areas, encompassing a variety of uses. However, implementation of the proposed policies will ensure that new development will not unduly impact established neighborhoods.
- *Maximizing waterfront accessibility.* With an emphasis on a perimeter shoreline trail along the San Francisco Bay and Oakland Estuary, the policies aim to provide a publicly-accessible waterfront.
- *Discouraging automobile use and creating new developments that are compatible with transportation capacity.* Policies promote the use of alternative modes of transportation—such as bicycles, shuttles, and water taxis—to reduce present and potential future congestion.
- *Ensuring economic development.* The envisioned long-term reuse of Alameda Point will result in replacement of jobs lost due to cessation of Naval operations, and will foster economic growth and development that benefits the community at large.
- *Creating a mixed-use environment.* The GPA encourages development of a variety of uses in Alameda Point that promote transit and a pedestrian-friendly environment. A mixed use approach will allow for the development of transit-friendly neighborhoods with a strong pedestrian character that will foster the development of the desired small town feeling.
- *Establishing neighborhood centers.* Each neighborhood in Alameda Point should have a neighborhood center as a focal point that allows for commercial, civic, community support services, cultural and recreational uses. Centers should allow for human interaction and public events. Centers should be distributed so all residents can walk to accomplish multiple purposes and have an access point to local transit. Integration of multiple forms of transportation is essential to a successful neighborhood center design. Similar to existing neighborhood business districts, these centers should provide critical local services, such as grocery stores, launderettes/cleaners and small restaurants that can rely mainly on customers who walk from their homes.
- *Attaining land use buildout.* The GPA depends on buildout of a variety of land uses in order to finance infrastructure and public service improvements on Alameda Point.
- *Provide housing opportunities consistent with the City's Housing Element.* Additional residential units are needed to provide a variety of housing opportunities within close proximity to employment opportunities on Alameda Point and to meet the City and region's housing needs.
- *Facilitating a no-cost economic development conveyance.* The City and US Navy have agreed to a No Cost Economic Development Conveyance of Alameda Point to the City. Development scenarios which achieve effective economic redevelopment will allow the US Navy to transfer the property to the City under this conveyance mechanism.

The goals and objectives of the GPA reflect the social and economic values of the Alameda community, as well as the community's intention to create a new neighborhood for the City of Alameda. The goals and objectives have been informed by the Vision Statement adopted by the

Alameda Base Reuse Advisory Group (now called the Alameda Point Advisory Committee) in September of 1994:

> VISION STATEMENT
> *Between now and the year 2020, the City of Alameda will integrate the Naval Air Station property with the City and will realize a substantial part of the Base's potential. Revenues will have increased and a healthy local economy will have resulted from the implementation of a coordinated, environmentally sound plan of conversion and mixed-use development. While building upon the qualities which make Alameda a desirable place to live, efforts for improving recreational, cultural, educational, housing, and employment opportunities for the entire region will have been successful.*

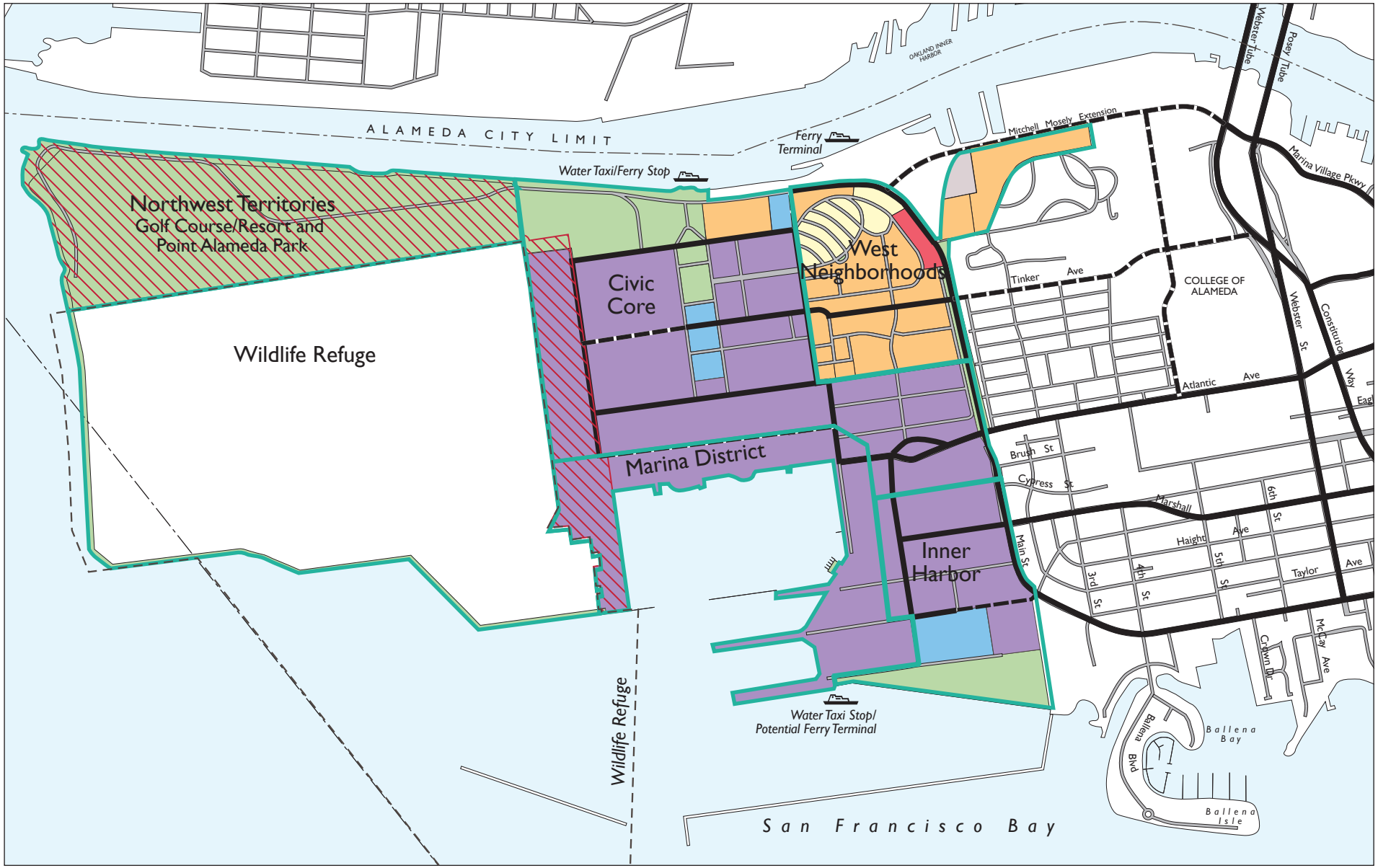
2. Characteristics of the General Plan Amendment

The Alameda Point GPA focuses on strengthening employment opportunities, neighborhood character, and open space connections on Alameda Point. Significant redevelopment opportunities include mixed-use neighborhood centers, marine-related and industrial activities, and commercial recreation uses.

The Alameda Point GPA proposes a total of 129 acres of Low and Medium Density residential uses. Approximately 432 acres of Alameda Point Mixed Use acreage is proposed, which includes residential, commercial, office, and industrial mixed uses. Additionally, 340 acres of parks and open space acreage is proposed, in addition to the 515 acres set aside for the Wildlife Refuge. Table III-1 describes the land use acreage distribution proposed under the GPA, and Figure III-3 illustrates the five planning subareas.

The Civic Core area of Alameda Point, the original administrative core of NAS Alameda, is intended to be redeveloped as a civic and cultural center of the City, with offices, retail, housing, parks and civic uses. Improved shoreline access and landmark structures would be used to establish a unique sense of character. The Marina area is intended to be redeveloped into a vital mixed-use area, with emphasis on extension of the City's shoreline open space promenade. Redevelopment activity should focus on pedestrian-circulation and sensitivity to the adjacent Wildlife Refuge. Existing industrial, research and development, and marine-related uses east of the Marina will be supported and expanded as feasible.

To reduce or minimize the potential increase in traffic congestion resulting from redevelopment of Alameda Point, the GPA proposes expansion of alternative transportation modes, including bicycle routes, pedestrian paths, public transit, shuttles, water taxi, and ferry service. Roadway and trail connections from other parts of the City to and within Alameda Point are important, along with streetscaping and signage improvements. Cooperation with regional agencies is also proposed to design, fund, and construct a new vehicle access to Interstate 880 (bridge, tunnel, or other connection, such as the gondola).



SOURCE: DYETT & BHATIA, 2001

FIGURE III-3

Alameda Point GPA EIR

Proposed Alameda Point General Plan Land Use

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The GPA also proposes conservation of historic resources on Alameda Point, such as US Navy buildings, historic homes, and the historic Training Wall. Additionally, the proposed GPA ensures that the City provides for management of stormwater/runoff, groundwater, and fire and emergency services on Alameda Point.

A description of the proposed land use designations and General Plan text amendments is provided below.

a. Land Use Designations by Planning Subarea. The Alameda Point GPA proposes redesignation of Alameda Point from the existing Federal Facility designation to the proposed General Plan land use designations illustrated in Figure III-3 and described below by planning subarea. Table III-1 also provides a breakdown of the proposed uses by subarea.

Table III-1: GPA Land Use Acreage Distribution

Land Use Categories	Civic Core (AP1)	Inner Harbor (AP2)	Marina (AP3)	West Neigh-borhood	NW Terri-tories	Wildlife Refuge	Total
Low-Density Residential				21			21
Medium-Density Residential	9			99			108
Alameda Point Mixed Use	263	74	95				432
Neighborhood Business				4			4
Industrial				6			6
Public/ Institutional	11	13					24
Parks & Open Space	54	29	21		236		340
Wildlife Habitat						515[a]	515
Total	**337**	**116**	**116**	**130**	**236**	**515[a]**	**1,444**

[a] Wildlife refuge comprises 565 acres total: 515 acres in Alameda and 50 acres in the County and City of San Francisco.

Source: City of Alameda Planning and Building Department, 2002.

(1) Civic Core (AP1). Located in the center of Alameda Point, the Civic Core includes many of the historic buildings that exist at Alameda Point and that comprise the NAS Alameda Historic District. This area would be designated primarily Alameda Point Mixed Use with some Parks & Public Open Space and Public/Institutional/ School. The western portion of this sub-area would be also designated as a Wildlife Refuge Impact Area. The Civic Core will have a major emphasis on public-serving and civic uses. Business park, office, civic, residential, industrial/warehousing, public/institutional, parks and public open space, commercial, and other supporting uses would be allowed within the district.

(2) Inner Harbor (AP2). This planning sub-area would be designated Alameda Point Mixed Use and Public/Institutional/School, and Parks and Public Open Space. The Inner Harbor area is planned for mixed-use development with a major emphasis on research and development and light industrial and industrial/warehousing uses. Light industry, office and supporting retail, industry/warehousing, and service commercial uses would be allowed within the district. Supporting uses should be focused in or around a mixed-use center along the extension of Pacific Avenue, and associated with patterns of use in the adjoining Marina district.

(3) Marina (AP3). This planning sub-area would be designated Alameda Point Mixed Use. Marine-related industry, warehousing, office, commercial, residential, recreation, and supporting

retail uses are allowed within the district. Uses should be structured to promote waterfront activity and vitality at the open space spine proposed along the Bay.

(4) West Neighborhoods. Land use designations for this planning sub-area would be primarily Medium-Density Residential (up to two families per dwelling unit) and Low-Density Residential (one family detached dwelling units). Several blocks along the west side of Main Street would be designated Neighborhood Business. Existing US Navy housing in the northeastern portion of the former NAS will be expanded with parks, neighborhood centers, and other supporting uses to form cohesive neighborhoods. Greenways and open space areas are planned throughout the area. The Big Whites, large historic homes previously occupied by high-ranking US Navy personnel, will be preserved for their historical significance. New housing is also proposed within the West Neighborhood.

(5) Northwest Territories. The entire Northwest Territories would be designated Parks and Public Open Space with a sub-area designated as a Wildlife Refuge Impact Area, and reserved for parks and recreation activities. A regional park, golf course with resort/conference facilities, and trail system are all being considered for the Northwest Territories area.

(6) Wildlife Refuge. This planning sub-area would be designated Open Space/Habitat. Most of the area formerly used as runways at Alameda Point is being transferred to the USFWS for use as a National Wildlife Refuge. The National Wildlife Refuge contains two wetlands areas and provides habitat for the endangered California least tern, the Caspian tern, and the California brown pelican. No new development other than an interpretive center will be permitted in this area.

b. General Plan Text Revisions. The proposed GPA includes two primary types of revisions to the text of the *General Plan*: 1) the addition of the Alameda Point Element as a new chapter of the *General Plan*; and 2) miscellaneous text revisions in existing chapters of the *General Plan*.

The most substantive revision will be the addition of the new General Plan Element that is proposed as Chapter 9, Alameda Point Element, of the *General Plan*. The Alameda Point Element is included as Appendix A of this EIR. The Element implements many of the goals and objectives identified in the *Community Reuse Plan*, but it also includes some refinements to the vision identified in the *Community Reuse Plan*. The Element reflects updated conditions, and identifies challenges and issues associated with the redevelopment of Alameda Point. The Element includes guiding and implementing policies that address the following topics: land use; transportation; open space, conservation and cultural resources; and health and safety.

Several text amendments, additions, and deletions are proposed to existing chapters of the *General Plan*. Table A-1, included in Appendix A, lists the proposed additions/modifications and deletions to text and figures of the existing *General Plan* with text changes shown in <u>underline</u> and deletions in ~~strikeout~~. New policies are noted and include the page number in the *General Plan* where they will be located.

3. Buildout Projections

Buildout of designated land uses in Alameda Point under the GPA is designed to permit a maximum of: 1,981 housing units; 2.3 million square feet of commercial, civic, and industrial building area;[7] 600 hotel rooms; 340 acres of recreational open space; 530 marina slips; and 515 acres[8] of Wildlife Refuge. Table III-2 details the buildout scenario for existing and proposed uses at Alameda Point under the GPA.

The GPA proposes preservation of 50 low density and 218 medium density housing units within the West Neighborhood, as well as development of up to 490 new medium density housing units. Additionally, up to 1,170 new medium density housing units are proposed within new mixed-use districts in the Civic Core and Marina areas. The Alameda Point Marina is planned for 530 berths, of which 53 berths are intended as live-aboard. Hotel and conference center land uses will generate approximately 600 rooms at buildout.

The industrial, business park, office and marine-related land uses proposed in the GPA are projected to result in approximately 1,614,750 square feet of building area at buildout. Civic and institutional land uses would result in 130,000 square feet of building area. Commercial development serving local residents and workers would constitute 104,000 square feet, while visitor-serving commercial and conference activities would comprise approximately 130,000 square feet. The land uses related to the Golf Clubhouse and Conference Facilities and Hotel/Conference Center would result in 338,000 square feet at buildout.

D. USES OF THIS EIR

This EIR will be used to provide decision-makers and the general public with relevant environmental information to use in considering adoption of the GPA by the City Council. City approval is necessary to adopt the GPA, including certification of this EIR. Approval of the proposed GPA will include land use designation changes and policy amendments. Policy amendments will include adoption of the GPA policies, changes to existing General Plan policies for internal consistency with the GPA, and an amendment to the *BWIP* to ensure land use designation consistency. Alameda Point is currently zoned M-2-G, *General Industrial Manufacturing* District with a *Special Government Combining Overlay* (G) and approval of the GPA will require rezoning of the area to MX, *Mixed Use Planned Development* and other appropriate zoning designations. The City may use this EIR for subsequent zoning ordinance amendments or project-specific approvals that are consistent with, and in furtherance of, the GPA; however, no specific development proposals are analyzed in this program-level EIR.

[7] The majority of the 2.3 million square feet would be located within existing buildings. It is the City's intent to establish performance zoning regulations for the GPA area which would regulate the use of these existing areas based on trip generation.

[8] An additional 50 acres fall within the City and County of San Francisco.

Table III-2: Alameda Point GPA 2020 Buildout

Land Use Categories	Units	Civic Core	Inner Harbor	Marina	West Neighbor-hoods	NW Territories	Total
Lt. Industry/Business Park/Office	sq.ft.	740,000	400,000	0	0	0	**1,140,000**
Industrial/Warehousing	sq.ft.	277,500	76,500	76,500	0	0	**430,500**
Marina-Related Industry	sq.ft.	0	0	44,250	0	0	**44,250**
Civic/Institutional Buildings	sq.ft.	100,000	0	0[a]	30,000	0	**130,000**
Commercial	sq.ft.	52,000	0	0	52,000	0	**104,000**
Visitor-Serving Recreation/ Commercial	sq.ft.	0	0	130,000	0	0	**130,000**
Golf Clubhouse/ Conference Facilities	sq.ft.	0	0	0	0	26,000	**26,000**
Hotel/Conference Center	sq.ft.	0	0	156,000	0	156,000	**312,000**
Total Square Feet		**1,169,500**	**476,500**	**406,750**	**82,000**	**182,000**	**2,316,750**
Sports Complex	acres	40	0	0	0	17	**57**
Golf Course	acres	0	0	0	0	214	**214**
Total Acres		**40**	**0**	**0**	**0**	**231**	**271**
Marina Slips[c]	slips	0	0	477	0	0	**477**
Liveaboards (10% liveaboards)[c]	slips	0	0	53	0	0	**53**
Total Slips		**0**	**0**	**530**	**0**	**0**	**530**
Low Density Residential	units	0	0	0	50	0	**50**
Medium Density Residential	units	863	0	525	490	0	**1,878**
Total Dwelling Units		**863**	**0**	**525**	**540**	**0**	**1,928**
Parks & Open Space	acres	14	29	21	0	5	**69**
Wildlife Habitat	acres	0	0	0	0	515[b]	**515**

[a] Does not include development of the Alameda Unified School District site.

[b] An additional 50 acres are within the City and County of San Francisco.

[c] Standard marina slips are listed first. Liveaboards, which comprise 10 percent of the total slips, are shown separately.

Source: City of Alameda Planning and Building Department, 2002.

IV. SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of each issue that has been identified through preliminary environmental analysis and the public scoping session for the Alameda Point General Plan Amendment and, as such, constitutes the major portion of the Draft EIR. Sections A through M of this chapter describe the environmental setting of the project as it relates to each specific issue, the impacts resulting from implementation of the project, and mitigation measures that would reduce impacts of the project.

Under CEQA, a significant impact is defined as a substantial, or potentially substantial, adverse change in the environment.[9] The *CEQA Guidelines* direct that this determination be based on scientific and factual data. Each impact and mitigation measure section of this chapter is prefaced by a summary of criteria of significance. These criteria have been developed using Appendix G of the *CEQA Guidelines* and applicable City policies. Policies and regulations from various State, federal and regional agencies are also used as appropriate (e.g., the Clean Air Plan published by the Bay Area Air Quality Management District (BAAQMD)).

ISSUES ADDRESSED IN THE DRAFT EIR

The following environmental issues are addressed in this chapter:

- Land Use
- Population, Employment and Housing
- Visual Resources
- Public Services
- Water Resources
- Historic and Cultural Resources
- Biological Resources
- Geologic and Soils
- Utilities
- Transportation and Circulation
- Air Quality
- Noise
- Hazards

[9] Public Resources Code § 21068.

Preliminary analysis determined that the proposed project would not result in significant impacts to agricultural resources or energy and mineral resources. Consequently, these topics are not examined in this chapter of the EIR, but are briefly discussed in Chapter VI, CEQA-Required Assessment Conclusions.

FORMAT OF ENVIRONMENTAL TOPIC SECTIONS

Each environmental topic considered in Chapter IV is comprised of two primary sections: 1) Setting, and 2) Environmental Analysis. An overview of the general organization and the information provided in the two sections is provided below.

- *Setting*. The Setting section for each environmental topic generally provides a description of the applicable physical setting for the project site and its surroundings (i.e., existing land uses, existing soil conditions, existing traffic conditions). An overview of regulatory considerations that are applicable to the specific environmental topic is also provided. The regulatory considerations subsections are organized by agency including applicable federal, State, regional and local (City) policies. The City's existing General Plan policies that are relevant to each environmental topic are detailed under the local policy section. General Plan policies that are proposed to be added, deleted or revised as part of the GPA are listed in the Environmental Analysis section (see below).
- *Environmental Analysis*. Each Environmental Analysis section is divided into two primary subsections: (a) the Proposed Project; and (b) Impacts and Mitigation Measures.

  Subsection (a), Proposed Project details the General Plan policies proposed to be added, deleted or revised as part of the Alameda Point GPA and that are applicable to the specific environmental topic and could result in potential environmental impacts.

  Subsection (b), Impacts and Mitigation Measures begins with a discussion of the criteria of significance followed by a discussion of the impacts that would result from implementation of the GPA through a 2020 buildout. Impacts that would be considered *less than significant* or *beneficial* based on the significance criteria are discussed first followed by a discussion of the impacts that would be considered *significant* and require mitigation.

  Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively within each topic and begin with an acronymic reference to the impact section (e.g., LU). The following symbols are used for individual topics:

LU:	Land Use
POP:	Population, Employment and Housing
VIS:	Visual Resources
SVCS:	Public Services
WATER:	Water Resources
HIST:	Historic and Cultural Resources

BIO:	Biological Resources
GEO:	Geology and Soils
UTIL:	Utilities
TRANS:	Transportation and Circulation
AIR:	Air Quality
NOISE:	Noise
HAZ:	Hazards

Impacts are also categorized by type of impact as follows:

- S = Significant
- SU = Significant and Unavoidable
- LTS = Less than Significant

Some potential impacts would be minimized through the implementation of policies from several sources: 1) proposed as part of the GPA; 2) existing General Plan polices; and/or 3) other existing regulations. Policies (existing and proposed) that would help mitigate potential impacts are detailed in the discussion following each bold impact statement. Potential impacts that would be reduced to a less-than-significant level by the implementation of existing policies, and/or regulations or policies that are proposed as part of the project are identified as *less than significant* before mitigation. Potential impacts that would require the implementation of any additional measure(s) in order to be reduced to a less-than-significant level are identified as *significant* prior to mitigation and *less than significant* after mitigation. Potentially significant impacts that could not be mitigated to a less-than-significant level are identified as *significant and unavoidable* after mitigation.

A. LAND USE

This section describes existing land use at Alameda Point and its vicinity, and evaluates the compatibility of the proposed land use designations with existing and proposed uses.

1. Setting

Existing land use information was obtained through a variety of documents produced by the City of Alameda, a leasing database maintained by the Alameda Point Leasing and Property Management Division of the City's Development Services Department, and on-site surveys. This section focuses on existing land use patterns at Alameda Point, highlighting the predominant land uses in the six Planning Area subareas. Additionally, this section describes land uses in the City of Alameda and the City of Oakland in the vicinity of the Planning Area.

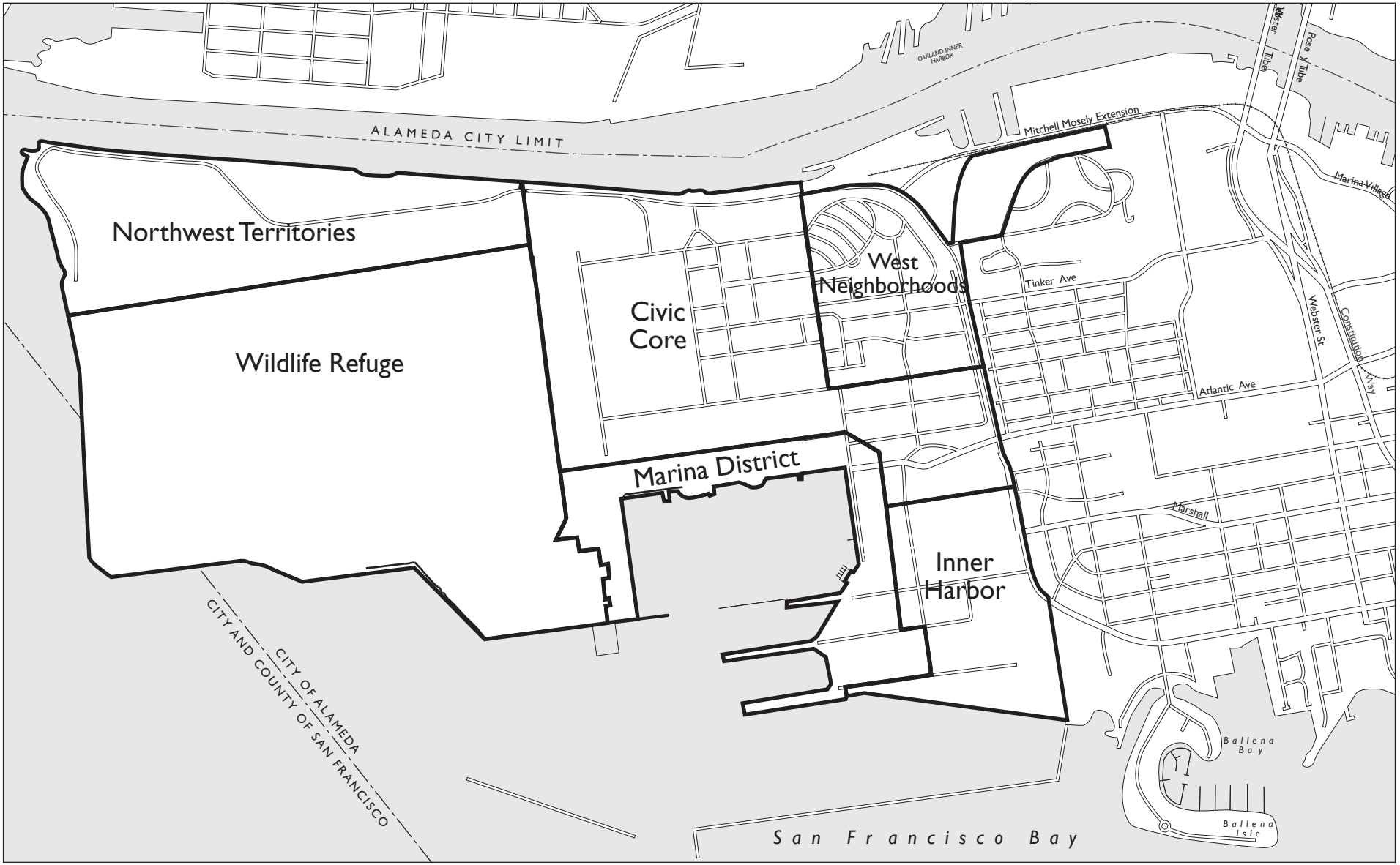
a. Existing Land Use at Alameda Point. Alameda Point comprises the western third of Alameda's main island. The remainder of the City of Alameda lies to the southeast, the Port of Oakland is situated across the Estuary to the north, and the San Francisco Bay lies to the west and south. Figure IV.A-1 identifies the Planning Area and the six planning subareas.

The Planning Area occupies approximately 1,444 acres, roughly one-fifth of the City's total area. The City currently leases land on Alameda Point from the Navy and subleases land to a variety of tenants. The western portion of the Planning Area, formerly used as an airfield will become the Alameda National Wildlife Refuge (Wildlife Refuge) and a golf course/resort (pending City approval and environmental review). The central portion of the site is intensely developed as a former military base, with an extensive road system serving the administrative and industrial buildings, warehouses, and piers. The northeastern portion of the site primarily consists of base housing and the southeastern portion of the site is predominantly covered by hardscape and large buildings. Alameda Point, through its leasing program, has attracted a variety of tenants to the former base including environmental firms, film industry uses, industrial and commercial uses, and various affordable housing providers. In 2002, there were approximately 1,000 jobs on Alameda Point and 268 units.[10]

A description of existing land use in each of the six planning subareas identified in the proposed General Plan Amendment is provided below.

(1) Subarea 1: Civic Core (AP1). Approximately 337 acres in size, subarea 1 is located in the central portion of Alameda Point, and is surrounded by the proposed Wildlife Refuge and Northwest Territories to the west, the Estuary to the north, residential and community support uses to the east, and the Marina District to the south. This subarea is dominated by structures currently being used for offices, research and development, and industrial uses.

[10] Alameda, City of, Planning and Building Department, 2002.



LSA

FIGURE IV.A-1

Alameda Point GPA EIR
Proposed Alameda Point
General Plan Land Use

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0 1250 2500
FEET

SOURCE: DYETT & BHATIA, 2001

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Administration buildings are located in the central portion of subarea 1, while warehouse and industrial buildings are located along the western and southern portions of the subarea. One building houses administrative offices for the City of Alameda. Companies involved in the film industry occupy several large industrial buildings in this subarea. Other buildings house environmental-technology incubator firms. The Civic Core also contains a cluster of recreational buildings and facilities and several buildings that are currently vacant, including the buildings formerly used as barracks.

(2) Subarea 2: Inner Harbor (AP2). This approximately 116-acre subarea is in the southeastern corner of Alameda Point between Main Street and the Marina District subarea. Land use in this subarea consists of industrial, warehouse, and community support uses. The most prominent land use features are the large-scale industrial buildings and the large, vacant hardscape areas. Several large warehouse buildings are used for various warehousing and industrial uses. Recreational facilities and open space areas are located along the eastern and southern edges of Subarea 2 and include the shoreline and a small marina within the breakwater, and a landscaped area for picnicking. Self-storage facilities and an open soccer field are located along Main Street. Encinal High School is located immediately east of this subarea.

(3) Subarea 3: Marina District (AP3). The primary land uses in the 115-acre Marina District subarea are research and development, industrial, and marine-related industrial. The Marina District subarea contains Piers 1, 2, and 3, which are used primarily for marine-related industrial uses and which include the Seaplane Lagoon. Pier 1 provides 1,200 feet of berthing area, Pier 2 provides 2,420 feet of berthing area, and Pier 3 contains 2,500 feet of berthing area. The Maritime Administration currently leases Piers 1 and 2 for marine-related industrial uses, and the Hornet Foundation leases Pier 3, where the USS Hornet is moored and open to the public as the USS Hornet Museum. The Seaplane Lagoon is serviced by ramps on each side that lead up onto the piers. There are two large warehouse buildings on the western side of the Lagoon.

Uses bordering the Marina District subarea include the proposed Wildlife Refuge to the west, research and development, industrial, and film-related uses in the former hangars to the north, and industrial uses to the east. The Seaplane Lagoon is oriented towards San Francisco Bay to the south.

(4) Subarea 4: West Neighborhood. The West Neighborhood, which formed the residential portion of NAS Alameda, contains approximately 124 acres. Located in the northeastern portion of Alameda Point, this subarea is comprised primarily of residential buildings, including 341 family housing units. In the north, family housing units consist of ranch style single-family homes located on curving streets that are bordered by mature trees. Multiple-family residences are located in the southern portion of Subarea 4. Some of the existing homes, known as the "Big Whites," are spacious, historic homes previously occupied by higher-ranking US Navy personnel.

Adjacent areas include the Civic Core subarea to the south and west, the Alameda Gateway ferry terminal and parking lot to the north and east, and the former FISC and East Housing (Catellus

Mixed Use Development) and US Coast Guard housing to the south and east. Subarea 4 includes land on the east side of Main Street where a mini-storage facility, Estuary Park, and Northern California Power Agency (NCPA) power plant are located.

(5) Subarea 5: Northwest Territories. Located in the northwest portion of Alameda Point, this subarea is approximately 236 acres in size and is bordered by the Oakland Estuary to the north, San Francisco Bay to the west, the proposed Alameda National Wildlife Refuge to the south, and the future 57-acre Alameda Point sports complex to the east. A portion of the Sports Complex (17 acres) is located in the Northwest Territories. The land uses in this subarea consist of open space interspersed with facilities and structures of the former NAS Alameda, including an abandoned airfield, guard tower, and other small support structures.

(6) Subarea 6: Wildlife Refuge. This area consists of approximately 565 land acres and 413 submerged acres (the submerged areas are not part of the GPA Planning Area). Most of the area formerly used as runways by the US Navy will be transferred by the US Navy to the US Fish and Wildlife Service (USFWS) for use as a National Wildlife Refuge. Approximately 50 acres of this area, located in the southwest corner of the Wildlife Refuge, are within the City and County of San Francisco. The area provides habitat for the endangered California least tern and California brown pelican, as well as the Caspian tern (see Figure IV.G-1). The area also contains two wetland areas and numerous small bunkers formerly used for ammunition storage.

b. Existing Land Use in the Vicinity of Alameda Point. Alameda Point is located at the western end of the island, and is bounded by water on three sides. The northern edge is located adjacent to the Oakland Estuary, which is heavily used for shipping traffic and port uses, commercial ferry services, and private pleasure craft. The western and southern edges abut San Francisco Bay. A more detailed description of the existing uses east of the Planning area within Alameda and those north of the Estuary in Oakland is provided below.

(1) City of Alameda. Land uses east of the Planning Area in the area bounded by Main Street and Webster Street include a mixture of residential (single- and multi-family); business parks; commercial; and community uses such as open space, parks, schools, and churches. Uses adjacent to the Planning Area and south of Atlantic Avenue are mainly residential. Educational and commercial areas, including business parks, are located primarily north of Atlantic Avenue, as is the planned Catellus Mixed Use Development. The following are more detailed descriptions of existing land use near Alameda Point.

South of Atlantic Avenue. Land uses near Alameda Point and south of Atlantic Avenue are mainly residential, institutional, and educational facilities, and include churches, parks, schools, and areas of shoreline access to San Francisco Bay. Bordering Alameda Point, to the east of Main Street and south of Atlantic Avenue, is a residential area known as the West End Neighborhood. This neighborhood contains apartments clustered along Atlantic and Central Avenues and a mixture of duplexes and single-family residences within the boundaries of Main Street, Atlantic Avenue,

Webster Street, and Central Avenue. An unused 100-foot wide railroad right-of-way extends along the south side of Atlantic Avenue from Main Street to Webster Street.

Other uses include a small neighborhood retail site at Atlantic Avenue and Main Street, three schools, and two parks. Commercial development, including offices, gas stations, retail stores, restaurants, commercial storage facilities, and motels, is concentrated primarily along Webster Street, approximately three quarters of a mile from Alameda Point. Adjacent to Alameda Point and south of Central Avenue is Encinal High School.

North of Atlantic Avenue. Land uses north of Atlantic Avenue consist primarily of educational facilities, retail, office, industrial, and residential. The College of Alameda occupies approximately 62 acres northwest of the intersection of Webster Street and Atlantic Avenue. The former FISC and NAS East Housing areas, which consist of approximately 215 acres combined and have been approved for a mixed-use development project proposed by Catellus, are located northwest of the College of Alameda. At buildout, the Catellus Mixed Use Development project will contain approximately 599 residential units, 19 acres of open space, 1.3 million square-feet of research and development and office uses, and a school site. The portion of the development north of the proposed Tinker Avenue extension will be primarily business park with office and research and development uses, and the portion south of the proposed Tinker Avenue will be primarily residential. The Catellus Mixed Use Development was approved by the City in June 2000 and construction is expected to begin in 2002, with phasing of construction occurring over 11 years.

The Marina Village shopping center, located southeast of the Posey Tube and about one mile from Alameda Point, is the commercial shopping center closest to the Planning Area. The shopping center contains a supermarket, drug store, restaurants, and specialty retail establishments. South of the Marina Village shopping center is California Heritage, a new residential development. The Mariner Square area at the north end of Webster Street includes boat sales and repair shops, boat berths, and restaurants. A 103-bed assisted living facility has been approved on the site, but has not yet been constructed.

The US Coast Guard Housing Area is north and west of the Catellus Mixed Use Development, and consists of 582 residential units on approximately 69 acres. The Coast Guard Housing Area is being leased by the Coast Guard from the Navy for use as housing. Miller Elementary School is also located in this area.

The Alameda Gateway is a 35-acre former shipyard site adjacent to the Estuary at the northern terminus of Main Street and northwest of Alameda Point. This site includes the Alameda Gateway ferry terminal and parking lot, winemaking and storage facilities, warehouses, offices, and ship repair facilities.

(2) City of Oakland/Port of Oakland. A portion of the Oakland waterfront area is located along the north side of the Estuary across from Alameda Point, and includes railroad facilities,

industrial container operations, a small park, and tugboat berthing. The visitor-serving commercial developments in Jack London Square and its vicinity are located along the shore in this area and include uses such as restaurants, hotels, retail stores, a movie theater, a ferry terminal, yacht moorage, and public access to the Estuary.
Inland from the Estuary are warehouse facilities, trucking yards and scales, live/work lofts, the produce district, and the Union Pacific railroad facilities.

(3) Oakland Estuary and San Francisco Bay. Two bodies of water—the Estuary to the north and San Francisco Bay to the west and south—border Alameda Point. The 7-mile long and approximately 1,000 feet wide Estuary separates the cities of Alameda and Oakland along the length of Alameda Point, increasing to approximately 1,500 feet wide near the FISC site. The configuration of the Estuary reflects a long history of dredging and bank stabilization projects that began in the mid-1800s. The Port of Oakland plans to deepen the Estuary from 42 feet to a depth of 50-feet below mean lower low water (MLLW) in order to accommodate the newest generation of deep-draft container ships. The Estuary receives heavy use by both commercial and recreational boaters. Commercial use includes trans-ocean ships, tugboats, and passenger ferries. Recreational use includes sailboats, motorboats, sculls, kayaks, and motorized personal watercraft.

San Francisco Bay, south and west of Alameda Point, historically has been used by commercial vessels and by recreational craft such as sailboats, motorboats, and windsurfing craft. Ferry service between Alameda, Oakland, and San Francisco is also provided at the City's other ferry terminal at Harbor Bay.

c. Local Land Use Trends. Local land use trends in the area surrounding Alameda Point will likely be greatly influenced by the proposed reuse and redevelopment of this area. Land use trends in areas that are adjacent to Alameda Point that may impact future development at Alameda Point include activities of the Port of Oakland; the approved Catellus Mixed Use Development; the Tinker Avenue Extension; and additional commercial, recreational, and residential development in the portions of the City of Alameda adjacent to the site.

The physical redevelopment of the Planning Area vicinity within the City of Alameda will be determined by the City of Alameda Community Improvement Commission (CIC) through the implementation of the *Community Improvement Plan for the Business and Waterfront Improvement Project* (*BWIP Plan*) and the *Alameda Point Community Improvement Plan for Alameda Point Improvement Project* (*APIP Plan*). The APIP boundaries encompass the East Housing area, 44 acres of the FISC Facility, and USCG Housing, as well as all of the former NAS Alameda. The BWIP boundaries generally encompass the remaining 97 acres of the FISC Facility and the College of Alameda, as well as the Atlantic Avenue and Main Street corridors. A portion of the project area east of Main Street is located within the BWIP area. Also included in the BWIP area are Alameda Gateway Center (referenced above) and the central Alameda waterfront areas such as the Alaska Basin and Fortmann Basin. The *APIP Plan* and the *BWIP Plan* boundaries in the vicinity of the project site are shown in Figure IV.A-2.

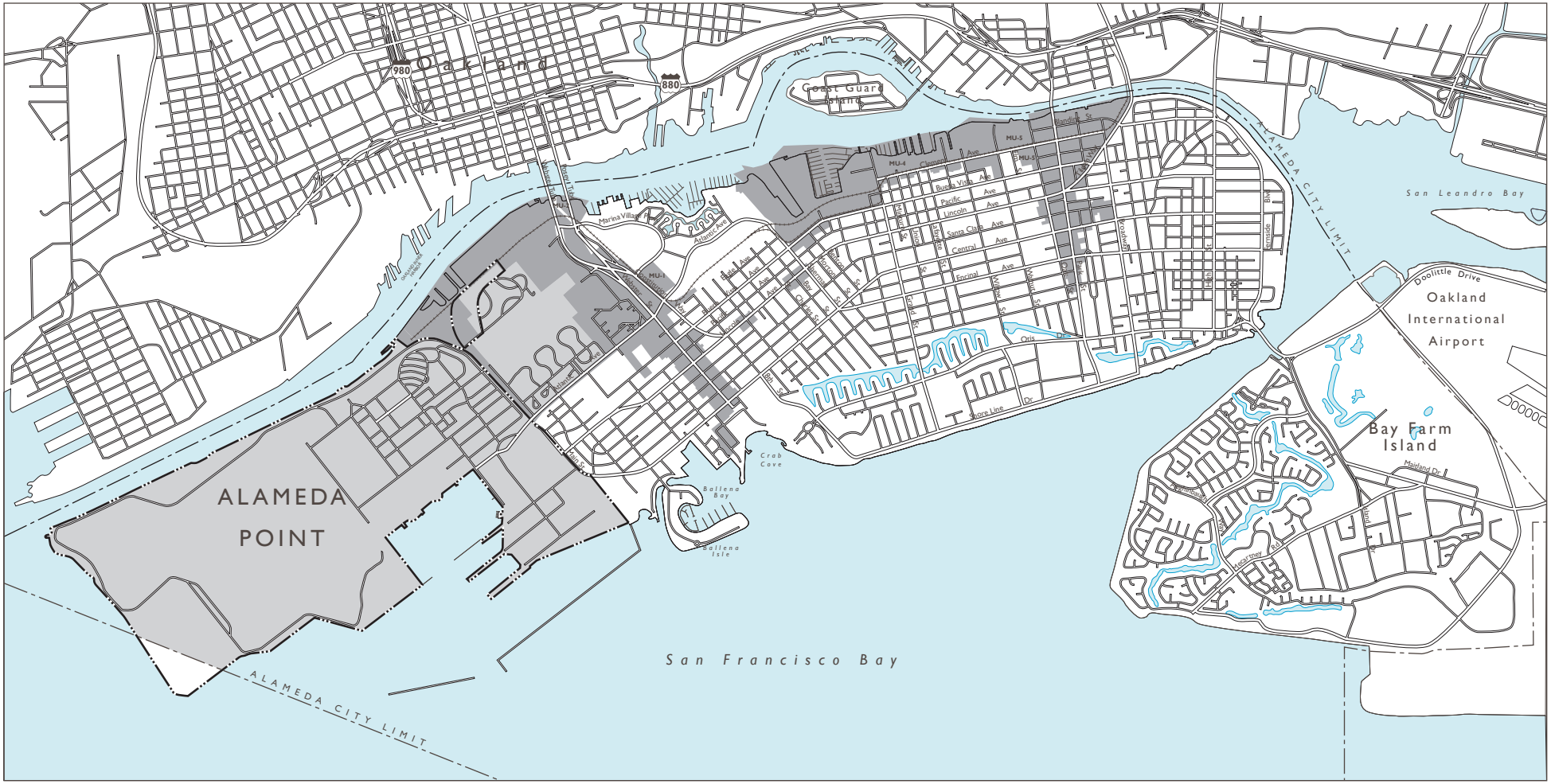

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FIGURE IV.A-2

Alameda Point GPA EIR
Redevelopment and
Community Reuse Plan Boundaries

SOURCE: DYETT & BHATIA, 2001; CITY OF ALAMEDA, 2001

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Physical development in the Planning Area vicinity in jurisdictions outside of the City of Alameda will be determined largely by the plans of the Port and the City of Oakland.

Prior to the undertaking of specific redevelopment projects within the boundaries of Alameda Point, land uses within the Planning Area will continue to be affected by the NAS Interim Lease Program. Interim lease land uses at NAS and specific projects planned in close proximity to the Planning Area are discussed below.

(1) NAS Interim Lease Program. The City's NAS Interim Lease Program allows all uses permitted in the present zoning designation (M-2-G, General Industrial Manufacturing, Special Government Combining District), with the exception of large-scale uses which may pose safety hazards or uses which cannot be supported by existing infrastructure. Approximately 1,000 employees worked at Alameda Point in March 2002.[11]

(2) Specific Projects Planned for the Site Vicinity. Each of the planned and/or approved projects discussed below is located in the vicinity of the Planning Area and would influence the project in some way. Each listed project either shares a physical boundary with the Alameda Point Planning Area or would make use of the same infrastructure and urban systems as would development that may occur under buildout of the GPA.

Catellus Mixed Use Development Project. The City entered into a Development Agreement with Catellus Development Corporation in June of 2000 to develop the FISC and the East Housing area which is part of the former NAS Alameda. The development agreement entitles Catellus to construct 1.3 million square feet of office and research and development (R&D) facilities in an office park setting on the FISC Facility and up to 500 single-family (detached or a combination of detached and attached duplexes) medium-density residential units on the East Housing area along with four ½-acre mini-parks and internal neighborhood street network. The Caltellus project includes all back-bone infrastructure necessary to serve the project site, including through streets and new and replacement utilities, the waterfront promenade, and a neighborhood park at the center of the Catellus residential area.

The project also provides a school site to the Alameda Unified School District (AUSD) and will develop 39 units of multi-family housing on the project site through the City of Alameda Housing Authority. As a condition of the Settlement Agreement that the City recently entered into with Renewed Hope Housing Advocates and ArcEcology, the City and Catellus revised the project to include 60 additional multi-family housing units. This revision was approved in November of 2001. Catellus is considering a change in the project that would replace some of the office/R&D space with retail uses; however, no applications have been filed with the City.

[11] Alameda, City of, Planning and Building Department, 2002, op. cit.

Tinker Avenue Extension. The Tinker Avenue Extension Project would provide for the improvement and widening of an existing segment of Tinker Avenue, and its extension as an arterial four-lane roadway between Main Street and Webster Street, primarily through the former Fleet Industrial Supply Center (FISC) to serve the Catellus mixed use project. The proposed at-grade Tinker Avenue Extension would use an existing 75-foot-wide easement outside the former FISC area (no right-of-way or public areas currently exist on this 358.67-foot-long segment owned and maintained by Mariner Development, but it is known as "Tinker Avenue"); additional right-of-way to be acquired from adjacent private property; land within the former FISC area; land at the College of Alameda; and a small amount of former railroad right-of-way adjacent to Main Street. The project received approval by the City in 2002 and is awaiting approval by other State agencies.

US Army Corps of Engineers and Port of Oakland Harbor Navigation Improvement (-50 Foot) Project. In 1998, the US Army Corps of Engineers (Corps) and Port of Oakland proposed to deepen the federal channels of the Oakland Inner Harbor and Port-maintained berths to a depth of 50 feet mean-lower-low-water (MLLW) to accommodate the newest generation of deep-draft container ships. The proposed navigation improvements would involve the dredging and disposal of 12.0 million to 14.5 million cubic yards of bottom sediment. In addition to this channel dredging, the Corps and the Port have proposed to undertake improvements to the inner-harbor turning basin, which would expand the outer diameter of the basin to 1,500 feet. Construction of the project began in 2001and will continue through 2005.[12]

d. Regulatory Considerations. The following section identifies land use plans and regulations that could affect/regulate future land uses at Alameda Point.

(1) Biological Opinion. A Biological Opinion was issued to the Navy in 1999 by the USFWS in response to the Navy's request for consultation regarding the disposal of NAS Alameda/ FISC Alameda by the US Navy and the community reuse as described by the *Community Reuse Plan*. The biological assessment on which the Biological Opinion is based studied the effects of the proposed disposal and reuse of NAS Alameda/FISC Alameda on the endangered California least tern and endangered California brown pelican. The terms and conditions of the Biological Opinion require land use restrictions in specified areas near the refuge in order to decrease the impact of new development on wildlife within the refuge. These land use restrictions are generally reflected in GPA policies. As required by the Biological Opinion, the City has completed a required Predator Management Plan, which is undergoing review by the USFWS. The Biological Opinion is included as Appendix D.

(2) State Lands Commission. At Statehood in 1850, California received ownership of the tidal and submerged lands and the beds of navigable waters within its boundaries. The State of California (and the many local agencies to which the State legislature has granted such lands) is charged by law to protect existing and former tidal and submerged lands for particular uses of

[12] www.portofoakland.com/maritime/projects.asp.

Statewide public benefit. These lands commonly are referred to as Public Trust lands. The Public Trust interest is a servitude or easement that preserves public use for commerce, navigation, fisheries, water-oriented recreation, habitat, and environmental study. The purpose of the Public Trust is to assure that land adjoining the State's waterways or land covered by those waters remains committed to water-oriented use benefitting the greatest number of people.

Land uses consistent with the Public Trust include, but are not limited to the following: harbor-related uses, such as port facilities, marinas and shipyards, maritime educational facilities, maritime related industry, warehouses, and water-oriented commerce; hospitality uses, such as hotels, restaurants, and other visitor-serving facilities; and ecologically related uses, such as wetlands, wildlife preserves, fishing areas, habitat and open space preservation, parks, greenways, and water-related recreation. Public Trust lands may not be used for general purpose industrial, warehousing and commercial, or for housing. Public Trust law allows property subject to the Public Trust to be leased. The ports of San Diego, Los Angeles, and Oakland are located on Public Trust lands and have been developed with marinas, hotels, maritime-related industry, and many visitor-serving amenities.

The City of Alameda was granted ownership and management of Public Trust lands at what eventually became Alameda Point by acts of the State legislature in 1913 and 1917. The City of Alameda transferred the land to the United States pursuant to authority conferred by the State legislature in 1917. The acts granting tidal and submerged lands to the City of Alameda allow for leasing the lands for up to 25 years (and with the possibility of lease extension for an additional 25 years), but do not allow the City to convey ownership of the land to private owners or other agencies. The State Lands Commission is the State agency charged with assuring that jurisdictions, such as Alameda, meet the terms of their legislative grants and of Public Trust law generally.[13] Case law and California statutes permit the Public Trust to be terminated on land where finite requirements are met, most importantly that the land must be filled, must be removed from today's waters, and must no longer be useful for Public Trust purposes. In such cases, the Trust may be terminated if land of equal value and usefulness for the defined purposes is brought into the Public Trust. These lands onto which the Trust is transferred are called exchange lands. Land exchanges are accomplished through written agreements, in this case, between the City of Alameda and the State of California. In order to terminate the Public Trust in specified lands, the City of Alameda and the State of California would need to find that those lands are not necessary for Public Trust purposes.

The City of Alameda and ARRA have resolved Public Trust issues with the State Lands Commission by means of legislation authorizing the exchange of specific non-Trust land for equivalent value land that was within the Public Trust. Senate Bill No. 2049, which took effect in 2000, enacted the NAS Alameda Public Trust Exchange Act, the purpose of which is to facilitate the productive reuse of the lands for commerce, navigation, and fisheries. Under this bill, exchanges of Public Trust lands will

[13] California Public Resources Code § 6301.

be made within the NAS property once the parcels are appropriately remediated. The intent of this effort is to maximize the Public Trust value at Alameda Point by terminating the Trust on land that is no longer useful for Public Trust purposes, such as the developed land in the inner core of the property, and exchanging that land for land that is useful for Trust purposes. Figure III-2 identifies the current Public Trust lands in Alameda Point. In 2002, there will be approximately 955 acres of Public Trust land at Alameda Point; prior to the NAS Alameda Public Trust Exchange Act there were approximately 1,139 acres of Public Trust lands.

(3) San Francisco Bay Conservation and Development Commission (BCDC). BCDC is a regional commission and planning agency created by the State legislature to provide a regional perspective for planning the development and conservation of San Francisco Bay. As required by the McAteer-Petris Act Cal. Gov. Code Section 66600, *et seq*., the *San Francisco Bay Plan* was submitted to the Legislature and the Governor of California, and BCDC was designated as the agency responsible for carrying out the *Bay Plan*. BCDC has jurisdiction over all submerged lands and lands subject to tidal action within the Bay, including land up to the mean high tide line and marshlands up to 5 feet above mean sea level (MSL). BCDC's shoreline band jurisdiction includes a 100-foot-wide band adjacent to the edge of the Bay. BCDC requires permits for levee maintenance, extraction of materials, and placement of any type of fill in areas under its jurisdiction.

The *San Francisco Bay Plan*, developed by BCDC in 1968 and updated in 1996, contains policies protecting the Bay's economic and natural resources and designates shoreline regional priority use areas. Bay Plan policies guide permit decisions by BCDC and serve as the regionwide land use designations for the San Francisco Bay shoreline. BCDC priority use areas include ports, airports, waterfront parks and beaches, wildlife areas, tidal areas, marinas, fishing piers, recreational ferries, boat-launching ramps, commercial recreation, and vista points.

The *San Francisco Bay Area Seaport Plan* constitutes the maritime element of the Metropolitan Transportation Commission's Regional Transportation Plan and is incorporated into the *Bay Plan*. The *Seaport Plan* was revised to acknowledge base closures, and port priority use designations were removed from Alameda Point.[14]

Areas without priority use designations in the *Bay Plan* are subject to policies contained in Part IV: Other Uses of the Bay and Shoreline. These policies allow shore areas to be used for any purpose that uses the Bay as an asset and in no way affects the Bay adversely.

Selected *San Francisco Bay Plan* Elements that may apply to Alameda Point include the following:

- For non-priority designated areas, accessory structures, such as boat docks and portions of a principal structure, may extend on piles over the water when such extension is necessary to

[14] Alameda, City of, 2000. *For the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility Alameda, California.* March.

enable actual use of the water, e.g., for mooring boats or to use the Bay as an asset in the design of the structure.

- Wherever waterfront areas are used for housing, the amount of shoreline and the surface area of the Bay should be increased to the maximum extent feasible by dredging additional channels inland from the Bay and, whenever feasible, high densities should be encouraged to provide the advantages of waterfront housing to larger numbers of people.
- Other uses on land reserved for water-related industry and port use may be allowed in the interim that, by their cost and duration, would not preempt future use of the site for water-related industry or port use.
- Marinas, boat-launching lanes, and fishing piers may be allowed, provided they would not preempt land or water area needed for other port priority uses and provided they would be feasible from an engineering, water quality, and biological resources perspective.
- Live-aboard boats should be allowed in marinas only if the number would not exceed 10 percent of the total authorized boat berths, unless the applicant can demonstrate clearly that a greater number of live-aboard boats would be necessary to provide marina security, and the boats would promote and further the recreational boating use of the marina. These live-aboard boats should be allowed in marinas only if the marina would provide adequate services, such as parking for residents and guests, restrooms, showers, and sewage pumpout facilities.
- Water-oriented commercial-recreational uses, such as restaurants, specialty shops, theaters, and amusements, should be encouraged in urban areas adjacent to the Bay.
- In addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible waterfront access should be provided for every new development in the Bay or on the shoreline, except in cases where public access is clearly inconsistent because of public safety considerations or significant use conflicts. In these cases, access at other locations, preferably near the project, should be provided whenever feasible.

(4) Association of Bay Area Governments (ABAG): Bay Trail Plan. ABAG, a regional planning agency, is planning and implementing the creation of a continuous public access corridor (the Bay Trail) around San Francisco Bay. The Bay Trail Plan was designated by the California legislature. The Plan contains policies, trail alignments, and specifications for bikeway classifications. The goal of ABAG is to establish a trail following the shoreline as closely as possible. The Bay Trail alignment does not presently extend onto Alameda Point, but does run along Main Street.

(5) City of Alameda General Plan. The current *General Plan* land use designation for the Alameda Point Planning Area is Federal Facilities. The existing General Plan Diagram is shown in Figure IV.A-3.

The City of Alameda will use this EIR as the environmental documentation for the proposed Alameda Point GPA, which, if approved, will replace the Federal Facilities designation of Alameda Point with other land use designations. As sites at Alameda Point are conveyed or leased to non-

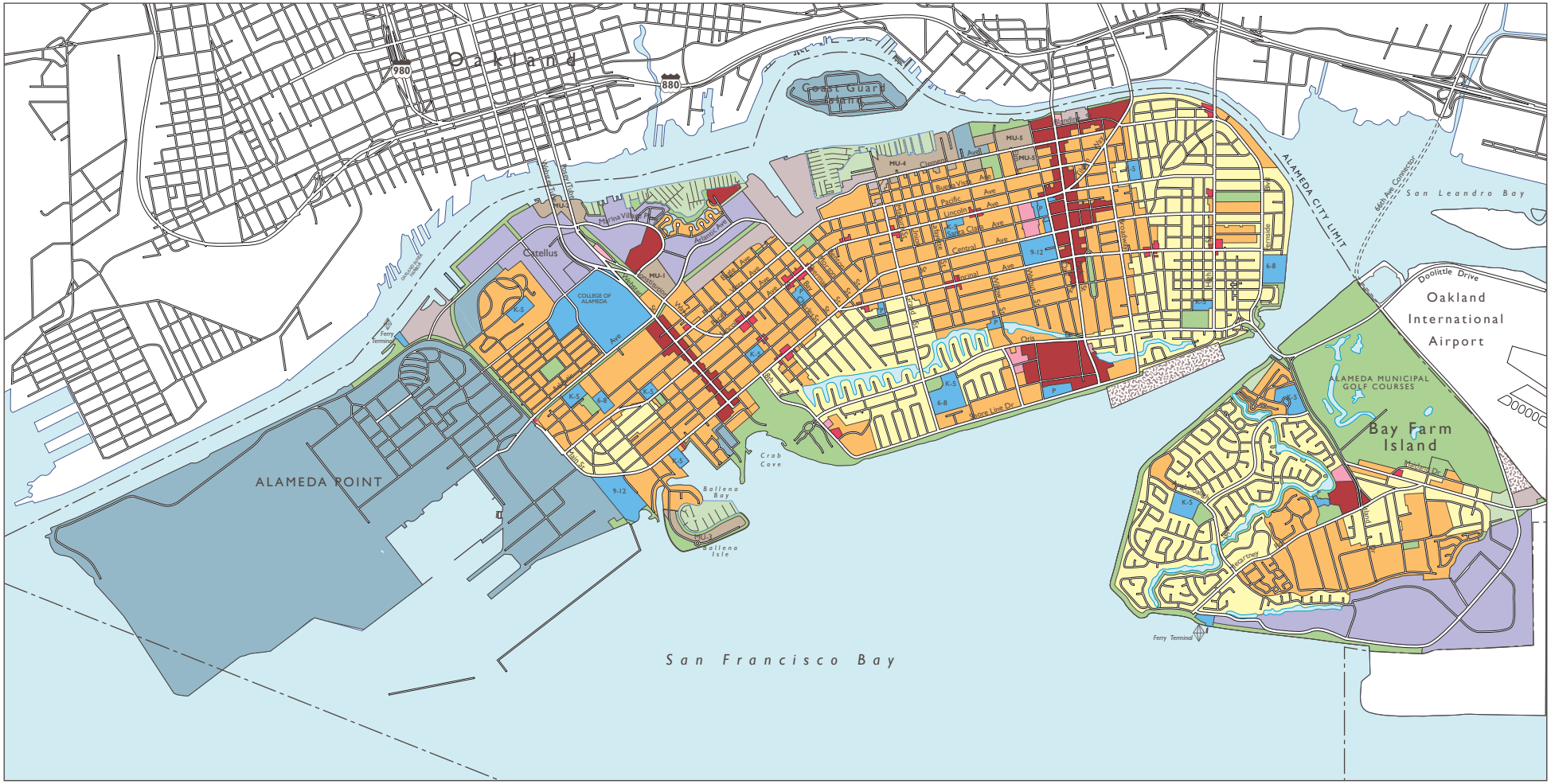

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FIGURE IV.A-3

Alameda Point GPA EIR

Existing Alameda General Plan Diagram

Low-Density Residential
Medium-Density Residential
Neighborhood Business
Community Commercial
Office
Business Park
Specified Mixed Use
General Industry
Open Space/Habitat
9-12 Public/Institutional/School (grades)
Federal Facilities
Commercial Recreation
Parks & Public Open Space

N

0 2500 5000
FEET

SOURCE: DYETT & BHATIA, 2001

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federal entities, the land uses on these sites would become subject to policies included in the *City of Alameda General Plan*.

Policies from the current *General Plan* that relate to land use are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed General Plan amendments related to land use are discussed in the Environmental Analysis subsection below.

Residential Areas

2.4.h Control nonresidential development on sites adjoining residential neighborhoods to minimize nuisances.

Retail Business and Services

2.5.a Provide enough retail business and services space to enable Alameda to realize its full retail sales potential.

2.5.c Do not permit offices to occupy ground floor space suitable for retail within the Main Street business districts and the Neighborhood business districts.

2.5.e Maintain full-service community shopping centers serving all sectors of the City.

2.5.f Maintain neighborhood business districts for small stores that attract mainly pedestrian traffic and can be acceptable neighbors for nearby residents.

Offices

2.7.a Provide ample space for local-serving office by encouraging construction of offices on second and third floors over retail space.

2.7.b Do not permit offices in residential areas designated on the General Plan Diagram.

Business Parks and Industrial Areas

2.8.c Support continued operation of manufacturing and distribution industries using seaport and rail facilities.

2.8.d Continue working to eliminate residential-industrial conflicts based on the assumption that the boundaries between the uses on the General Plan Diagram will endure 20 years or longer.

2.8.f Revise zoning regulations to remove cumulative provisions that permit all uses except housing in industrial areas.

City-Owned Land

2.10.a Establish long-range management policies for City-owned real property based on comparative evaluation of potential for public use and enjoyment, public- or joint-venture enterprise development, or lease for development.

2.10.b Investigate and pursue potential opportunities to acquire underused State or Federal property in Alameda.

2.10.c Stop the trend toward private use of public property.

2.10.d At locations where it is infeasible to provide public access to the shoreline, or allow public use or publicly owned shoreline, such as along the Tidal Canal, continued private use should be permitted only if mitigation is provided by improving public shoreline access elsewhere in the City.

Shoreline Access and Development

6 .2 .a Maximize visual and physical access to the shoreline and to open water.

6.2.b Regulate development on City-owned shoreline property to maximize public use opportunities.

6.2.e Remove impediments to enjoyment of shoreline access where legal access exists.

6.2.g Prepare a Shoreline Access Plan in consultation with BCDC for areas where development proposals are expected to provide opportunities to improve or extend access.

6.2.h Require shoreline access where appropriate as a condition of development approval regardless of whether development occurs within the area of BCDC regulation.

6.2.i Require off-site access as a mitigation when public access on-site is infeasible.

6.2.1 Seek grants for improvement of Bay Trail segments.

(6) City of Alameda Zoning Ordinance. The City of Alameda Zoning Ordinance provides development regulations for all properties within the City. The majority of the Alameda Point Planning Area (located west of Main Street) is currently zoned *General Industrial Manufacturing* (M-2-G) with a *Special Government Combining Overlay* (G). The small portion of the Planning Area located east of Main Street is zoned primarily Low- and Medium-density residential. Permitted uses within this district consist of a wide range of commercial and industrial uses, including heavy manufacturing. Conditionally permitted uses include manufacturing facilities, shipping terminals, unenclosed uses, and commercial marinas.

The G Combining Overlay District is intended to be combined with other zoning districts and to be applied to lands under government ownership. Lands within this district can be leased under an Interim Leasing Program which allows all uses permitted in the present zoning designation with the exception of large scale uses that may pose safety hazards or uses that cannot be supported by existing infrastructure. Under the Interim Lease Program, each interim use is: (1) required to obtain an interim Use Permit; (2) is limited to a term of 10 years; (3) must use existing facilities without requiring substantial new facilities; (4) must not disrupt ongoing governmental activity; and (5) shall not delay eventual redevelopment. The Interim Lease Program also contains other detailed use restrictions that include limitations on the types of activity that may occur on the site. Future uses on these lands at the end of the leasing period would be subject to detailed analysis under CEQA at the

time that specific development plans are presented to the City. In addition, the Zoning Ordinance states that prior to the use of such lands by non-government entities, rezoning procedures will be completed to remove the G classifications, unless an interim leasing program is adopted.

As parcels are conveyed out of federal ownership, the zoning of individual sites will be changed to reflect the land uses designated in the GPA, as described in Chapter III, Project Description. The City has traditionally used a *Mixed Use Planned Development* (MX) district that permits a mixture of land uses. Land uses allowed under the MX designation include single- and multiple-family residential, open space, entertainment, offices, research and development, schools, and limited retail uses.

(7) Community Improvement Plan for the Business and Waterfront Improvement Project (BWIP Plan). The *BWIP Plan* applies to a redevelopment project area which encompasses the area of Alameda Point east of Main Street, City of Alameda northern waterfront area bordering the Oakland Estuary, as well as Park Street and Webster Street business districts. A small portion of the BWIP area located west of US Coast Guard Housing is located within the GPA Planning Area. The BWIP boundary in the vicinity of Alameda Point is shown in Figure IV.A-2. The *BWIP Plan* includes a list of major goals, proposed redevelopment activities, and rules for participation in the BWIP by the City and other entities.

The major goals of the *BWIP Plan* include: elimination of blighting influences; strengthening of retail and other commercial functions in the historic downtown area; strengthening of the economic base within the project area; replanning and development of undeveloped areas; provision of adequate land for parking and open space; and expansion and improvement of the community's supply of low- and moderate-income housing, as well as expansion of the community's supply of market-rate housing.

Lands within the BWIP project area are designated General Industry, Parks and Public Open Space, Commercial Recreation, and Medium Density Residential.

(8) NAS Alameda Community Reuse Plan (Reuse Plan). The *Community Reuse Plan* was adopted by ARRA in 1996. The document was created through the Alameda Base Reuse Advisory Group (BRAG), now called the Alameda Point Advisory Committee, and was subject to public work-shops, a newsletter and public preferences survey, a long-range vision charette, and regular meetings of the BRAG and its subcommittees. The *Reuse Plan* presents analysis and recommendations for the community reuse of the former NAS Alameda and FISC Facility.

The *Reuse Plan* contains the community's general goals and policies for productive reuse of NAS Alameda and the FISC Facility, but it is not self-implementing. In general, the *Reuse Plan* proposes several land use scenarios which the City considered as part of the preparation of the GPA. The *Reuse Plan* divides NAS Alameda and the FISC Facility into seven Planning Areas. These Planning

Areas are defined by mapped boundaries, a textual description, and numbered policies for each proposed reuse.

(9) Alameda Point Community Improvement Plan for the Alameda Point Improvement Project (APIP Plan). The *APIP Plan* is a redevelopment project for an area encompassing NAS Alameda, the East Housing area, and the southern portion of the FISC Facility. The APIP boundaries in the vicinity of the project are shown in Figure IV.A-2.

The *APIP Plan* was adopted by the Alameda Community Improvement Commission (CIC) in April 1998. It does not provide for specific projects within the redevelopment area, but rather provides a process and basic framework by which specific plans will be presented, specific projects will be established, and specific solutions will be proposed. Lands within the APIP project area are designated mixed used, single-family residential, open space/habitat, and public/institutional.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to land use, discusses the adverse impacts that would result from their implementation, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to land use. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the *General Plan*), which includes several policies related to land use. Those policies are detailed below.

Federal Government Facilities

~~*2.9.c Establish a liaison committee that will maintain close communication with the Alameda Naval Station and will facilitate coordination between planning and development at the NAS and in adjoining areas.*~~ **[Policy to be deleted]**

Airport Environs Element

~~*7.2.f Limit Development in Alameda Gateway (Todd Shipyard) to uses consistent with ALUC policy for the outer portion of the ALUC Safety Zone for NAS Runway 25.*~~ **[Policy to be deleted]**

Alameda Point Element **[New element and policies]**

9.2.a Create a series of neighborhoods, each with a central focus of mixed-use development, including local serving commercial and recreational uses and a mixture of housing types and densities serving all income levels

9.2.b Provide diverse and creative development and architectural styles to achieve distinctive neighborhoods.

9.2.c Create a district that is well integrated with the surrounding neighborhoods and has a high level of accessibility via a variety of transportation modes.

9.2.e Achieve human-scale transit-oriented development.

9.2.g Integrate Alameda Point into the community by creating transit and physical connections to adjacent community centers such as Marina Village and Webster Street.

9.2.h Encourage architecture and design in Alameda Point that are compatible with existing neighborhoods east of Main Street, and that do not divide the neighborhoods with the use of physical barriers.

9.2.i Encourage a mix of uses that are compatible, rather than competitive, with existing uses in adjacent areas.

9.2.j Maintain overall development in Alameda Point in accordance with the stipulations of Table 2-7, while permitting flexibility in the location of the development in the three mixed-use areas.

Table 2-7: Alameda Point GPA - Maximum Permitted Buildout, 2000-2020

Land Use Categories	Units	Civic Core (AP1)	Inner Harbor (AP2)	Marina (AP3)	West Neighborhood	NW Territories	Alameda Point Total
Lt. Industry/Business Park/Office	sq.ft.	740,000	400,000	0	0	0	**1,140,000**
Industrial/Warehousing	sq.ft.	277,500	76,500	76,500	0	0	**430,500**
Marina-Related Industry	sq.ft.	0	0	44,250	0	0	**44,250**
Civic/Institutional Buildings	sq.ft.	100,000	0[1]	0	30,000[1]	0	**130,000[1]**
Commercial	sq.ft.	52,000	0	0	52,000	0	**104,000**
Visitor-Serving Recreation/Commercial	sq.ft.	0	0	130,000	0	0	**130,000**
Golf Clubhouse/Conference Facilities	sq.ft.	0	0	0	0	26,000	**26,000**
Sports Complex	acres	40	0	0	0	17	**57**
Golf Course	acres	0	0	0	0	214	**214**
Marina slips	slips	0	0	530	0	0	**530**
Live Aboards (10% of 530 slips)	slips	0	0	53	0	0	**53**
Low Density Residential	units	0	0	0	50	0	**50**
Medium Density Residential	units	863	0	525	490	0	**1,878**
Hotel/Conference Center	rooms	0	0	300	0	300	**600**

[1] *Does not include square footage for Alameda Unified School District.*

NOTE: This table represents the maximum permitted build-out for Alameda Point. While development intensities have been assigned to each Planning Area, the development increments can be moved from one Planning Area to another to optimize development opportunities.

Source: City of Alameda Planning and Building Department, 2002.

9.2.k Observe boundaries and restriction of Public Trust Land, including housing limitations.

9.2.l Encourage and support the development of community-based cultural facilities such as places of worship, youth activity centers, and senior activities in Alameda Point.

9.2.o Create mixed-use development that locates service-oriented uses near residences and offices.

9.2.p Create neighborhood centers similar to Alameda's neighborhood business districts, with supporting uses such as retail and local serving office and civic uses in mixed-use neighborhood centers that are acceptable for nearby residents.

9.3.a Develop the Civic Core as a major new center of the City, and a focus of the Alameda Point district.

9.3.b Develop housing to serve workplaces and public and institutional uses anticipated in the Civic Core. Focus residential development adjacent to the Shoreline open space promenade to create opportunities for pedestrian centers and foster a transit orientation.

9.3.f Foster cohesion between development of this new mixed-use [Inner Harbor] area and existing surrounding neighborhoods and the City of Alameda.

9.3.i Cluster mixed-use residential, retail commercial, and other supporting uses in a neighborhood center along the extension of Pacific Avenue.

9.3.l Foster development of residential, commercial, and retail uses that promote vitality and pedestrian activity along the waterfront.

9.3.s Guide further development of this [West Neighborhood] primarily residential area to improve quality of life for residents, accessibility for pedestrians, and supporting uses to promote a balanced neighborhood.

9.3.y Encourage residential development at densities of between 15 and 21.8 dwelling units per net acre in the vicinity of the ferry terminals, along with parks and community serving businesses and institutions, in order to promote accessibility via alternative modes of transit.

9.3.aa Cluster supporting uses such as retail and local serving office and civic uses in mixed-use neighborhood centers.

b. Impacts and Mitigation Measures. The impact analysis in this section examines potential impacts of the GPA in terms of its impacts on land use and its consistency with land use-related polices and regulations. The land use effects that could result from implementation of the proposed policies/policy amendments and projected buildout of the GPA are both considered. Issues of compatibility and the GPA's effects on the general development pattern in Alameda are also addressed. The consistency of the GPA with regional policies of agencies with jurisdiction over specific environmental resources or urban systems in Alameda, such as the *Regional Air Quality Program* of the Bay Area Air Quality Management District and the *Congestion Management Program* of the Congestion Management Agency, are addressed in other topical areas of this EIR (i.e., Air Quality or Transportation).

This section includes a description of the criteria utilized to determine whether any significant land use impacts would result from the GPA, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts—including impacts due to policy implementation and plan buildout—followed by significant impacts.

(1) Criteria of Significance. The project would cause a potentially significant land use impact if it would:

- Disrupt or divide the physical arrangement of an established community;
- Conflict with any applicable land use plans or policies adopted by agencies with jurisdiction over the project, including but not limited to the *City of Alameda General Plan* and zoning designations and policies;
- Conflict with any applicable habitat conservation plan or natural community conservation plan; or
- Be incompatible with existing land use in the vicinity.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at plan buildout.

Policy Implementation. Implementation of the GPA policies that relate to land use would not result in any significant land use impacts. The majority of the policies relate to the City's participation in and support of programs and/or processes that will help better the environment in the City of Alameda and better integrate Alameda Point into the community as a whole. Some examples of such policies are listed below:

9.2.c Create a district that is well integrated with the surrounding neighborhoods and has a high level of accessibility via a variety of transportation modes.

9.2.g Integrate Alameda Point into the community by creating transit and physical connections to adjacent community centers such as Marina Village and Webster Street.

9.2.h Encourage architecture and design in Alameda Point that are compatible with existing neighborhoods east of Main Street, and that do not divide the neighborhoods with the use of physical barriers.

9.2.i Encourage a mix of uses that are compatible, rather than competitive, with existing uses in adjacent areas.

GPA Policy 9.2.i encourages a mix of land uses that are compatible, rather than competitive, with existing uses, while GPA Policies 9.2.c, 9.2.g and 9.2.h seek to integrate Alameda Point with surrounding neighborhoods both architecturally and physically. Implementation of any of the policies related to land use would not physically divide an established community; introduce new land uses that would conflict with established uses; or establish land use patterns in conflict with applicable land use plans or policies. Upon adoption, the City would implement General Plan designations and zoning changes and the GPA would not conflict with any City land use plans or policies.

Consistency of the proposed GPA with applicable planning documents described in the setting section are discussed below. Issues of policy consistency/inconsistency (as compared to physical environmental impacts) are not considered to have a significant effect on the environment, and therefore this discussion is included under less-than-significant impacts. The physical impacts associated with such policy conflicts are addressed in the appropriate technical sections of this chapter (e.g., Air Quality or Noise).

Community Reuse Plan. Though adopted by the ARRA, the *Reuse Plan* was not adopted by the City Council and does not have the force of law that the City's *General Plan* holds. However, the *Reuse Plan* has provided the basis for the goals, policies and land uses proposed in the Alameda Point GPA. The *Reuse Plan* integrated the local planning process and the base reuse process in a single document. The major sections of the *Reuse Plan* were intended to follow the format of the *General Plan*, so that the document would easily integrate into existing policies and procedures. The *Reuse Plan* contains numerous policies, many of which were already adopted in the City's *General Plan*. Others are proposed as part of this GPA. The *Reuse Plan* also contains sections, such as property disposition and implementation strategy, which are not appropriate for a General Plan.

The residential development proposed in the GPA is more than what was proposed in the *Reuse Plan*, including 53 live-aboards within the 530-slip marina in the Seaplane Lagoon. The additional units permit the City to meet its "fair share" of housing under the Proposed Housing Element and provide a better jobs/housing balance. The non-residential development is basically similar, but of a smaller scale, to what was proposed in the *Reuse Plan*, with the addition of 54,000 square feet of commercial space and 30,000 square feet of civic/institutional space. While the *Reuse Plan* considered the Marina sub-area a tourist-related destination, it provided no specific details. The GPA proposes a 530-slip marina and a 300-room hotel.

The 981,000 square feet of light industry proposed for the Northwest Territories in the *Reuse Plan* is not a part of the GPA. This has been replaced by the golf course/resort which has increased from 105 acres in the *Reuse Plan* to 214 acres in the GPA and includes a 300-room hotel.

The *Reuse Plan* estimated the size of the Wildlife Refuge to be between 390 and 525 acres subject to further negotiation with the US Fish and Wildlife Service. More recent surveys indicated, and the GPA reflects, the actual size of the Wildlife Refuge to be approximately 565 acres.

Community Improvement Plan for the Business and Waterfront Improvement Project (BWIP Plan). The redevelopment of the BWIP Project Area conforms with the *City of Alameda General Plan* adopted by the City Council in 1991. There is no reference in BWIP to the "*Amended General Plan*" (as occurs in the APIP document) which would allow for dynamic *General Plan* revisions to be consistent with the *BWIP Plan*. Thus, consistency between the *General Plan* and *BWIP Plan* would not automatically be maintained in the event of future amendments to the current *General Plan*. However, Health & Safety Code section 33367 requires that all Redevelopment Area plans be

consistent with the *General Plan* of the adopting jurisdiction; therefore, the BWIP should be amended whenever *General Plan* changes would cause it to be it inconsistent with the *General Plan.*

The BWIP project area includes the portion of the GPA in the vicinity of the Alameda Gateway. This area is designated Federal Facilities, and the southern-most strip is designated Proposed Roadway, which would provide for the Mitchell-Mosley Avenue extension from Marina Village on the east to Main Street on the west. The BWIP Land Use Map land use designations are not consistent with the land uses proposed as a part of the GPA. An amendment to the BWIP Land Use Map will be necessary after adoption of the GPA to provide consistency with the proposed General Plan Amendments.

Alameda Point Community Improvement Plan for the Alameda Point Improvement Project (APIP Plan). Section 402 of the *APIP Plan* identifies the permissible land uses for the project site as "Mixed Use." Mixed Use, as defined in the *APIP Plan*, allows for the following uses: residential, office, R&D, industrial, civic, institutional, business park, light industry, commercial parks, open space, commercial recreation/marina, and public rights-of-way. Section 403 further states that the mixed uses permitted are only those which are consistent with the *General Plan* as amended.

The *General Plan* currently designates the property as Federal Facilities. Under State law and the *APIP Plan*, no uses can be developed which are inconsistent with these *General Plan* designations unless the designations are changed through a formal amendment of the *General Plan*. Following approval of the General Plan Amendment discussed in the Chapter III, Project Description, of this EIR, the *APIP Plan* would be consistent with the *General Plan*.

Zoning Ordinance. Adoption of the GPA will result in the Zoning Ordinance designations that apply to Alameda Point becoming inconsistent with the *General Plan*. Specifically, the M-2-G General Industrial (Manufacturing with Special Government Combining) zoning designation will not be consistent with the majority of the land use designations being proposed as part of the GPA. Once the GPA is adopted, the City will amend the zoning of these properties to reflect the land uses designated in the proposed GPA, as described in Chapter III, Project Description. The City has traditionally used a *Mixed Use Planned Development* (MX) district that permits a mixture of land uses. Land uses allowed under the MX designation include single- and multiple-family residential, open space, entertainment, offices, research and development, schools, and limited retail uses. This change would require the preparation of a Master Plan for each area that is rezoned to MX pursuant to the MX Zone Regulations.[15] The Master Plan would require subsequent Development Plans including precise identification of the distribution, location, and extent of future land uses.

The purpose of the MX Zone is to encourage the development of a compatible mixture of land uses which may include residential, retail, office, recreational, entertainment, research-oriented light

[15] Alameda, City of, 1958. Municipal Code, Article 1, Zoning Districts and Regulations (Zoning Ordinance). Includes all revisions through November 1999.

industrial, water, and other related uses.[16] The MX Zone regulations require the Master Plan to address pedestrian accessibility, enhancement of existing historic structures and unique landscapes, enhancement of accessible recreation areas, and creation of environments that are conducive to mutual interdependence in terms of living, working, shopping, entertainment, and recreation.

Zoning designations on parcels at Alameda Point would be changed to reflect the land uses designated in the GPA and would thereby be consistent with the City's Zoning Ordinance. Land use restrictions required by the Biological Opinion to decrease the impact of neighboring development on wildlife are reflected in the GPA policies (see Policies 9.3kk to 9.3uu), and will likely also be implemented in land development regulations.

Bay Plan. Implementation of the GPA would be consistent with the *Bay Plan* by encouraging marine-related industry and by maximizing waterfront access to the public, where feasible. The GPA would allow the development of up to 44,250 square-feet of marina-related industry, 530 marina slips, bike paths, a golf course/resort, and trail system that would provide public access to the shoreline for a wide range of users. Implementation of the GPA would also fulfill the *Bay Plan* focus on water-oriented commercial recreational uses.

Bay Trail Plan. Plans for extending the Bay Trail through Alameda Point are conceptual at this point. The City would need to coordinate with ABAG on the exact alignment of the Bay Trail through Alameda Point. If the Bay Trail is extended through Alameda Point, the proposed Class I Bike Path/Multi-Use Trail through the northwestern portion of the GPA would be consistent with the Bay Trail Plan by providing access to this area.

Plan Buildout. Buildout of the GPA will result in beneficial impacts by increasing public access to the Oakland-Alameda shoreline, and increasing the amount of open space area and developed recreational facilities. Buildout under the GPA would be integrated within Alameda Point and would allow planned development of a large area, allowing for compatible and complimentary development. Externally, buildout of the GPA would integrate and incorporate the former NAS into the surrounding neighborhoods and the City as a whole. Lastly, there are no habitat conservation plans applicable to the area and all development in the GPA would be required to comply with the restrictions specified in the Biological Opinion.

The proposed GPA does not allow for specific developments to occur, rather it designates land use types, densities, intensities, and policies guiding development. Buildout of development envisioned under the GPA would constitute in-fill development. On the east, the site is bordered by existing City of Alameda development. New development envisioned under the GPA would extend existing City land uses toward the west, thereby incorporating and integrating the former NAS into the community and improving land use consistency both within Alameda Point and the City. Provided below is a discussion of the land use changes by sub-area that would occur with buildout of the GPA.

[16] Ibid.

Civic Core. Land use designations for the portion of the sub-area along the Oakland Estuary would allow the development of parks and public open space, medium-density residential, and public and institutional uses. Further inland, and incorporating the NAS Historic District, the sub-area would be designated primarily Alameda Point Mixed Use with some Public/Institutional/School. Alameda Point Mixed Use allows development of two or more uses on a single site or within a single building, and may include business park, office, and commercial uses. These business or commercial uses would be interspersed with the existing structures. The allowable mass and height of buildings could vary widely. The western portion of this sub-area would be designated a Wildlife Refuge Impact Area and would be subject to design regulations likely to reduce the scale of the built environment. Land use changes would integrate new office and residential development with existing development, thereby creating more compact development with attendant transit and public service efficiencies.

Northwest Territories. The entire Northwest Territories would be designated Parks and Public Open Space, and would include a golf course/resort. A large portion of this sub-area would be designated a Wildlife Refuge Impact Area, and would be further subject to design regulations likely to reduce the scale of the built environment. This land use designation would be beneficial by allowing development for active recreational uses, while preserving the area as open space.

West Neighborhoods. Land use designations for this planning sub-area would be primarily Medium-Density Residential (up to two families per dwelling unit) and Low-Density Residential (one family detached dwelling units). Maximum allowable densities are 26.1 dwelling units per acre (DUA) and 8.7 DUA, respectively. Several blocks along the west side of Main Street would be designated Neighborhood Business. The maximum FAR is 0.6, which can increase to a maximum of 2.0 if in-lieu parking fees are substituted for on-site parking. These uses would allow the same development as currently exists in much of the sub-area and the proposed changes would offer the added benefit of new housing, along with the reuse of existing housing.

Inner Harbor. This planning sub-area would be designated Alameda Point Mixed Use, Public/ Institutional/School, and Parks and Public Open Space. Development emphasis would be on R&D and light industrial uses, along with supporting retail. Given the type of existing development in this area, this designation would be beneficial in land use compatibility terms; by redeveloping a large industrial/warehousing area into an office/R&D development that will be more compatible with adjacent residential neighborhoods across Main Street.

Marina. This planning sub-area would be designated Alameda Point Mixed Use. Uses along the waterfront would be industrial/warehousing and marine-related industrial combined with a multi-use district. Development could include structures from one to several stories in height, with a mix of businesses, business-serving, and resident-serving uses. The west side of the Marina abuts the Wild-life Refuge, and would be subject to additional regulations limiting development. This designation would result in development that would complement the waterfront location and allow a transition in intensity of uses closer to the Wildlife Refuge.

Wildlife Refuge. This planning sub-area will be designated Open Space/Habitat and no development other than an interpretive center would be allowed.

(3) Significant Impacts and Mitigation Measures. No significant impacts related to land use would result from implementation of the proposed GPA.

B. POPULATION, EMPLOYMENT, AND HOUSING

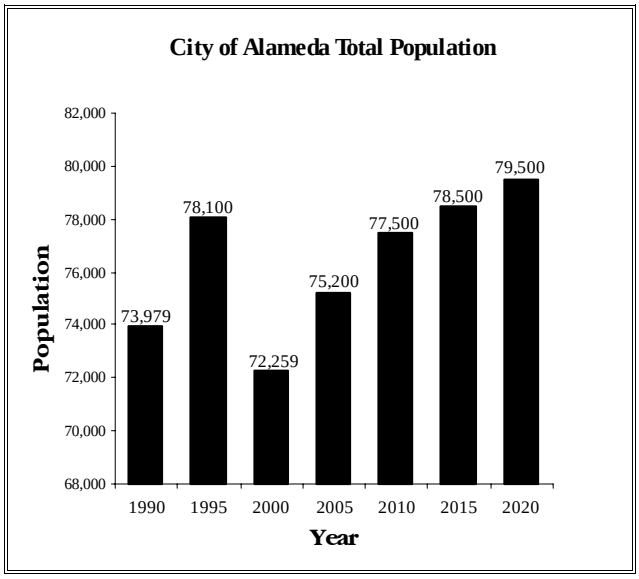
This section describes the City of Alameda's existing and projected population, employment and housing conditions and evaluates potential impacts associated with the implementation of the Alameda Point GPA. Consistency of the GPA with local policies related to population or housing supply will also be addressed in this section.

1. Setting

The following setting information is based on population and job growth projections prepared by the Association of Bay Area Governments (ABAG) and data available from the US Census.

a. Population. The City of Alameda's population and housing characteristics are described below.

(1) Total Population. The current population of Alameda is 72,259 persons, according to the 2000 US Census. This number represents a decrease of 7,032 persons since 1994, which is accounted for in part by the closure of the NAS and the FISC Alameda. Alameda was the only Bay Area city to lose population between the 1990 and 2000, standing in sharp contrast to a more than 35 percent growth rate in Alameda County over the last 10 years. ABAG projects that the population of Alameda will rise over the next 20 years, although it will probably not reach its all-time-high population of 89,000 during World War II.



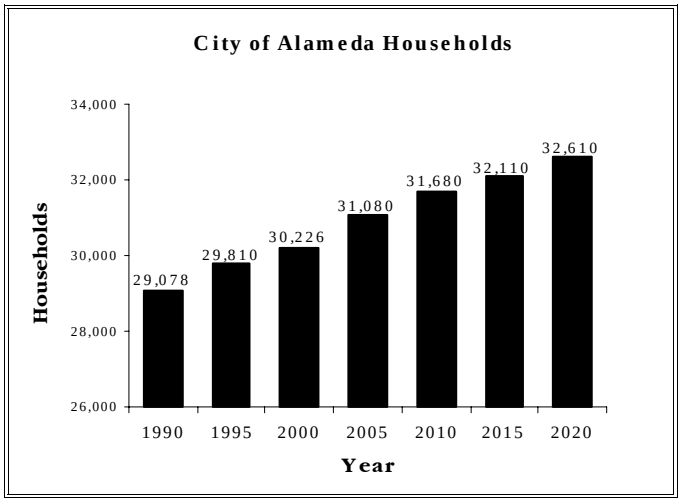
Sources: ABAG Projections, 2002; US Census, 2000.

ABAG projects that Alameda will grow by nearly 3,000 residents (4 percent) by 2005 and an additional 2,300 residents (3 percent) by 2010.[17]

(2) Households and Household Size. The current number of households in Alameda is 30,226, according to the 2000 US Census. Of these, 17,858 (59 percent of total households) are family households; 8,378 (28 percent) of the total have children under 18. The average household size is 2.35, and the average family size is 3.04.

[17] Association of Bay Area Governments, 2001. *Projections 2002: Forecasts for the San Francisco Bay Area to the Year 2025.* December.

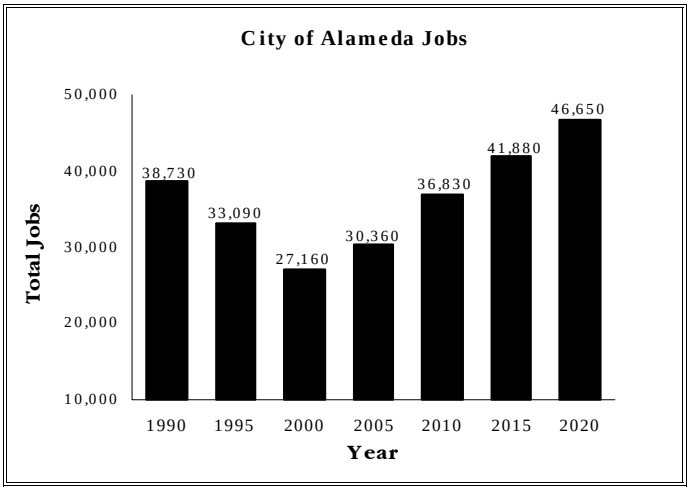
Between 2000 and 2005 ABAG projects that the number of households in Alameda will increase by 854 (3 percent) and will grow by another 600 (2 percent) by 2010. ABAG also projects that household size will be 2.40 persons in 2020.



Source: ABAG Projections, 2002.

(3) Income. In 2000, ABAG estimated the mean household income (in 1995 dollars) for Alameda at $85,500, slightly above the Alameda County mean of $82,500. Mean household income is expected to rise to $87,200 by 2005, and $95,500 by 2020, and ABAG projects it will be below the mean for the County by 2020.

b. Employment. During the early 1990s, the City of Alameda experienced a substantial decline in overall employment due to the closure of NAS Alameda and related facilities. The US Navy installations at full operation in 1990 employed nearly 6,000 civilians and 12,800 military personnel (including reserves), for a total NAS/FISC Facility employment of approximately 18,800.



Source: ABAG Projections, 2002.

(1) Total Jobs *Projections 2002* estimates that the City of Alameda had 27,160 jobs in 2000.[18] This number represents a decrease of 11,570 (42.5 percent) since 1990 when the total number of jobs was estimated at 38,730. As mentioned above, this sharp decrease was due in large part to local military base closures accompanied by job losses during the recession of the early 1990s.

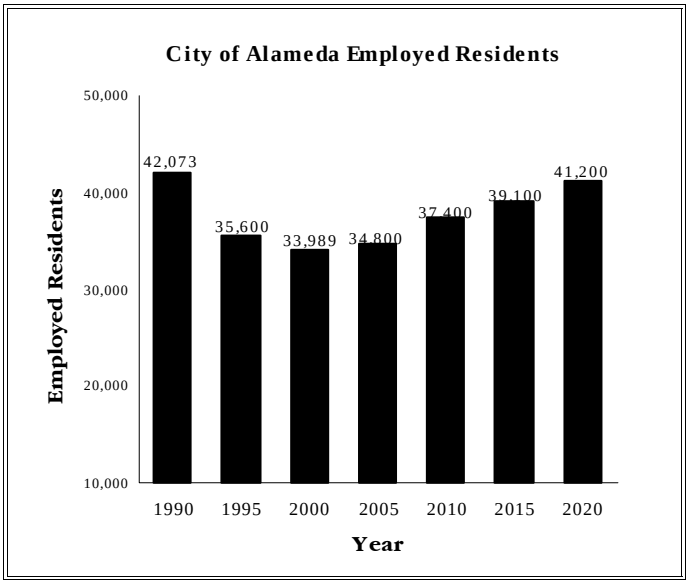
ABAG projects significant job gains over the next 20 years as firms relocate to the City and new infill development takes place. By 2005, ABAG projects a job increase of 3,200, a 12 percent gain from 2000. An additional 6,470 jobs are projected to be added between 2005 and 2010, a 21 percent

[18] Ibid.

increase from 2000. ABAG projects that job growth will begin to slow after 2010, with 5-year increases dwindling to between 11 to 14 percent by 2020.

According to ABAG, in 2020 most jobs will be in the retail or service sectors or classified as "other" (16 percent, 42 percent, and 30 percent, respectively). "Other" jobs include those in transportation, communication, utilities, finance, real estate and government.[19] A small proportion of jobs (13 percent) would be in agriculture/mining and manufacturing/wholesale. ABAG projects that jobs in agriculture/mining, manufacturing/wholesale and retail will continue to decline as a percentage of the total over the next 20 years. By 2020, ABAG projects that jobs classified as service and "other" will reach 77 percent of total jobs in Alameda.

(2) Employed Residents. In 2000, Alameda was home to 34,800 employed residents according to ABAG.[20] This number represents a net loss of 8,084 employed residents over the previous 10 years. From 2000 onward, ABAG projects that Alameda will reverse its 10-year trend of losing employed residents. According to ABAG, the City will gain 811 employed residents (2 percent) by 2005 and it will gain another 2,600 employed residents (7 percent) by 2010. Over the next decade it is projected to gain an additional 3,800 employed residents (10 percent).



Source: ABAG Projections, 2002.

c. Housing. This section addresses several aspects of the existing housing setting in Alameda including descriptions of housing stock, housing affordability, and the relationship between jobs and housing.

Alameda currently has a total of 31,644 housing units.[21] Between 1989 and 1999, approximately 2,165 units were added to the housing stock, an average of 216 units per year. Alameda's housing

[19] Ibid.

[20] Ibid.

[21] US Census, 2000.

stock is relatively old when compared to the rest of the Bay Area. More than one-third of the homes were built before 1940, and three-quarters of the stock was built before 1970.[22]

In general, Alameda's housing stock is well-maintained. However, almost all neighborhoods contain units that show some degree of deterioration or disrepair. According to the 2001 residents survey on housing issues conducted by the City, 4 percent of all survey respondents said they were very unsatisfied with the overall condition of their current housing. In addition, 16 percent of respondents said they had trouble keeping up with house repairs due to cost.[23] However, officials estimate that less than 5 percent of Alameda's housing stock requires some form of rehabilitation to make it safe and sanitary.

Alameda has a relatively large percentage of multi-family units. Structures with two or more units comprise 46.1 percent of Alameda's housing stock. A total of 15.7 percent are structures with two to four units (a decrease from 17 percent in 1989) and 30.4 percent are structures with five or more units (a decrease from 34 percent in 1989).[24] [25]

Of the 14 cities in Alameda County, only Emeryville (78 percent), Berkeley (57 percent), and Oakland (53 percent) have a higher percentage of multi-family units than Alameda (46.1 percent). As of 2000, single-family units represented approximately 40 percent of the total housing stock in Alameda, whereas in 1989 single-family units accounted for 48 percent of all housing units.[26]

Another distinguishing characteristic of Alameda's housing stock is the presence of houseboats[27] and liveaboards.[28] Up to 10 percent of berths at commercial marinas are permitted to have houseboats or

[22] Alameda, City of, Planning and Building Department, 2001.

[23] Evans/McDonough (EML), 2001. City of Alameda Housing Development Division Report of Telephone Survey Results. March. Four-hundred residents over the age of 18 were interviewed out of a sample drawn from a Random Digit Dial database of known local telephone exchanges. The margin of error for the overall survey is ± 4.9 percentage points.

[24] US Census 1990 and 2000.

[25] California, State of, Department of Finance, 2001. Website: www.dof.ca.gov.

[26] California Department of Finance, op. cit., US Census 2000.

[27] Houseboat shall mean a boat that is used for a residential or other non-water oriented purpose that is not capable of being used for active navigation. (Note: Houseboats are not permitted outside of commercial marinas designated for houseboat berthing. A houseboat is equivalent to a floating home as defined in subsection 13-38.5 of the Alameda Municipal Code, and is subject to the regulations set therein. Houseboats are also subject to the requirements of Article XIV of Chapter XIII of the Alameda Municipal Code.)

[28] Liveaboard shall mean a boat that is not a transient boat, that is capable of being used for active self-propelled navigation, and that is occupied as a residence, as defined in California Government Code Section 244. (Note: Liveaboard boats are not permitted outside of commercial marinas.)

liveaboards, pursuant to both BCDC regulations and the City of Alameda Zoning Ordinance. Currently there are approximately 41 houseboats in the City and 176 liveaboards.[29,30]

In 2001, the City of Alameda (including the Community Improvement Commission, ARRA and the Housing Authority) entered into a settlement agreement with Renewed Hope and Arc Ecology that requires 25 percent of all newly constructed housing units at Alameda Point to be made permanently affordable as follows:

- 10 percent of all newly constructed housing units shall be made permanently affordable to households with incomes at or below 80 percent of median income; and
- the remaining 15 percent of newly constructed units shall be made affordable under the criteria set forth in California Health & Safety Code section 33413(b)(2).

d. Jobs/Housing Balance. The jobs/housing balance concept is used to examine whether a region has a balance between its housing supply and its employment base. The primary functions of an analysis of the relationship between jobs and housing are: 1) to provide a generalized measure of employment or housing need in areas where the relationship between these two characteristics is imbalanced; and 2) to indicate the potential severity of imbalance-related impacts on traffic flows and housing affordability.

A region that has too many jobs relative to its housing supply is likely to experience escalation in housing prices (with a concurrent decline in affordability for the lower-income segments of the community) and intensified pressure for additional residential development. Conversely, if a region has relatively few jobs in comparison to employed residents, this may be a good indication that many workers are commuting to jobs located elsewhere. The resulting traffic patterns can lead to traffic congestion and adverse effects on both local and regional air quality.

(1) Methodology. Although the term "jobs/housing balance" is typically used to refer to a relationship between jobs and housing units within any given community, the key relationship is between jobs and the number of employed residents within a community, because some households have no workers. The balance between population and employment is typically measured by computing the ratio of jobs to employed residents, with 1.0 indicating a balance between the two variables.

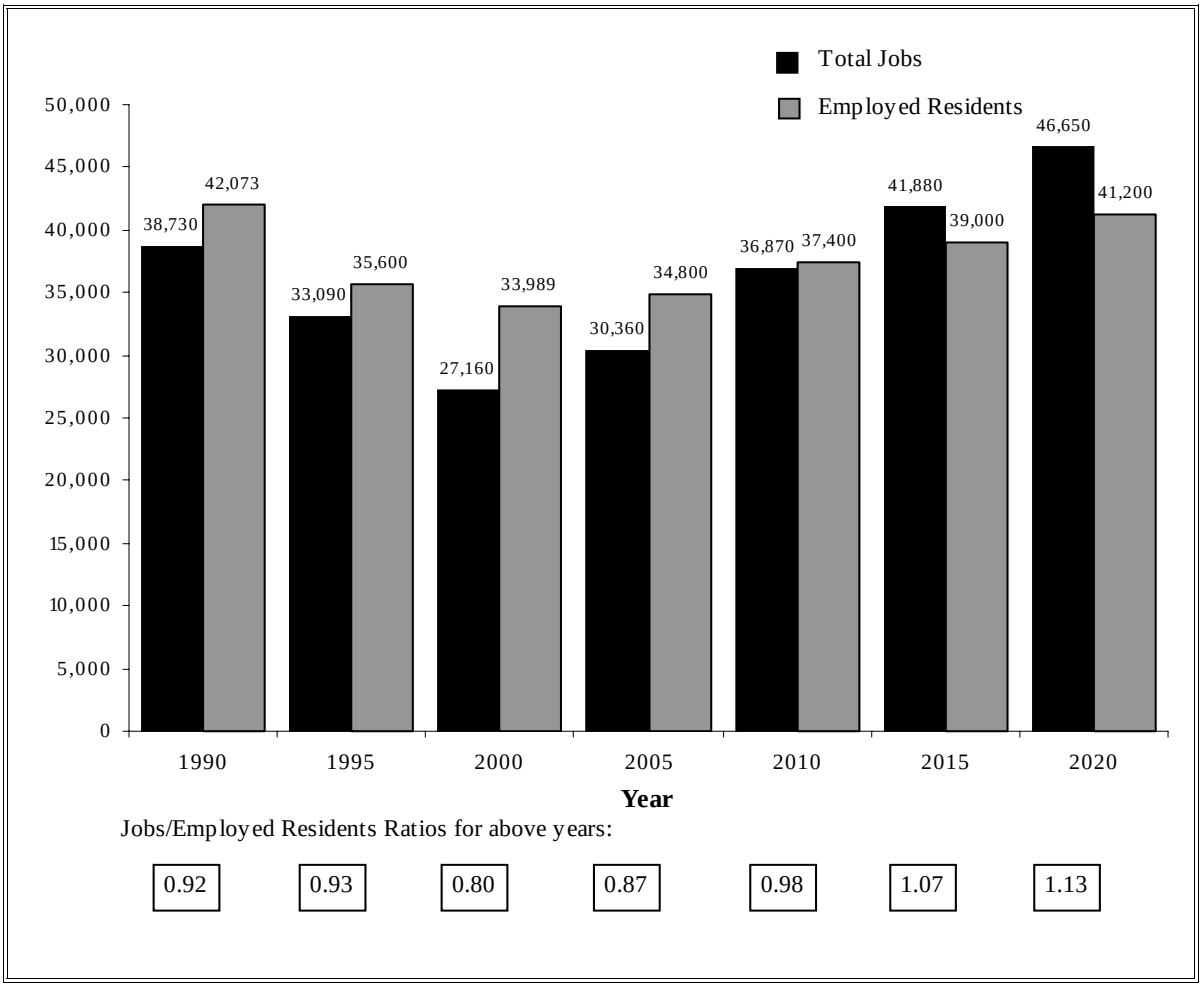
(2) Jobs/Housing Data for the City of Alameda and Alameda County. According to ABAG, the City of Alameda had more employed residents than jobs in 2000, indicating that many residents commute outside of the City to work. As of 2000, Alameda's jobs/housing ratio was 0.71. ABAG projects that over the next 20 years this ratio will reverse and the number of jobs will exceed

[29] Blanchfield, Jeff, 2001. Bay Conservation and Development Commission. Personal communication with LSA Associates, Inc. August 20.

[30] Alameda, City of, Planning and Building Department, 2001.

the number of employed residents. By 2005, ABAG projects a jobs/housing ratio of 0.84 based on 30,420 jobs and 36,100 employed residents. By 2010, ABAG projects a jobs/housing ratio of 1.02 based on 37,880 jobs and 37,200 residents. By 2020, ABAG projects a further increase in the jobs/ housing ratio to 1.22, based on 49,320 jobs and 40,400 employed residents (see Table IV.B-1).

Table IV.B-1: City of Alameda Total Jobs/Employed Residents



Source: ABAG Projections, 2002.

In Alameda County, the jobs/housing ratio is nearly balanced, according to ABAG, and is projected to remain so for the next 20 years. In 2000, the jobs/housing ratio was 1.08, based on 751,680 jobs and 697,882 employed residents. ABAG projects that by 2005 the jobs/housing ratio will remain at 1.08, based on 790,400 jobs and 730,700 residents. This nearly balanced situation will remain until 2020 when, according to ABAG, the jobs/housing ratio will be 1.08, based on 964,740 jobs and 889,400 employed residents. This data suggests that a large proportion of Alameda County residents both work and live in the County.

e. Regulatory Considerations.

(1) Association of Bay Area Governments. State Housing Element Law, Government Code § 65584, requires local governments to plan for their share of anticipated regional housing needs. In April 1999, the Association of Bay Area Governments (ABAG) began a process to develop a methodology for fairly distributing the region's housing need determination (known as the Regional Housing Needs Allocation [RHND]). Each jurisdiction must plan for its RHND allocation when General Plan Housing Elements are updated. The allocation takes into consideration regional and local factors such as jobs, housing, land use and transportation. The most recent round of allocations, released on June 1, 2000, is particularly focused on achieving a jobs/housing balance with the goal of providing housing, particularly affordable housing, in proximity to high job growth areas. Alameda's allocation and housing goals for the 5-year planning period ending June 30, 2006 are shown in Table IV.B-2.

Table IV.B-2: Regional Housing Needs Allocation By Income Level (1999-2006)[a]

	Total Need (New Units)	Very Low	Low	Moderate	Above Moderate	Average Yearly Need (New Units)
City of Alameda	2,162	443	265	611	843	288
Alameda County	46,793	9,910	5,138	12,476	19,269	6,239

[a] RHND income levels are for a family of four in Alameda County: Very Low (up to $35,800); Low ($31,651 to $50,640); Moderate ($50,641 to $75,960); Above Moderate (above 75,960)

Source: ABAG, 2001. *Regional Housing Needs Allocation.* March 15.

(2) Housing Element Update. The City is in the process of updating the General Plan Housing Element, which will apply citywide. As previously discussed, the Housing Element update will include the City's RHND allocation. Alameda is a mature city and there is very little undeveloped land available. Since Alameda is an island, it faces a unique limitation in meeting its housing needs since it cannot grow by annexation or create land for new development. Alameda Point will be the location of much of the City's "fair share" housing.

After adoption of the General Plan Amendment, substantial additional land at Alameda Point will be properly designated for potential future residential use.

(3) City of Alameda General Plan. The *City of Alameda General Plan* contains the following policies related to population, employment and housing:

Residential Areas

2.4.c Where a suitable residential environment can be created, give priority to housing on land to be developed or redeveloped in order to meet the quantified objectives of the Housing Element.

2.4.e Expand housing opportunities for households in all income groups.

5.5.e Minimize commuting by balancing jobs and nearby housing opportunities.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to population, employment, and housing, discusses any impacts that would result from their implementation or the projected GPA buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to population, employment, and housing. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the *General Plan*), which includes several policies related to population, employment, and housing. Those policies are detailed below.

Alameda Point Element **[New Element]**

9.3.b Develop housing to serve workplaces and public and institutional uses anticipated in the Civic Core. Focus residential development adjacent to the Shoreline open space promenade to create opportunities for pedestrian centers and foster a transit orientation.

9.3.i Cluster mixed-use residential, retail commercial, and other supporting uses in a neighborhood center along the extension of Pacific Avenue.

9.3.t Consider the need for workforce housing.

9.3.v Integrate interim users into planning for redevelopment of existing housing areas. Honor commitments to the Homeless Collaborative, US Coast Guard, or other potential interim users, while developing transition plans to provide for appropriate, cost-effective, long-term redevelopment solutions.

9.3.y Encourage residential development at densities of between 15 and 21.8 dwelling units per net acre in the vicinity of the ferry terminals, along with parks and community serving businesses and institutions, in order to promote accessibility via alternative modes of transit.

b. Impacts and Mitigation Measures. This section includes a description of the criteria utilized to determine whether any significant population, housing, and employment impacts would result from the GPA, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts followed by significant impacts.

(1) Criteria of Significance. The proposed project would have a significant effect on population, employment, and housing if it would:

- Result in substantial population or housing growth or concentration of population, either directly (by proposing new homes and businesses) or indirectly (through extension of roads or other infrastructure);

- Displace a substantial number of existing housing units, especially affordable (very low, low, and moderate income) housing units, necessitating the construction of replacement units elsewhere; or
- Create a substantial imbalance between jobs and housing through direct physical impacts to housing.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at plan buildout.

Policy Implementation. Implementation of the new policies and policy revisions proposed as a part of the GPA would not result in significant impacts. GPA Policy 9.3.b and 9.3.t would be beneficial by encouraging the development of housing facilities to serve workers at Alameda Point. GPA Policies 9.3.i and 9.3.y, which encourage the development of housing within neighborhood centers and the development of medium density housing, would be beneficial by increasing housing supply within Alameda Point.

The GPA would be consistent with existing General Plan policies by assisting the City to meet its Regional Housing Needs Allocation and by expanding housing opportunities for all income groups.

Plan Buildout. Buildout of the GPA would not displace existing affordable housing units. The GPA would have a beneficial effect by allowing the development of medium-density housing, thereby increasing the number of affordable housing units in the City. Medium-density housing is typically more affordable than single-family detached housing and the addition of these units in the GPA would have a beneficial effect by helping the City meet its ABAG Regional Housing Needs Allocation.

Buildout of the GPA would result in the following less-than-significant impacts.

<u>Impact POP-1</u>: Implementation of the GPA would result in substantial population, employment and housing growth. (LTS)

Buildout of the GPA would result in both housing and job-related growth by the planned buildout date of 2020, as shown in Table IV.B-3.

Buildout of the proposed GPA couldresult in a total of 1,891 new

Table IV.B-3: GPA Projected Employment

Development	Total Development	Square Feet/ Employee	Employment
Light Industry/Business Park/Office	1,140,000	275	4,145
Industrial/Warehousing	430,500	750	574
Marina-Related Industry	44,250	400	111
Civic/Institutional	130,000	1,100	118
Commercial	104,000	400	260
Visitor-Serving Recreation/Commercial	130,000	480	271
Golf Clubhouse/ Conference Facilities	26,000	480	54
Golf Course	–	–	50
Hotel/Conference Center[a]	312,000	575	543
Total	2,316,750		6,126

[a] Hotel assumes 520 square feet per room.

Source: City of Alameda, 2002.

households[31] by the year 2020. This would add 4,538 persons to the City's population, based on the City's average of 2.4 persons per household.[32] The Catellus Mixed Use Development Project, which will allow the development of up to 599 residential units on the FISC and East Housing properties, would result in another 1,438 persons. Buildout of both the Catellus Mixed Use Development project and the Alameda Point GPA would result in a total increase of 5,976 persons. ABAG projects a net population gain in Alameda of 7,241 for the period of 2000 to 2020. This population growth would be less than ABAG's forecast for the 20-year period. Implementation of the GPA would not result in a population increase that exceeds ABAG's 2002 projections and would result in a City population equivalent to the City's population in 1995.

The reuse planning efforts for NAS Alameda and FISC have been under way since the early 1990s. The *Community Reuse Plan* was adopted by ARRA and accepted by the City as a guiding document in January 1996; the City certified the *NAS Reuse EIR* in March 2000. Both of these documents anticipated growth that exceeds what will be permitted by the proposed GPA. As a result, the growth envisioned in the GPA would not result in substantial, unanticipated population growth.

Because the buildout of Alameda Point is classified as infill development (i.e., the infrastructure for development is pre-existing and the area is within the City limits) and because there is no significant amount of land around the site that could be developed, it is unlikely that the project will cause indirect population growth.

Buildout of the GPA would result in about 6,126 new employees by 2020, as shown in Table IV.B-3. These new employees would increase the demand for local housing. In 2000, the City of Alameda had approximately 1.12 employed residents per household.[33] ABAG is projecting that this average will increase to 1.26 in 2020. Based on the traffic model's prediction that approximately 20 percent of the employees will live in Alameda and ABAG data on the average number of employed residents per household, it is estimated that the project would generate demand for approximately 1,225 new housing units within the City. This estimated housing demand is extremely conservative (i.e., it will ensure that potential impacts are not underestimated) in that it assumes that all new employees are new residents.

The GPA provides for up to 1,981 housing units at Alameda Point, which would result in construction of 756 units over the amount needed to satisfy the demand created by jobs at Alameda Point. This excess will assist the City in achieving its Fair Share Allocation.

[31] The number of estimated households does not include the 90 existing units that were occupied at the time of the 2000 Census.

[32] US Census, 2000.

[33] Ibid.

Existing and proposed policies that address this potential impact are highlighted below.

Proposed GPA Policies. Proposed Policies 9.3.b, 9.3.i, 9.3.t, 9.3.v, and 9.3.y would help minimize this impact by increasing the number of housing units in the City and placing housing at Alameda Point, an area of the City that will see substantial employment growth.

Existing General Plan Policies. Policies 2.4.c and 2.4.e relate to the giving priority to housing on land that will be developed or redeveloped and expanding housing opportunities in the City, which will also help minimize potential housing impacts.

Mitigation Measure POP-1: No mitigation measures are necessary. Implementation of the existing and proposed policies detailed above would reduce this impact to a less-than-significant level.

Impact POP 2: Implementation of the GPA would impact the City's ratio of jobs to employed residents. (LTS)

In the short term, the employment generated by the GPA would contribute to a growing balance between jobs and employed residents in Alameda. In 2000, according to ABAG, the City had fewer jobs than employed residents, with a jobs to employed residents ratio of 0.80. ABAG predicts that this ratio will increase to 1.13 by 2020, meaning that there will be a slightly greater number of jobs than employed residents.[34]

Consistent with ABAG projections, the proposed GPA together with the approved Catellus Mixed Use Development project represents the beginning of an expected trend away from outcommuting by Alameda residents and toward increased job-related commuting into the City. If the ABAG data prove correct, job growth will outpace household growth, as discussed previously. The projection that 20 percent, or 1,225 of the 6,126 new employees associated with the GPA would reside within the City of Alameda leaves a remainder of approximately 4,901 employees who would need to locate housing outside of the City. Based on ABAG projections that the average number of employed residents per household for the region will be 1.06 in 2020, the GPA would create a demand for approximately 4,623 new housing units outside of Alameda. These households would generate additional impacts discussed under several topics of this chapter. These job growth projections, however, are based on economic and land use factors which are outside the control of the City of Alameda. Additional discussion of impacts associated with other projects in both Alameda and Oakland is included in Chapter VI, CEQA Conclusions.

Existing and proposed policies that address this potential impact are highlighted below.

[34] Association of Bay Area Governments, 2001. *Projections 2002: Forecasts for the San Francisco Bay Area to the Year 2025.* December.

Proposed GPA Policies. Proposed Policies 9.3.b, 9.3.i, 9.3.t, 9.3.v, and 9.3.y would help to minimize this impact by increasing the number of housing units in the City and placing housing in Alameda Point, an area of the City that will see substantial employment growth.

Existing General Plan Policies. Policies 2.4.c and 2.4.e relate to giving priority to housing on land that will be developed or redeveloped and expanding housing opportunity in the City.

Mitigation Measure POP-2: No mitigation measures are necessary. Implementation of the existing and proposed policies detailed above would reduce this impact to a less-than-significant level.

(3) Significant Impacts and Mitigation Measures. No significant impacts related to population, employment, and housing conditions or resources were identified.

C. VISUAL RESOURCES

1. Setting

This section describes the visual resources of the Alameda Point landscape, the surrounding views, and the factors that influence the viewing public's perception of the landscape, including viewing distance and viewer sensitivity. Urban design issues, within the visual context of Alameda Point, also are addressed in this section, and a generalized viewshed extending out from the site up to approximately 5 miles, but limited within that radius by terrain and structures, is considered.

a. Data Sources, Study Area, and Methodology. Information regarding visual resources was obtained in part from Chapter 3.2 of the *NAS Reuse EIR* produced by the City of Alameda in 2000, and was supplemented with an additional on-site survey. The study area consists of Alameda Point, areas that can be seen from Alameda Point, and areas with views into Alameda Point.

b. Landscape Character. The following sections provide a discussion of visual resource conditions.

(1) Regional Landscape Character. Alameda Point is located on the western tip of the main island of Alameda on the eastern shore of San Francisco Bay. It is bordered by the Oakland-Alameda Estuary and the Port of Oakland to the north, San Francisco Bay to the west and south, and the City of Alameda to the east. Alameda island is separated from the East Bay mainland by the narrow Estuary, Tidal Canal, and San Leandro Bay.

The region surrounding Alameda Point is urbanized and industrial in character. The topography of Alameda Point is essentially flat. Expansive views from the site of the San Francisco Bay, the City of San Francisco lying 3 miles to the west, Jack London Square, the downtown portion of Oakland further to the northeast, and the East Bay hills provide visual relief from the industrial development and expanses of pavement both within and surrounding the site. The City of Alameda, characterized by narrow residential lots and compact shopping districts, is located immediately east and southeast of the site. The Port of Oakland and the former FISC Oakland, characterized by large, heavy industrial uses, are located across the Estuary and north of Alameda Point. While there is no direct access to the island of Alameda from any of the major regional highways, multi-lane highways built at-grade and in elevated configurations, such as I-880 and the San Francisco-Oakland Bay Bridge, can be seen from Alameda Point.

(2) Landscape Character of Alameda Point. Views within Alameda Point are presently characterized by various military support facilities, including aircraft hangars, military housing, and aircraft runways.

Areas within Alameda Point that have readily identifiable visual characteristics include:

- *The Administrative and Community Support Area (Within the Civic Core Subarea).* This area, near the central portion of the former air station, is bounded by West Red Line Avenue and West Tower Avenue between Monarch and Todd Streets. It includes Lexington and Saratoga Streets from the Main Gate to West Tower Avenue and features various light-colored, painted concrete or stucco buildings of one to three stories arranged around open lawns, with sidewalks and landscaped borders. A portion of this subarea was determined to be eligible for listing in the National Register of Historic Places as a historic district. The historic portion includes 87 buildings and structures--38 in this central core and 49 in an adjacent family housing area (for a detailed description of historical resources, see Section IV.F). The lawn areas provide a welcome contrast to the expanses of pavement found in most other areas of Alameda Point. The low buildings, open lawns and related landscape materials create a distinct campus-like, pedestrian-oriented character.
- *The Hangars and Nearby Related Buildings (West and South Sides of the Civic Core Subarea).* These areas, located at the east edge of the runways and near the north side of Seaplane Lagoon, are characterized by a series of very large individual buildings arranged in a row and surrounded by paved surfaces and smaller buildings. Most of the hangars have a stucco finish and are painted in light earth tones. Although the buildings are large, they are surrounded by runways and pavement, making their size difficult to grasp, especially in the absence of trees.
- *Barracks Housing Area (Within the Civic Core Subarea).* The barracks are located between Monarch Street and Lexington Street from West Red Line Avenue to West Midway Avenue. The barracks are long, flat-topped buildings with light-colored concrete or stucco finishes, up to four stories high, with wings extending at right angles from a central spine. Typically, the dormitories are set back from the street with parking lots between the street and the buildings. Lawn areas serving as common outdoor space, with some trees and shrubs, surround most of the dormitories.
- *Family Housing Area, Detached Units (Part of the West Neighborhood Subarea).* Approximately 60 single-family wood frame homes, with white or earth-tone stucco finishes, are situated west of Main Street. They are arranged in neighborhoods with well-groomed landscaping and mature trees between Pan Am Way and Orion Street and Barbers Point Road and West Midway Avenue. Although most homes were built during the 1940s, they appear well-maintained and in good condition. The older units and the landscaping are included in the National Register-eligible historic district.
- *Family Housing Area, Multiple-Family Apartments and Townhouses (Part of the West Neighborhood Subarea).* Wood-frame two-story apartment buildings with light-colored stucco exteriors are located in the residential area west of Main Street. The units have second-floor balconies with ground-floor parking either beneath the building or in adjacent parking lots, and are arranged to provide common lawn areas on the side away from the street. Most units were constructed between 1964 and 1969. Multiple-family, three- to four-bedroom townhouses built in the 1960s are also located in this subarea. Landscaping is minimal, although mature

trees are distributed throughout the neighborhood. Many units in this area appear to be in need of maintenance.

- *The Piers and Adjacent Supply and Maintenance Area (Including the Inner Harbor and Part of the Marina District Subareas)*. This portion of Alameda Point extends from the Seaplane Lagoon and piers eastward and from Atlantic Avenue southward. The area is characterized by expanses of pavement punctuated by buildings with associated outdoor storage or work areas enclosed by chain-link fences.
- *The Seaplane Lagoon (Within the Marina District Subarea)*. The Seaplane Lagoon is an engineered rectangular body of water more than a ½-mile long and nearly ¼-mile wide. It lies off the south side of Alameda Point and is formed by straight shorelines at right angles to each other on the west, north, and east sides with three piers to the south.
- *The Runways and Tarmac Area (Proposed Wildlife Refuge and Northwest Territories Sub-areas)*. This area is expansive, flat and almost completely paved. Although this area is intensely developed with runways and taxiways, its location near the San Francisco Bay and the relative absence of vertical elements allow outstanding, long-range views of the surrounding Bay Area. The proposed Wildlife Refuge, as well as the proposed golf course/resort and Point Alameda Park, would be located in this area which has only a few structures and consists mostly of the runway area previously used by the US Navy.

(3) Landscape Character of Adjoining Off-Site Areas. The landscape character of off-site areas adjoining Alameda Point is described in the following sections. These areas could affect or be affected by future development under the proposed project.

- *Catellus Mixed Use Development Site.* The site of the future Catellus Mixed Use Development occupies the area along the Estuary, west of Mariner Square and across the channel from Jack London Square. It includes the former FISC Facility, as well as what is known as the East Housing area, which is bounded by the former FISC site to the north, Main Street to the west, Atlantic Avenue to the south, and the College of Alameda to the east. The structures at the East Housing site were recently demolished and the first phase of the Catellus housing is under construction. The visual character of FISC is currently dominated by numerous large-scale warehouses and extensive areas of pavement.

  The visual character of this area will change as the design details are determined and as each phase of the Catellus Mixed Use Development is constructed. An office park will be built in the area near the waterfront and will replace several large warehouse structures with two- to five-story office buildings. In the area south of the waterfront, office and R&D facilities will replace several large warehouse structures. These office/R&D facilities will be one- to two-story and oriented towards the streets. The housing will be a cohesive master-planned residential neighborhood with similar architectural styles throughout the development.

- *Port of Oakland/FISC Oakland*. The Port of Oakland and the former FISC Oakland occupy an area along the north shore of the Estuary directly opposite Alameda Point, lending a distinct industrial waterfront character that includes docking facilities for large ocean-going cargo

vessels and large, mechanized loading and unloading cranes. There are expansive cargo container storage areas, numerous warehouses, and a number of rail lines in this area.

- *Jack London Square*. Jack London Square is a specialized commercial district featuring restaurants, entertainment, specialty shops, boat sales, hotels, and a marina. It is located on the Oakland waterfront, east of the Port's container shipping facilities, at the end of Broadway, and directly across the Estuary from the Catellus Mixed Use Development site. Most of the development at Jack London Square has a waterfront/marina theme or character. The area is designed to promote pedestrian traffic among the shops and restaurants. Boardwalks along the shore and waterfront restaurants provide opportunities for public views of the Estuary, the Catellus Mixed Use Development property, the San Francisco-Oakland Bay Bridge, and the San Francisco skyline. The Oakland Ferry terminal and Roosevelt Pier are located at the western edge of Jack London Square.
- *Mariner Square*. On the Alameda side, Mariner Square abuts the Estuary waterfront across from the south end of the Jack London Square complex. It features boat berths, boat sales and repair, houseboats, restaurants, and public access to the shore.
- *College of Alameda*. At the northwest corner of the intersection of Webster Street and Atlantic Avenue, the College of Alameda campus buildings are set back several hundred feet from both major roads, with lawns and walkways leading to the campus core.
- *Atlantic Avenue, Main Street, and Central Avenue.* This neighborhood contains apartments clustered along Atlantic and Central Avenues and consists of a mixture of duplexes and single-family residences. A small neighborhood retail site is located at Atlantic Avenue and Main Street. To the east of Main Street and south of Atlantic Avenue is a residential area known as the West End Neighborhood, which consists of duplexes and single-family residences. Encinal High School is located nearby, southwest of the intersection of Central Avenue and 3rd Street. An unused 100-foot-wide railroad right-of-way extends along the south side of Atlantic Avenue from Main Street to Webster Street. Ballena Isle, which provides public shoreline access, lies off the southeast corner of Alameda Point.
- *USCG Housing Area*. The Coast Guard duplex and multiple-family housing occupies approximately 69 acres east of Main Street. This area is characterized by old and new residential buildings, nonlinear streets, residential parking areas, and landscaped open areas. Also included in this area is the Miller School complex.

(4) Sensitive Views. Views are considered to be sensitive when they have high scenic quality and are experienced by relatively large numbers of people. Scenic quality is a measure of the overall impression or appeal of an area created by the physical features of the landscape, such as natural features (landforms, vegetation, water, color, adjacent scenery, and scarcity), and man-made features (roads, buildings, railroads, agricultural patterns).

Landscapes are generally subdivided into three distance zones based on relative visibility from travel routes or observation points. The foreground view extends from the viewer to distances up to ½

mile; middle ground views extend from ½ mile up to 3 miles; and background views are views of distances greater than 3 miles.

(3) Sensitive Views Outward from Alameda Point. Significant regional features viewed from Alameda Point include San Francisco Bay, the City of San Francisco, the San Francisco-Oakland Bay Bridge, Mt. Tamalpais, the City of Oakland, the East Bay Hills, and San Bruno Mountain. Figure IV.C-1 depicts views from Alameda Point. The most sensitive views include views of the San Francisco Bay, the City of San Francisco and the East Bay Hills.

Because Alameda Point is relatively flat, views are unobstructed and extend for many miles in all directions, depending on weather and air quality conditions. Views of the City of San Francisco and the Bay occur along roads, where buildings line the roadway and frame the view. The longer streets, such as West Red Line Avenue west of Pan Am Way, provide long-distance views of the City of San Francisco and the Bay (see Figure IV.C-2). Unobstructed views are also available from most shoreline locations along the perimeter of Alameda Point (see Figure IV.C-3).

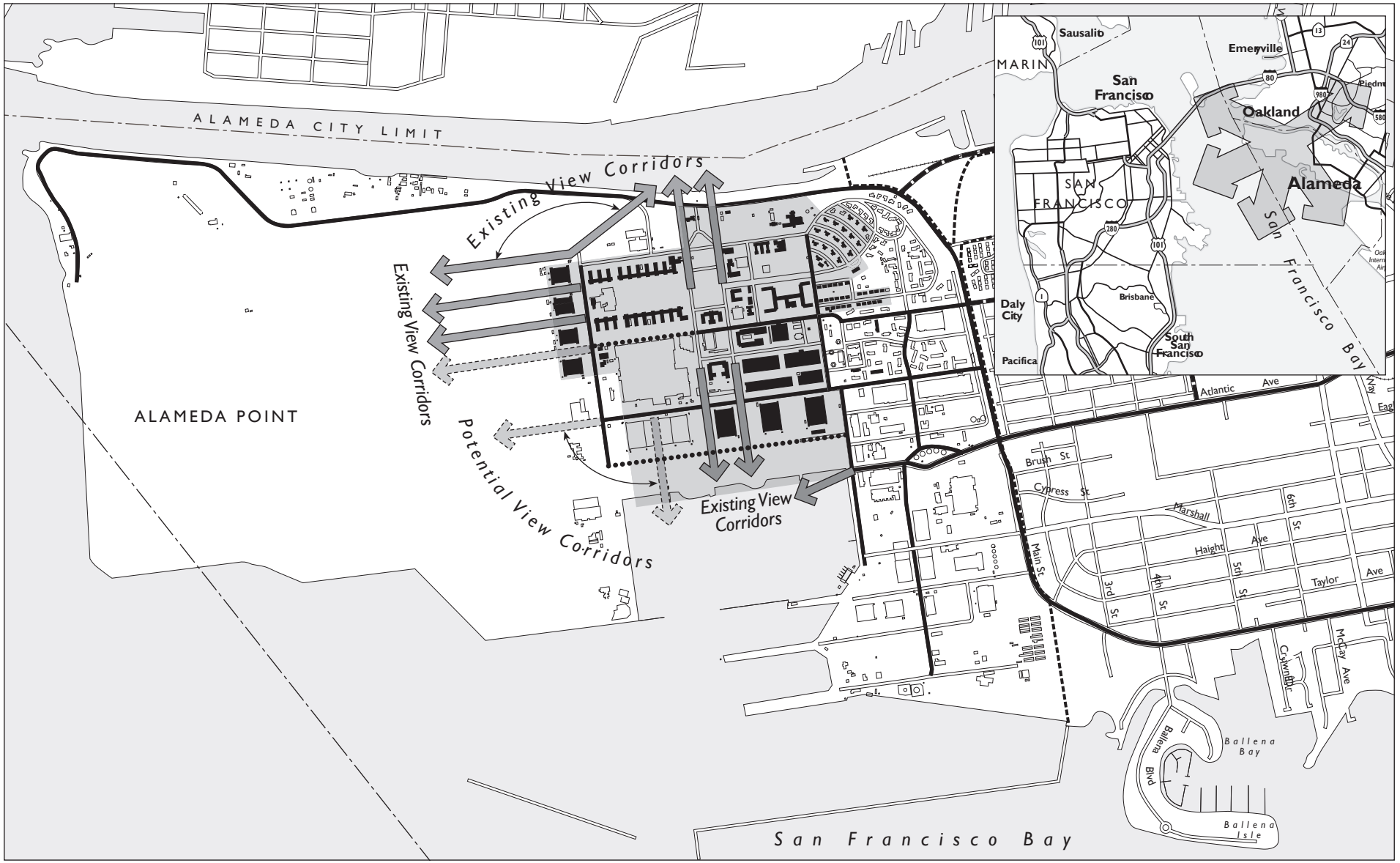
Views of the Estuary, East Bay Hills and the City of Oakland occur throughout Alameda Point when not obstructed by buildings or trees. Figure IV.C-4 is a view from the shoreline near West Hornet Avenue of the East Bay Hills, and Figure IV.C-5 is a view from Barbers Point Road of the East Bay Hills. Views of the Estuary from within the civic core are generally obscured by buildings. Unobscured views of the Estuary do exist in the area that was formerly utilized as an air field.

Views of San Bruno Mountain and the South Peninsula can be seen from the Seaplane Lagoon, West Hornet Avenue, and West Tower Avenue. Figure IV.C-6 is a view from the proposed Inner Harbor Regional Park, south of West Hornet Avenue into the South Peninsula.

(4) Sensitive Views into Alameda Point. There are no sensitive views of Alameda Point from other portions of Alameda. Alameda Point is not visible from most of the City, because of the lack of topography in Alameda. Figure IV.C-7 is a view from Main Street, north of Atlantic Avenue, looking westward at Alameda Point.

Alameda Point is visible from I-880, the Oakland Ferry Terminal, and from elevated heights in Oakland. However, views of the site are not sensitive, because they consist primarily of buildings, piers, runways, and warehouses with low scenic qualities.

Foreground views of Alameda Point are also visible from the Estuary by the Alameda/Oakland Ferry and from other boats passing through the Inner Harbor.



LSA

NAS Historic District
Contributing Building
View Corridor
Potential View Corridor
Major Street
Proposed Major Street

N

0 1250 2500
FEET

SOURCE: DYETT & BHATIA, 2001

FIGURE IV.C-1

Alameda Point GPA EIR
Historical Resources, Existing and Potential View Corridors

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Figure IV.C-2 View of San Francisco from West Red Line Avenue.

Figure IV.C-3 View of San Francisco from the northeast corner of the Seaplane Lagoon.

LSA

FIGURE IV.C-2&3

Alameda Point GPA EIR

Views of and from the Project Site

SOURCE: DYETT & BHATIA, 2001

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Figure IV.C-4 View of the East Bay hills from proposed Inner Harbor Regional Park.

Figure IV.C-5 View from Barber Point Road of the East Bay hills.

LSA

FIGURE IV.C-4&5

Alameda Point GPA EIR
Views of and from the Project Site

SOURCE: DYETT & BHATIA, 2001

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Figure IV.C-6 Views to the South Peninsula.

Figure IV.C-7 Views into Alameda Point from Main Street.

LSA

FIGURE IV.C-6&7

Alameda Point GPA EIR

Views of and from the Project Site

SOURCE: DYETT & BHATIA, 2001

c. Sensitive Views Within Alameda Point. The sensitive views within Alameda Point consist of views of the Historic District buildings and grounds. These buildings are discussed in more detail in Section IV.F, Historic and Cultural Resources. While many buildings on Alameda Point are currently unoccupied, the redevelopment of the area will facilitate a significant increase in the number of viewers.

d. Regulatory Considerations. The following is a brief summary of the relevant plans, policies, and regulations governing visual and scenic resources.

(1) The San Francisco Bay Plan. The Bay Plan of the Bay Conservation and Development Commission (BCDC) contains policies and objectives relevant to visual resources in its public access and appearance, design, and scenic views sections (see Section IV.A, Land Use, for a description of the BCDC). Relevant Bay Plan policies are listed below.

Policy 1: To enhance the visual quality of development around the Bay and to take maximum advantage of the attractive setting it provides, the shores of the Bay should be developed in accordance with the Public Access Design Guidelines.

Policy 2: All bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore. To this end, planning waterfront development should include participation by professionals who are knowledgeable of the commission's concerns, such as landscape architects, urban designers, or architects, working in conjunction with engineers and professionals in other fields.

Policy 4: Structures and facilities that do not take advantage of or that do not visually complement the Bay should be located and designed so as not to impact visually on the Bay and the shoreline. In particular, parking areas should be located away from the shoreline. However, some small parking areas for fishing access and Bay viewing may be allowed in exposed locations.

Policy 8: Shoreline developments should be built in clusters, leaving open area around them to permit more frequent views of the Bay. Developments along the shores of tributary waterways should be Bay-related and should be designed to preserve and enhance views along the waterway, so as to provide maximum visual contact with the Bay.

Policy 13: Local governments should be encouraged to eliminate inappropriate shoreline uses and poor quality shoreline conditions by regulation and by public actions (including development financed wholly or partly by public funds). The commission should assist in this regard to the maximum feasible extent by providing advice on Bay-related appearance and design issues and by coordinating the activities of the various agencies that may be involved with projects affecting the Bay and its appearance.

Policy 15: Vista points should be provided in the general locations indicated in the plan maps. Access to vista points should be provided by walkways, trails, or other appropriate means and should connect to the nearest public thoroughfare where parking or public transportation is available. In some cases, exhibits, museums, or markers would be desirable at vista points to explain the value or importance of the areas being viewed.

(2) City of Alameda General Plan. Policies from the current *General Plan* that relate to visual resources are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed General Plan amendments related to visual resources are discussed in the Environmental Analysis subsection below.

The City Design Element and the Parks and Recreation, Shoreline Access, Schools, and Cultural Facilities Element of the *City of Alameda General Plan* specifically address visual resource issues.

Edges, Vistas, Focal Points

3.2.a Maximize views of water and access to shorelines.

3.2.d Maintain views and access to the water along streets and other public rights-of-way that extend to the bulkhead line. Construct benches, ramps, rails, and seating appropriate for viewing and access, and provide walls or other screening where needed to protect adjoining property.

3.2.e Encourage landmark structures at prominent locations.

3.2.f Work to establish greenways on unused railroad right-of-way adjoining Main Street and Atlantic Avenue, extending east through the railroad yard to Sherman Street.

3.2.g Work with BCDC staff to prepare a schematic plan for development of the 100-foot-wide strip above mean high tide on properties likely to require BCDC development approval.

3.2.i Ensure that sections of the Estuary waterfront remain visually unobstructed.

Open Space for the Preservation of Natural Resources

5.1.e Continue to preserve and maintain all lagoons as habitat as well as visual and compatible-use recreational resources.

Shoreline Access and Development

6.2.a Maximize visual and physical access to the shoreline and to open water.

6.2.d Through design review of shoreline property, give consideration to views from the water.

4. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to visual resources, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant is detailed at the beginning of the Impacts and Mitigation Measures section.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to visual resources. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the *General Plan*), which includes several policies related to visual resources. Those policies are detailed below.

9.2.d Preserve scenic views from the district and the area's cultural landscape.

9.2.m As part of the development or landscaping approval process, define view corridors and develop criteria so that views may be preserved.

9.3.h Encourage development along Main Street that visually and physically connects the existing residential West Neighborhood to development in the Inner Harbor area. Do not permit perimeter walls that insulate development from the surrounding neighborhoods.

9.3.rr Prepare and adopt development regulations that implement the Biological Opinion (1999) prepared by the US Fish and Wildlife Service to guide development within the Wildlife Refuge Impact Area (see Figure 9-5). Ensure that the regulations contain specific requirements regarding, but not limited to:

- *Building size, height, design and location*
- *Appropriate uses adjacent to the Refuge*
- *Predator management*
- *Parking restrictions*
- *Lighting provisions*
- *Landscaping restrictions, and*
- *Stormwater management.*

Ensure that development in all areas adjoining the Wildlife Refuge adheres to the Wildlife Refuge Management Plan's guidelines regarding pets, predator control and landscaping.

9.4.h Create entryways that maximize views, create connections to surrounding uses, and reflect Alameda's island character.

9.4.k Design the entry of Pacific Avenue to create views and connections to the Marina district.

9.4.w Preserve view corridors in the layout and landscaping of the roadway system, particularly along the waterfront.

9.4.x Where possible, align roadways to frame important views.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant visual impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. The project would cause a potentially significant visual impact if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially degrade the existing visual character or quality of the site and its surroundings, or result in the substantial disruption or blocking of existing public views or public opportunities to view scenic resources;
- Result in visual resource conditions that would conflict with applicable City of Alameda policies and regulations governing aesthetics; or
- Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at plan buildout.

Policy Implementation. The GPA policies listed above would have a beneficial effect by integrating existing General Plan City Design Element policies into Alameda Point. These GPA policies would require future development to identify and preserve view corridors and preserve scenic views to and from the historic district. The policies also encourage: (1) due consideration of views relative to the placement of buildings and new road facilities; (2) development that visually and physically connects with existing development; and (3) development of entryways that will maximize views and reflect Alameda's island character.

The GPA policies would also be consistent with policies of the *San Francisco Bay Plan* that seek to enhance the visual quality of development around the Bay by preserving view corridors, clustering structures and imposing height restrictions on structures to permit views of the Bay, and providing vista points. Implementation of these policies would result in a beneficial impact related to visual resources and would not result in any adverse impacts.

Plan Buildout. Buildout of the proposed program would create a generally beneficial aesthetic impact at Alameda Point and in the project vicinity by renovating or removing deteriorating buildings, eliminating open expanses of pavement, creating a greater continuity of land use and introducing new public views and landscaping.

The proposed GPA does not allow for specific developments to occur, rather it designates land use types, densities, and policies guiding development. Although it is not possible to predict with certainty how particular buildings will be designed, it is possible to generally envision how Alameda Point might look under redevelopment. In general, the GPA would allow land uses resulting in a vibrant mixed use visual setting, including extensive areas of public open space.

Civic Core. Land use designations for this planning sub-area along the Estuary include Parks and Public Open Space, Medium Density Residential, and Public/Institutional, which could create a

visually varied waterfront without blocking mid-range views toward the Estuary from points south. Further inland, and incorporating the NAS Historic District, this sub-area is designated primarily Alameda Point Mixed Use with some Public/Institutional/School. Alameda Point Mixed Use allows development of two or more uses on a single site or within a single building, and may include business park, office, and commercial uses. Substantial reuse of historic structures is expected, and an overall business/institutional visual setting within the existing historical context would result. The allowable mass and height of buildings may vary widely. The western portion of this sub-area is designated a Wildlife Refuge Impact Area; design regulations for this area have not yet been finalized, but are likely to reduce the scale of the built environment, which would achieve a more gradual visual transition to the refuge beyond.

Northwest Territories. The entire Northwest Territories are designated Parks and Public Open Space, and are planned as a golf course/resort, a low-intensity land use that is expected to result in a park-like setting along the Estuary. Adjacent to the golf course/resort would be the 57-acre Alameda Point sports complex. The soccer and softball fields would continue the park-like setting to the east of the golf course. This sub-area is designated a Wildlife Refuge Impact Area, and would be further subject to design regulations likely to reduce the scale of the built environment.

West Neighborhoods. Land use designations for this planning sub-area are primarily Medium-Density Residential (up to two families per dwelling unit), and Low-Density Residential (one family detached dwelling units). Maximum allowable densities are 26.1 dwelling units per acre (DUA) and 8.7 DUA, respectively. These uses are the same as currently exist in much of the sub-area, and reuse of existing housing, plus additional housing is proposed for the area. In addition, a greenbelt along both sides of Main Street is planned. Visually, this sub-area would include greenbelts or homes in the foreground views. In addition, an area along the west side of Main Street would be designated Neighborhood Business. This area is intended for a community garden and produce market which would not block views; however, if in the future this property were to be developed with a retail complex, views could be obscured. The maximum FAR is 0.6 in a neighborhood commercial designation, which can increase to a maximum of 2.0 if in-lieu parking fees are substituted for on-site parking. The mass of this business center could vary widely, depending on the maximum FAR; it is possible this neighborhood-serving district could block views between Main Street and the residential community to the west.

Inner Harbor. This planning sub-area is designated Alameda Point Mixed Use, Public/Institutional/School, and Parks and Public Open Space. Emphasis would be on R&D and light industrial uses, along with supporting retail, which would result in a more campus-like visual setting relative to the current industrial setting. A large waterfront park would provide a visual link between Alameda Point and the Bay, and allow views toward the Bay from points northward.

Marina. This planning sub-area would be designated Alameda Point Mixed Use, which would include a continuous shoreline promenade, visually linking Alameda Point to the Bay. Inland, uses would be waterfront-serving commercial and industrial combined with a multi-use district aimed at

serving residents and pedestrians. Visually, this would include structures from one to several stories in height, with a rich mix of businesses, business-serving, and people-serving uses. The west side of the Marina abuts the Wildlife Refuge, and would be subject to additional regulation likely to reduce the scale of the built environment.

Wildlife Refuge. Eventually, it is expected this planning sub-are would take on a more natural appearance, as airfield facilities are removed and/or degenerate with time.

Impact VIS-1: Buildout of the GPA would significantly alter scenic or sensitive views from and into Alameda Point. (LTS)

Scenic views to and from Alameda Point may be altered when new development occurs. The overall aesthetic quality of the Planning Area vicinity is characterized by a mix of commercial, residential, industrial, and vacant institutional land uses. Scenic views outward from Alameda Point are currently available from the shoreline and along streets. Existing view corridors should be maintained and enhanced in areas where street configurations will not change and where the streets will be extended. The creation of the proposed Wildlife Refuge and the Alameda Point Golf Course would maintain the view corridor from the Civic Core, Marina District, and Northwest Territories areas. An interpretive center may be built for the Wildlife Refuge, but this should be sited to maintain sensitive views.

The sensitive views within Alameda Point consists mainly of historic buildings in the Civic Core. New development would be designed to visually complement the existing historic structures and would not degrade the sensitive views within Alameda Point.

Buildout of the GPA would not alter sensitive views into Alameda Point from the City, as views of the area are limited from within Alameda. Views of Alameda Point from I-880 and from the Estuary are not sensitive, as they consist primarily of buildings, piers, and warehouses with low scenic qualities and would not be impacted by buildout of the GPA.

Several existing and proposed General Plan policies address visual resources, as described below.

Proposed GPA Policies. Polices 9.2.d, 9.2.m, 9.4.h, 9.4.w, and 9.4.x would help minimize this impact by preserving scenic views from the district, defining view corridors with the layout of development and roadway system, and creating entryways and connections to surrounding land uses.

Existing General Plan Policies. Policies 3.2.a, 3.2.d, 3.2.i, 5.1.e, 6.2.a, and 6.2.d would help minimize this impact by maximizing views of the water and shoreline, preserve the lagoon as a visual resource, and require design review of shoreline development.

Other Policies. The City's Design Review Manual includes an objective (No. 7): "Where a project is located on the waterfront, the design should take full advantage of this feature by maximizing the orientation of the project to, and the visual relationship with, the water." The Design Review Manual guides the design review of individual projects. This is a standard City practice which implements the Mitigation Measure.

The implementation of these policies would ensure that this impact would not be significant.

Mitigation Measure VIS-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact VIS-2: Increased light or glare from development may affect views. (LTS)

Light or glare from proposed commercial, or industrial development in the Civic Core, Inner Harbor, and Marina subareas may affect views within Alameda Point and outward from Alameda Point. Development along the shorelines and within Alameda Point could cause light to overflow out from commercial and industrial uses onto nearby residential uses.

Light overflow impacts would be minimized by implementation of the terms and conditions of the Biological Opinion that pertain to lighting restrictions. The Biological Opinion for the proposed Wildlife Refuge contains lighting restrictions to protect foraging, nesting, and roosting habitats from disturbance that would ensure that light or glare would not overflow from the project site onto neighboring properties. The Biological Opinion restricts the height of light poles around the soccer fields, restricts the time of year that the fields may be lighted, and does not allow for lighting of the golf course. The soccer and softball fields, which are part of the sports complex, would be lighted year-round and would be located within the Civic Core area; this would serve to soften the effect of night-time light or glare, as the area is shielded by surrounding buildings.

Several existing and proposed General Plan policies address light and glare as described below.

Proposed GPA Policies. Policy 9.2.m would help minimize this impact by requiring the development of review criteria to preserve views. Policy 9.3.rr would help minimize impacts from light and glare by calling for the development of regulations that would implement the lighting provisions of the Biological Opinion .

Existing General Plan Policies. Policy 3.2.d directs that walls or other screening will be provided as needed to protect views from adjoining property. Policy 6.2.d would require design review of shoreline development to consider light and glare sources that could result from development.

Other Policies. The City's Design Review Manual includes an objective (No. 5) : "Lighting should be designed so as not to be detrimental to adjacent property or a public thoroughfare." Implementation of this objective will ensure that no significant lighting impacts result.

Mitigation Measure VIS-2: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

(3) Significant Impacts and Mitigation Measures. No significant impacts related to visual resources would result from implementation of the GPA.

D. PUBLIC SERVICES

1. Setting

This section presents information on public services at Alameda Point and the City of Alameda, including fire protection, emergency medical service, police protection, schools, and parks and recreation. Alameda Point and the City of Alameda serve as the study areas for analysis of the GPA's impacts on public services. Current information was obtained through websites for the City of Alameda Fire Department and Alameda Unified School District, as well as written and telephone correspondence with staff at the City of Alameda Fire Department, Police Department, and Parks and Recreation Department, and the Alameda Unified School District.

Alameda Point was in caretaker status from base closure in April 1997 to the year 2000. During that time, the US Navy continued to be responsible for law enforcement, fire protection, and emergency medical services and arranged for the provision of these services by the City of Alameda through a cooperative agreement. That cooperative agreement has ended and the City is now responsible for providing these services. Prior to closure of the base, NAS Alameda was under exclusive federal jurisdiction, which limited law enforcement to federal authorities enforcing federal laws. Following closure, the US Navy placed NAS Alameda under concurrent jurisdiction, which allows enforcement of federal, State, and local laws on the property by federal, State, and local authorities.

a. Fire Protection and Emergency Medical Service. The City of Alameda Fire Operations Division is responsible for the operation of five stations, geographically located to provide timely emergency response anywhere in the City. The division employs 117 personnel, 112 of whom are uniformed firefighters. Of these uniformed firefighters, 25 are certified paramedics, and the remaining 87 are emergency medical technicians (EMTs). Although all of Alameda's firefighters are trained to respond to medical as well as fire-related emergencies, paramedics undergo more extensive emergency training than EMTs. The Fire Operations Division has 27 firefighters on duty at all times, staffing five engine companies, two truck companies, three ambulances, and one fireboat. In 2001, the Fire Operations Division received approximately 5,000 calls. Of these, approximately 80 percent were calls for medical service, and 20 percent were fire-related and other calls. The Fire Operations Division meets its goal of responding to calls within 3.5 minutes more than 90 percent of the time.[35]

Within the Civic Core sub-area of Alameda Point, Fire Station #5 is located at 905 West Ranger Avenue. This station is staffed with at least three firefighters (constituting one engine company) and as many as five firefighters at all times. Calls from anywhere in Alameda Point can be answered by

[35] Jones, Steve, 2002. Deputy Fire Chief of Operations, Alameda Fire Department. Personal communication with LSA Associates, Inc. August 2.

firefighters at this station within 3½ minutes. The Fire Department receives approximately two calls per day from Alameda Point.[36]

In addition to the Fire Operations Division, the Fire Department also consists of the Prevention Services Division and Disaster Preparedness Services, which emphasize decreasing the incidents of fires and hazardous material incidents and improving disaster preparedness. The City of Alameda is located in an area facing high risks from local earthquake faults, major civilian flight paths, and land uses that involve the use or storage of hazardous materials. As a result, the Fire Department provides information to citizens to help minimize damage and injury in a disaster, and effective communication and efficient services when a disaster occurs.[37]

b. Police Protection. The Alameda Police Department provides services that include law enforcement, criminal investigations, and parking enforcement. The department also operates an animal shelter and provides animal control services. The department employs a force of 111 sworn officers and 66 other personnel. The department's current staffing level is 1.5 officers per 1,000 residents. In 2000, approximately 59,300 calls were responded to and 11,245 reports were filed, increases of 0.6 percent and 2.1 percent, respectively, from 1999.

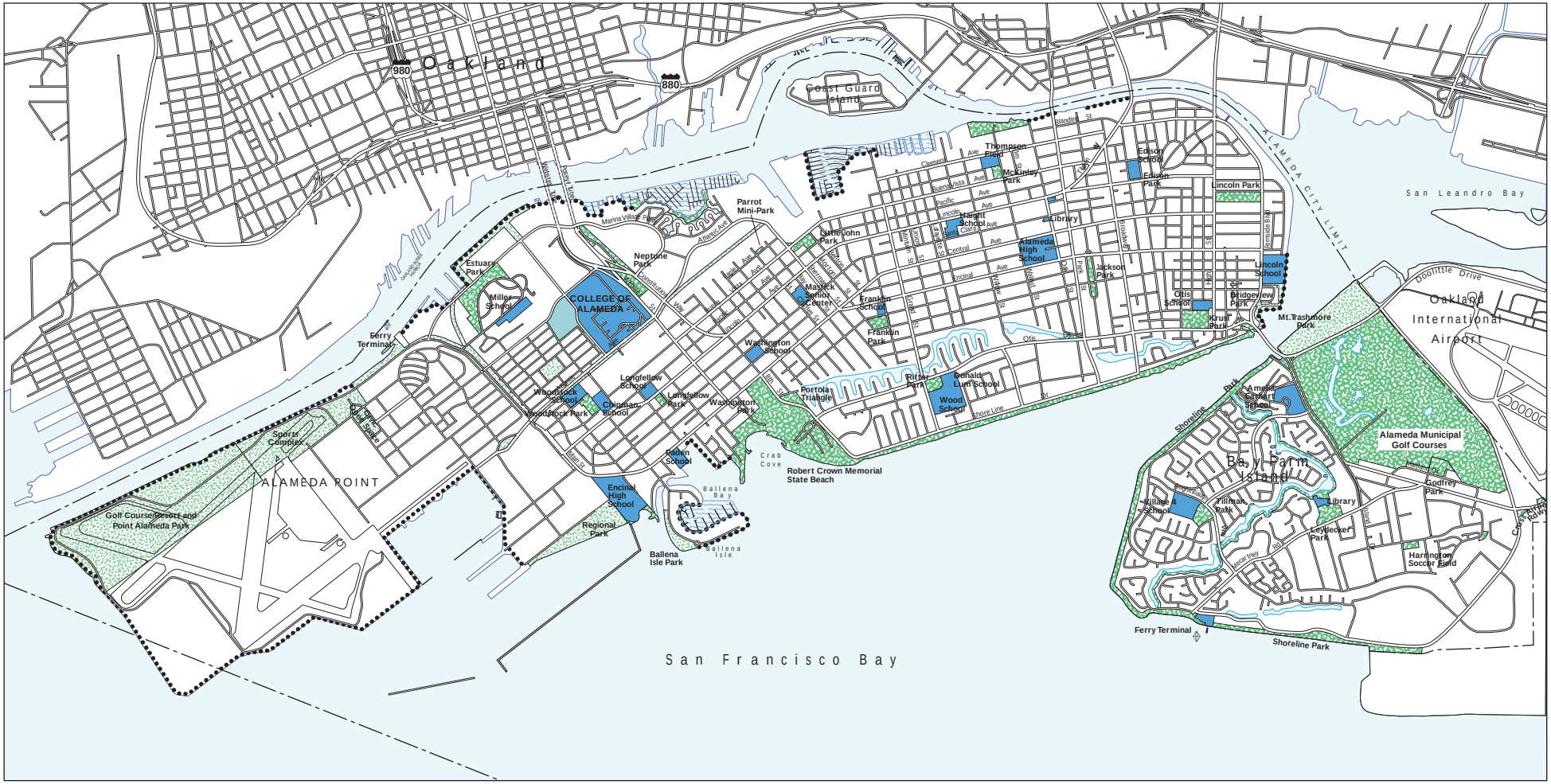
The City is divided into four geographic sectors and each sector is patrolled by an average of three officers, depending on the day of the week and the time of day. The Alameda Police Department assigns one officer per shift to exclusively patrol the Alameda Point sector.

c. Schools. Students who live in the Alameda Point Planning Area attend Alameda Unified School District (AUSD) schools. The closest schools to the Planning Area, and those that now serve students living in Alameda Point, are Miller Elementary, Woodstock Elementary, Chipman Middle School, and Encinal High School. Miller Elementary is located in the midst of the Coast Guard housing area. Woodstock Elementary, Chipman Middle School, and Encinal High School are located east of the Planning Area and south of Atlantic Avenue as shown in Figure IV.D-1.

AUSD currently has capacity for 11,547 students in its 12 elementary schools, 3 middle schools, and 3 high schools. As shown in Table IV.D-1, enrollment in the 2000-2001 school year is 10,700, for an overall utilization rate of 92.7 percent. Capacity and utilization for the schools that serve Alameda Point vary. Miller Elementary and Chipman Middle Schools have the lowest utilization rates, at 61.6 percent (capacity of 380 students) and 70.9 percent (capacity of 804 students), respectively. Woodstock Elementary's utilization rate is 91.5 percent, with a capacity of 401 students, and Encinal High has a utilization rate of 102.7 percent with a capacity of 1,378 students.

[36] Ibid.

[37] Alameda, City of, Fire Department, 2002. Website: www.ci.alameda.ca.us/fire/index.html. August 1.



LSA

FIGURE IV.D-1

Alameda Point GPA EIR

Existing and Proposed Parks and Schools

Existing Parks, Open Space and Greenways

Existing Schools

Proposed School

Proposed Parks, Open Space and Greenways

Public Shoreline Access

N

0 2500 5000

FEET

SOURCE: DYETT & BHATIA, 2001

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d. Parks and Recreation. Described below are the categories of parks and open space in Alameda; categories and acreage of *developed* parks; limited access lands; and several policy considerations related to parks and recreation.

(1) Citywide Park Land. The City maintains four categories of parks and open space:

- *Developed Park Land*. The City has 197 acres of parks, excluding school sites, open spaces, and county and State parks. These are separated into sub-categories based on park type.
- *Undeveloped Park Lands*. This category includes the 20-acre Mt. Trashmore site, undeveloped greenways along Atlantic Avenue, and the future Catellus project parks.
- *Limited Access Lands.* This category includes over 350 acres of developed and undeveloped properties such as the Alameda Municipal Golf Course and College of Alameda Hardball Field, for which access is limited to paying or scheduled users.
- *School Parks.* This category includes AUSD school properties only. These areas are generally not available for public use after school and on weekends due to locked gates.

Table IV.D-1: Alameda Unified School District Enrollment and Capacity

School	Enrollment 2000-2001	Capacity[a]	Percent of Capacity
Elementary Schools			
Bay Farm	506	538	94.1
Earhart	691	727	95.0
Edison	366	362	101.1
Franklin	280	287	97.6
Haight	551	578	95.3
Longfellow	399	489	81.6
Lum	498	509	97.8
Miller[2]	234	380	61.6
Otis	412	460	89.6
Paden	383	429	89.3
Washington	461	565	81.6
Woodstock[a]	367	401	91.5
Elementary Total	5,148	5,725	89.9
Middle Schools			
Chipman Middle[b]	570	804	70.9
Lincoln Middle	872	804	108.5
Wood Middle	815	831	98.1
Middle School Total	2,257	2,439	92.5
High Schools			
Alameda High	1,656	1,765	93.8
Encinal High[b]	1,415	1,378	102.7
Island High	224	240	93.3
High School Total	3,295	3,383	97.4
Total	**10,700**	**11,547**	**92.7**

[a] Includes special education students.
[b] School will accommodate students in the Planning Area.

Source: Alameda Unified School District; Alameda High School, 2001.

(2) Developed Park Land. Alameda owns and maintains the following types of developed parks:

- *Neighborhood Parks* are primarily used by elementary school-age children, but they are also used by residents and visitors of all ages for picnicking, passive recreation, and other activities. There are 12 neighborhood parks in the City; ranging in size from 1.1 to 5.5 acres.
- *Community Parks* are larger parks that have recreational facilities such as lighted baseball diamonds, tennis courts, and picnic areas. Alameda maintains four community parks.
- *Community Open Space* facilities are developed areas that consist of special purpose facilities such as the Model Airplane Field, the 32-acre Shoreline Park, and boat launches. There are eight areas of community open space in Alameda.

- *Regional Facilities* land is contained within one facility: the 80-acre Crown Memorial Beach.

Existing park and open space totals are shown in Table IV.D-2. Figure IV.D-1 shows existing and proposed parks in Alameda.

The City maintains one undeveloped parkland site: Mt. Trashmore. This 20-acre site contiguous to the San Leandro Bay Regional Shoreline is the City's former trash disposal facility. Undeveloped greenways also exist on former railroad properties along Atlantic Avenue and it is anticipated that the Catellus development on the FISC site will eventually develop approximately 16 acres of parks.

Table IV.D-2: Existing Parks and Open Space

Type/ Name of Park	Acres	Type/ Name of Park	Acres
Neighborhood Parks		***Community Open Space***	
Franklin	2.98	Boat Launches	2.80
Godfrey	5.45	Dog Exercise Area	4.00
Harrington (Soccer Field)	2.02	Mastick Senior Center	2.60
Jackson	2.27	Model Airplane Field	1.30
Littlejohn	3.45	Portola Triangle	2.30
Longfellow	1.14	Scout	0.01
McKinley	1.22	Shoreline	31.83
Neptune	3.08	Edison (Strip Park)	0.28
Rittler	4.81	***Greenways***	
Tillman	4.01	Main Street Greenway	6.00
Towata	1.55	*Subtotal*	*51.12*
Woodstock	3.96	***Regional Park/ Recreation Facility***	
Subtotal	*35.94*	Crown Memorial Beach	80.00
Community Parks		*Subtotal*	*80.00*
Leydecker	5.88	***Undeveloped Park Lands***	
Lincoln	7.80	Mt. Trashmore	20.00
Krusi	7.46	Future Greenways[a]	9.00
Washington	14.71	Future Catellus Parks	16.00
Subtotal	*35.85*	*Subtotal*	*45.00*
Total Park Acreage			**247.91**

[a] Includes Atlantic Greenway and Railroad right-of-way.

Source: Alameda Park and Recreation Department, 2002.

(3) Limited-Access Lands.

The four limited-access areas within the City of Alameda include the Alameda Municipal Golf Course, the College of Alameda hardball field, the soccer fields at Alameda Point, and Estuary Park. These facilities are maintained by the City. Estuary Park, an 11.18-acre park within the USCG housing area, presently serves the USCG area but is closed for remediation. Limited Access Land totals are shown in Table IV.D-3.

Table IV.D-3: Limited Access Lands

Name of Park	Acres
College of Alameda Hardball Field	4.0
College of Alameda Recreation/ Open Space	19.2
Alameda Point Soccer Field[a]	4.5
Chuck Corica Golf Complex	328.2
AUSD Facilities	72.8
Estuary Park[b]	11.2
Total	**439.9**

[a] Leased until 2002.
[b] Estuary Park is currently closed.

Source: Alameda Recreation and Parks Department.

Alameda has 72.8 acres of school recreational facilities consisting of playing-fields, paved schoolyards, landscaping, tracks, and athletic facilities. Although these are generally not available for public use, they are valuable resources for school-aged children. The public uses seven school facilities for recreation. The Little League field at Wood Middle School is used for team practice and games. Lincoln Middle School and Earhart Elementary School host community soccer programs. Wood, Chipman, and Lincoln

schools offer after-school programs during the school year. The College of Alameda includes 19.2 acres of open space and recreational facilities and a 4-acre hardball field.

(4) Acres of Parkland per 1,000 Residents. Alameda's current ratio of neighborhood and community parkland, including school playgrounds and fields, is approximately 2.1 acres per 1,000 residents. About 95 percent of Alameda residents live within 3/8 mile of a park, the maximum radius for effective service as indicated by studies in other cities. While the *City of Alameda General Plan* does not state a specific goal of park acreage per 1,000 residents, California cities typically strive for 3 to 6 acres of neighborhood and community park space per 1,000 residents. The City does not collect fees under the Quimby Act (the State law regulating fees and extractions for park lands).

e. Regulatory Considerations. The following is a brief summary of relevant plans, policies, and regulations which address public services.

(1) The San Francisco Bay Plan. The Bay Plan of the Bay Conservation and Development Commission (BCDC) contains policies and objectives relevant to parks and recreation in the Recreation and Public Access policy sections. These policies are aimed at increasing water oriented activities in the Bay and the addition of shoreline parks, outlining general standards for recreational facilities, and including public access to shoreline developments.

(2) City of Alameda General Plan. Policies from the current *General Plan* that relate to public services are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed General Plan amendments related to public services are discussed in the Environmental Analysis subsection below.

Public services are addressed in several sections of the *City of Alameda General Plan*. Fire and police services are addressed in the Health and Safety Element and schools and parks are addressed in the Parks and Recreation, Shoreline Access, Schools and Cultural Facilities Element and the Open Space and Conservation Element. Applicable policies from each of these elements are listed below.

Residential Areas

2.4.m Give priority for public open space and other public improvements to neighborhoods determined to have a shortage relative to the rest of the city.

Open Space for the Managed Production of Resources

5.2.b Explore interest in public and privately owned sites available for community gardens.

Parks and Recreation

6.1.a Expand Alameda's park system.

6.1.b Continue cooperation with the Alameda Unified School District to achieve optimum joint use of limited school open space and park space.

6.1.c Pursue park and open space grant opportunities and cooperative agreements with local, regional, and State agencies for expansion of the City's park and open space system.

6.1.d Promote the development and retention of private open space to compensate for the shortage of public open space.

6.1.e Acquire and develop an Estuary Park of 10 or more acres.

6.1 .h Develop a greenway on former railroad right-of-way east of Main Street north of Atlantic Avenue, and on the south side of Atlantic Avenue extending east to Sherman Street.

Shoreline Access and Development

6.2.b Regulate development on City-owned shoreline property to maximize public use opportunities.

Schools

6.3.b Support the Alameda Unified School District efforts to obtain school impact fees needed to maintain adequate educational facilities to serve enrollment generated by new development in the City.

6.3.c Approval of residential, commercial and industrial development may be conditioned upon the mitigation of the impact of such development on the Alameda Unified School District.

Fire Hazards

8.2.a Maintain and expand the City's fire prevention and fire-fighting capability.

8.2.b Maintain the current level of emergency medical service.

8.2.c Update the City's list of "critical facilities."

8.2.d Assure the compliance of new structures with the City's current Fire, Seismic, and Sprinkler Codes. Existing structures shall be required to comply with the intent of the Codes in a cost-effective manner.

8.2.e Require developers to plan underground utilities so disruption by earthshaking or other natural disasters is diminished.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to public services and describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate.

The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to public services. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the *General Plan*), which includes several policies related to public services. Those policies are detailed below.

Alameda Point Element

9.2.l Encourage and support the development of community-based cultural facilities such as places of worship, youth activity centers, and senior activities in Alameda Point.

9.2.n Explore the feasibility of creating an outdoor site for cultural celebrations, ceremonies, and exhibitions.

9.3.d Provide for cultural and civic places, through the development or reuse of key civic structures, libraries, churches, plazas, public art, or other major landmarks to provide a sense of center and unique character.

9.3.g Review the East Bay Regional Park District's plans for a regional park prior to approval and implementation.

9.3.w Incorporate small, intermittent parks into residential development.

9.3.z Where new residential development occurs along the waterfront, limit development to the south side of Main Street or the Mosley Extension in order to protect public access to the waterfront.

9.3.bb Consider the preservation of the Admiral's House for community and City use.

9.3.cc Preserve the Northwest Territories for parks and open space, which may include a golf course/hotel-resort, pedestrian and bicycle trails, and public access.

9.3.ee Develop a perimeter trail along the north and west boundaries of this area. [NW Territories]

9.3.ff Develop a public park, called Alameda Point Park, in this area. [NW Territories]

9.3.kk Help maintain a Wildlife Refuge that balances natural conservation with public access, education, and ship navigation.

9.3.mm Support a system of trails that provide public access to and within the Wildlife Refuge.

9.3.nn Support education facilities and programs, similar to other conservation areas such as the Elsie D. Roemer Bird Sanctuary, in conjunction with either Point Alameda Park or the Wildlife Refuge.

9.5.a Provide open space and recreational opportunities to serve new residents and employees of Alameda Point.

9.5.b Integrate parks and plazas into new development at Alameda Point.

9.5.c Provide for community recreation opportunities throughout Alameda Point.

9.5.d Establish a pedestrian- and bicycle-accessible perimeter shoreline trail throughout Alameda Point. Ensure that this trail is open year round, that the trail meets minimum multi-use trail standards, and that landscape treatment of the open spaces adjacent to the Estuary and the San Francisco Bay does not block distant views.

9.5.e Establish a public plaza at the marina that will serve as a focus for public uses on the waterfront.

9.5.f Pursue an aggressive tree-planting program at Alameda Point to bring up to par with Alameda-wide forestation levels/standards.

9.6.k Mitigate factors and conditions in Alameda Point that are conducive to fire hazards.

9.6.l Identify effective means of dealing with fire disasters should they occur.

9.6.n Extend Alameda's current level of emergency medical service into Alameda Point as reuse activities and residential buildout proceed.

9.6.r Support integration of Alameda Point into the City of Alameda's Emergency Operations Plan.

9.6.s Create and integrate provisions for emergency management in Alameda Point into the City of Alameda's Emergency Operations Plan.

9.6.t Identify "critical facilities" in Alameda Point area, as defined in Alameda's 1976 Safety Element, and integrate them to the City's existing "critical facilities" list and emergency provision plan.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant public services impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. The project would cause a potentially significant impact to public services if it would:

- Result in substantial adverse physical impacts associated with the provision of police and fire services due to a demand beyond established levels, which would require the construction of new or physically altered facilities resulting in environmental impacts;
- Result in a demand for school services beyond the existing or planned capacity of the Alameda Unified School District which would require the provision of new or physically altered facilities, the construction of which could cause significant environmental impacts;

- Result in an increased use of existing park facilities such that substantial physical deterioration would occur, or that would require the building of new facilities, the construction of which would result in adverse physical effects on the environment; or
- Result in City residents being outside the target maximum radius (within ⅜-mile) of a park.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at plan buildout.

Policy Implementation. Implementation of the new policies proposed as part of the GPA would not result in significant impacts. GPA Policies 9.6 k through 9.6.n, 9.6.r, 9.6.s, and 9.6.t would be beneficial for police and fire protection services by expanding fire fighting capability, extending emergency medical service into the project site, actively reducing fire hazards, and supporting and integrating Alameda Point into the City's Emergency Operations Plan. The remaining GPA policies listed in the above section would be beneficial by directing the creation of additional parks and open space, recreation, and trail facilities. There are no GPA policies related to schools.

The GPA policies would be consistent with the existing General Plan policies 6.1.a and 6.1.c, which relate to the expansion of the City's park system. They would also be consistent with the BCDC Bay Plan policies that call for the expansion of recreational activities in the Bay and along the shoreline.

Plan Buildout. Three beneficial impacts on public services (all of which relate to parks and recreation services) are evaluated below. They are followed by a discussion of less-than-significant impacts to other public services. Construction-related impacts resulting from the provision of new parks (if any) are discussed in the appropriate sections (i.e., Air, Water Quality, etc.).

New Parks and Recreational Facilities. Buildout of the proposed GPA would have a beneficial impact by increasing the ratio of park acreage per 1,000 residents. The proposed sports complex located primarily in the Civic Core sub-area would contain tennis courts, a pool, a gymnasium, and outdoor recreation areas and sports fields. In addition, there is substantial shoreline open space with bay views throughout the site. Historically, access by the general public to Alameda Point has been limited due to military security needs. Many areas previously off limits will be opened up by the City under the proposed project.

Existing outdoor facilities at Alameda Point, including soccer fields, tennis courts, and ballfields, are proposed for public use. A golf course/resort is proposed in the Northwest Territories and is currently undergoing environmental review. The addition of new parks at Alameda Point and at the Catellus Mixed Use Development site will increase the area of parkland from the existing 2.1 acres per 1,000 residents to 2.3 acres per 1,000 residents. The addition of new parks at Alameda Point would result in approximately 25.3 acres of parkland per 1,000 residents within the GPA Planning Area (calculation does not include the wildlife acreage or the golf course). Table IV.D-4 lists the parks and open space that are proposed at Alameda Point.

Alameda Point Golf Course/ Resort. An 18-hole golf course with clubhouse, a 300-room hotel, and a 300,000 square-foot conference center are proposed on 214 acres of the northwestern portion of Alameda Point. A 9-hole short game course would be developed as well as putting, chipping, short game, and long game practice facilities. The proposed Alameda Point Golf Course would include development of a public park, that includes a hiking and bicycling trail, parking, and restrooms. The Alameda Point Golf Course is currently the subject of a separate EIR and is pending City approval.

Table IV.D-4: Proposed Parks and Open Space, Alameda Point

Name of Park/Open Space Facility	Type of Park/ Open Space Facility	Acres
Main Street Neighborhood Parks	Neighborhood Parks	1-3
Inner Harbor Regional Park	Regional Facility[a]	29
Point Alameda Park	Regional Facility[a]	5-11
Golf Course/Resort	Regional Facility	214
Sports Complex	Community Facility	57
USFWS Wildlife Refuge[b]	Limited Access Facility	515
Shoreline Trail (NW Territories)	Community Open Space	16
Historic Parade Ground	Community Open Space	7
Total		**844 - 852**

[a] Subject to lease by EBRPD, otherwise Community Facility.
[b] Excludes 50 acres of land in the City of San Francisco and 413 acres of open water off the southwest corner of the island.

Sources: City of Alameda; Alameda Point Golf Course Feasibility Study; Sports Complex Master Plan; Catellus Mixed Use Development EIR.

Alameda Point Sports Complex. The Alameda Reuse and Redevelopment Authority (ARRA) approved a Master Plan for a community-wide sports complex in December 1997. This sports complex would provide the City and the region with much-needed facilities for existing programs that are in high demand and for popular sports that currently lack adequate facilities. The proposed 57-acre site is located at the northern edge of Alameda Point, adjacent to the proposed golf course (see Figure IV.D-1). The northern portion of the site is bordered by the proposed extension of the Shoreline Trail. This site includes the former NAS gymnasium and indoor swimming pool. Before these two facilities can be used, they must be renovated to meet fire/life safety and accessibility requirements. The preferred design for the Sports Complex includes six soccer fields, four softball/ Little League fields, a roller hockey rink, a renovated gymnasium with indoor basketball, a multi-use building, a tennis complex, a skateboard park (completed in 1997), a swimming center, sand volleyball courts, two play equipment areas, and picnic areas.

Inner Harbor Regional Park Facility. Approximately 29 acres of dry land along the southeastern shoreline of Alameda Point, just west of Encinal High School, is planned for a regional-serving park facility (see Figure IV.D-1). The site, along with the existing marina, the breakwater, and the water area between the breakwater and the shore would be improved for passive and active recreational uses.

Beyond the beneficial impacts evaluated above, the GPA would result in the two less-than-significant adverse impacts described below. The first relates to fire and police services and the second, to schools.

Impact SVCS-1: Buildout of the GPA would increase the demand for fire and emergency medical services and police protection. (LTS)

Fire Station #5, located in the civic core area of Alameda Point, would continue serve future development that is likely to result under buildout of the GPA. Buildout of the GPA would increase the demand for fire and emergency medical services and police protection, but not such that the Fire Department would be unable to meet its target 3.5-minute response time, or that construction of new facilities would be required.[38]

Demand for Police Department services depends not only on the numbers of residents and employees in the City, but also on the nature of the population (i.e., residents versus employees or "daytime population") and of land uses (i.e., primarily daytime office uses versus evening commercial uses such as restaurants). Given the projected employment and population in 2020 under buildout of the proposed GPA, there would be an increased demand on the Police Department, particularly during the daytime. This increased demand could be accommodated by the Police Department by adding personnel and would not require the construction of new facilities. As a result, no significant impact would result.

Several of the proposed and existing General Plan policies address emergency services as described below.

Proposed GPA Policies. Policies 9.6.k through 9.6.m would help minimize this impact by reducing factors and conditions that lead to fire hazards, identifying effective means for dealing with fire disasters, and by maintaining and expanding the City's fire prevention and fire-fighting capability into Alameda Point by establishing a station with two fire companies. Policies 9.6.n through 9.6.t would help to minimize this impact by extending emergency medical service into Alameda Point, supporting the integration of Alameda Point into the City of Alameda's Emergency Operations Plan, and identifying and integrating "critical facilities" in Alameda Point into the emergency provision plan.

Existing General Plan Policies. Policies 8.2.a through 8.2.e would help minimize this impact by maintaining and expanding the City's fire prevention and fire-fighting capability and emergency medical service, updating the City's list of "critical facilities," assuring compliance of new structures with the City's current Codes, and placing new utilities underground. Section 27.2 of the *Alameda Municipal Code* also authorizes the City to collect a police and fire impact fee.

Mitigation Measure SVCS-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

[38] Jones, op. cit.

Impact SVCS-2: Buildout of the GPA would increase demand on AUSD schools. (LTS)

The GPA would generate new students for the schools serving the Planning Area. The AUSD employs a student yield factor to estimate students generated by a specific project. According to recent research completed for the AUSD, new single-family units in Alameda have been averaging 0.28 kindergarten through fifth grade (K-5) students, 0.12 middle school (6-8) students and 0.13 high school (9-12) students per unit.[39] This suggests that AUSD should expect 1,049 students from the residential units[40] proposed as part of the project, allocated by grade range as shown in Table IV.D-5.

Table IV.D-5: Projected K-12 Public School Enrollment

Schools	Capacity	Current Enrollment	Increase Due to GPA	Current Percent of Capacity	Projected Percent of Capacity
Elementary Schools	5,725	5,148	554	89.9	99.6
Middle Schools	2,439	2,257	237	92.5	102.2
High Schools	3,383	3,295	258	97.4	105.0
Total	**11,547**	**10,700**	**1,049**	**92.5**	**101.8**

Source: AUSD and LSA Associates, Inc., 2001 and 2002.

The GPA is anticipated to generate 554 elementary school students for Miller and Woodstock Elementary Schools, 237 middle school students for Chipman Middle School, and 258 high school students for Encinal High School. This would increase enrollment at Miller and Woodstock Elementary schools (assuming Alameda Point-generated students are absorbed equally by both schools) by approximately 277 students for each elementary school to a total enrollment of 511 students for Miller Elementary School and 644 students for Woodstock Elementary School. Enrollment at Chipman Middle School would be 807 and at Encinal High School would be 1,673. This would bring the AUSD-defined use for Miller to 134 percent of capacity, Woodstock Elementary to 160 percent of capacity, Chipman Middle School 100 percent of capacity, and Encinal High School 121 percent of capacity. As shown in Table IV.D-5, the impact of this increase in student population would not be as great if it is distributed differently among the existing schools. As a result of the GPA, the student population would increase from 89.9 to 99.6 percent of capacity at the affected elementary schools, 92.5 to 102.2 percent at the affected middle schools, and 97.4 to 105.0 percent at the affected high schools.

In order to address the additional demand placed on the District by the Project, AUSD is entitled to assess and collect a School Facilities Mitigation Fee in the amount of $4.86 per square foot of residential development for additions or new construction over 500 square feet and $20,000 in value and $0.34 per square foot for new commercial buildings or additions, the maximum fee currently allowed under State Law.[41] Payment of the School Facilities Mitigation Fee has been deemed by the State legislature to be full and complete mitigation of the impacts of a development project on the

[39] City of Alameda, 2000. *Catellus Mixed Use Development EIR.* April.

[40] Includes live-aboard boats and low- and medium-density residential.

[41] Under certain circumstances, school districts are permitted to exceed this fee.

provision of adequate school facilities. The assessment of the standard School Facilities Mitigation Fee ensures that the Project would not result in a significant impact under CEQA, in accordance with Senate Bill 50, which became effective in 1998.

In addition, the City and AUSD have entered into an Agreement regarding public benefit conveyance at both FISC (Catellus Mixed Use Project) and NAS Alameda (Alameda Point). Within the Catellus Mixed Use Project, there is a proposed 8-acre school site. Within Alameda Point, there is a 12-acre site in the Inner Harbor Mixed Use area which will be conveyed to AUSD for school or administrative purposes.

Existing and proposed policies that will help minimize the potential impact are described below.

Proposed GPA Policies. There are no GPA policies that relate to schools.

Existing General Plan Policies. Policies 6.3.b and 6.3.c would help to minimize this impact by supporting AUSD efforts to obtain school impact fees needed to maintain adequate educational facilities to serve enrollment generated by new development in the City and by providing that approval of specific residential, commercial and industrial development may be conditioned upon the mitigation of the impact of such developments.

Mitigation Measure SVCS-2: No mitigation measures are necessary. Implementation of the existing policies described above will ensure that no significant impact results.

(3) Significant Impacts and Mitigation Measures. No significant impacts related to public services were identified.

E. WATER RESOURCES

1. Setting

This section describes the existing hydrological setting for the area that could be affected by the buildout of the GPA, including run-off, drainage, and water quality, based on information available from City staff, previous CEQA/NEPA documentation, and other published reports. This section also identifies impacts that may result from future development in the area, and suggests mitigation measures to reduce potential impacts. Discussion of contamination of subsurface soils and groundwater (including the on-site storm drainage system) resulting from past activities at the site is presented in Section IV.M, Hazards, of this EIR. The study area for the water resources analysis includes Alameda Point, as well as the land and bodies of water immediately surrounding it, to the extent that these areas are relevant to or could impact water resources issues at Alameda Point.

a. Climate. The climate of the Oakland-Alameda area is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool wet winters and relatively warmer dry summers. The mean annual rainfall in the vicinity of Alameda Point, for the period between 1970 and 2000, was approximately 23 inches (95 percent of which falls between October and April).[42] Analysis of long-term precipitation records indicates that wetter and drier cycles, lasting several years, are common in the region. Severe, damaging rainstorms occur at a frequency of about once every 3 years.[43]

b. Drainage and Flooding. Alameda Point is bordered on three sides by water, with San Francisco Bay to the southwest and northwest and Oakland Inner Harbor to the northeast. The topography is flat, and the shoreline areas are protected in most areas by breakwaters or other shoreline protection, such as dikes or seawalls. There are no creeks or other natural water courses crossing the site. Surface water occurs as sheetflow[44] which is collected in a stormwater drainage system, conveying surface water from the site directly to receiving waters. The storm drainage collection system at Alameda Point consists of drains, catch basins, and 43 discharge outfalls to the Oakland Inner Harbor and San Francisco Bay.[45] Most of the existing piping is corrugated metal. Under a

[42] Western Regional Climate Center, 2001. Website: www.wrcc.dri.edu/elimsmsfo.html.

[43] Brown III, William, M., 1988. "Historical Setting of the Storm: Perspectives on Population, Development, and Damaging Rainstorms in the San Francisco Bay Region," in *Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California.* Stephen D. Ellen and Gerald F. Wieczorek, Eds. US Geological Survey Professional Paper 1434.

[44] Sheetflow occurs when runoff moves as a continuous smooth sheet across the whole slope (i.e., drainage is not channelized).

[45] Alameda, City of, 2000. *Draft EIR for the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility Alameda, California.* March.

cooperative agreement with the US Navy, the storm drainage collection system is currently operated and maintained by the City of Alameda.

Seasonal flooding problems are common due to deteriorating storm drains, flat topography (resulting in inefficient conveyance of runoff), and subsidence. Some locations within the West Neighborhood, Civic Core, and Northwest Territories sub-areas are subject to flooding during heavy rainstorms. In addition, clogging of drainage inlets can occur in the autumn during leaf-fall season, or when too much debris accumulates in the catch basins. The City Department of Public Works, Maintenance Service Division is responsible for preventive and corrective maintenance on the storm drainage system, including removing debris from the catch basins. The Maintenance Service Division also performs street sweeping, with the stated intent of sweeping each City street at least once per week.[46]

In the past, flooding near the intersection of Main Street and Singleton Avenue occurred periodically when high tides and storms events occurred simultaneously. Flooding depths at this location were observed to exceed 1.5 feet.[47] This situation was remedied with the construction of the Main Street Improvement Project (MSIP) which was completed in May 2001. The MSIP was designed and constructed to retain and convey flood waters associated with the 25-year event.

The GPA Planning Area is not currently included in the Federal Emergency Management Agency's (FEMA) regional flood hazards mapping program and therefore Flood Insurance Rate Maps (FIRMs), that typically delineate 100-year flood hazard zones, have not been prepared for Alameda Point. No other floodplain delineations for Alameda Point have been completed. The surrounding areas of the City of Alameda have been evaluated for flooding hazards by FEMA. The City is committed to completing a 100-year flood map study, which would be submitted to the US Army Corps of Engineers (COE) for approval (see proposed GPA Policy 9.6.g). Completion of the floodplain delineation (with formal approval of the delineation by FEMA through the Letter of Map Revision process) and compliance with the provisions of the National Flood Insurance Program would minimize the potential for future flood-related damage to new development and allow property owners and tenants within Alameda Point to qualify for nationally-sponsored flood insurance, as needed.[48] The GPA Planning Area is not located within identified dam failure inundation hazard areas.[49]

[46] Alameda, City of, Maintenance Division, 2001. Website: www.ci.alameda.ca.us/public_works/maintenance.html.

[47] Waziri, Wally, 2001. Associate Engineer, City of Alameda Department of Public Works. Personal communication with Baseline Environmental Consulting. August 1.

[48] Shom, Mike, 2001. Planner, Federal Emergency Management Agency. Personal communication with Baseline Environmental Consulting. August 1.

[49] Sommeraurer, Ed, 1999. Engineer, City of Alameda. Personal communication with Baseline Environmental Consulting. January 13.

c. Coastal Hazards. The location of Alameda Point (adjacent to the San Francisco Bay and Oakland Estuary) may result in the site being affected by coastal hazards, such as tsunamis, extreme high tides, or sea level rise.

(1) Tsunamis. A tsunami is a sea wave produced by an offshore earthquake, volcanic eruption, or landslide.[50] Tsunamis are difficult to observe in the open ocean because they have relatively low wave heights (typically less than 10 feet) and travel very fast (up to 500 miles per hour).[51] Tsunamis can be exceedingly destructive upon reaching exposed coastlines, where they are capable of rising to 100 feet in height and moving at 30 miles per hour.

The San Francisco Bay, and its tidally influenced tributaries, are partially protected from inundation and damage associated with tsunamis because of the restricted hydraulic access at the Golden Gate. The predicted wave runup in the bay adjacent to Alameda Point has been estimated to range from 4.7 to 5.5 feet above mean sea level for the 100-year tsunami.[52]

(2) Extreme High Tides. Extreme high tides in the San Francisco Bay result from the combined effects of astronomical high tides (related to the lunar cycle) and other factors including winds, barometric pressure, ocean temperatures, and freshwater runoff.[53] In California, the highest astronomical tides occur in the summer and winter, and therefore extreme high tides occur during these times. The highest tide ever recorded in the San Francisco Bay (between 1855 and 1983) occurred on December 3, 1983 (tide elevation of 6.0 feet above National Geodetic Vertical Datum (NGVD). Based on the 129-year record of daily high tide, the COE has developed an estimated 100-year high tide elevation for various locations within the Bay. The elevation of the adopted 100-year tide at Alameda Point is approximately 6.6 feet above NGVD.[54] The Corps indicates that northern Alameda County (including Alameda Point) is not threatened by significant tidal flooding problems (although fluvial flooding exacerbated by high tides could occur) to warrant further evaluation of tidal flood control projects.[55]

[50] Steinbrugge, K., 1982. *Earthquakes, Volcanoes, and Tsunamis, An Anatomy of Hazards*, Skandia America Group.

[51] Costa, J. and V. Baker, 1982. *Surficial Geology, Building with the Earth.*

[52] Houston, J.R. and A.W. Garcia, 1975. Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, Technical Report H-75-17. November.

[53] US Army Corps of Engineers, 1989. *San Mateo and Northern Alameda Counties Interim San Francisco Bay Shoreline Study.* September.

[54] US Army Corps of Engineers, 1984. *San Francisco Bay, Tidal Stage vs. Frequency Study*. October.

[55] US Army Corps of Engineers, 1989, op. cit.

(3) Sea Level Rise. Tidal gauge measurements collected over the last 100 years indicate that sea level is rising relative to the land surface in many locations throughout the world.[56] It is widely believed that sea levels will continue to rise in response to global warming. Global warming causes thermal expansion of the upper layers of the ocean (increasing the volume of water) and melting of the earth's glaciers and polar ice fields. Such increases in sea level, if sustained over long periods of time, could create flooding problems (or exacerbate existing problems) for those areas currently protected from flooding with only minimal freeboard. To plan for, and mitigate, potential flooding problems associated with sea level rise, it is important to be able to quantify the amount of sea level rise expected at a specific location over a given time period. Long-range projections of the behavior of physical systems are extremely difficult because of the uncertainties involved. Since the Environmental Protection Agency (EPA) released its first major study on sea level rise in 1983, estimates for amount of predicted sea level rise have steadily decreased. In 1983, EPA predicted a 175 centimeter (5.7 feet) rise at Alameda Point by 2100.[57] EPA's most recent prediction for the expected total sea level rise at Alameda Point is 16 centimeters (0.5 feet) by the year 2050 and 37 centimeters (1.2 feet) by the year 2100.[58]

Based on review of a 7.5-minute topographic map,[59] it appears that portions of the site are below elevation 7.1 feet NGVD (the elevation of the extreme high tide added to the incremental sea level rise expected by 2050), and therefore may be subject to increased flooding hazards as time progresses. It should be noted that these areas may not be susceptible to flooding if they are protected by continuous natural high areas, seawalls, or constructed berms.

d. Water Quality. The quality of surface and groundwater at Alameda Point is affected by historic and current land uses at the site and the composition of subsurface geologic materials. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards. The GPA Planning Area is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB), which is responsible for implementation of State and Federal water quality protection guidelines in the vicinity of Alameda Point. The RWQCB implements the Water Quality Control Plan (Basin Plan),[60] a master policy document for managing water quality issues in the region. The Basin Plan establishes beneficial uses

[56] Bay Conservation and Development Commission, 1987. *Sea Level Rise: Predictions and Implications for San Francisco Bay*. December.

[57] US Environmental Protection Agency, 1983. *Can We Delay Greenhouse Warming?*. Prepared by S. Seidel and D. Keyes.

[58] US Environmental Protection Agency, 1995. *The Probability of Sea Level Rise*, EPA 230-R-95-008. October.

[59] US Geological Survey, 1980, *Oakland West, Calif.*, 7.5-minute topographic map. More detailed topographic information will be available when surveying is performed for the 100-year flood map study.

[60] Regional Water Quality Control Board, San Francisco Bay Region, 1995. *Water Quality Control Plan*. June 21.

for waterways and water bodies within the region. Beneficial uses of coastal waters in the San Francisco Bay include water contact recreation, noncontact water recreation, industrial service supply, navigation, marine habitat, shellfish harvesting, fishing, and preservation of rare and endangered species. Beneficial uses of East Bay Plain groundwater aquifer (the aquifer underlying the site represents a small portion of this larger aquifer) include municipal and domestic water supply, industrial process water supply, and agricultural water supply.

(1) Surface Water. Runoff water quality is regulated by the Federal National Pollution Discharge Elimination System (NPDES) Non-point Source Program (established through the Clean Water Act). The objective of this program is to control and reduce pollutant discharges to water bodies from nonpoint sources. The Program is administered by the California Regional Water Quality Control Boards. The Project site would be under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board and the City of Alameda. The City is a participant in the Alameda County-wide Clean Water Program.

Projects disturbing more than 5 acres of land during construction are required to file a Notice of Intent (NOI) with the RWQCB to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity. A developer must propose control measures that are consistent with the State General Permit. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the general permit. A SWPPP should include Best Management Practices (BMPs) designed to reduce potential impacts to surface water quality through the construction and life of the Project. Project activities and SWPPP are enforced by the SFRWQCB and the City of Alameda.

Examples of BMPs for the SWPPP to control erosion during construction would include, but are not limited to the following:

- uncovering soils only where required for construction activities;
- covering all stockpiles of soil;
- installation of silt fences or filters at storm drains;
- construction of berms to contain runoff; and
- proper storage and handling of construction materials and waste.

In addition to construction BMPs, the SWPPP shall include measures designed to mitigate potential water quality degradation of runoff from all portions of the completed development. These measures would vary based on the size of the development and the sensitivity of the area, but in general, passive, low-maintenance BMPs (e.g., grassy swales, porous pavements) are preferred over higher maintenance BMPs such as sedimentation basins or fossil filters. Site planning must also include consideration of long-term water quality impacts and aim to minimize stormwater runoff such as: incorporation of minimized impervious surface area, minimized directly connected impervious

surface area, installation of low-maintenance native landscaping, and application of stormwater treatment controls.

Additionally, the City of Alameda requires development and implementation of an operations and maintenance plan for BMP's at development sites to ensure functional operation and stormwater management.

In addition to typical urban pollutants in site runoff, the existing storm drainage system at the site has been determined to be a reservoir and conveyance for contaminants, including petroleum hydrocarbons, metals, radiologic materials, and polynuclear aromatic hydrocarbons. The sources of these contaminants include untreated industrial wastewater (prior to the implementation of an industrial wastewater treatment system at Alameda Point in 1975), and contaminated surface soils entrained in storm water.

The status of contaminated sediments in the drainage system is discussed in more detail in Section IV.M, Hazards, of this EIR.

The Oakland Estuary and San Francisco Bay are the receiving water bodies for runoff from the site. Under the Bay Protection and Toxic Cleanup Program,[61] San Francisco Bay (as a whole) and portions of the Estuary[62] have been designated "candidate toxic hot spots" based on water and/or sediment samples "that exhibit toxicity associated with toxic pollutants."[63] The identified contaminants of concern in San Francisco Bay include mercury, PCBs, dioxin, and pesticides. The identified contaminants of concern within the Inner Harbor include silver, cadmium, chromium, copper, mercury, lead, polynuclear aromatic hydrocarbons, PCBs, and pesticides.

(2) Groundwater. Prior to human development, the quality of shallow groundwater at Alameda Island was of excellent quality.[64] Groundwater was recharged only by rainfall; no other sources contributed to the shallow aquifer. Historic accounts of water obtained from wells drilled in the Merritt Sand on Alameda Island in the mid- to late-1800s describe the water as the "sweetest" in the area. Overpumping of these wells resulted in salt water intrusion and closure of most of the wells

[61] The California State Water Resources Control Board (SWRCB) has contracted with the California Department of Fish and Game (CDFG) to coordinate the scientific aspects of the Bay Protection and Toxic Cleanup Program (BPTCP), a SWRCB program mandated by the California Legislature. The BPTCP is a comprehensive, long-term effort to regulate toxic pollutants in California's enclosed bays and estuaries.

[62] The specific portions of the Inner Harbor that have been designated candidate toxic hot spots are areas near storm drain outfalls at the Pacific Drydock and Fruitvale Avenue (southeast of Alameda Point).

[63] California, State of, Water Resources Control Board, 1999. *Consolidated Toxic Hot Spots Clean Up Plan.* June.

[64] Figuers, S., 1998. *Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, CA.* Prepared for the Friends of the San Francisco Estuary. June 15.

by the turn of the century. Only minor pumping of groundwater from the aquifer underlying Alameda Island has occurred since 1900.[65]

Shallow groundwater occurs at the site at depths ranging around 4 to 8 feet below the ground surface (bgs) in fill materials and Bay Mud.[66] This shallow water-bearing zone is not considered a regionally extensive aquifer.[67] Bay Mud underlies the fill to a maximum identified depth of 95 feet bgs. The two main aquifers underlying the site occur in the Merritt/Posey Sand and the Alameda Formation. These aquifers are separated by fine-grained, low permeability sediments referred to as the San Antonio aquitard. The depth to the top of the Alameda Aquifer, which is largely recharged by rainfall in the Oakland Hills, ranges from 100 to 200 feet bgs.[68] Figure IV.E 1 provides a geologic cross-section of the Planning Area. Based on its vulnerability to contaminants, low yield to wells, high total dissolved solids (TDS) levels, and likely land subsidence which may occur with extraction, the US Navy has concluded that the shallow groundwater has no designated beneficial uses.[69]

Groundwater extraction from the shallowest water bearing zone at Alameda Point is restricted as a condition of the City's lease with the US Navy. Upon transfer of the property to the City, the City expects to enact a deed restriction that prohibits the extraction of groundwater from the shallowest groundwater zone (similar to the Covenant to Restrict Use of Property for the FISC property, which restricts use of shallow groundwater).[70]

There are numerous water supply wells on the island of Alameda, including two wells at Alameda Point. These wells generally supply water for irrigation and, to a lesser extent, for industrial uses. On Alameda Point, a well near the Officers Club is currently used for irrigation and a well near the Pan Am Building is believed to be capped.[71] While most of the water supply wells on Alameda draw water from the permeable zones within the deeper San Antonio and Alameda Formations, some also may draw water from the shallower Merritt/Posey Formation.

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[65] Ibid.

[66] Tetra Tech EM, Inc., 2000. *Final Determination of the Beneficial Uses of Groundwater, Alameda Point, Alameda, California.* July.

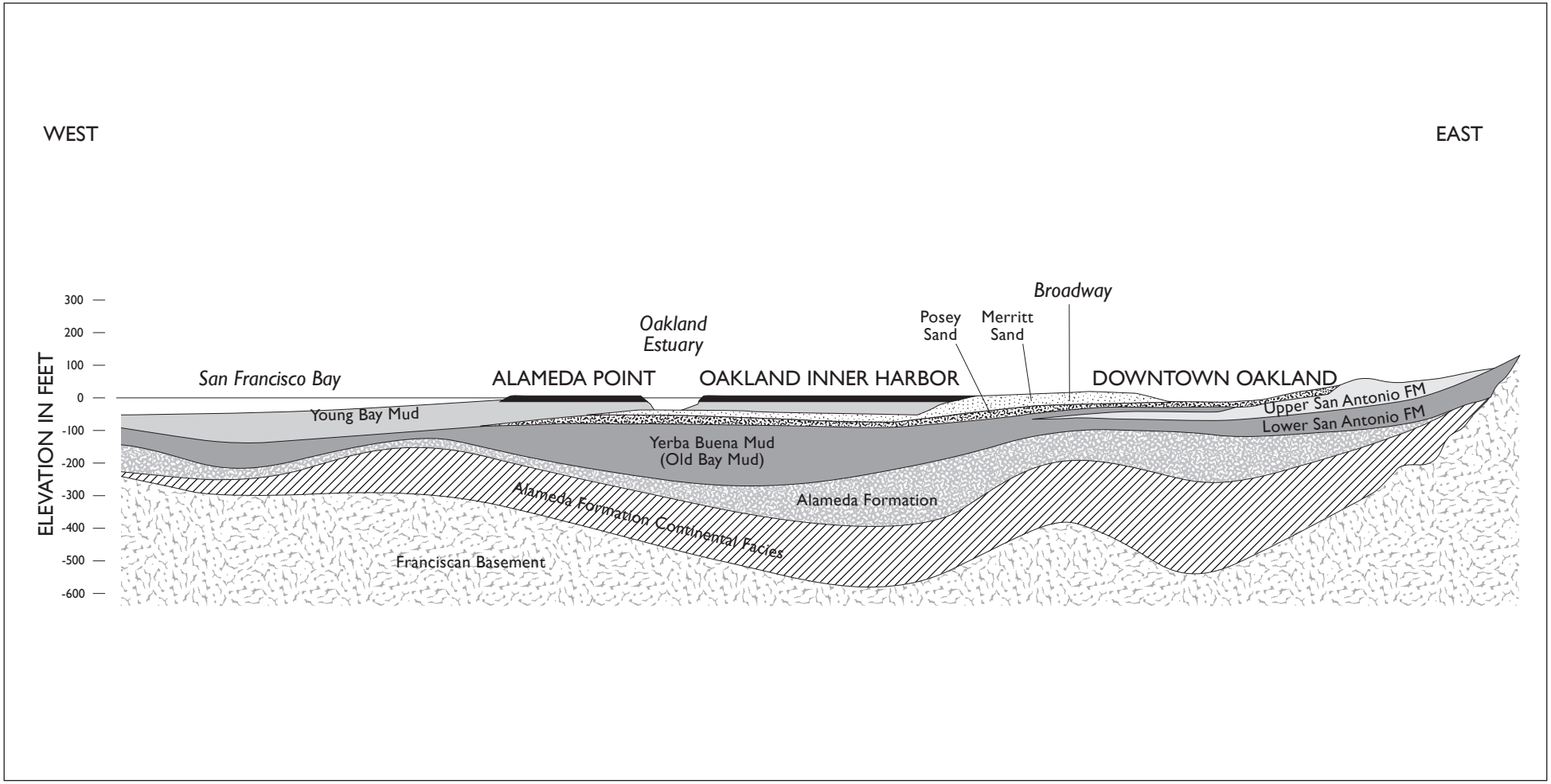
[67] Tetra Tech EM, Inc., 1998. *Final Cumulative Groundwater Monitoring Report (1994-1996), FISC, Oakland Alameda Facility/Alameda Annex, Alameda, CA.* November 12.

[68] Ibid.

[69] Tetra Tech EM, Inc., 2000, op. cit.

[70] Bryant, Kevin, 2001. Planner, City of Alameda. Personal communication with Baseline Environmental Consulting. August 2.

[71] Ibid.



LSA

FIGURE IV.E-1

Alameda Point GPA EIR

Geologic Cross-Section of Alameda Point and Surrounding Areas

0 .5 1

APPROXIMATE SCALE IN MILES
VERTICAL EXAGGERATION 10X

SOURCE: CARLISLE AND ROLLINS 1994; MODIFIED FROM ROGERS AND FIGUERS 1991, AS CITED IN CITY OF ALAMEDA, 2000.

I:/IMAGES/GRAPHICS/JOBS/CIA132 ALAMEDA POINT/ILLUS/FIGURES/FIG_IVE1.AI (11/08/02)

e. Dredging. Existing waterfront facilities at Alameda Point include the Oakland Inner Harbor channel (along the northeast site boundary), and Piers 1, 2, and 3 and the Seaplane Lagoon (both on the south side of the site). Historically, the entrance to the pier area and the turning basin have been dredged to 42 feet below mean lower low waterline (mllw) plus 2 feet overdredge every 2 years. Piers 1, 2, and 3 were dredged to 50 feet below mllw (plus 2 feet of overdredge). The seaplane lagoon was dredged to 15 feet below NGVD in the 1940s. A portion of the lagoon was also dredged in 1981, when the US Navy sought to increase its depth for the purposes of diver training.[72] Each of these areas may require maintenance dredging at some time in the future, depending on future land uses. Some dredging could also be performed to remediate contamination identified in sediments in these areas (see Section IV.M, Hazards, for additional details).

Dredging of the Oakland Inner Harbor channel is conducted by the Port of Oakland in cooperation with the US Army Corp of Engineers. Authorized by the passage of the Water Resources Development Act of 1999, the Port is currently dredging the channel to deepen it from -42 feet to -50 feet to accommodate container ships. It is expected that the Port will continue to manage dredging activities in the Inner Harbor.

f. Regulatory Considerations. Water resources are regulated by many different federal, State, and local agencies that are authorized to work together to implement various aspects of laws and policies protecting water resources. To clarify this discussion of regulatory considerations, the following discussion is organized by water resources topic, followed by a discussion of relevant General Plan policies.

(1) Water Quality. The Federal Clean Water Act 33 U.S.C. § 1251, *et seq*., is implemented by the San Francisco Bay Regional Water Quality Control Board (RWQCB), in part through its NPDES permits. The NPDES permit process allows the RWQCB to establish requirements for discharges of potential water pollutants from point sources, such as "end of pipe" discharges, and from nonpoint sources, such as stormwater runoff.

The RWQCB also regulates water quality in accordance with State laws, notably the Porter-Cologne Water Quality Control Act, Cal. Water Code § 13000, *et seq*. To implement these clean water laws, the RWQCB has prepared the San Francisco Basin Plan (Basin Plan).[73] The Basin Plan identifies "Beneficial Uses" of surface and ground waters, wetlands, and marshes and sets forth water quality objectives to protect these uses. Beneficial uses for San Francisco Bay, including the Alameda area, are industrial uses, processing, navigation, contact and noncontact recreation, fishing, commercial uses, wildlife habitat, species preservation, and fisheries habitat.[74]

[72] Alameda, City of, 2000, op. cit.

[73] San Francisco Bay Regional Water Quality Control Board, 1995, op. cit.

[74] Ibid.

Municipalities are governed by a joint NPDES permit in Alameda County. Construction and industrial permits (General Permits) are specifically between SFRWQCB and the industry or developer. To meet permit requirements, 17 local municipalities and agencies, including the City of Alameda, are participating in the Alameda Countywide Urban Runoff Clean Water Program. Program participants are responsible for developing and implementing a stormwater management program that emphasizes control of pollutants at their source. The City of Alameda has adopted the Stormwater Management and Discharge Control Program (SWMDCP) Ordinance that commits the City to performance requirements set forth by NPDES Permit (No. CA 0029831) issued by the RWQCB. In addition, the *City of Alameda General Plan* has numerous policies that address dredging, nonpoint pollutants, marina bilge, and other measures to protect surface waters on the site and in the bay.

NAS Alameda and FISC Alameda comply with the permits for industrial runoff through notices of intent that cover each entire facility as a single industrial site. The permit contains a stormwater pollution prevention plan (SWPPP) that includes existing and proposed best management practices. The Navy has prepared a stormwater sampling and analysis program for review by the RWQCB and has been preparing annual reports since 1992. As part of that program, water is tested twice annually between October and April, and monthly visual inspections are conducted. No problems have been reported.[75] The permit also covers stormwater discharges associated with construction activities that disturb soil. The Navy no longer holds permits at NAS Alameda or FISC. Developers within the GPA planning area will be required to obtain and comply with a general construction permit from the SFRWQCB. The RWQCB and City of Alameda hold jurisdiction over the GPA planning area. All construction and post-construction activities are enforced by RWQCB and the City.

(2) Fill and Dredging. The COE regulates discharge of dredge or fill materials, pursuant to Section 404 of the Clean Water Act, 33 U.S.C. § 1344. The San Francisco Bay Conservation and Development Commission (BCDC) has regulatory authority over any filling operations in the San Francisco Bay and inland within a 100 feet (30 m) of high tide. Within bay waters, the COE and BCDC have overlapping jurisdictions.

Dredging in the Bay and disposal of dredge spoils is a highly regulated activity. Prior to initiation of any dredging activities, the City would be required to submit an application to the Dredged Material Management Office (DMMO), a joint program of BCDC, San Francisco Bay Regional Water Quality Control Board (RWQCB), State Lands Commission (SLC), the San Francisco District US Army Corps of Engineers (COE), and the US Environmental Protection Agency (EPA). Also participating is the California Department of Fish and Game, which provides advice and expertise to the process. The purpose of the DMMO is to cooperatively review sediment quality sampling plans, analyze the results of sediment quality sampling and make suitability determinations for material

[75] Szymanski, 1996. As cited in City of Alameda *Draft EIR for the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility, Alameda, California,* 2000.

proposed for disposal in San Francisco Bay. The goal of this interagency group is to increase efficiency and coordination between the member agencies and to foster a comprehensive and consolidated approach to handling dredged material management issues. Applicants using DMMO fill out one application form, which the agencies then jointly review at bi-weekly meetings before issuing their respective authorizations.

BCDC, the COE, the US Environmental Protection Agency (EPA), and the RWQCB developed a Long-term Management Strategy (LTMS) program to guide dredging and disposal of materials from San Francisco Bay in an economic and environmentally sensitive manner. Within the LTMS program, the EPA studied acceptable ocean disposal sites, the RWQCB reviewed disposal of dredged materials in the Bay, and BCDC evaluated the potential for using dredged materials in upland disposal. The COE oversees the overall management of the LTMS program. A comprehensive management plan has been prepared based on the results of these studies. Potential reuse alternatives include fill for construction, levee maintenance, landfill cover, and marsh restoration.

The City's *General Plan*, policy 5.1.g, is being amended to support the Long-Term Management Strategy, Management Plan, prepared by federal and State agencies.

(3) Flooding. Flood protection for non-federal lands is administered by FEMA under the National Flood Insurance Program (NFIP). Under this program, local communities must implement floodplain management measures to reduce flood risks to new development. These measures are developed on the basis of flood insurance studies (FIS) and flood insurance rate maps (FIRMs). The Alameda Point area would be placed under the NFIP when the property is conveyed from Federal ownership.

The most recent FIS and associated FIRMs prepared for the City did not include analysis of flood hazards within the NAS Alameda/FISC Alameda boundaries. The City's *General Plan* provides guidance regarding floodplain protection, coordination with BCDC on potential sea level rise, flood proofing, runoff reduction, and maintaining drainage facilities.

(4) Existing General Plan Policies. Policies from the current *General Plan* that relate to water resources are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Amendments proposed to the General Plan related to water resources are discussed in the Environmental Analysis subsection below.

Open Space for the Preservation of Natural Resources

5.1.r Continue to participate in the Alameda County Non-Point Source Task Force.

5.1.s Participate in the Non-Point Source Control Program (NPSC).

5.1.t Consider adopting City standards in addition to those adopted by the County, to deal with non-point source water pollution problems such as sheet flow storm runoff and sedimentation affecting sensitive water habitats.

5.1.w Require new marinas and encourage existing marinas to provide easily accessible waste disposal facilities for sewage and bilge and engine oil residues.

5.1.x Prevent migration of runoff off-site or into wetland areas and water-related habitat by requiring that proposed projects include design features ensuring detention of sediment and contaminants.

5.1.aa Review proposed development projects for both water and energy efficiency, and integrate plans for the use of reclaimed wastewater for landscaping as a condition of approval.

Shoreline Access and Development

6.2.k In cooperation with the US Coast Guard and governmental agencies concerned with water quality, continue to maintain strict monitoring of compliance with environmental regulations by boat users.

Flooding

8.3.a Adopt the final version of the June 1990 Preliminary Flood Insurance Rate Maps produced by the Federal Emergency Management Agency for Alameda.

8.3.b Ensure that structures proposed for sites located on flood plains subject to the 100-year flood are provided adequate protection from floods.

8.3.c Monitor EPA reports on sea level rise in order to anticipate impacts if sea level rise accelerates; coordinate with BCDC to design an appropriate response.

8.3.d Support national and international efforts to protect the Earth's ozone layer, including policy to minimize or prevent the release of chlorofluorocarbons and similar gases.

8.3.e Support a multi-use concept of waterways, including, where appropriate, uses for flood control, open space, nature study, habitat, pedestrian circulation, and outdoor sports and recreation.

8.3.f Use all possible means of reducing the potential for flood damage in Alameda. These may include the requirement of flood-proofing, flood forecast and warning or evacuation programs, and stringent groundwater management programs to prevent subsidence.

8.3.g Require the maintenance of easements along those drainage ways necessary for adequate drainage of normal or increased surface runoff due to storms.

8.3.h Require new drainage facilities to be designed to minimize the effects of settlement.

8.3.i Reduce the effects of surface runoff by the use of extensive landscaping, minimizing impervious surface and drainage easements.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to water resources, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to water resources. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the *General Plan*), which includes several policies related to water resources. Those policies are detailed below.

Open Space and Conservation Element

5.1.g ~~*Support BCDC in their efforts to implement a regional dredging plan.*~~ *Conduct all dredging in compliance with the Long Term Management Strategy, Management Plan, prepared by the USACE, USEPA, BCDC, and SFRWQCB.* **[Amended Policy]**

5.1.dd Develop and implement planting and herbicide, pesticide, and fertilizer application plans, including a pesticide drift control plan, for the golf course and public open space areas. **[New Policy]**

Health and Safety Element

8.3.j Require shoreline owners to maintain perimeter dikes to applicable standards. **[New Policy]**

8.3.k Leave adequate setbacks along waterfront areas for the expansion of seawalls and levees. **[New Policy]**

8.3.l Regularly inspect and maintain seawalls around the City. **[New Policy]**

Alameda Point Element **[New Element]**

9.3.r Provide signs, pamphlets, public education and outreach activities advising boaters and marina users to eliminate any discharges or pollutants to receiving waters.

9.3.uu Develop detailed stormwater management and monitoring plans for the Northwest Territories in coordination with the US Fish and Wildlife Service to protect open-water foraging areas for least terns and brown pelicans. Ensure that the plans are reviewed and approved by the Service contemporaneously with the City environmental review process and prior to development within this area.

9.6.a Integrate the management of Alameda Point's runoff management into the City's existing programs.

9.6.b Support improvement programs that address water quality, urban runoff and flooding.

9.6.c Integrate Alameda Point into the City of Alameda's Storm Water Management and Discharge Control Program.

9.6.d Require all proposed reuse activity in Alameda Point to be in compliance with the Regional Water Quality Control Board storm water recommendations.

9.6.e Restrict the installation of water supply wells in the uppermost aquifer at Alameda Point to reduce the potential use, or migration of, groundwater affected by the release of hazardous materials.

9.6.f Support development of a water-quality testing program for all existing water supply wells in Alameda Point to determine the safe uses or appropriate discharge of pumped water.

9.6.g Support preparation of a Flood Insurance Study by FEMA to cover Alameda Point.

9.6.h Coordinate incorporation of Alameda Point into the City of Alameda Urban Runoff Program to reduce potential water quality degradation related to urban runoff.

9.6.i Identify and implement improvement programs to address periodic flooding at Alameda Point.

9.6.j Establish an assessment mechanism to provide for capital costs for construction, maintenance, and operation of urban runoff Best Management Practices and costs associated with inspection, monitoring, and reporting that could be incurred by the City in incorporation of the Alameda Point into the Urban Runoff Program.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant water resource impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. The following list of criteria of significance is based on the CEQA Guidelines Appendix G Environmental Checklist Form. A significant impact would result from adoption of the GPA if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of 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 or siltation on- or off-site;

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water 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; or
- Expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at buildout of the GPA.

Policy Implementation. GPA Policy 9.3.r would have a beneficial impact by encouraging boater and marina user education about the discharge of pollutants to receiving waters. GPA Policies 9.3.uu. 9.6.a, and 9.6.b recommend the development of stormwater management and monitoring plans and runoff management for the planning area. Other GPA policies related to maintenance of water quality (Policies 9.6.c through 9.6.j) would be beneficial by supporting the integration of Alameda Point into the City's existing water quality and runoff management programs.

The GPA would be consistent with the existing General Plan policies related to non-point source pollution, education about Best Management Practices for boaters and at marinas, and programs to address flooding problems at Alameda Point.

Plan Buildout. Buildout of the GPA would result in a slight reduction in the amount of impervious surface area that currently exists, due to the conversion of pavement and runway surface in the Northwest Territories sub-area to parks and open space, including a golf course. A reduction in impervious cover would be expected to reduce the rate and volume of stormwater runoff while increasing infiltration and groundwater recharge (most new development would take place in areas that are already covered with impervious surface). As a result, buildout of the GPA would result in a beneficial impact.

Less-than-significant impacts that would result under buildout of the GPA are discussed below. Potential impacts that do not exceed the significance criteria listed above are discussed first. Poten-

tial impacts that would be mitigated to a less-than-significant level through the implementation of policies proposed as part of the GPA, existing General Plan policies or other existing City regulations are highlighted with a bold impact statement, and the policies and regulations that would reduce the impact to a less-than-significant level are detailed.

Point Source Discharges. The GPA does not propose any industrial-type discharges that would require compliance with specific Waste Discharge Requirements (issued, when required, by the RWQCB), and therefore would not be expected to exceed waste discharge standards for point sources. The GPA would be subject to the requirements of nonpoint-source regulations, which are further discussed under Impact WATER-1 below.

Groundwater Extraction. Buildout of the GPA would not result in any significant effects related to the groundwater supply. No groundwater extraction from or injection into deep aquifers is proposed as part of the project. As a result, the project is unlikely to have any significant effect on deep aquifers. Proposed Policy 9.6.e would restrict the installation of wells in the shallow groundwater zone. Currently, wells drawing on shallow aquifers are prohibited by leases on parcels controlled by the US Navy, and will be prohibited by covenant on parcels transferred to City control.

Construction Dewatering. Construction of specific types of buildings or utilities may require excavation below the groundwater level, which may require pumping of groundwater to dewater excavations. Groundwater at Alameda Point is generally quite shallow, ranging in depth from approximately 4 to 8 feet below the surface. As documented in the Hazards section of this EIR (Section IV.L), existing groundwater quality data indicate that the shallow groundwater in some areas contains contaminants, and if improperly handled and discharged could result in significant impacts to the health and safety of the public or site workers that may come into contact with dewatering effluent.

Depending on the quality, the dewatering effluent may be acceptable for discharge to the storm drainage system or the sanitary sewer system. Either discharge would require proper permitting from the regulating agencies; the RWQCB for discharges to the storm drain system or surface waters and/or EBMUD for discharges to the sanitary sewer. These permitting programs are existing programs that would be expected to adequately mitigate potential impacts to water quality to a less than significant level. Proposed Policy 9.6.f encourages water quality testing of wells to determine appropriate use and discharge options for extracted groundwater.

The Geology section of this EIR includes a discussion of potential dewatering-induced ground settlements.

Alteration of Drainage Patterns. The site is relatively flat, and although the drainage patterns may be altered by the installation of storm drainage infrastructure, it is not expected that any

significant changes to the currents or course of water movements, or alteration of course or flow of flood waters would occur as part of the proposed project.

Mudflows, Seiches, and Tsunamis. The site is relatively flat and would not be expected to be affected by mudflows or other types of landslides. A damaging seiche in the Bay is a low probability event even for unprotected sites on the Bay, and therefore inundation from seiches would represent a less-than-significant impact. Alameda Point is partially protected from inundation and damage from tsunamis due to restricted hydraulic access at the Golden Gate and the area is expected to have a reduced magnitude in the event of a tsunami.

Surface Water Quality. The GPA could result in one potential impact related to water quality as discussed in significant impacts.

Flood Hazards. Implementation of the GPA could result in one impact related to flood hazards as discussed below.

Impact WATER-1: Development that would occur under the GPA may result in placement of housing within the 100-year flood hazard area or exposure of people or structures to flooding. (LTS)

As discussed above, the GPA Planning Area has not been evaluated for flood hazards by FEMA. FEMA mapping completed for areas adjacent to the site indicate that portions of Alameda Point may be susceptible to inundation during the 100-year flood. In addition, if sea level rises, as predicted by the EPA, flood magnitude and frequency at the site could increase with time, exposing people and property to unacceptable flood-related hazards in the future. Since the 100-year flood hazard zone has not been delineated at the site, it is not possible to determine what portions of the GPA Planning Area may be impacted by flooding. In addition, since the area has not been considered by FEMA, property owners may not be permitted to participate in the National Flood Insurance Program, and therefore may not be able to purchase affordable flood insurance, if needed.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Polices 9.6.b and 9.6.i would support improvement programs to address flooding issues at Alameda Point. GPA Policy 9.6.i would support preparation of a Flood Insurance Study by FEMA to cover Alameda Point.

Existing General Plan Policies. Policies 8.3.b, 8.3.e, 8.3.f, 8.3.g, and 8.3.i address flooding issues by requiring flood protection, ensuring that structures in flood plains be protected from the 100-year flood event, supporting use of waterways for flood control, using all possible means of reducing the potential for flood damage, requiring the maintenance of easements along drainage ways, and encouraging landscaping and other design features to reduce

potential effects of surface runoff. Policy 8.3.c includes monitoring EPA reports on sea level rise and coordinating with BCDC, if necessary, to design an appropriate response.

Mitigation Measure WATER-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact WATER-2: Maintenance dredging that may be undertaken to serve future uses in the vicinity of the piers and Seaplane Lagoon may cause impacts to water quality at the dredging and disposal sites. (LTS)

During dredging, sediments would be disturbed, producing a short-term increase in turbidity. Increased turbidity could affect dissolved oxygen levels by decreasing light penetration into the water and decreasing oxygen-generating photosynthesis. Alteration of dissolved oxygen levels could effect aquatic life in the water body. In addition, increased turbidity caused by dredging could mobilize pollutant-containing sediments, potentially causing short-term increases in pollutants in the water column. Appropriate dredging methods such as clamshell dredging would minimize turbidity and are feasible to use.

The three disposal options for dredged sediments identified in the LTMS include: 1) in-Bay disposal; 2) ocean disposal; and 3) upland/wetland reuse. Disposal of dredge spoils in the Bay or ocean may create water quality impacts with sediment plumes from the initial disposal event (and with the subsequent resuspension of material from the dispersive in-Bay sites).[76] Upland reuse could result in erosion and sedimentation problems and discharge of pollutants to the land and surface waters.

The LTMS, which is currently in effect, establishes a regional program that allows the regulating agencies to manage the disposal of dredge spoils using each of the three available disposal options in a way that decreases the overall environmental impacts associated with all dredging activities in the San Francisco Bay region, thereby minimizing potential cumulative impacts. The DMMO and the provisions of the LTMS provide guidance for individual dredging projects which stipulate the sediment testing criteria, periods of time dredging is allowable in particular areas to decrease potential impacts to habitat, and disposal options.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. There are no proposed GPA polices that address dredging impacts.

[76] US Environmental Protection Agency, Regional Water Quality Control Board, and Bay Conservation and Development Commission, 1998. *Long-Term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region.* October.

Existing General Plan Policies. Existing General Plan Policy 5.1.g is proposed to be revised to require all dredging to be conducted in compliance with the LTMS.

Mitigation Measure WATER-2: No mitigation measures are necessary. Implementation of the General Plan policy described above will ensure that no significant impact results.

c. Significant Impacts. The proposed GPA would result in two significant impacts as discussed below.

Impact WATER-3: Construction activities and post-construction site uses associated with buildout of the GPA could result in degradation of water quality in the Oakland Estuary and the San Francisco Bay by reducing the quality of storm water runoff. (S)

The City's NPDES permit is currently being reviewed and revised to include enhanced stormwater management requirements. In addition to other requirements, the permit will mandate the City to require all development projects to incorporate stormwater treatment controls to manage the quantity and quality of stormwater runoff generated by a development. These enhanced requirements strive to further minimize the impacts of development on water quality within the GPA planning area.

Construction activities for redevelopment of Alameda Point, such as site preparation, surface grading, and new construction, could create soil disturbances and increase erosion and sedimentation, potentially resulting in degradation of the quality of receiving waters. Chemical releases associated with construction activities and equipment operation and maintenance may also result in spills and other accidental releases of pollutants, potentially resulting in degradation of the quality of receiving waters.

New construction and intensified land uses at Alameda Point would result in increased vehicle use and potential discharge of associated pollutants. Leaks of fuel or lubricants, tire wear, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters. Runoff from the proposed common landscaped areas, turf grass areas (at the proposed golf course and parks), and residential areas may contain residual pesticides and nutrients. The proposed maritime light industry uses in the Marina District sub-area could introduce pollutants from boat maintenance and repair activities, and spills from boat fueling and waste disposal. Marina use could also result in direct discharges of contaminants to surface waters. Long-term degradation of water quality runoff from the site could impact water quality in the Oakland Estuary and the Bay.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Policies 9.6.c, 9.6.d, 9.6.h, and 9.6.j would incorporate Alameda Point into existing City, County, and RWQCB storm water programs. GPA Policy 9.3.uu would require detailed stormwater management and monitoring plans for the Northwest Territories to ensure protection of habitat for least terns and brown pelicans. GPA Policy 9.3.r would provide education and outreach to boaters and marina users to prevent discharges to surface waters.

Existing General Plan Policies. Stormwater quality is addressed in existing General Plan policies as well as proposed GPA policies. Policies 5.1.r, 5.1.s, 5.1.t, 5.1.x, and 8.3.i commit the City to participate in existing non-point source programs, to consider additional City standards (that would be more stringent than existing County standards), and to encourage landscaping and other design features to reduce the impacts of storm water drainage. General Plan Policies 5.1.w and 6.2.k address potential marina impacts.

Mitigation Measure WATER-3: Implementation of the existing and proposed policies described above will help minimize this impact. In addition, all development projects shall be required to submit and comply with an operations and maintenance plan. These plans shall include stormwater treatment controls to manage the quantity and quality of stormwater runoff. (LTS)

Impact WATER-4: Existing wells at Alameda Point could potentially become conduits for surface and groundwater contaminants to affect deeper aquifers. (S)

At least two water supply wells are present at Alameda Point, and additional wells could potentially be discovered during development in the project area. Wells that are not used or maintained may deteriorate or become damaged, potentially allowing surface water runoff, that may contain urban pollutants, to reach the groundwater table, degrading groundwater quality. In areas where the shallowest groundwater is contaminated, a damaged well could also allow contaminants from the shallow groundwater to migrate and affect deeper, uncontaminated aquifers. Proper abandonment of the wells would prevent contaminated surface and/or groundwater from affecting deeper aquifers.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Policy 9.6.e which restricts the installation of water supply wells at Alameda Point and Policy 9.6.f which supports the development of a water-quality program for all existing water supply wells would help minimize this impact.

Existing General Plan Policies. There are no existing policies that address wells specifically, but Policies 5.1.s, 5.1.t, 8.3.f, and 8.3.i relate to reducing the effects of surface runoff and would help to minimize this impact.

Mitigation Measure WATER-4: Implementation of the existing and proposed policies described above will help minimize this impact. In addition, all water supply wells that are not proposed for future use shall be properly abandoned in accordance with the California Department of Water Resources Well Standards (Bulletin 74-90). (LTS)

F. HISTORIC AND CULTURAL RESOURCES

1. Setting

This section discusses the archaeological and historical background data pertinent to Alameda Point. The discussion includes brief summaries of archival research and the archaeological, ethnographic, and historical setting for Alameda Point. The results of field and archival research are presented for both prehistoric and historic cultural resources.

Cultural resources include any object, site, area, building, structure, or place within Alameda Point that is archaeologically or historically significant or that exhibits traditional cultural value, such as properties sacred to Native Americans or other ethnic groups.

For purposes of CEQA, "historical resources" include: (1) a resource listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR); (2) a resource included in a local register of historical resources adopted pursuant to a local ordinance or resolution or included in a historical resource survey, meeting the requirements of California Public Resource Code Section 5024.1(g); or (3) any resource that the lead agency deems to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

CEQA also applies to effects on archaeological resources that are historical resources. For purposes of CEQA analysis of significant effects on the environment, an archaeological resource that is not also a historical resource must be "unique"—i.e., there must be a high probability that it: (1) contains information needed to answer important scientific research questions, and that it is the subject of demonstrable public interest; (2) has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) is directly associated with a scientifically-recognized prehistoric or historic event or person.[77]

a. Data Sources, Study Area, and Methodology. Baseline data were taken from the *NAS Reuse EIR* produced by the City of Alameda. While the studies used in the *NAS Reuse EIR* were conducted prior to 2000, these studies still reflect current conditions. City sources were consulted to update the status of historical resources.

b. Archaeological Setting. Although archaeological resources studies for the surrounding area have been ongoing since the early 1900s, relatively little work has been undertaken on the US Navy properties at Alameda. This lack of archaeological study is due to the fact that most of the facilities at Alameda Point were constructed on filled Bay lands and saltwater marshlands beginning in 1918, except for minor berm construction associated with the Southern Pacific Coast Railroad in the 1890s. No prehistoric cultural resources are likely to be located in the area.

[77] California Public Resources Code Section 21083.2(a) and (g).

In accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC. Section 3001, *et seq*., in 1996 a focused effort was made by PAR Environmental Services to locate any skeletal remains or artifact collections that might have been removed from sites within Alameda Point. NAGPRA's intent is to ensure that museums and federal agencies identify human remains and funerary items in their collections that may be affiliated with contemporary federally-recognized native peoples, and to return them as appropriate. Although no known sites were identified within Alameda Point, PAR contacted local museums that would be most likely to contain materials from Alameda. No collections were identified.

Alameda Point is situated on the northwest portion of Alameda island overlooking San Francisco Bay to the west and south. East of the Alameda Point property, the island was originally a peninsula connected to the mainland by low-lying marshlands formed by a complex system of sloughs. Coupled with the nearby sheltered coastal environment, these marshlands and their abundant resources would have been attractive to aboriginal populations.

Based on data gathered from extensive excavations of several large shellmounds in the Bay Area, it appears that occupation of this portion of the San Francisco Bay spans an extended period. Although the intensity of land use appears to have been light, Early Holocene (pre-5000 BC) use of the region has been documented at sites in nearby San Jose and Scotts Valley.[78] A second, more intensive, occupational phase appears to have occurred between 5000 and 2000 BC. During this period, the Bay region appears to have been occupied by groups of hunters and gatherers who subsisted on a variety of terrestrial, shoreline, and marsh plant and animal resources. The people who occupied the region during this time contrasted with later groups who are thought to have relied primarily on shellfish.[79,80] Although the aboriginal populations may have been impacted by fluctuating sea levels during the Holocene, the use of the region appears to have been continual until the historic period (post-1700 AD).[81]

Ethnographically, Alameda Point was occupied by the Costanoan, or Ohlone, the only Penutian-speaking group to dwell along the ocean shore. Like most California aboriginal groups, the Ohlone relied heavily on hunting and gathering. However, their traditional way of life essentially disappeared by the mid-1800s as a result of impacts incurred by the Spanish-enforced mission system, introduced diseases, and a declining birth rate.[82]

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[78] Moratto et al., 1984. *California Archaeology.*

[79] Ibid.

[80] Breschini and Haversat, 1980. *Preliminary Archaeological Report and Archaeological Management Recommendations for CA-MNT-170, on Pescadero Point, Monterey County, California.*

[81] Busby et al., 1995. *Archaeological Survey and Site Evaluation: Disposal and Reuse, Department of Defense Family Housing, Novato, Marin County, California.*

[82] Ibid.

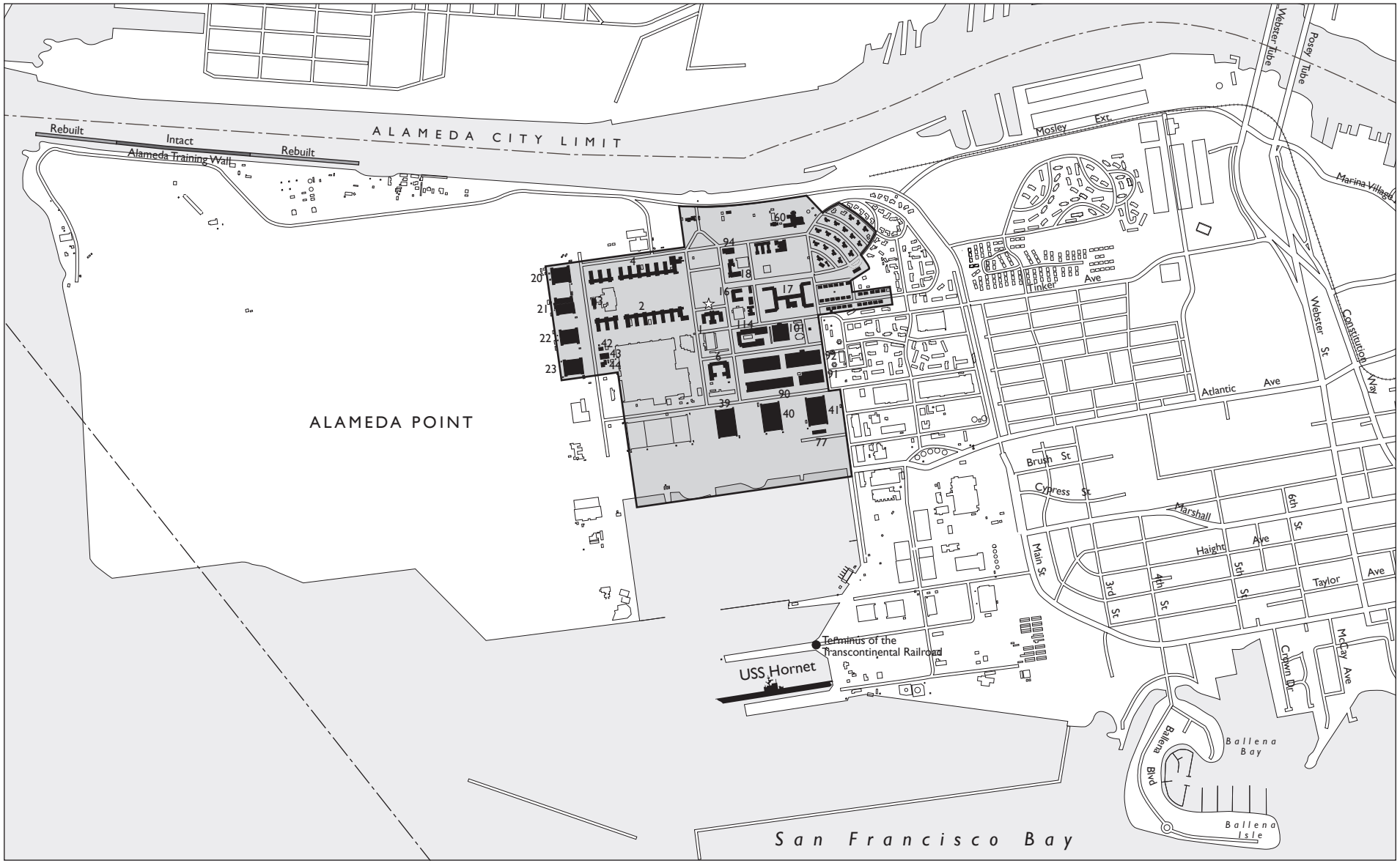
While there are no previously recorded archaeological sites within Alameda Point, numerous pre-historic sites have been identified near Alameda Point. These sites consist primarily of shellmounds containing flaked stone tools and other cultural artifacts. The nearest of these sites is on the high ground or "encinal" of Alameda, approximately 2 miles southeast of Alameda Point. The main village site on the encinal is known as Sather Mound. This 3-acre site was excavated around 1900 by an amateur archaeologist, Captain Clark, who exposed 450 human burials in three distinct layers. In addition to Sather Mound, five other village sites have been identified on the encinal.

c. Historical Setting. In 1864, the San Francisco and Alameda Railroad connected Oakland to west Alameda and to San Francisco via ferry service from its wharf built at the western tip of the then Alameda peninsula at what is now the base of Alameda Point Pier 2 (see Figure IV.F-1). For a short period, the Central Pacific Railroad used this link to San Francisco as the terminus of the Trans-continental Railroad. This western end of Alameda was subdivided and platted as Woodstock and became an early center of industry. In 1868 Samuel Orr, taking advantage of the water and rail connection, established the Alameda Oil Works which processed castor, coconut and linseed oils. In 1880, the Pacific Oil Company was established on adjacent land and began the production of petroleum products. These refineries were located on land south of Pacific Avenue and west of Main Street. They were acquired 5 years later by the Standard Oil Company, which continued to operate at this site until it moved the refinery to Richmond, California in 1903, allowing the Woodstock area to revert to agricultural use until acquired by the US Navy.

The property north of Pacific Avenue and west of Main Street was developed in the 1870s by the Pacific Coast Borax Works, which also took advantage of this rail-water link by importing borax from Death Valley by rail and exporting its products by water and rail. This facility continued operation until the property was acquired with the adjacent land, mostly in agricultural use, by the US Navy. The site of the four-story borax plant is now occupied by a building which formerly held an aircraft engine overhaul facility. The remains of the railroad wharf and ferry slip, as well as related submerged objects, were removed by dredgers in the late 1930s prior to filling this area for the construction of NAS Alameda.

The land occupied by Alameda Point consists almost entirely of engineered fill that was installed on marshlands or shallow waters within San Francisco Bay. The first documented filling of this land began sometime during the 1890s, and was specifically related to the construction of a "mole," or bermed railroad track by the Southern Pacific Railroad. Following this activity, roads and shipyards became the main improvements on the marshlands. A lithograph made in 1893 depicts a large commercial warehouse on the site, with sailing ships docked alongside in the Estuary.[83] By the late 1920s, the northern part of what is now Alameda Point had been filled and partially occupied by the Alameda Airport, a City-owned facility, and Benton Field, a minor Army Air Corps facility. The US Navy acquired Benton Field and the Alameda Airport in 1936. In 1938, the US Navy began

[83] PAR, 1996. *An Archaeological Evaluation of the Fleet Industrial Supply Center - Alameda Annex/Facility, and Navy Alameda Family Housing, Alameda County, California.*



LSA

22 Contributing Building

☆ Plaque: California Registered Historical Landmark

Alameda Point Historic District

N

0 1250 2500

FEET

SOURCE: DYETT & BHATIA, 2001

FIGURE IV.F-1

Alameda Point GPA EIR

Historical Resources

I:/IMAGES/GRAPHICS/JOBS/CIA132 ALAMEDA POINT/ILLUS/FIGURES/FIG_IVF1.AI (11/08/02)

constructing the Naval Air Station. Construction activities focused on erecting permanent buildings on the eastern half of the site and filling the southern and western portions for runway areas. Buildings constructed during World War II were considered temporary, due to their light construction. Following the War, construction activities continued to take place until the decision was made to close the base in 1993.

Two existing structures were constructed prior to 1940: Building 163 (which was constructed in 1939) and the Training Wall. In 1997, the US Navy hired JRP Historical Consulting Services to conduct an evaluation of the Training Wall, located at the edge of the Estuary and within the boundaries of Alameda Point (shown in Figure IV.F-1). The Training Wall is a rubble masonry jetty, built by the US Corps of Engineers between 1874 and 1896, to "train" the tides to scour a navigational channel between Oakland and Alameda.[84] On the basis of this evaluation, the US Navy concluded that 1,750 feet of the Training Wall are significant, retain integrity, and meet the criteria for listing in the NRHP. The Training Wall was placed on the City's Historical Building Study List in 2000.

In September 1997, the Samuel Knight Chapter of the Society for Industrial Archaeology alerted the US Navy of the possibility that the ruins of the South Pacific Coast Railroad (SPCRR) Terminal, which burned in 1902, may still exist on or near the northwest boundary of Alameda Point. Concern has also been expressed that other historic remains may exist beneath the fill on which Alameda Point was built. These remains could include portions of the former Alameda Airport, Pan American Airlines facilities, Alameda Yacht Basin and the ship hulks that were used to create it, Benton Field, the 1864 San Francisco and Alameda Railroad wharf, and other 19th century industrial development in the platted area known as Woodstock on the (then) western end of Alameda. While it is possible that remains of a portion of the SPCRR Terminal may survive submerged off the northwest corner of Alameda Point, there is no evidence of remains of any other historic uses that predate the US Navy. To the contrary, the records of the 12th Naval District, which was responsible for the acquisition, dredging, filling, and construction of Alameda Point, indicate that former property owners were provided an opportunity to remove all material, buildings, and other structures and that, prior to initiating the filling, dredge contractors were paid to remove all concrete, asphalt, building debris, and any other remaining objects and scarify all land areas. Pilings and submerged objects also were removed from water areas prior to filling to ensure even settlement of the fill material and eliminate any future obstruction to construction.

According to the SHPO, two California Registered Historical Landmark exist on Alameda Point, a commemorative plaque and the USS Hornet (see Figure IV.F-1). Located near the flagpole in front of Building 1 at Alameda Point, Landmark #968 consists of a plaque commemorating the flight of the Pan American World Airways' China Clipper that departed from the "Alameda Marina" for Manila, Philippines on November 22, 1935. The Alameda Marina was located approximately in this

[84] JRP Historical Consulting Services for Engineering Field Activity, West, Naval Facilities Engineering Command, 1997. *Guide to Preserving the Character of the Naval Air Station Alameda Historic District.* April.

area until Alameda Point was filled to create land for the base. Under the command of Captain Edwin C. Musick, the aircraft reached Manila via Honolulu, Midway, Wake, and Guam. This event was historically significant because it inaugurated ocean airmail service and commercial air flight across the Pacific Ocean. Because of its listing as a California Landmark, the plaque is automatically included in the CRHR. The plaque has been relocated to its present location for maximum visual exposure, and nothing remains of the historic site it commemorates.

The other California Registered Historical Landmark at Alameda Point is the USS Hornet, a WWII aircraft carrier moored in the Marina area. The USS Hornet is owned and operated as a museum by the Aircraft Carrier Hornet Foundation.

The buildings and structures within Alameda Point reflect three distinct periods of development: Pre-war, War, and Post-war. Most of the Pre-war buildings were constructed during 1940 and 1941 of reinforced concrete in a styling typical of commercial and industrial design from the 1930s. This style was identified as "Moderne" or modernistic by the designers. The Moderne style is defined as featuring cubistic forms and minimal detail to accentuate the forms. Influenced by the Art Deco and Streamline Moderne movements of the 1930s, the Moderne style generally is called Art Deco in popular literature in architectural history. Buildings and structures constructed during the War, between late 1941 and 1945 were, with minor exceptions, temporary or semi-permanent woodframe buildings that shared little in common with the pre-war buildings in either materials or design. Post-war buildings are notably different from both the pre-war and wartime constructions. While lacking the Moderne design qualities of pre-war structures, these buildings were far more permanent than those of the wartime era.

(1) Naval Air Station Alameda Historic District. In 1992, a comprehensive inventory of pre-1946 buildings and structures was undertaken at Alameda Point by S.B. Woodbridge. Woodbridge's work focused on determining whether any buildings at Alameda Point qualified for listing in the National Register of Historic Places (NRHP). Buildings listed in or determined eligible for listing in the NRHP are automatically included in the CRHR, after the application to the National Register has been completed and approved. The report concluded that, while no individual building qualified for listing in the NRHP, an area in the Civic Core sub-area appeared to qualify for listing as a historic district. The identified area includes 87 buildings and structures that contribute to the area's historic significance ("contributing buildings"), 35 non-contributing major buildings and many temporary or minor buildings, which do not contribute to the historical significance. The Woodbridge report further determined that no pre-1946 buildings and structures outside the boundaries of the district meet the criteria for listing in the NRHP. The historic area identified by Woodbridge (1992) was called the Naval Air Station Alameda Historic District. On September 23, 1992, the California State Historic Preservation Office (SHPO) concurred with the US Navy's findings of eligibility. The boundaries of the District and key buildings that contribute to the District are shown in Figure IV.F-1.

As a result of Woodbridge's inventory, pre-1946 buildings and structures at Alameda Point may be divided into two categories: those that contribute to the NAS Historic District's historic context and those that do not. None of the buildings or structures appear to qualify for listing in the NRHP individually. The contributing buildings and structures within the Historic District, however, collectively appear to qualify for listing in the NRHP as a historic district because, as a historic district, they convey the historic sense of place that was a World War II-era naval air station. The Historic District includes streetscapes, i.e., street patterns and landscaping, which also contribute to its significance.

Military construction between 1938 to 1945 was included in Woodbridge's inventory. The NAS Historic District includes two very different types of buildings: those built of reinforced concrete before American entry into World War II and those buildings constructed during the War, most of which were woodframe and of a temporary or semi-permanent nature. Approximately half of the contributing buildings were constructed before American entry into the War, and half were constructed during the War.

In Woodbridge's analysis, with US Navy agreement and SHPO concurrence, the NAS Historic District includes 87 contributing buildings and structures. Of these, 38 are numbered nonresidential buildings, and 49 are family housing units identified by street address. The buildings and structures considered to be contributing resources are listed in Table IV.F-1.

The NAS Historic District qualifies for the National Register on the basis of the architectural merit of the buildings as well as the site plan, which includes landscaping, street patterns, and the manner in which buildings are grouped. The Historic District comprises a variety of different functional building types, including hangars, barracks, administrative buildings, repair shops, and single-family homes. It also includes elements associated with the site plan, such as the landscaped street corridors leading from the gate to the headquarters building. The buildings within the Historic District are unified architecturally by the common use of reinforced concrete and Art Deco or Moderne detailing.

In 1997, JRP Historical Consulting Services prepared a document entitled "Guide to Preserving the Character of the NAS Historic District."[85] The purpose of the document was to identify "character-defining elements" of the Historic District to enable the Historic Advisory Board of the City of Alameda to manage the buildings of the Historic District, after conveyance, in a manner that would preserve the National Register eligibility of the Historic District. This EIR also identifies the key elements of the Historic District. The document was adopted by the Historic Advisory Board for use as the design guidelines for the Historic District.

The JRP document analyzes the Historic District as comprising five functional areas: Administrative Core, two Hangar Areas, Shop Area, and Residential Area. The Administrative Core, two Hangar Areas, and Shop Area are within the Civic Core subarea; the Residential Area is within the West

[85] Ibid.

Table IV.F-1: Contributing Buildings within the NAS Historic District

Non-Residential Structures	One-Story Officer Housing Units	Two-Story Officer Housing Units
Building 1	570 Pensacola Road	2805 Seattle Road
Building 2	550 Pensacola Road	2765 Seattle Road
Building 3	530 Pensacola Road	2825 Newport Road
Building 4	500 Pensacola Road	2815 Newport Road
Building 6	470 Pensacola Road	2801 Newport Road
Building 8	450 Pensacola Road	2765 Newport Road
Building 9	2501 Pensacola Road	2865 San Diego Road
Building 16	571 Corpus Christi Road	2835 San Diego Road
Building 17	550 Corpus Christi Road	2805 San Diego Road
Building 18	551 Corpus Christi Road	2775 San Diego Road
Building 20	530 Corpus Christi Road	2875 San Pedro Road
Building 21	531 Corpus Christi Road	2845 San Pedro Road
Building 22	500 Corpus Christi Road	2835 San Pedro Road
Building 23	501 Corpus Christi Road	2815 San Pedro Road
Building 30	470 Corpus Christi Road	2795 San Pedro Road
Building 31	471 Corpus Christi Road	2845 Pearl Harbor Road
Building 39	450 Corpus Christi Road	2825 Pearl Harbor Road
Building 40	451 Corpus Christi Road	2805 Pearl Harbor Road
Building 41	370 Corpus Christi Road	570 West Essex Drive
Building 42	371 Corpus Christi Road	
Building 43	350 Corpus Christi Road	
Building 44	351 Corpus Christi Road	
Building 60	330 Corpus Christi Road	
Building 63	331 Corpus Christi Road	
Building 75A	300 Corpus Christi Road	
Building 77	301 Corpus Christi Road	
Building 91	270 Corpus Christi Road	
Building 92	271 Corpus Christi Road	
Building 94	250 Corpus Christi Road	
Building 101		
Building 102		
Building 114		
Building 115		
Building 116		
Building 130		
Building 135*		
Building 137*		

* Slated for demolition in a 1996 Memorandum of Agreement signed by the US Navy, SHPO, and Advisory Council on Historic Preservation. These structures will likely be demolished.

Source: Woodbridge. S.B., 1992.

Neighborhoods subarea. The buildings within each area are distinctive architecturally as well as functionally. Within each area, the report identifies the most important contributing buildings. The other buildings, while recognized as contributing buildings within the Historic District, are treated as support buildings that contribute to the historic character but to a lesser degree. The document also recognizes key elements of the site plan. Table IV.F-1 identifies the contributing buildings in the NAS Historic District.

The key buildings in the Administrative Core are the Headquarters Building (Building 1), the two large barracks (Buildings 2 and 4) with their attached mess hall (Building 3), the Bachelor Officers' Quarters (Building 17), and Dispensary (Building 16). The key elements of the site plan in this area are the landscaped corridor connecting the main gate with the Headquarters Building, and the large landscaped area between the two barracks.

The key buildings in the two Hangar Areas are the seven contributing hangars (Buildings, 20, 21, 22, 23, 39, 40, and 41), and the Air Terminal Building (Building 77). The key site plan elements are the views along Monarch Street and West Tower Avenue, which front the hangars.

The Shop Area comprises buildings that are inherently support buildings. The only key building in that area is the Firehouse, Building 6. There are no key site plan elements in the Shop Area.

The Residential Area includes two groups of nearly identical buildings: two-story officers' quarters and one-story non-commissioned officers' quarters. Because the buildings are nearly identical (within each group), there are no key buildings, except for the Admiral's House. The key site plan elements in this area are the meandering streets and a small park separating the NCO and officers' quarters.

Figure IV.F-2: USS Hornet

In addition to the buildings and structures described above, the former USS Hornet, a moveable object, is a National Historic Landmark on the NRHP and is included in the CRHR. The former USS Hornet is currently berthed under a lease at Alameda Point on Pier 3, owned by a nonprofit organization, and operated as a historical museum. Figure IV.F-2 depicts the USS Hornet.

(2) Memorandum of Agreement. In 1999, the Advisory Council on Historic Preservation signed a Memorandum of Agreement (MOA) with the US Navy and SHPO. The MOA stipulates that the US Navy will prepare a National Register Nomination Form for the NAS Alameda Historic District; collect historic artifacts and records and transfer them to the National Archives Pacific-Sierra Region; establish layaway and caretaker maintenance procedures; and set interim leasing guidelines. In addition, the US Navy will plan for the long-term preservation of the District by

submitting applications for placement of the Estuary Jetties (Training Wall) and Federal Channel Historic District on the City's Historic Advisory Board Study List. In addition, the US Navy stipulated that, prior to demolition, the buildings will be documented to the standards of the Historical American Building Survey. The MOA also provides for an annual report and review to ensure that the terms of the agreement are being followed. The interim leasing guidelines of the MOA do not restrict the type of uses for the building, but require that any maintenance, repair, or adaptation to allow reuse follow specific guidelines to preserve the historical integrity of the buildings. Design guidelines for the District were adopted by the Historic Advisory Board and are contained in the *Guide to Preserving the Character of the Naval Air Station Alameda Historic District*.[86] Any changes to buildings in the District must be reviewed by the Alameda Historical Advisory Board (HAB) for consistency with the City's Preservation of Historical Monuments Ordinance. Additionally, the City of Alameda has designated the Historic District as a City Monument, a designation given to any site (including trees), building, structure, portion of a structure, or group of structures of particular historical significance to the City. Designation as a City Monument means that no alteration of the character defining elements of the District can occur without a Certificate of Approval from the HAB. Designation as a City Monument is more restrictive than placement on the Historical Building List, which only addresses the demolition of structures.

(3) Status of Cultural Resources. In summary, this analysis finds that the NAS Historic District and the Training Wall constitute historical resources under CEQA by virtue of their qualification-for-listing inclusion in the NRHP and, as a result, the CRHR. In addition, the USS Hornet and the Alameda Marina plaque both constitute historical resources by virtue of their listing as a California Landmark and, as a result, in the CRHR.

d. Regulatory Considerations.

(1) Federal Laws. Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. 470f, as amended, Pub. L. 89-515, and its implementing regulations, 36 C.F.R. Part 800, require federal agencies to consider the effects of their actions on properties listed, or eligible for listing, in the NRHP. It also requires that agencies provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on actions that will directly affect properties included in or eligible for inclusion in the NRHP. The criteria for evaluating NRHP eligibility or significance of historic properties are found in 36 C.F.R. Section 60.4. In 1999, the US Navy completed and entered into an MOA with the Advisory Council on Historic Preservation and the SHPO, thus fulfilling its legal responsibility under Section 106.

(2) State Laws. The principal State regulations relating to preserving historic and archaeological properties are Public Resources Code Section 5020 *et seq.*, CEQA Sections 21083.2 and 21084.1, and *CEQA Guidelines* Section 15064.5. CEQA mandates that significant effects to cultural

[86] Ibid.

resources be determined during the planning stage of a project. Resources that constitute historical resources or unique archaeological resources for purposes of CEQA are defined earlier in this section, under the Cultural Resources Studies section heading.

The Public Resources Code requires that the State Historical Resources Commission evaluate applications and make recommendations on applications submitted to the NRHP, conduct a statewide inventory and maintain comprehensive records of historical resources pursuant to federal and State law, and establish and develop criteria for the recording and preservation of historical resources and for the rehabilitation of historic structures. In addition the Commission must recommend the criteria and standards for acceptance of historical buildings, structures, sites, or places for registration as historical landmarks or points of historical interest and evaluate nominations to the California Register. The Commission also maintains a register which identifies historical landmarks and points of historical interest by number and description.

For purposes of CEQA, a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[87] A substantial adverse change includes physical demolition, destruction, relocation or alteration of the resource such that the significance of the resource would be materially impaired.[88] A lead agency must identify potentially feasible measures to mitigate significant adverse changes in the significance of a historical resource.[89] Generally, mitigation measures for reducing or avoiding historic resource impacts are contained in the *Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995).

CEQA also applies to significant effects on unique archaeological resources. If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts are made to leave the resources in place, or may require other mitigation subject to certain financial and timing limitations set forth by CEQA.[90] Impacts on non-unique archaeological resources need not be evaluated under CEQA.

In addition to CEQA, Section 5020 *et seq*. of the Cal. Pub. Res. Code, establishes the California Register of Historic Resources, a listing of significant historic resources in the State similar to the NRHP at the national level. NRHP listed or eligible properties are automatically listed in the California Register.

[87] California Public Resources Code § 21084.1

[88] 14 C.C.R. § 15064.5[b]

[89] 14 C.C.R. § 15064.5[b][4]

[90] California Public Resources Code § 21083.2(b) through (e).

(3) Local Laws. In 1975, the City adopted the Historical Preservation Ordinance and created the Historical Advisory Commission (which became a Board in 1990). The Ordinance established procedures for identifying and designating City Monuments and properties for the City's Historic Building List. The Alameda Municipal Code, Section 13-21.2 defines a City Monument as any site, building, structure, and/or group of structures of particular historic significance. In 1987, the City became a Certified Local Government and is required by the State to have a historical preservation ordinance and an advisory board.

The City of Alameda has designated the NAS Historic District a City Monument, and any application for demolition, structural alteration of character-defining elements, or removal of a historical monument must be submitted to the Historical Advisory Board for approval.

(4) Existing General Plan Policies. Policies from the current *General Plan* that relate to historic and cultural resources are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed General Plan amendments related to historic and cultural resources are discussed in the Environmental Analysis subsection below.

Architectural Resources

3.3.a Continue to identify quality architecture of all periods in Alameda's history and participate in programs to increase owners' and buyers' awareness of the importance of preservation.

3.3.b Consider formation of Historic Districts within which alterations to existing structures would be regulated to maintain neighborhood scale and historic character.

3.3.c Maintain strong demolition control for historic properties.

3.3.d New construction, redevelopment and alterations should be compatible with historic resources in the immediate area.

3.3.e Develop detailed design guidelines to ensure protection of Alameda's historic, neighborhood, and small-town character. Encourage preservation of all buildings, structures, areas and other physical environmental elements having architectural, historic or aesthetic merit, including restoration of such elements where they have been insensitively altered. Include special guidelines for older buildings of existing or potential architectural, historical or aesthetic merit which encourage retention of original architectural elements and restoration of any missing elements. The design guidelines to include detailed design standards for commercial districts.

3.3.f Regulate development in neighborhood business districts to maintain a street-wall, with most structures built to the property lines, entrances directly facing the sidewalk, and parking at the rear.

3.3.i Preserve all City-owned buildings and other facilities of architectural, historical or aesthetic merit. Prepare a list of these facilities and develop an Historic Facilities Management Plan that provides procedures for preserving their character-defining elements, including significant interior features and furnishings. Include in the Management Plan design guidelines or standards and a long-term program to restore significant character-defining elements which have been altered.

3.3.j Encourage owners of poorly remodeled but potentially attractive older buildings to restore the exterior of these buildings to their original appearance. Provide lists of altered buildings which present special design opportunities and make the lists widely available. Develop financial and design assistance programs to promote such restoration.

3.3.k Require that any exterior changes to existing buildings receiving City rehabilitation assistance or related to Use Permits, Variances or Design Review, or other discretionary City approvals be consistent with the building's existing or original architectural design unless the City determines either (a) that the building has insufficient existing or original design merit of historical interest to justify application of this policy or (b) that application of this policy would cause undue economic or operational hardship to the applicant, owner or tenant.

Historic and Archaeologic Resources

5.6.a Protect historic sites and archaeologic resources for their aesthetic, scientific, educational, and cultural values.

5.6.b Working in conjunction with the California Archaeological Inventory, review proposed development projects to determine whether the site contains known prehistoric or historic cultural resources and/or to determine the potential for discovery of additional cultural resources.

5.6.c Require that areas found to contain significant historic or prehistoric archaeological artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to historic and cultural resources, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to historic and cultural resources. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the *General Plan*), which includes several policies related to historic and cultural resources. Those policies are detailed below.

Alameda Point Element **[New Element]**

9.2.b Provide diverse and creative development and architectural styles to achieve distinctive neighborhoods.

9.2.h Encourage architecture and design in Alameda Point that are compatible with existing neighborhoods east of Main Street, and that do not divide the neighborhoods with the use of physical barriers.

9.3.x Preserve the Big Whites for their historical significance, and encourage surrounding development that is complementary.

9.3.bb Consider the preservation of the Admiral's House for community and City use.

9.5.g Preserve Alameda Point's Historic District, buildings, development patterns, and open spaces.

9.5.h Preserve to the greatest extent possible buildings within the Alameda Point Historic District (boundaries shown in Figure 9-8) to maintain the neighborhood and historic character.

9.5.i Provide a mechanism for timely and expedient reviews to ensure that contributing buildings in the Historic District are not left vacant and are managed in compliance with all applicable regulations. Care for contributing buildings of the NAS Historic District using the standards presented in the National Park Service Preservation Brief 31, Mothballing Historic Buildings.

9.5.j Preserve the historic sense of place of the Historic District by preserving the historic pattern of streets and open spaces in the area.

9.5.k Minimize impacts on the architectural integrity of individual contributing buildings and structures.

9.5.l Make every reasonable effort to incorporate compatible adaptive uses or uses for which the buildings were originally designed. Address impacts related to rehabilitation of historic buildings when proposals are submitted and tenants are selected. In addition, identify methods to eliminate hazardous materials (such as asbestos and lead paint), secure and protect vacant buildings, provide for fire detection and suppression, and correct deficiencies in access for people with disabilities with minimal impact on the buildings using the State Historic Building Code.

9.5.m Prepare design guidelines and specifications for new construction within and adjacent to the Historic District that ensures compatibility of new construction with the character of the Historic District.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant historic and cultural resources impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. The proposed GPA would cause a potentially significant impact to historic and cultural resources if it would:

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

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at plan buildout.

Policy Implementation. Implementation of the proposed GPA policies would have a beneficial effect. GPA Policies 9.2.h encourages architecture and design in Alameda Point that would be compatible with the existing neighborhoods to the east of Main Street and which would help integrate Alameda Point into the City. GPA Policies 9.3.x, 9.3.bb, 9.5.g, 9.5.h, 9.5.i, 9.5.j would preserve the historical integrity of Alameda Point, while GPA Policies 9.5.l and 9.5.m would allow for the adaptive reuse and new construction that is compatible and would respect the existing historical fabric.

The US Navy and the City have complied with all federal and State laws regarding historic resources at Alameda Point. The GPA would be consistent with the NAS Historic District designation and any demolition or structural alteration would be subject to approval by the Historical Advisory Board.

Plan Buildout. Buildout of the GPA would result in the less-than-significant impact described below.

Impact HIST-1: New development that may occur under buildout of the GPA could impact the character of the Historic District. (LTS)

The GPA would permit construction of new buildings and improvements within the Historic District that could impact the general character of the Historic District. However, implementation of several of the existing and proposed General Plan policies would ensure that this potential impact would remain less than significant. The applicable policies are described below:

Proposed GPA Policies. Policies 9.3.x and 9.5.m would help to minimize this impact by encouraging compatible development and design guidelines for new construction.

Existing General Plan Policies. Policies 3.3.d through 3.3.e would help minimize this impact by requiring that new construction or redevelopment be compatible with historic resources in the immediate area and the development of design guidelines to ensure protection of historic character.

Mitigation Measure HIST-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

(3) Significant Impacts and Mitigation Measures. No significant impacts related to historic resources were identified.

G. BIOLOGICAL RESOURCES

1. Setting

This section describes the biological resources at Alameda Point, including vegetation, wildlife, sensitive species, and sensitive habitats that could be affected by future development under the proposed GPA. Vegetation and wildlife are described in terms of habitat types. A discussion of applicable laws and regulations governing these resources is provided at the end of this section.

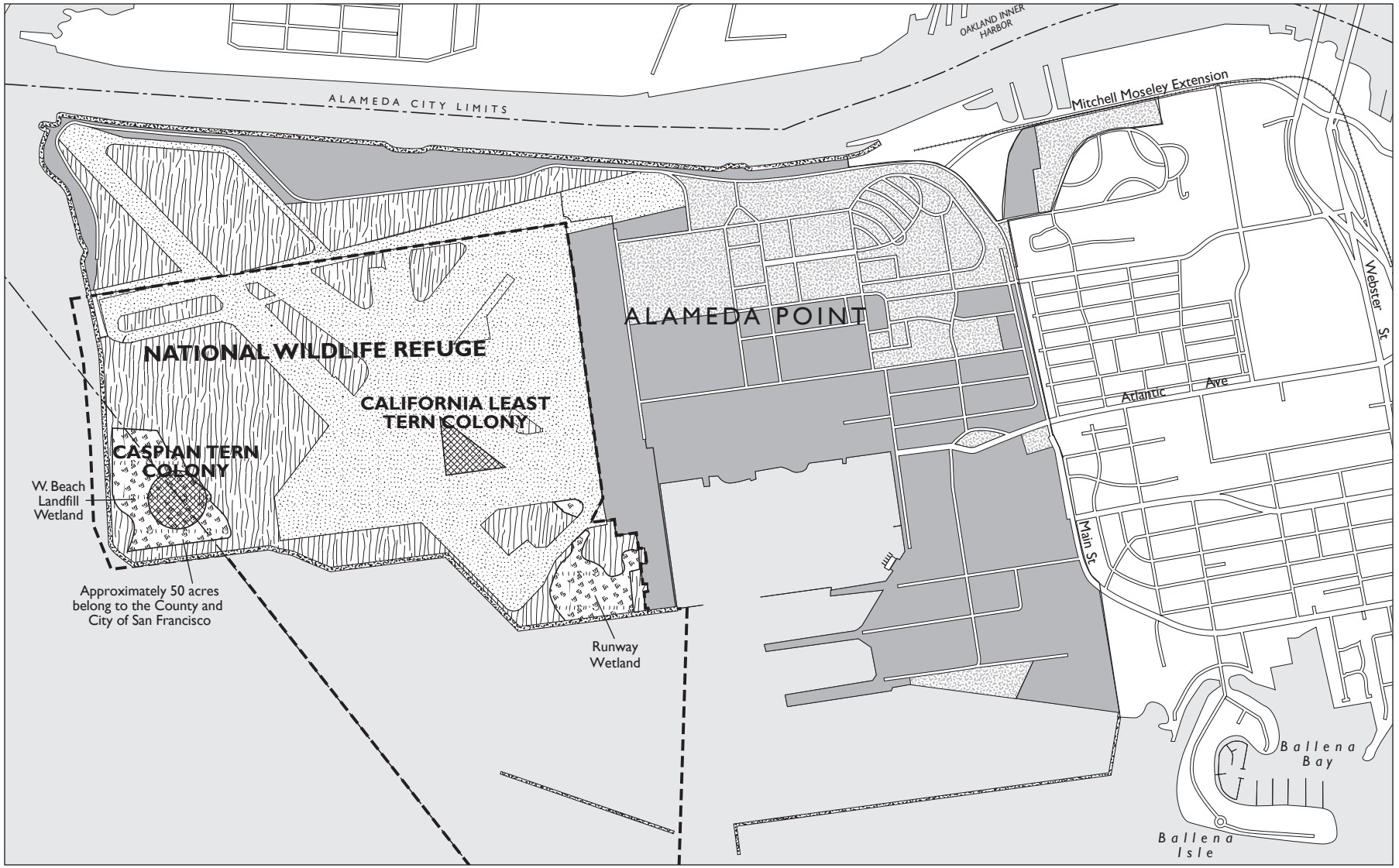
The land comprising the Wildlife Refuge subarea is being transferred by the US Navy to the US Fish and Wildlife Service (USFWS) for use as the Alameda National Wildlife Refuge. The refuge will impact the development of adjacent subareas, including the Civic Core Mixed Use Area, the Marina Mixed Use Area, and the Northwest Territories Area. This property supports one of the largest and most successful breeding colonies of the endangered California least tern (*Sterna antillarum browni*) in the State and constitutes nearly the entire breeding population of the least tern in the San Francisco Bay Area. Extended discussion of the least tern's natural history and breeding colony in the Wildlife Refuge subarea is provided in the Sensitive Species portion of this section.

a. Data Sources, Study Area, and Methodology. The study area for biological resources includes the Planning Area and adjacent bodies of water and breakwaters. An extensive literature review of biological resources was conducted for the *NAS Reuse EIR*. This section relies largely on information from the *NAS Reuse EIR*, as well as on information provided in the USFWS's *1998 Draft Comprehensive Conservation Plan for Alameda National Wildlife Refuge*. Updated information regarding occurrences of species in the Planning Area was obtained from the *California Natural Diversity Data Base* (CNDDB).[91] The CNDDB was also consulted for updated information regarding federal and State listings of sensitive species. Listings for State and federally listed endangered and threatened species are updated quarterly; other status information (such as federal species of concern and State species of special concern) was last updated by CDFG in July 2001. Finally, the Point Reyes Bird Observatory provided least tern survey information for the 2000 nesting season.

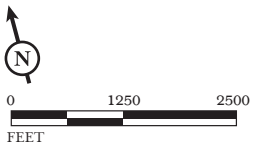
b. Vegetation. Vegetation is described in terms of habitat types rather than natural vegetation communities because Alameda Point is located primarily on bay fill land and most of the site is developed. Habitat types identified at Alameda Point include grasslands, wetlands, open water, rock breakwaters, asphalt airfield, landscaped/developed areas, and intensively-developed areas. The locations of these habitat types are shown in Figure IV.G-1. The salt marsh and grassland areas are the only areas that resemble natural vegetation communities.

(1) Grasslands. Grasslands at Alameda Point consist of mowed grassy areas on approximately 165 acres in the western portion of the station adjacent to the airfield. Grasslands exist within the proposed Wildlife Refuge and the Northwest Territories subareas. They can be classified as

[91] California, State of, Department of Fish and Game, 2001. *California Natural Diversity Database*.



LSA



Grasslands
Wetlands
Nesting Colony
Airfield/Tarmac
Riprap
Intensely Developed
Landscaped/Developed
Open Water

Sources:
US Navy. *Natural Resoure Management Plan.* Naval Air Station Alameda.
USDA Soil Conservation Service. January 1986.
Dr. Chris Kitting, Biologist, CSU Hayward, 1990.
Sandy Wylie Echeverria and Patrick J. Rutten, Inventory of Eelgrass in San Francisco /San Pablo Bays, National Marine Fisheries Service, Southwest Region, October 1989.
LSA, Biological Report, Harbor Bay Ferry Terminal, prepared for the City of Alameda, January 1990. Includes Figure 5, Proposed Ferry Approach Route (eelgrass bed locations derived from surveys), and Figure 8, Transit Locations, Pacific Aerial Photo of Ferry Approach Vicinity, June 1989.

FIGURE IV.G-1

Alameda Point GPA EIR
Environmental Resources

SOURCE: DYETT & BHATIA, 2001

I:/IMAGES/GRAPHICS/JOBS/CIA132 ALAMEDA POINT/ILLUS/FIGURES/FIG_IVG1.AI (11/08/02)

California annual grassland series, consisting primarily of nonnative grasses and other herbaceous vegetation.[92]

(2) Wetlands. There are two wetlands areas at Alameda Point that have been classified as salt marsh and brackish tidal marsh, both within the Wildlife Refuge subarea. The 22.3-acre West Beach Landfill Wetland is in the southwestern corner of Alameda Point, and the 12.7-acre Runway Wetland is southeast of the former airfield (see Figure IV.G-1). The West Beach Landfill Wetland is dominated by common pickleweed (*Salicornia virginica*) and, therefore, can be classified in the pickleweed series.[93] The vegetation at the Runway Wetland is similar to that of the West Beach Landfill Wetland.

(3) Open Water. Eelgrass (*Zostera* sp.) beds are found in the shallow waters of San Francisco Bay, off the western shore of Alameda Point. Eelgrass is a type of seagrass, which is a common marine flowering plant that grows in soft sediments. Seagrass provides many important ecological functions, such as stabilizing unconsolidated sediments, providing shelter for many organisms, and improving water quality by reducing nutrients, sediments, and pollutants from land.[94]

(4) Rock Breakwaters and Riprap. No vegetation is found at the breakwaters and riprap.

(5) Airfield/Tarmac. The airfield is the paved area within the Wildlife Refuge subarea, Northwest Territories subarea, and the northwest corner of the Civic Core subarea. The airfield is devoid of vegetation except nonnative grass species and other exotic species that inhabit disturbed areas in the cracks of the tarmac, especially at the California least tern nesting site.

(6) Landscaped/Developed Areas. The vegetation in the landscaped/developed areas of Alameda Point is characterized by ornamental species and other nonnative species in landscaped lawns and parks. These areas are primarily in the Civic Core, the West Neighborhood, and the Inner Harbor subareas.

(7) Intensively Developed Areas. The intensively developed areas consist primarily of buildings, roads, and parking lots and have little vegetation. These areas are primarily in the eastern portion of Alameda Point, such as the Civic Core, Marina District, and Inner Harbor Areas; but they also include nearly half of the Northwest Territories subarea in the west.

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[92] Sawyer, John and Todd Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society, Sacramento, California.

[93] Ibid.

[94] Williams, Susan L. and Christopher A. Davis, 1996. Population Genetic Analyses of Transplanted Eelgrass (*Zostera marina*) Beds Reveal Reduced Genetic Diversity in Southern California. Restoration Ecology Vol. 4 No. 2, pp. 163-180. June 1996.

c. Wildlife. Wildlife use all of the habitat types at Alameda Point. The primary wildlife habitats are the grasslands and wetlands near the airfield, the airfield itself, and the rock breakwaters. Most of this wildlife habitat is within the Wildlife Refuge subarea. Grasslands within the Northwest Territories subarea are also used as nesting, roosting, and foraging sites for birds. The breakwater provides habitat for birds and marine mammals. The Bay Area is a crucial nesting and foraging area and wintering ground for birds in the Pacific Flyway, which extends from South America to the Arctic Circle. Wildlife in the developed areas of Alameda Point is typical of that found in disturbed urban areas of the region and includes invertebrates, amphibians, reptiles, birds, and mammals.

(1) Grasslands. Grasslands at Alameda Point provide nesting sites and foraging areas for a variety of wildlife: the northern harrier (*Circus cyaneus*) nests in the upland areas adjacent to the wetlands and marshes. The killdeer (*Charadrius vociferus*), horned lark (*Eremophila alpestirs*), and burrowing owl (*Athene cunicularia*) have all been observed nesting in the grasslands at Alameda Point. The red-tailed hawk (*Buteo jamaicensis*), northern harrier, peregrine falcon (*Falco peregrinus*), white-tailed kite (*Elanus leacarus*), American kestrel (*Falco sparverius*), and other avian predators all prey on dove species (*Columba livia* and *Zenaida maroura*), the black-tailed hare (*Lepus californicus*), and the California ground squirrel (*Spermophilus beecheyi*) in the grasslands.[95]

(2) Wetlands. The two wetland areas in the Wildlife Refuge subarea support a variety of wildlife, especially birds, and are among the few remaining salt marshes in the Bay Area. Birds that use these salt marshes include waterfowl, shorebirds, terns, gulls, and swallows. The wetlands in the Planning Area provide birds with nesting, roosting, and foraging areas in the marsh vegetation, exposed bare ground, and aquatic and mudflat habitats. The Caspian tern (*Sterna caspia*) has nested at the West Beach Landfill Wetland. The Caspian tern nesting colony is of regional importance because this species nests at only a few other locations in California;[96] at one time the West Beach Landfill Wetland in the Wildlife Refuge subarea contained as much as 75 percent of the central California breeding population of the Caspian tern.[97,98] This Caspian tern colony in some years has appeared to be the largest Caspian tern colony on the West Coast of North America, although the number of Caspian terns nesting at the West Beach Landfill has declined over the past few years. The exact cause of this decline is unknown, but may be associated with harassment by the California and western gull or encroachment by vegetation.

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[95] Feeney, Leora R, 1994. *Base Closure—Relevant Issues and Questions. In: Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future.* Prepared by the Golden Gate Audubon Society. 1994.

[96] Bailey, Stephen F., 1994. *Waterbirds Using the Alameda Naval Air Station with Special Attention to Caspian Terns. In: Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future.* Prepared by the Golden Gate Audubon Society. March 12.

[97] Ibid.

[98] US Navy, 1993. *California Least Tern Nesting Season at the Alameda Naval Air Station—1993.* Prepared for Engineering Field Activity West, San Bruno, California. Prepared by Laura D. Collins. December.

(3) Open Water. The shallow water of San Francisco Bay and the Estuary provide important foraging habitat for the California least tern (*Sterna antillarum browni*) and the California brown pelican (*Pelecanus occidentalis californicus*), as well as for herons and shorebirds.[99] Eelgrass beds off the western shore provide important habitat for waterfowl and a nursery for various fish and invertebrates. In a six-year survey of eelgrass meadows near Alameda Point, 18 fish species and 35 epibenthic invertebrate taxa were observed within and near the eelgrass beds.[100]

Fish species frequently found in the open water of the San Francisco Bay include the topsmelt (*Atherinops affinis*), jacksmelt (*Atherinopsis californiensis*), Pacific herring (*Clupea harengus*), northern anchovy (*Engraulis mordax*), arrow goby (*Clevelandia ios*), striped bass (*Morone saxatilis*), shiner perch (*Cymatogaster aggregata*), yellowfin goby (*Acanthogobius flavimanus*), and Pacific staghorn sculpin (*Leptocottus armatus*). During the spawning migration, several chinook salmon runs, including the federally endangered winter-run chinook salmon (O*ncorhynchus tshawytscha*), enter San Francisco Bay from the Pacific Ocean, then head north to the Sacramento River.[101]

The pacific herring (*Clupea pallasii*) spawns periodically in the Estuary. Typically, the herring spawns between December and February, but spawning activity has been documented as late as mid-March.[102]

Zooplankton (microscopic invertebrates that swim or drift in water) is a necessary component of a healthy marine ecosystem, serving as a source of food for many different organisms. For example, in the San Francisco Bay, zooplankton is the preferred food for the northern anchovy (*Engraulis mordax*) and topsmelt (*Atherinops affinis*), which are an important part of the California least tern diet.[103] Based on a survey of fish dropped by California least terns at Alameda Point, approximately 25 percent were northern anchovy and 60 percent were either topsmelt or jacksmelt.[104] Dropped fish

[99] US Navy, 1986. *Natural Resource Management Plan. Naval Air Station Alameda.* Prepared by USDA Soil Conservation Service. 1986.

[100] Kitting, C.L., 1994. *Shallow Populations of Small Fishes in Local Eel Grass Meadow Food Webs.* In: *Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future.* Prepared by the Golden Gate Audubon Society. 1994.

[101] Alameda, City of, 1999. *Draft EIR for the Reuse of Naval Air Station Alameda and the Fleet Industrial Supply Center, Alameda Annex and Facility, Alameda, California.* May.

[102] California, State of, Department of Fish and Game, 1996. Pacific Herring Spawn and Juvenile Recruitment Data Sheets 1985-1996. Unpublished data, July.

[103] US Navy, 1988. *California Least Tern Foraging and Other Off-Colony Activities Around Alameda Naval Air Station During 1988.* Prepared for Department of Ornithology and Mammalogy, California Academy of Sciences, San Francisco, California. Prepared by Stephen F. Bailey. November.

[104] Hieb, K., 1994. *Pelagic Fish Community of the South and Central San Francisco Bay—Prey Source for Wildlife Using the Alameda Naval Air Station.* In: *Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future.* Prepared by the Golden Gate Audubon Society. March 12.

provides an indication of what species of fish foraging adult terns are bringing back to feed their chicks.

Most of the benthic organisms (those living on or at the bottom of a body of water) in San Francisco Bay are introduced species that generally are better adapted to changes in the water quality (the result of human use and development, salinity fluctuations, and sediment movement) in the Bay than are the native species.[105]

(4) Rock Breakwaters and Riprap. Breakwater Island, Long Breakwater, and the open water gap between the two breakwaters are important roosting, nesting, and foraging areas for water-birds and provide a haul-out site for harbor seals (*Phoca virtulina*). Although the breakwaters are outside of the Alameda Point Planning Area, the boundary of the proposed Alameda Point Wildlife Refuge includes all of Breakwater Island and abuts Long Breakwater. The majority of Long Break-water is City of Alameda property leased to the US Navy. Breakwater Island is the largest and only known night roost for the California brown pelican (*Pelecanus occidentalis*) in San Francisco Bay,[106] and is also the nesting site for the second largest colony of the western gull (*Larus occidentalis*) in central and northern California.[107] It also is a roosting site for the three local cormorant species, at least six gull species, at least eight shorebird species, and at least two species of egret and heron. The harbor seal uses the tip of Breakwater Island as a haul-out site. Haul-out sites are used for resting and pupping.[108] Breakwater Island is a favorable site for wildlife because it is relatively undisturbed (protected from human disturbance, terrestrial predators, and boats), and provides easy access to prey.[109] Long Breakwater is less desirable because of its connection to the mainland, providing access to humans and predators.

At least 25 species of waterbirds are known to forage around the gap between the breakwaters, particularly in its tidal eddies. These species include the Forster's tern (*Sterna forsteri*), Caspian tern, five species of grebe, at least seven duck species, at least two loon species, three cormorant species, the mew (*Larus canus*) and western gull (*Larus occidentalis*), and the American coot (*Fulica americana*).[110]

[105] US Navy, 1988. Op. cit.

[106] US Navy 1997. Base Cleanup Plan, NAS Alameda. Alameda, CA. Revision 03. February.

[107] Feeney, Leora R, 1994. Op. cit.

[108] Alameda, City of, 1999, op. cit.

[109] Ibid.

[110] Bailey, Stephen F., 1994. *Waterbirds Using the Alameda Naval Air Station with Special Attention to Caspian Terns. In: Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future.* Prepared by the Golden Gate Audubon Society. March 12.

(5) Airfield/Tarmac. The paved airfield includes one of the most significant biological resources in Alameda Point, the nesting habitat for a colony of the California least tern. Although the paved airfield is within the Wildlife Refuge, Northwest Territories, and Civic Core subareas, the California least tern has nested only within the Wildlife Refuge subarea. The California least tern typically nests in open, unvegetated expanses of light colored sand, dirt, or dried mud near a lagoon or estuary where it can forage. As its natural habitat has decreased or become increasingly subject to human disturbance, the California least tern has begun to use other areas (such as the airfield tarmac) with features similar to its natural habitat.

Although the California least tern has nested in several locations on the airfield in the past, it has consistently nested in one particular area each year. This 4-acre site now contains an electric fence built by the US Navy to protect the nesting tern from ground predators. The substrate of the enclosure consists of asphalt, decomposing asphalt, sand, oyster shells, cinder blocks, and drain tiles. Oyster shells create disruptions in the substrate that may make the tern less visible to predators, and cinder blocks and drain tiles establish a monitoring grid and provide the tern chicks with protection from predators and the sun.[111] The surrounding airfield consists of asphalt and low-lying vegetation that provide a buffer zone from predators. The openness of the area and firmness of the substrate restrict perching, denning, and nesting opportunities for predators.[112]

(6) Landscaped/Developed Areas. Landscaped areas around buildings, residences, and parks are used primarily by typical urban wildlife, such as the western scrub-jay (*Aphelocoma californica*), scrub jay (*Aphelocoma coerulescens*), red-winged blackbird (*Agelaius phoeniceus*), sparrow, house finch (*Carpodacus mexicanus*), American robin (*Turdus migratorius*), and California ground squirrel (*Spermophilus beecheyi*). Raptors and other predators may use these areas for foraging. Bats may also colonize in the abandoned buildings located (pallid bat (*Autrozous pallidus*) and Brazilian free-tailed bat (*Tadarida brasiliensis*)) at Alameda Point.[113] Feral cats are also found in these areas and all other terrestrial habitats.

(7) Intensively Developed Areas. Typical urban wildlife, such as the California ground squirrel, scrub jay, and American robin, may be observed in the intensively developed areas but to a lesser extent than in the landscaped/developed areas because less foraging habitat is available in these areas.

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[111] Pomeroy, Douglas R., 1994. *Management of Least Terns and Natural Resources at the Alameda Naval Air Station: The Current Program and Planning for Reuse.* In: *Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future.* Prepared by the Golden Gate Audubon Society. March 12, 1994.

[112] Collins, Laura D., 1994. *A History and Overview of Least Terns at the Alameda Naval Air Station in Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future.* Prepared by the Golden Gate Audubon Society. March 12.

[113] Constantine, Denny G. 1996. *Bat Survey of NAS Alameda and Adjacent Naval Buildings.* Letter report to Tom Leaf, Tetra Tech. January 3.

d. Sensitive Species. Sensitive species include those that are listed or proposed for listing by the USFWS or the CDFG as endangered, threatened, or rare; candidate species for listing; species of concern; and species of special concern. Also included as sensitive species are plants listed by the California Native Plant Society (CNPS) as rare or endangered. Sensitive species are provided varying levels of legal protection under the Federal[114] and/or State[115] Endangered Species acts, depending on their classification. Table IV.G-1 lists sensitive plant and animal species that have been or may be found within Alameda Point. Most of the potential habitat for sensitive species is on the Wildlife Refuge.

(1) Sensitive Plants. No sensitive plants are known to occur at Alameda Point, and none have been found in previous surveys of the site. Alameda Point is highly urbanized, and there is only a minimal amount of natural vegetation on the site. Nine sensitive plants have the potential to be found at Alameda Point because they have been observed within a 1-mile radius of Alameda Point. Of these nine species, seven are unlikely to grow there because there are no suitable habitats. The two remaining species, Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *palustris)*, a CNPS List 1B plant, and marsh gumplant (*Grindelia stricta* var. *angustifolia)*, a CNPS List 4 species, could grow in the salt marshes of the Wildlife Refuge subarea but are unlikely due to its developed nature.[116] Although Alameda Point was surveyed as recently as 1991 for Point Reyes bird's beak, this species has not been seen in Alameda since 1917.[117]

(2) Sensitive Animals. Fourteen sensitive animal species have been observed at Alameda Point. Most of the habitat for these species is within the Wildlife Refuge. The California least tern and California brown pelican are federally- and State-listed endangered species that have been observed at Alameda Point. The American peregrine falcon, a State-listed endangered species that was delisted from federally-endangered species status in 2000, has also been observed at Alameda Point. The Steller sea lion (*Eumetopias jubatus*), a federally-listed threatened species, was seen once in the San Francisco Bay near Alameda Point.[118] The presence of Steller sea lions in the vicinity of the site is unusual and no important breeding sites or haul-out sites are found at Alameda Point.

[114] 16 U.S.C. § 1531, *et seq*.

[115] California Fish and Game Code § 2050, *et seq*.

[116] US Navy, 1993d. *Naval Air Station Alameda WET Analysis.* Prepared for United States Navy and PRC via Kinnetic Laboratories, Inc. Prepared by the Habitat Restoration Group. October 1.

[117] California, State of, Department of Fish and Game, 2001. *California Natural Diversity Database.* January 13.

[118] US Fish & Wildlife Service, 1998a. *Draft Comprehensive Conservation Plan for Alameda National Wildlife Refuge.* December.

Table IV.G-1: Sensitive Species Known to Inhabit or Potentially Inhabiting Alameda Point and Surrounding Waters

Common Name Scientific Name	Status (Federal/State/ CNPS)	Habitat	Occurrence
Plants			
Adobe sanicle *Sanicula maritima*	--/--/1B	Chaparral, coastal prairies, meadows, valley and foothill grasslands; clay serpentinite	U
Marsh gumplant *Grindelia stricta var. angustifolia*	--/--/4	Marshes and swamps (coastal salt)	U
Santa Cruz tarplant *Holocarpha macradenia*	--/SE/1B	Coastal prairies, valley and foothill grasslands; often clay	U
Contra Costa goldfields *Lasthenia conjugens*	FPT/SE/1B	Mesic valley and foothill grasslands, vernal pools; alkali, clay-based soils	U
Alkali milk-vetch *Astragalus tener* var. *tener*	–/CSC/1B	Playas, valley and foothill grasslands (adobe clay), vernal pools (alkaline)	U
Kellogg's wedge-leaved horkelia *Horkelia cuneata* ssp. *sericea*	--/--/1B	Closed-cone coniferous forest, coastal scrub, chaparral (maritime); sandy or gravelly openings	U
Point Reyes (Northcoast) bird's beak *Cordylanthus maritimus* ssp. *palustris*	--/--/1B	Coastal salt marshes, coastal dunes	U
Robust spineflower[a] *Chorizanthe robusta* var. *robusta*	SE/--/1B	Openings of cismontane woodlands and in sandy soils of coastal dune and coastal scrub habitats; generally blooms from May-September	U
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	--/--/1B	Coastal bluff scrub, coastal dunes, and coastal prairie; occurs in sandy soils on terraces and slopes; generally blooms April-June	U
Fish			
Green sturgeon *Acipenser medirostris*	--/CSC/--	Fresh and brackish water feeder on amphipods and shrimp.	P
Steelhead *Oncorhynchus mykiss*	FT/CSC/--	Spawns in coastal streams in fall and winter and can migrate extensively at sea	P
Winter-run chinook salmon *Oncorhynchus tshawytscha*	FE/SE/--	Anadromous (ascends rivers in cooler months to spawn) in sea and coastal streams	P
Longfin smelt *Spirinchus thaleichthys*	--/CSC/--	Anadromous	P
Tidewater goby *Eucyclogobius newberryi*	FE/CSC/--	Brackish water habitats along the California coast; shallow lagoons and lower stream reaches	U
Birds			
California brown pelican *Pelecanus occidentalis californicus*	FE/SE/--	Coastal; rarely found on fresh water	C
Double-crested cormorant *Phalacrocorax auritus*	–/CSC/--	Nests along coastal cliffs and offshore islands, usually on ground with sloping surface or in tall trees along lake margins	C
California clapper rail *Rallus longirostris obsoletus*	FE/SE/--	Saltwater marshes traversed by tidal sloughs in the vicinity of San Francisco Bay	P

Table IV.G-1 *continued*

Common Name Scientific Name	Status (Federal/State/ CNPS)	Habitat	Occurrence
Western snowy plover, coastal population *Charadrius alexandrinus nivosus*	FT/CSC/--	Sandflats and alkali ponds	CO
Western gull *Larus occidentalis*	--/S*/--	California coast; casual inland	C
California least tern *Sterna antillarum browni*	FE/SE/--	Breeds in colonies on bare or sparsely vegetated, flat substrates, such as sand beaches, alkali flats, landfills, and paved areas	C
Caspian tern *Sterna caspia*	–/*/--	Coasts and inland lakes, rivers, and marshes	C
Northern harrier *Circus cyaneus*	--/CSC/--	Marshes, meadows, and grasslands	C
Merlin *Falco columbarius*	--/CSC/--	Open woods, wooded prairie, marshes, and grasslands	CO
American peregrine falcon *Falco peregrinus anatum*	–/SE/--	Open wetlands near cliffs	CO
Burrowing owl *Athene cunicularia*	--/CSC/--	Grasslands where ground squirrels are present, open country of golf courses, road cuts, and airports	C
California horned lark *Eremophilia alpestris actia*	–/CSC/--	Dirt fields, gravel ridges, and shorelines	C
Loggerhead shrike *Lanius ludovicianus*	--/CSC/--	Scrub and open woodland	C
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	--/CSC/--		P
Alameda song sparrow *Melospiza melodia pusillula*	--/CSC/--		C
California black rail *Laterallus jamaicensts coturniculus*	--/ST/--	Salt marshes, mostly those bordering large bays; prefers heavy growth for cover, mainly pickleweed (Salicornia spp.); also found in some brackish and freshwater marshes and emergent wetlands, wetlands although mostly near tidal sloughs	P
White-tailed kite *Elanus leucurus*	--/S*/--	Open grasslands, meadows, or marshes for foraging in proximity to isolated dense-topped trees for nesting and perching.	U
Mammals			
Salt marsh wandering shrew *Sorex vagrans halicoetes*	--/CSC/--	Bogs, wet meadows, along streams in forests	U
Pacific western big-eared bat *Corynorhinus townsendii townsendii*	--/CSC/--	Caves, mine tunnels, and buildings for roosts	P
Pallid bat *Aatrozous pallidas*	--/CSC/--	Grasslands, forests, deserts, roosts in buildings, bridges, rocky areas.	P
Greater western mastiff bat *Eumops perotis californicus*	--/CSC/--	Roosts on or in buildings, crevices in cliffs, in trees, and in tunnels	U
Steller sea lion *Eumetopias jubatus*	FT/--/--	Chiefly marine but sometimes rivers	CO

Table IV.G-1 *continued*

Common Name Scientific Name	Status (Federal/State/ CNPS)	Habitat	Occurrence
Salt marsh harvest mouse *Reithrodontomys raviventris*	FE/SE/--	Pickleweed marsh of San Francisco Bay and its tributaries	U
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/CSC/--	Heavy chaparral, streamside thickets, deciduous or mixed woods	U
Reptiles			
Western pond turtle *Clemmys marmorata*	--/CSC/--	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation	P
Insects			
Monarch butterfly *Danaus plexippus*	--/S/--	Winter roost sites extend along the coast from northern Mendocino to Baja California; roosts are typically located in wind-protected tree groves of Eucalyptus, Monterey Pine or Cypress trees with a source of nectar and water nearby	CO

[a] Historical occurrences only, thought to be extirpated from the area.

Notes:

Federal Status
FE = Endangered
FT = Threatened
FC = Candidate (formerly C1)
FPE = Proposed endangered
FPT = Proposed threatened

State Status
SE = Endangered
ST = Threatened
SR = Rare
CSC = California species of special concern
S* = Regionally important , protected under CEQA

CNPS (California Native Plant Society)
List 1A = Presumed extinct in California
List 1B = Rare and endangered in California and elsewhere
List 3 = Need more information – a review list
List 4 = Limited distribution - a watch list

Occurrence at NAS Alameda/FISC Alameda
C = Confirmed
CO = Confirmed occasional visitor
P = Possible
U = Unlikely

Sources: CDFG, 2001a; CDFG, 2001b; CDFG, 1999; and the following sources, as cited in City of Alameda, 2000: (Burt, 1980; California Department of Fish and Game, 1994b, 1995, 1996a, 1996b, 1996c, 1998; Eschmeyer and Hammann, 1983; Hickman, 1993; National Geographic Society, 1987, Skinner and Pavlik, 1994;US Navy, 1994a, 1995a; US Fish and Wildlife Service, 1994b, 1995a, 1995b, 1996.)

Fourteen additional sensitive animal species have the potential to inhabit Alameda Point. Of these, five sensitive mammals and one fish species are unlikely to be found at the site because of geographic or habitat limitations or because these species have not been observed during extensive surveys.

California Least Tern. The sensitive species of particular concern is the federally- and State-listed endangered California least tern. This species courts, nests, raises young, forages, and roosts in Alameda Point. The tern colony, which is located in the proposed USFWS Wildlife Refuge, is the northernmost breeding colony along the California coast and currently the only substantial colony in San Francisco Bay.[119] The colony was one of the major reasons for the USFWS's request for transfer of a portion of Alameda Point to become part of the San Francisco Bay National Wildlife Refuge.

[119] Ibid.

The California least tern uses the airfield for nesting and the open water for foraging. The tern nests mainly within a 4-acre enclosure on the airfield. It has been observed foraging most often in San Francisco Bay, along the southwestern boundaries of Alameda Point. The least tern is migratory; it arrives at Alameda Point from mid-April to mid-June, nests from early May to early July, and departs in mid-August.[120] Each year, particularly recently, pairs of terns at Alameda Point have produced high numbers of fledglings, and thus have added a large number of potential new breeders to the Statewide population. The colony of California least terns at Alameda Point can be considered a "source" population in that the reproductive success at this site exceeds mortality. As such, this colony contributes to breeding populations in other areas of California.[121] The importance of this site is especially critical during El Niño years, when southern sites from Los Angeles to the Mexican border experience breeding failure due to a reduced availability of cool water fish species that are the typical prey for terns. During El Niño years, warm water moves north from equatorial regions in the Pacific Ocean. This increase in water temperature either forces cool water fish species to move north or interferes with the breeding of the fish that remain. Therefore, fewer small fish are available for the tern to feed chicks at the southern nesting sites. Because Alameda Point is farther north than these other breeding sites, it is less affected during El Niño years.[122]

The primary problems that result in breeding failure of the California least tern are predation and human-related disturbance. The adjacent land uses that contribute most to these problems are large areas of heterogeneous prey- and predator-supporting habitat, nearby buildings and other human-associated structures, relatively close residential areas, and adjacent frequently-used recreation areas. While Alameda Point does include these land use types, none of them is immediately adjacent to the least tern colony. To overcome the impacts of these factors on breeding success of the least tern colony, management efforts have included protective fencing both around the colony and on the eastern boundary of the Wildlife Refuge subarea and predator control measures. Currently, the Point Reyes Bird Observatory conducts weekly surveys of the colony during nesting season. In the year 2000 breeding season, there were 312 least tern nests on Alameda Point, with an estimated 280 pairs and about 200 fledglings.

California Brown Pelican. A large colony of the California brown pelican, a federally- and State-listed endangered species, roosts at Breakwater Island. Breakwater Island and the adjacent bay provide both food and roosting sites, the limiting resources for brown pelicans during the nonbreeding season. The pelicans eat small surface-schooling fish, primarily anchovy. Shallow water

[120] Ibid.

[121] US Fish and Wildlife Service (USFWS), 1999. *Endangered Species Formal Consultation on the Proposed Naval Air Station Alameda/Fleet and Industrial Supply Center Alameda Disposal and Reuse, Alameda County, California.* USFWS Reference No. 1-1-98-F-2. Written communication. US Department of the Interior, Sacramento Fish and Wildlife Service Office, Sacramento, California. March 22.

[122] US Navy, 1995c. *California Least Tern Foraging and Other Off-colony Activities Around Alameda Naval Air Station During 1993.* Prepared for Engineering Field Activity West, San Bruno, California. Prepared by Laura D. Collins and Leora R. Feeney. August.

foraging may be particularly important to the young pelican that has not yet perfected the aerial plunge dive used by the adult pelican on the outer coast. The breakwater is the largest roost, and the only known night roost in the San Francisco Bay Area.[123] The brown pelican roosts to rest, to maintain body temperature, and to socialize. Roosting requires a dry location that is near food and a buffer from predators and humans. Breakwater Island provides quality habitat for roosting because of its isolation.

American Peregrine Falcon. The American peregrine falcon, a State-listed endangered species, uses Alameda Point to forage in the grasslands and ruderal areas between the runways, but nests off-site at the Bay Bridge.[124] The frequency of peregrine falcon visits to Alameda Point is occasional.[125]

Winter-Run Chinook Salmon. During the spawning migration, the federally- and State-listed endangered winter-run chinook salmon enters San Francisco Bay from the Pacific Ocean, then heads north to the Sacramento River. The salmon returns through central San Francisco Bay to the ocean as year-old juveniles.[126] Adults typically concentrate in waters around Angel Island and Tiburon.[127] Adults and juveniles are believed to travel between the Sacramento River system and the Pacific Ocean via the most direct route, which is north of Alcatraz Island. The winter-run chinook salmon may occasionally stray from its migration route into the vicinity of Alameda Point.

Other Sensitive Species Observed at Alameda Point. Three sensitive bird species besides the California least tern nest in the Wildlife Refuge subarea. The western snowy plover (*Charadrius alexandrinus nirvosus*), a federally threatened species and a California species of special concern (CSC), will often share habitat with the least tern, and individual snowy plovers have nested within the least tern nesting site.[128,129,130] However, the Wildlife Refuge subarea is not within proposed or

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[123] US Navy and Tetra Tech, Inc., 1997. *Biological Assessment for Disposal and Reuse of Naval Air Station Alameda and Fleet and Industrial Supply Center, Alameda Facility and Annex, Alameda, California.* September.

[124] ARRA, 1994. *NAS Alameda Community Reuse Plan, Reconnaissance Phase Report*. Prepared by EDAW, Inc.

[125] US Navy, 1993d. *Op. cit.*

[126] US Army Corps of Engineers, 1992. *Environmental Assessment, Oakland Inner Harbor 38-foot Separable Element of the Oakland Inner Harbor Navigation Improvement Project.*

[127] Ibid.

[128] Collins, Laura, 1996. Biologist, communication with Tetra Tech, Inc. December 17.

[129] US Navy, 1993c. Annotated List of Waterbirds of the Naval Air Station—Alameda. Prepared by Stephen F. Bailey, assisted by Laura D. Collins. March 6, 1983.

[130] Feeney, Leora R, 1994. Base Closure—Relevant Issues and Questions. In: Proceedings of Alameda Naval Air Station's Natural Resources and Base Closure Planning for the Future. Prepared by the Golden Gate Audubon Society. March 12, 1994.

designated critical habitat for the snowy plover. The burrowing owl, also a CSC, nests in the grasslands adjacent to the West Beach Landfill Wetland. This species nests in ground squirrel burrows and forages in the grasslands. The northern harrier, another CSC species, nests in the West Beach Landfill Wetland and forages in both salt marsh areas and the adjacent grasslands.

Although the Caspian tern and the western gull have no federal or State sensitive designations, they are considered to be sensitive species because of the size of the populations that nest in the vicinity of Alameda Point. The nesting colonies of the Caspian tern and western gull in the West Beach Landfill Wetland are the largest such colonies in the Bay Area. Nests and eggs are protected under the California Fish and Game Code (Section 3503). These nesting colonies are of regional significance and therefore are considered in this evaluation.

CSCs that have been observed foraging within 1 mile of Alameda Point include the double-crested cormorant (*Phalacrocorax auritus*), merlin, California horned lark, and loggerhead shrike (*Lanius ludovicianus*).[131]

Monarch Butterfly. The monarch butterfly (*Danaus plexippus*) is not a federally- or State-listed endangered or threatened species, nor is it considered a Species of Special Concern by the CDFG. The overwintering habitat is of most concern in California because of the increase in removal or degradation of suitable areas. Every fall, the monarch flies to the same overwintering sites and frequently to the same trees. In California, the butterfly clusters in these sites from about October through February. Removal of the trees or alterations to the grove where the butterfly overwinters could disrupt the lifecycle of those particular butterflies that annually use the area.

The monarch butterfly migrates every fall to overwintering sites in California and Central Mexico. In California, these sites are primarily eucalyptus (*Eucalyptus sp.*) or Monterey pine (*Pinus radiata*) groves and are occupied by the monarch butterfly generally between the months of October and February. Preferred groves are often located within canyons or other drainages that provide shelter from the wind and a source of water for the monarch butterfly. Two other types of migration sites are also important to the monarch butterfly: autumnal roost sites and nectaring bivouacs. Autumnal roost sites generally host smaller populations of the monarch, and may be used for only a few weeks or a couple of months in the fall and early winter as the butterfly passes through an area. Nectaring bivouacs often support a consistent flow of the monarch as the butterfly moves to and from cluster sites located elsewhere.

There is a grove of trees in the West Neighborhood subarea where monarch butterflies have been observed in fairly dense concentrations in the fall. The grove of trees is a mixture of Monterey pine, stone pine, and eucalyptus. The grove is in a park-like area between the houses that front on

[131] Feeney, Leora R., and Laura D. Collins, 1993. Partial Lists of Mammals, Reptiles, Birds, and Fishes of the Naval Air Station, Alameda. Prepared for the Environmental Clean-up and Restoration Committee serving the East Bay Conversion and Reinvestment Commission. October 16.

Barber's Point Road and Pearl Harbor Road. The trees are kept trimmed up to the canopy and the understory consists of manicured lawn. The butterfly could be using these trees as autumnal roost sites because it has not been observed in large densities during the winter months.

e. Sensitive Habitats. Wetlands are important because they perform significant biological functions, such as providing nesting, breeding, foraging, and spawning habitat for a variety of resident and migratory animal species.[132] Wetlands are defined by the COE regulations as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[133] The vegetation and wildlife at the two wetland areas (salt marshes) on Alameda Point are described below.

The West Beach Landfill Wetland was used as a landfill from 1952 though 1978. A large berm was installed in 1986 to contain contaminants in the landfill. Open water observed in the wetland originates from seasonal ponding of precipitation, tidal saltwater that enters the landfill from San Francisco Bay through a 36-inch culvert, and ground water. There are 16.9 acres of brackish marsh plant community and 5.4 acres of open water less than 6.6 feet deep at West Beach Landfill Wetland, and this wetland's most significant function is seasonal wildlife use by wintering and migrating waterfowl.

The Runway Wetland, located in the proposed Wildlife Refuge, is bordered by runways to the west and north, a building to the east, and a seawall along San Francisco Bay to the south. The wetland includes brackish marsh and open water. The Runway Wetland's most significant function is for migrating and wintering birds.

f. Regulatory Considerations.

(1) US Fish and Wildlife Service. The USFWS has jurisdiction over formally-listed threatened and endangered species under the federal Endangered Species Act. This Act protects listed animal species from harm or "take", which is broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". An activity can be defined as a "take" even if it is unintentional or accidental.[134] Listed plant species are provided more limited protection. In California, an activity on private lands will violate Section 9 of the Federal Endangered Species Act if a federally listed plant species is intentionally removed, damaged, or destroyed.

[132] US Army Corps of Engineers, Regulatory Program Regulations 33 CFR § 320.4.

[133] 33 CFR § 328.3(b) [1984].

[134] Mueller, T.L., Esq. *Guide to the Federal and California Endangered Species Laws.* Planning and Conservation League Foundation, Sacramento, California. 1994.

An endangered species is one that is considered to be in danger of becoming extinct throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. In addition to endangered and threatened species, which are legally protected under the federal Endangered Species Act, the USFWS maintains a list of proposed species and candidate species. Proposed species are those for which a proposed rule to list them as endangered or threatened has been published in the Federal Register. Candidate species are those for which the USFWS has on file sufficient information on biological vulnerability and threats to support proposals to list them as endangered or threatened. Federal candidate species are specifically included on a list published in the *Federal Register*. Federal species of concern are those that were formerly classified as category 2 candidate species. These species may become candidate species in the future, but existing information is not sufficient to assess biological vulnerability and threats. Federal candidate species and species of concern are not afforded legal protection under the Endangered Species Act.

(2) California Department of Fish and Game. The California Department of Fish and Game (CDFG) has jurisdiction over state-listed rare, threatened, and endangered species under the state Endangered Species Act. This Act protects listed plant and animal species from harm or "take."

The State also identifies special-status wildlife on its lists of Species of Special Concern and Fully Protected and Protected Species. These species are not afforded legal protection under the State Endangered Species Act. Fully Protected and Protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or the Department of Fish and Game.

(3) US Army Corps of Engineers. Under Section 404 of the Clean Water Act, the US Army Corps of Engineers (Corps) is responsible for regulating the discharge of fill material into waters of the United States. Waters of the US and their lateral limits are defined in 33 CFR Part 328.3(a), and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the US are termed "isolated wetlands" and, in many cases, are also subject to Corps jurisdiction.

In general, a Corps permit must be obtained before placing fill in wetlands or other waters of the US. The type of permit depends on the acreage involved, the types of wetlands or other waters, and the purpose of the proposed fill. In many cases, fills of less than 3 acres can be covered by existing Nationwide Permits, which do not require public review, but in some cases require mitigation and review by selected agencies. An Individual Permit is required for projects that result in more than a "minimal" impact on wetlands or other waters. Individual Permits require evidence that wetland impacts have been avoided to the extent possible, and also require that the permits be available for review by the public.

(4) Regional Water Quality Control Board. Pursuant to Section 401 of the Clean Water Act, projects that require Corps Individual Permits and many Nationwide Permits must obtain water quality certification from the Regional Water Quality Control Board (RWQCB). This certification

ensures that the Project will uphold state water quality standards. The RWQCB may impose mitigation requirements even if the Corps does not.

(5) Existing General Plan Policies. Policies from the current *General Plan* that relate to biological resources, are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed General Plan amendments related to biological resources are discussed in the Environmental Analysis subsection below.

Open Space for the Preservation of Natural Resources

5.1.a Preserve and enhance all wetlands and water-related habitat.

5.1.b Protect open space habitat areas, including sensitive submerged tidelands areas (mudflats) and eelgrass beds, from intrusions by motorized recreational craft, including jet skis and hovercraft.

5.1.c Continue to prohibit filling of water-related habitat except in those limited cases in which a strong public need clearly outweighs the habitat preservation need, and where approval is granted by the appropriate agencies.

5.1.d Preserve buffers between wetlands and urban uses.

5.1.e Continue to preserve and maintain all lagoons as habitat as well as visual and compatible-use recreational resources.

5.1.j Use the City of Alameda Street Tree Management Plan as the guiding reference when considering action which would affect the trees contained in the urban forest.

5.1.l Work with local recreation groups to disseminate information regarding the sensitivity of Open Space - Habitat areas to intrusions by motorized craft.

5.1.m Post and maintain signs warning boaters and users of motorized craft that they are approaching a wildlife area.

5.1.n Inventory existing wetlands and water-related and other habitats to create a comprehensive map of sensitive biological and botanical resources, to better protect these resources.

5.1.o Complete the Bayview Shoreline Preserve Improvement Plan.

5.1.p Require that proposed projects adjacent to, surrounding, or containing wetlands be subject to a site-specific analysis which will determine the appropriate size and configuration of the buffer zone.

5.1.t Consider adopting City standards in addition to those adopted by the County, to deal with non-point source water pollution problems such as sheet flow storm runoff and sedimentation affecting sensitive water habitats.

5.1.v Participate in the identification of agencies responsible for the cleanup of toxic materials within the Oakland Estuary, and support them in their efforts.

5.1.w Require new marinas and encourage existing marinas to provide easily accessible water disposal facilities for sewage and bilge and engine oil residues.

5.1.x Prevent mitigation of runoff off-site or into wetland areas and water-related habitat by requiring that proposed projects include design features ensuring detention of sediment and contaminants.

5.1.bb Require a biological assessment of any proposed project site where species or the habitat of species defined as sensitive or special status by the California Department of Fish and Game or the US Fish and Wildlife Service might be present.

Open Space for the Managed Production of Resources

5.2.a Protect and preserve Bay waters and vegetation as nurseries and spawning grounds for fish and other aquatic species, both as a part of habitat preservation and to encourage continued use of the Bay for commercial fishing production.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to biological resources, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to biological resources. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the *General Plan*), which includes several policies related to biological resources. Those policies are detailed below.

Open Space and Conservation Element

~~*5.1.f Urge the NAS to promptly clean up toxic materials found on-site.*~~ **[Policy is proposed to be deleted]**

5.1.g Conduct all dredging in compliance with the Long Term Management Strategy, Management Plan, prepared by the USACE, USEPA, BDCD, and SFRWQCB. **[Amended Policy]**

5.1.dd Develop and implement planting and herbicide, pesticide, and fertilizer application plans, including a pesticide drift control plan, for the golf course and public open space area. **[New Policy]**

Alameda Point Element **[New Element]**

9.3.e Ensure that development is consistent with the recommendations developed to implement the Wildlife Refuge Impact Area, mapped in Figure 9-5.

9.3.k Create a mixed-use area that is sensitive to the restrictions and recommendations regarding the neighboring Wildlife Refuge.

9.3.m Limit housing development in the Marina district to the eastern and northeastern portions of the marina to avoid proximity to the Wildlife Refuge.

9.3.n On the western shore of the marina, encourage industrial and marine-related industrial uses that are consistent with the Public Trust and sensitive to the Wildlife Refuge.

9.3.o Ensure that development is consistent with the recommendations developed to implement the Wildlife Refuge Impact Area, as mapped in Figure 9-5.

9.3.q Educate boat owners and users of the marina about restrictions to Breakwater Island and install signs that warn boaters about the sensitivity of the wildlife at and around Alameda Point and about prohibitions for disturbing protected bird and mammal species.

9.3.r Provide signs, pamphlets, public education and outreach activities advising boaters and marina users to eliminate any discharges or pollutants to receiving waters.

9.3.dd Incorporate recommendations and regulations regarding the Wildlife Refuge into development in the Northwest Territories.

9.3.hh Explore using elements of the golf course design such as roads, retention/drainage collection ponds, or bunkers as physical barriers between the golf course and the Wildlife Refuge.

9.3.ii Maintain grassland foraging areas for raptors in the golf course design.

9.3.jj Ensure that development is consistent with the recommendations developed to implement the Wildlife Refuge Impact Area, as mapped in Figure 9-5.

9.3.kk Help maintain a Wildlife Refuge that balances natural conservation with public access, education, and ship navigation.

9.3.ll Support implementation of the US Fish and Wildlife Service's Comprehensive Conservation Plan for Alameda National Wildlife Refuge (1998).

9.3.rr Prepare and adopt development regulations that implement the Biological Opinion (1999) prepared by the US Fish and Wildlife Service to guide development within the Wildlife Refuge Impact Area (see Figure 9-5). Ensure that the regulations contain specific requirements regarding, but not limited to:

- *Building size, height, design and location;*
- *Appropriate uses adjacent to the Refuge;*
- *Predator management;*
- *Parking restrictions;*
- *Lighting provisions;*
- *Landscaping restrictions; and*
- *Stormwater management.*

Ensure that development in all areas adjoining the Wildlife Refuge adheres to the Wildlife Refuge Management Plan's guidelines regarding pets, predator control and landscaping.

9.3.ss Encourage funding and implementation of the Comprehensive Conservation Plan by the US Fish and Wildlife Service.

9.3.tt Work with the US Fish and Wildlife Service and the US Department of Agriculture Wildlife Services, to develop informational materials and an educational program for occupants in Alameda Point and marina users or tenants describing the importance of animal control for protection of the least tern colony.

9.3.uu Develop detailed stormwater management and monitoring plans for the Northwest Territories in coordination with the US Fish and Wildlife Service to protect open-water foraging areas for least terns and brown pelicans. Ensure that the plans are reviewed and approved by the Service contemporaneously with the City environmental review process and prior to development within this area.

Water Quality and Flooding Hazards Element

9.6.a Integrate the management of Alameda Point's runoff management into the City's existing programs.

9.6.b Support improvement programs that address water quality, urban runoff, and flooding.

9.6.c Integrate Alameda Point into City of Alameda's Stormwater Management and Discharge Control Program.

9.6.d Require all proposed reuse activity in Alameda Point to be in compliance with the Regional Water Quality Control Board stormwater recommendations.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant biological resources impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. The GPA would cause a potentially significant impact to 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 CDFG or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Have a substantial adverse effect on federally protected wetlands or waters of the United States, as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological alteration, or other means.
- Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or substantially impede the use of native wildlife breeding or roosting sites.

- Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance.
- Conflict with an adopted local, regional or state habitat conservation plan.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at buildout of the GPA.

Policy Implementation. Adoption of the GPA policies would have an overall beneficial effect by implementing the provisions of the Biological Opinion, ensuring compatible development adjacent to the Wildlife Refuge, and educating the public about biological resources. A copy of the Biological Opinion is provided in Appendix D of this EIR. Specifically, GPA Policy 9.3.rr directs the City to prepare and adopt development regulations that implement the terms and conditions of the Biological Opinion. GPA Policies 9.3.k through 9.3.o, 9.3.dd, and 9.3.jj encourage development of housing and mixed-use areas sensitive to the restrictions of the Wildlife Refuge. Several policies (9.3.q, 9.3.r, 9.3.kk, and 9.3.tt) propose educating boaters, marina users, and future occupants or tenants about the sensitivity of, and need for protection, of biological resources.

The GPA policies would be consistent with existing General Plan Policies 5.1.a through 5.1.d which call for the protection and enhancement of wetlands and water-related habitat. The GPA policies would support existing General Plan policies such as 5.1.l and 5.1.m, which propose a boater education program and 5.1.p, which would require analysis of appropriate buffer zones between projects and wetlands.

Adoption of the GPA policies would implement the Biological Opinion that the USFWS issued as part of its review under the Federal Endangered Species Act and GPA Policy 9.3.ll would support the implementation of the USFWS's Comprehensive Conservation Plan for Alameda National Wildlife Refuge. The GPA would not conflict with any other habitat conservation plans. In addition, GPA policies would be consistent with Public Trust land purposes which encourage marine related uses and public access to shoreline areas.

Plan Buildout. Buildout of the GPA would result in the beneficial impacts discussed below. Development of the Wildlife Refuge would provide 565 acres of protected habitat (515 acres of which are in Alameda) for the California least tern and Caspian tern. The area is considered one of the most productive breeding sites for the California least tern and the establishment of the Wildlife Refuge would benefit and further protect these sensitive species.

Buildout of the GPA could result in the following less-than-significant impacts.

<u>Impact BIO-1</u>: New development adjacent to the wildlife refuge could lead to increased predation of the California least tern. (LTS)

The USFWS is responsible for predator management within the proposed Alameda National Wildlife Refuge. The development of soccer fields, a golf course, a hotel/resort in the Northwest Territories sub-area and ball fields in the Civic Core sub-area would place developed land uses in this area closer to the California least tern colony and could increase habitat for least tern predators such as ravens, other predatory birds, feral cats, and other predatory mammals. In addition, development would add predator perches. Increased disturbances by predators could result in decreased breeding success.

Development in the Northwest Territories sub-area would decrease the open paved area that serves as a buffer surrounding the tern colony, providing additional breeding and foraging habitat and perching opportunities for predators, as well as reducing the ability of the tern to detect incoming predators. The proposed golf course, in particular, may provide nesting and foraging areas for ravens and raptors. Landscaping trees in the Northwest Territories sub-area could provide nesting and perching habitat for predators, such as crows, ravens, or raptors. Shrubs with dense foliage provide nesting habitat for some predators, such as loggerhead shrikes.[135] Garbage cans, large trash receptacles, and uncontained litter attract crows, gulls, dogs, cats, skunks, and raccoons, which may then be attracted to tern eggs and chicks nearby.[136]

Increased night lighting associated with development and the sports complex (soccer fields and ball fields) could enhance the ability of nocturnal predators, such as owls and cats, to prey on the tern. In addition, night lighting could reduce the ability of the tern to detect approaching predators.[137] The light poles associated with the soccer fields and ball fields would also provide additional perches.

Existing and proposed policies that would help minimize this potential impact are described below.

> *Proposed GPA Policies.* Proposed GPA Policy 9.3.rr directs the City to prepare and adopt development regulations that implement the terms and conditions of the Biological Opinion (this policy implements NAS Reuse Mitigation BIO-1 and BIO-2). The Biological Opinion states that the reuse of Alameda Point would not jeopardize the continued existence of federal endangered or threatened species, that no critical habitat has been designated for endangered or threatened species at Alameda Point, nor would any be adversely modified or destroyed. The USFWS has determined a series of measures (referred to as "Terms and Conditions") necessary to minimize any incidental take of listed species, particularly the California least tern and the California brown pelican. The Terms and Conditions include, among other measures, restrictions on lighting, building heights and locations, and landscaping in the

[135] Caffrey, Carolee, 1997. As cited in the *Draft EIR for the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility, Alameda, California.*

[136] US Navy, 1995c. *Op. cit.*

[137] Small, Maynard, 1996. As cited in *Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility, Alameda, California.*

vicinity of the Wildlife Refuge sub-area. These development restrictions would need to be adopted through an implementing ordinance by the City of Alameda.

Within the Terms and Conditions section, the Biological Opinion also delineates specific areas within which certain development restrictions should apply. Based on these delineated areas, the proposed GPA has identified a Wildlife Refuge Impact Area (see Figure 3.4-1) to help ensure that terms and conditions of the Biological Opinion are implemented. Implementation of proposed Policies 9.3.g, 9.3.t, and 9.3.pp will ensure that development is consistent with the recommendations developed to implement the Wildlife Refuge Impact Area, as mapped in Figure 9-5 of the proposed GPA. These three policies are identical in wording and apply to the Civic Core, Marina, and Northwest Territories sub-areas, respectively.

In addition to Policy 9.3.rr, the GPA outlines numerous other policies that would reduce this impact. GPA Policies 9.3.ll and 9.3.ss support implementation and funding of the Comprehensive Conservation Plan. GPA Policies 9.3.kk and 9.3.jj seek to balance development with public access and guidelines for development listed in the Wildlife Refuge Management Plan. Other policies encourage the development of informational materials (9.3.tt) and detailed stormwater management and monitoring plans that would protect open water foraging areas (9.3.uu).

Existing General Plan Policies. Several existing General Plan policies would help minimize this impact. Policies 5.1.a through 5.1.d would help minimize this impact by calling for the protection and enhancement of wetlands and water-related habitat. Additional protection would be provided by Policies 5.1.l and 5.1.m, which propose a boater education program and 5.1.p, which require the analysis of appropriate buffer zones between projects and wetlands.

Mitigation Measure BIO-1: No mitigation measures are necessary. Implementation of the existing and proposed policies and the Biological Opinion described above will ensure that no significant impact results.

Impact BIO-2: The GPA could result in an increased presence of people and domestic animals in the Northwest Territories sub-area, which would impact the California least tern and the California brown pelican. (LTS)

Under the proposed project, recreational use in the Northwest Territories sub-area is expected to increase, as is the presence of people and domestic animals. Although the USFWS will control access to the refuge, uncontrolled domestic animals could prey on least terns and their eggs. Nesting terns may rise up and fly away in response to approaching people or animals, making the least tern eggs or chicks vulnerable to hypothermia, hyperthermia, or predation. Additional human and domestic animal access to the areas bordering the Wildlife Refuge is likely to result in increased attempts at unauthorized access.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. As discussed in Impact BIO-1, the USFWS Biological Opinion sets forth a series of detailed Terms and Conditions for addressing the protection of the least tern and brown pelican. Again, proposed GPA Policy 9.3.rr directs adoption of local regulations implementing the terms and conditions of the Biological Opinion through an implementing ordinance and proposed Policies 9.3.e (and 9.3.o and 9.3.jj), 9.3.rr, 9.3.ss, 9.3.zz, and 9.3.tt would reduce this potential impact through development of educational programs, stormwater management plans, and development guidelines. Policy 9.3.rr implements NAS Reuse Mitigation Measure BIO-1 and BIO-2.

Existing General Plan Policies. Existing General Plan Policies 5.1.b, 5.1.l, and 5.1.m encourage the protection of open space habitat areas from intrusions by motorized recreational craft, including jet skis and hovercraft, and education and information directed at boaters related to protecting habitat areas from intrusion. Other General Plan Policies such as 5.1.d, 5.1.e, and 5.1.p are related to the use of buffer zones that would protect habitat areas from human and domestic animal intrusion.

Mitigation Measure BIO-2: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact BIO-3: Buildout of the GPA would result in increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, and western gull nesting, as well as the haul-out site for the harbor seal near Breakwater Island. (LTS)

The proposed marina in the Marina District sub-area—including 530 marina slips (53 of which would be live-aboards)—would increase boat traffic in the vicinity of Breakwater Island and south of the Wildlife Refuge sub-area. It is likely that boat traffic would consist mainly of small to medium sailboats and motorboats. Breakwater Island, which is within the boundaries of the proposed Alameda National Wildlife Refuge, provides a roosting site for the California brown pelican, a nesting site for the western gull, and a haul-out site for the harbor seal. Access to Breakwater Island is under the control of the USFWS. The open water of the Bay south of the landing field provides foraging habitat for these species, as well as for the California least tern and other birds. Increased boat traffic could result in increased boat wake, motor noise, and potential harassment of animals. Potential impacts from boat traffic include decreased foraging success for the tern, decreased breeding success for the western gull, and disturbance of the California brown pelican and harbor seal.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Proposed Policy 9.3.n would encourage industrial and marine-related industrial uses that are consistent with the Public Trust, and would comply with the terms and conditions of the Biological Opinion for the Wildlife Refuge, to help minimize this impact. GPA Policy 9.3.q would protect wildlife by directing the installation of signs that warn boaters about the sensitivity of the wildlife at and around Alameda Point, and about prohibitions for disturbing protected bird and mammal species, as well as educate boat owners and users of the marina about restrictions to Breakwater Island.

Existing General Plan Policies. General Plan Policy 5.1.m requires that the City shall "post and maintain signs warning boaters and users of motorized craft that they are approaching a wildlife area."

Mitigation Measure BIO-3: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact BIO-4: Berthfront sediment dredging and in-water construction activities in the Marina District sub-area could impact fish and other aquatic organisms. (LTS)

Mammals and birds, including the California least tern, that feed on fish could be affected by dredging. The California least tern that nests in the Wildlife Refuge sub-area does most of its foraging in the open water west and south of the West Beach Landfill Wetland, and to a lesser degree, in the Seaplane Lagoon. Dredging could disturb and disperse contaminated materials into the water during the period of active dredging and for a short time thereafter. Sediments in the lagoon have been found to be contaminated with heavy metals (lead, chromium, and zinc), PCBs, organic compounds, chlorinated compounds, and other industrial effluent.

Dredging and in-water construction activities would also increase the turbidity of the water, reducing visibility for the California least tern, California brown pelican, and other species. Increased turbidity also could discourage the tern's prey fish from entering the Seaplane Lagoon and adjacent San Francisco Bay, thereby decreasing the supply of available fish during dredging and construction operations. A reduction in young fish produced during the spawning season could result in breeding failure for the tern due to a limited food supply for tern chicks and fledglings. Increased turbidity from dredging and in-water construction activities would be localized and of limited duration. The magnitude of the turbidity would depend in part on the number and type of dredges working at a given time, their locations, and measures implemented to reduce turbidity. In the main ship channel leading to the deepwater marina piers, dredging activities would be associated with deeper water and would not be expected to impact the shallow foraging areas. It is unlikely that dredging would be required in the near future in the deepwater docks, and those docks are not known to be contaminated.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Policies 9.3.e , 9.3.o, and 9.3.jj would reduce this impact by encouraging development recommendations that would protect wildlife. Policy 9.3.rr would implement the provisions of the Biological Opinion, which places restrictions of dredging operations, thereby minimizing this impact.

Existing General Plan Policies. Existing General Plan policies listed in BIO-1 and BIO-2 for mitigating impacts that would result from the intrusions of motorized watercraft would help to minimize this impact.

Mitigation Measure BIO-4: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact BIO-5: Stormwater runoff from the golf course, paved areas, construction, and marina-related activities could create an adverse impact on wildlife and sensitive habitats. (LTS)

Use and maintenance of a golf course and paved areas could introduce pollutants, including oil and grease, herbicides, pesticides, and fertilizers into runoff. Stormwater runoff could enter the least tern colony nesting area, West Beach Landfill Wetland, Runway Wetland, and surrounding water bodies (San Francisco Bay, Seaplane Lagoon, and Estuary). During construction in the Northwest Territories, Marina, and the Civic Core sub-areas, in particular, construction equipment and operation may result in spills and other accidental emissions of pollutants that could similarly affect the California least tern and Caspian tern colonies, wetlands, and water bodies. Maintenance and repair of boats and spills from boat fueling and waste disposal could affect water quality in the adjacent water bodies. Marina use could also discharge pollutants to surface waters. These marina-related pollutants could affect marine and aquatic species, such as the harbor seal and fish, as well as birds, such as the least tern, that forage in the waters.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Impacts to biological resources from stormwater runoff would be mitigated by development restrictions specified in the Biological Opinion that would be adopted through implementing ordinances by the City of Alameda, as directed under Policy 9.3.rr of the GPA. GPA Policy 9.6.c, which would require the City to integrate Alameda Point into the City's Stormwater Management and Discharge Control Program, would also mitigate this impact.

The GPA also proposes the addition of Policy 5.1.dd to the Open Space and Conservation Element of the *General Plan* that will require the development and implementation of planting

and herbicide, pesticide, and fertilizer application plans, including a pesticide draft control plan, for the golf course and public open space areas.

Existing General Plan Policies. Policies 5.1.t and 5.1.x, relate to the control of storm runoff and would help to minimize this impact.

Mitigation Measure BIO-5: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results. (LTS)

c. Significant Impacts and Mitigation Measures. Implementation of the GPA would result in one significant impact to biological resources.

Impact BIO-6: Development that may occur under buildout of the proposed GPA could impact pallid bats and western mastiff bats that may roost in the abandoned buildings on-site. (S)

The pallid bat, western mastiff bat and Pacific western big-eared bat are State species of special concern. The *Reuse EIR* concluded that western mastiff bat was unlikely to occur on the site due to lack of suitable habitat, and did not specifically address pallid bat or big-eared bat, or other more common bats. Bat roosts have been identified on the adjacent FISC site and bats may find suitable roost on the Alameda Point site as well. Surveys conducted for that document by Constantine[138] found no evidence of either species on the site, but did not cover every building in the Planning Area. Both species could occur in buildings on the site, because: 1) the surveys in 1996 were not comprehensive; 2) both species frequently roost in buildings; and 3) bats could have colonized buildings on the site since the 1996 surveys. Thus, the removal of buildings could result in the loss of roosting habitat occupied by pallid and big-eared bats.

To avoid or minimize potential impacts to pallid and big-eared bats to a less-than-significant level, the following mitigation measure should be implemented:

Mitigation Measure BIO-6: Within a 6-month period prior to any demolition of abandoned buildings, a qualified biologist familiar with bats shall conduct a survey to determine the status of these bat species on the project site. If special-status bat species are found, a biologist familiar with relocating bats shall be consulted regarding the best methods to remove bats from the buildings, and such methods shall be implemented. All relocation plans would be subject to review and approval by the California Department of Fish and Game. If suitable roost sites are not present in the area after demolition of the existing roost, a plan to construct artificial roost sites would be developed and submitted to CDFG for approval. Artificial roosts should

[138] Constantine, Denny G., 1996. *Bat Survey of NAS Alameda and Adjacent Naval Buildings.* Letter report to Tom Leaf, Tetra Tech. January 3.

be constructed at least 6 months prior to demolition of the existing roosts. This could include removing sections of the walls and roofs, which would discourage bats from continuing to roost in the buildings. If a maternity colony of any bats is found, the building and the bats shall not be disturbed until the young have dispersed. (LTS)

H. GEOLOGY AND SOILS

1. Setting

This section describes the local and regional geologic conditions that could influence the magnitude of the geologic hazards at Alameda Point. As with any development site located on reclaimed land bordering San Francisco Bay, geologic hazards associated with earthquakes and land settlement are among the main areas of concern for future development of Alameda Point.

a. Data Sources, Study Area, and Methodology. Alameda Point serves as the study area for analysis of the proposed project's impacts on geology and soils. Information on the geologic setting and conditions presented in this section were gathered from published reports and maps prepared by the US Geological Survey (USGS), the California Division of Mines and Geology (CDMG), and other sources. Many of these sources were cited in the City of Alameda *NAS Reuse EIR*. Additional information was obtained through the ABAG and CDMG websites. The environmental setting data from previous studies remains current and reflects year 2001 conditions.

b. Regional and Site Geology.

(1) Physiography. Alameda Point is constructed on fill on tidelands west of Alameda Island in the eastern region of the San Francisco Bay basin. The land surface is low-lying and nearly flat. Elevations are less than 15 feet above mean sea level (msl).

The dominant geological processes that have shaped the landscape in the vicinity of Alameda Point are uplift and erosion of the East Bay hills, subsidence of the San Francisco Bay basin, and faulting associated with the Hayward Fault and other active faults of the San Andreas Fault system.

(2) Regional Geology. San Francisco Bay Area geology is dominated by the San Andreas Fault system, which includes a network of faults that have been active during the last 30 million years.[139] Figure IV.H-1 shows the locations of principal active faults in the region of Alameda Point.

Figure IV.H-2 shows the geology of the region surrounding Alameda Point. Bay Area geology is quite complex, owing to the relative movement of the North American continental and Pacific Ocean crustal plates. The bedrock that underlies the sediments in the San Francisco Bay basin and that is exposed in some of the hills surrounding the Bay consists of a complex of partially metamorphosed sedimentary and volcanic rocks belonging to the Franciscan Formation.

The region was apparently well above sea level until about 1 million years ago when a combination of subsidence of the basin and rising sea levels due to melting of continental ice caps led to

[139] Wallace, R.E., 1990. General Features. Pp. 3-12. In: *The San Andreas Fault System, California.* U.S. Geological Survey Professional Paper 1515. R.E. Wallace (ed).

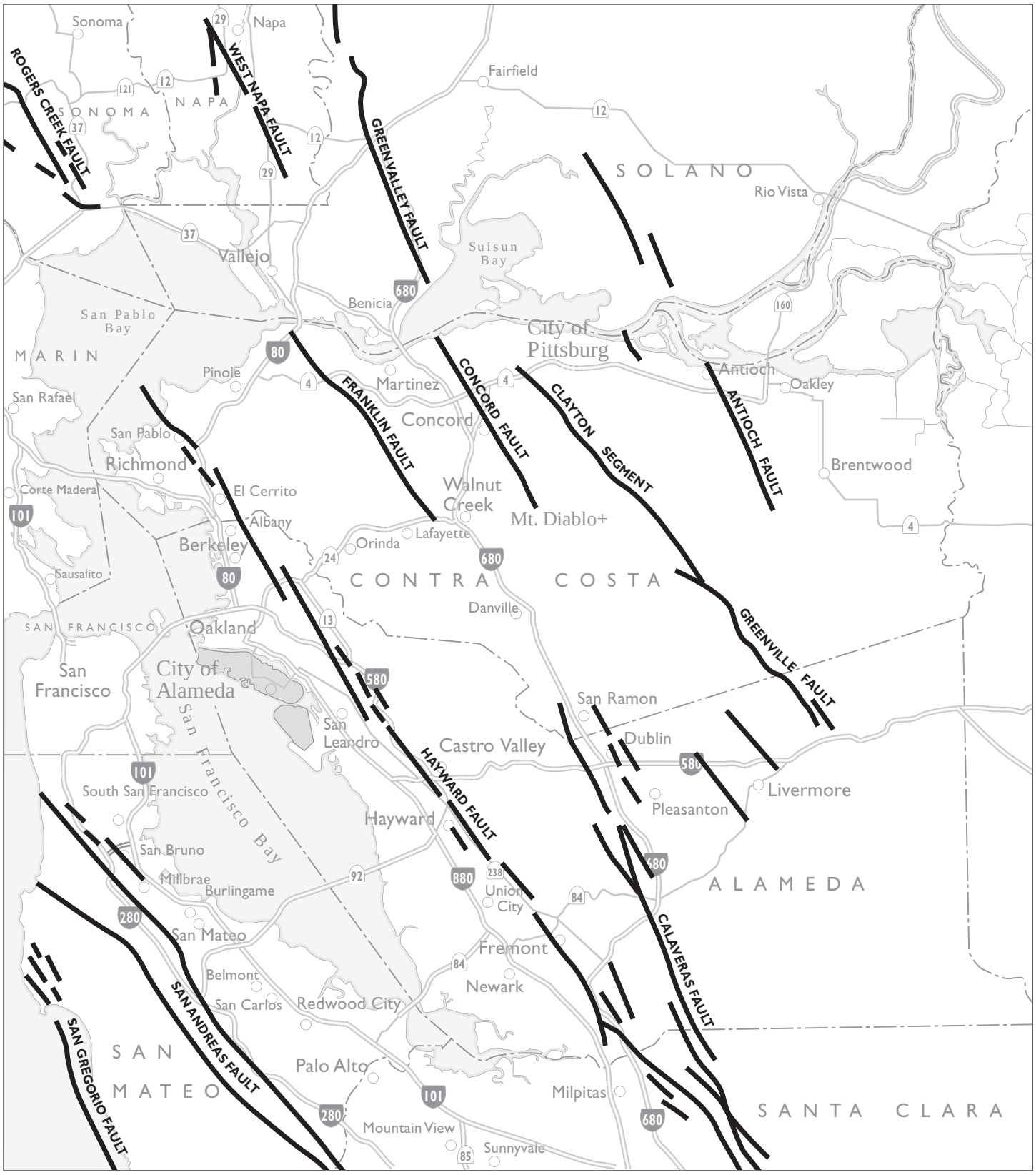

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FIGURE IV.H-1

Alameda Point GPA EIR
Regional Faultlines

SOURCE: JENNINGS, 1994

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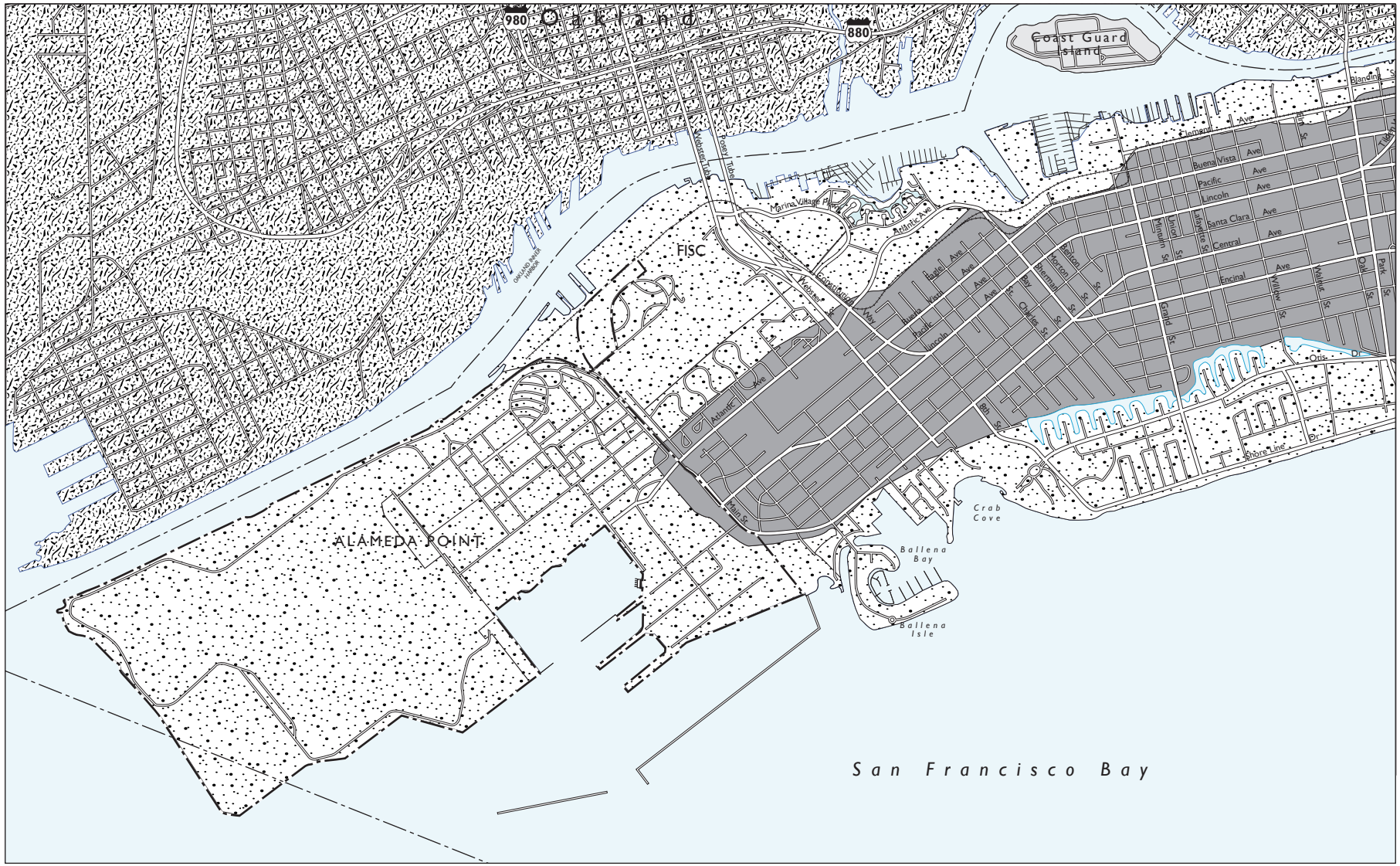

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Holocene Estuarine Mud, 0-130 ft thick

Quaternary Alluvium, 0-160 ft thick

Franciscan Formation Sandstone and Shale with Greenstone, Chert, Limestone, Conglomerate, and Metamorphic rocks

Project Boundary

N

0 1500 3000

FEET

SOURCE: ROGERS AND FIGUERS, 1991, AS CITED IN CITY OF ALAMEDA, 1999.

FIGURE IV.H-2

Alameda Point GPA EIR

Regional Geology

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deposition of sediments on the Franciscan bedrock surface. Below is a description of the deposits found beneath and near Alameda Island.

Most of Alameda Island and areas inland of the historic shoreline of the bay north of the Estuary are underlain by Merritt Sand, a loose, fine-grained, well-sorted beach dune sand formation deposited late in the Pleistocene.[140]

The Merritt Sand is underlain by a thick sequence of unconsolidated sediments that together were called the Alameda Formation. These sediments are over 1,000 feet thick in the vicinity of Alameda Point.[141] Recent geologic studies limit use of the name Alameda Formation to the continental deposits at the base of this sequence. The upper portion of the sequence contains a fine silty sand deposit called the Posey Sand. Together, the Merritt Sand and the Posey Sand comprise an aquifer that is or has been exploited as a source of potable water (see Section IV.E, Water Resources). West of the historic margin of the bay, the Merritt/Posey aquifer is overlain by Younger Bay Mud. In some areas, such as beneath the Oakland Inner (Estuary) and Outer Harbors, the Bay Mud has been removed by dredging and has exposed the aquifer to brackish bay water.

Beneath the Posey Sand is a clayey unit identified in some reports as the San Antonio Formation. The San Antonio Formation may have been deposited during about the same period as the Temescal Formation to the east (older alluvial fan deposits that lie at the base of the East Bay hills) and the Older Bay Mud (also known as the Yerba Buena Mud) that is found beneath the bay to the west.[142] Because it is very fine-grained and not very permeable, the Yerba Buena Mud/San Antonio Formation/Temescal Formation acts as a confining unit for deeper aquifers within the Alameda Formation. Beneath these deposits, the Alameda Formation consists of mixed sediments that were deposited above sea level. The Alameda Formation rests on the Franciscan bedrock (see Figure IV.D-1 for a geologic cross section illustrating the stratigraphy beneath Alameda Point).

(3) Site Geology. Borehole logs from Alameda Point indicate that the geologic profile is relatively horizontal and uniform throughout most of the project site.[143] A deep boring near Building 23 (a former aircraft maintenance hangar north of the Seaplane Lagoon) provides a general characterization of the stratigraphy that underlies the project site. The log of the boring showed 16 feet of loose sandy fill underlain by 30 feet of Younger Bay Mud. Below that, 45 feet of Merritt Sand is

[140] Helley, E.J., K.R. Lajoie, and D.B. Burke, 1972. *Geologic Map of Late Cenozoic Deposits, Alameda County, California.* US Geologic Survey Miscellaneous Field Studies Map MF-429. Scale 1:62,500.

[141] Radbruch, D.H., 1957. *Aerial and Engineering Geology of the Oakland West Quadrangle, California.* U.S. Geological Survey Miscellaneous Geologic Investigations, Map I-239. Scale 1: 24,000.

[142] Ibid.

[143] Carlisle, H., and K. M. Rollins, 1994. *Ground-Response Studies at the Alameda Naval Air Station.* In: *The Loma Prieta, California, Earthquake of October 17, 1989 - Strong Ground Motion.* U.S. Geologic Survey Professional Paper 1551-A. R.D. Borcherdt (ed).

underlain by 331 feet of stiff clay (Older Bay Mud) and another 44 feet of gravel, sand, and clay of the Alameda Formation. The base of the San Antonio Formation was found at a depth of about 256 feet; Franciscan bedrock was encountered at a depth of 466 feet; ground water was encountered at a depth of 8 feet.

Although the profile described above provides a general characterization of the project site geologic profile, the thickness of Younger Bay Mud is variable. During the last low sea level stand (95,000 to 11,000 years before present), an east-west oriented stream channel was formed along the north-central portion of the project site. The channel formed a depression which was filled with Younger Bay Bud as sea level gradually rose over the last 11,000 years. The thickness of Younger Bay Mud increases toward the axis of the channel. At the channel axis, the Younger Bay Mud is 80 feet or more thick.[144]

Almost all of Alameda Point was constructed on engineered fill materials placed over submerged lands or tidal flats.[145,146] Most of the artificial fill along the east shore of San Francisco Bay consists of Merritt Sand mixed with Bay Mud that has been dredged or pumped from offshore underwater borrow areas. In some places it consists of other materials, including Temescal Formation, broken rock, or miscellaneous refuse.[147] Reclamation of the tidal lands at Alameda Point began in the mid-1800s, and most of Alameda Point was filled during 1939 and 1940.[148]

A small portion of Alameda Point lies within the historic shoreline of Alameda. Native geology in this location consists of Merritt Sand. Historic shoreline boundaries for Alameda are shown on Figure IV.H-3.

(4) Soils. Soils at Alameda Point consist mainly of non-native soils developed on fill materials. These soils include Urban Land and Xeropsamments. These are all disturbed, mixed soils with variable properties. Figure IV.H-3 shows the distribution of these soil formations in Alameda. Urban Land refers to fill material that is covered by buildings or roads. The fill can have a wide range of characteristics, depending on its origin. Most of the land east of the Northwest Territories sub-area is classified as Urban Land, which includes land covered by buildings and roads. The western portion of the installation is underlain by Xeropsamments, which consists of sandy material

[144] Goldman, H.B., 1969. *Geology of San Francisco Bay.* Pp. 9-30. In: *Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology Special Report 97.* H.B. Goldman (ed).

[145] Nichols, D.R., and N.A. Wright, 1971. *Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California.* U.S. Geological Survey Open File Report/Basic Data Contribution No. 9.

[146] Radbruch, D.H., 1957. *Op. cit.*

[147] Ibid.

[148] Rogers, D.J., and S.H. Figuers, 1991. *Site Stratigraphy and Near Shore Development Effects on Soil Amplification in the Greater Oakland Area.* Pp. 123-150. In: 1989 Loma Prieta Earthquake. U.S. Association of Engineering Geologists Special Publication 1. J.E. Baldwin and N. Sitar (eds).

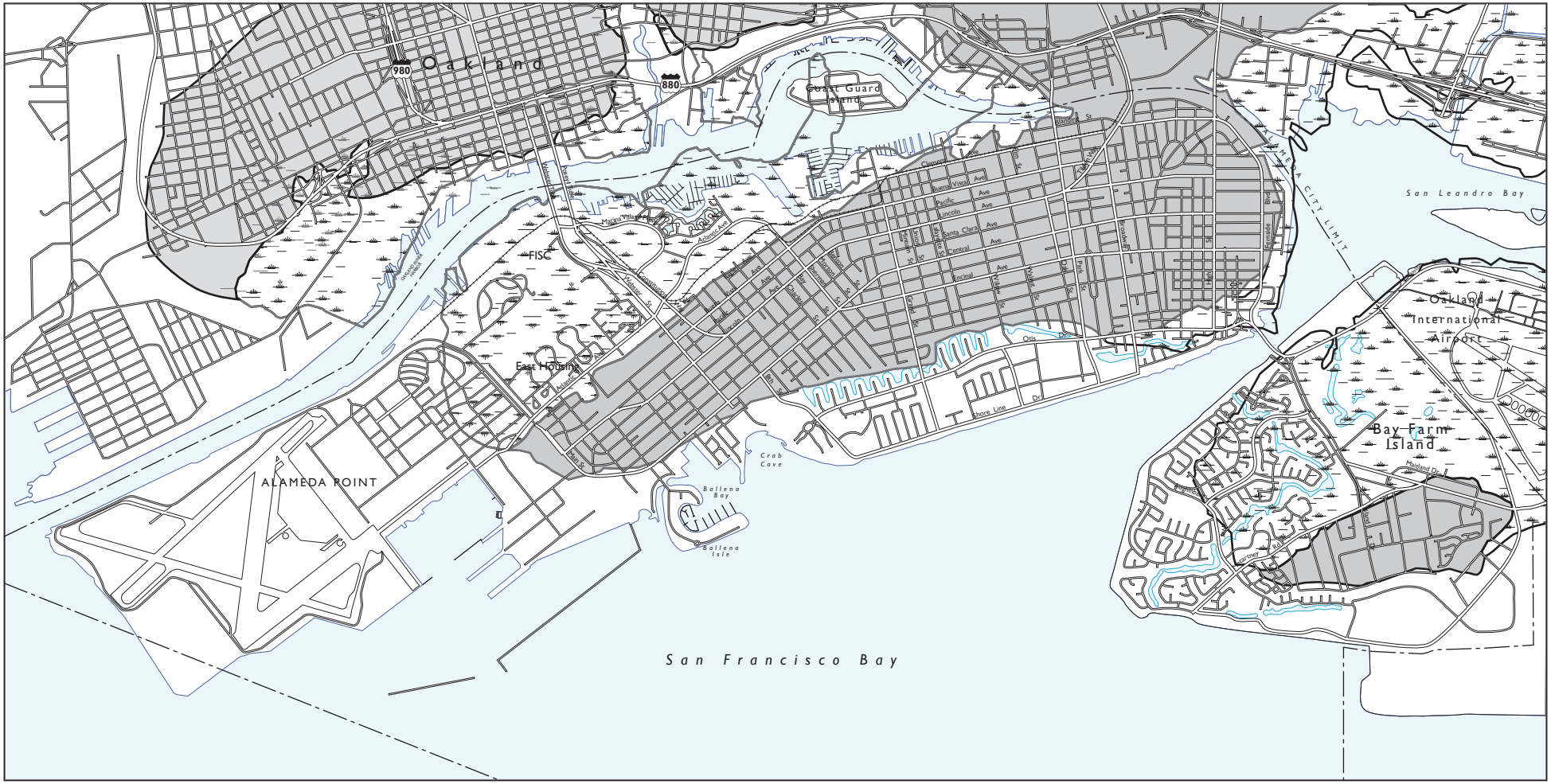

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FIGURE IV.H-3

Alameda Point GPA EIR

Alameda Historical Shoreline

SOURCE: DYETT & BHATIA, 2000

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that was dredged from old beach areas. These soils are very permeable, with a shallow water table. Although the shallow water table can be a primary limiting factor for development on these soils, the wildlife refuge would be located over this area, and would not contain development that would be affected by this soil type.

A small portion of the southeast corner of Alameda Point (in a nonfill area) contains Baywood loamy sand soil, which developed on Merritt Sand deposits. About 35 percent of the area classified as Urban Land—i.e., Baywood complex—is actually Baywood loamy sand; 60 percent is Urban Land, and about 5 percent contains other soils. However, all of the soils strongly resemble Baywood soil, which is a very deep permeable soil. It has few limitations for development in level areas such as Alameda.

c. Faults. Alameda Point lies within the San Andreas Fault system (Figure IV.H-1). In the San Francisco Bay Area, the San Andreas Fault system stretches across a zone approximately 44 miles wide, consisting of mostly right-lateral strike-slip faults.[149] The two sides of a strike-slip fault slip past each other in the direction of the trace of the fault, with relatively little vertical movement. Strike-slip faults are called right-lateral if, to a person standing on one side of the fault and facing the other, the opposite side would appear to be moving to the right. CDMG defines an active fault as a fault that has had surface displacement within the last 11,000 years. In general, it is believed that future earthquakes are more likely to occur on recently active faults than on faults that have not been recently active.

The principal active faults of the San Andreas Fault system in the Bay Area include the San Andreas, San Gregorio, Hayward, Rogers Creek, West Napa, Calaveras, Concord, and Green Valley Faults.[150,151]

In California, special restrictions apply to construction within "fault-rupture hazard zones," as defined by the CDMG under the Alquist-Priolo Special Studies Zones Act,[152] to prevent developments and structures for human occupancy across the trace of an active fault. No active faults have been identified on the Alameda Point property.

[149] Wallace, R.E., 1990. *General Features.* Pp. 3-12. In: *The San Andreas Fault System, California.* U.S. Geological Survey Professional Paper 1515. R.E. Wallace (ed).

[150] Jennings, C.W., 1994. *Fault Activity Map of California and Adjacent Areas with Location and Ages of Recent Volcanic Eruptions.* California Geologic Data Map Series, Map No. 6. California Division of Mines and Geology.

[151] Bortugno, E.J., 1982. Map Showing Region of Faulting. Santa Rosa Quadrangle, 1:250,000: California Division of Mines and Geology Regional Geologic Map Series, No. 2A, sheet 5.

[152] California Public Resources Code § 2621, *et seq*.

Alameda Point is less than 12 miles from the San Andreas Fault.[153] The nearest active fault is the Hayward Fault, approximately 5 miles east of Alameda Point. The last major earthquake along the Hayward Fault occurred in 1868. The estimated recurrence interval for a large earthquake on the Hayward Fault similar to the 1868 earthquake is about 130 ± 60 years.[154]

Earthquake magnitude (expressed on the open-ended Richter scale) is a measure of the amount of energy released at the origin of an earthquake within the earth's crust. Each integer increase in magnitude represents a ten-fold increase in energy. The potential magnitude of an earthquake is thought to increase with the length of the fault. Therefore, the largest earthquakes are expected to occur on long faults, such as the San Andreas, Hayward, and Rogers Creek Faults.

According to recent studies, the probability of one or more large earthquakes (Richter magnitude 6.7 or greater) occurring in the San Francisco Bay Area during the next 30 years is estimated at 70 percent, with an estimated uncertainty of 1 percent.[155] This estimate includes the San Andreas, Rodgers Creek-Hayward, Calaveras, San Gregorio, Concord-Green Valley, Mount Diablo Thrust, and Greenville Faults. The estimated probability of a magnitude 6.7 or greater earthquake on the Rodgers Creek-Hayward Fault is 32 percent in the next 30 years, and corresponding probabilities for the San Andreas and Calaveras Faults are 21 and 18 percent, respectively.[156]

The Mercalli intensity scale is an expression of the amount of ground shaking during an earthquake, based on observations such as the degree of damage to structures. Earthquake intensity depends on factors such as the distance from the origin of the earthquake and the nature of the geologic materials at the location where the earthquake is felt. Generally, bedrock shakes the least, and loose saturated materials shake more violently because seismic waves are amplified by these materials. See Table IV.H-1 for a full description of intensities on the Mercalli scale.

Damage to structures depends not only on the intensity and duration of an earthquake but also on how the structure is built and the direction of travel of seismic waves relative to the orientation of the supporting elements of the structure. Well-designed structures may perform well in strong earthquakes.

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[153] Wagner, D.L., E.J. Bortugno, and R.D. McJunkin, 1990. Geologic Map of the San Francisco-San Jose Quadrangle. California Division of Mines and Geology Map No. 5A. Scale 1:250,000.

[154] Lienkaemper, J.J., and G. Borchardt, 1992. *Hayward Fault: Large Earthquakes Versus Surface Creep.* Pp. 101-110. In: *Proceedings of the Second Conference on Earthquake Hazards in the Eastern San Francisco Bay Area. California* Department of Conservation, Division of Mines and Geology, Special Publication 113. G. Borchardt (ed).

[155] Working Group on California Earthquake Probabilities, 1990. *Probabilities of Large Earthquakes in the San Francisco Bay Region, California.* U.S. Geological Survey Circular No. 1053.

[156] Ibid.

Table IV.H-1: Modified Mercalli Intensity Scale

MMI Value	Summary Damage Description Used on Maps	Full Description (from Ref. 40)
I		Not felt. Marginal and long period effects of large earthquakes.
II		Felt by persons at rest, on upper floors, or favorably placed.
III		Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV		Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motorcars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV wooden walls and frame creak.
V	Pictures Move	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI.	Objects Fall	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).
VII	Nonstructural Damage	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbranded parapets and architectural ornaments). Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII	Moderate Damage	Steering of motorcars affected. Damage to masonry C; partial collapse. Some damage to masonry walls. Twisting fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX	Heavy Damage	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations). Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand raters.
X	Extreme Damage	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Waters thrown on banks of canals, rives, lakes, etc. Sand and mud sifted horizontally on beaches and flat land. Rails bent slightly.
XI		Rails bent greatly. Underground pipelines complete out of service.
XII		Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

Source: http://www.abag.ca.gov/bayaea/egmaps/doc/mmi.html, 2002.

d. Geologic Hazards. One of the earliest studies of the seismic hazards at Alameda Point was conducted for the US Navy in 1973.[157] The principal hazards identified in that preliminary study were liquefaction, lateral spreading, and differential settlement. The first two of these are secondary effects of ground shaking. Differential settlement is a problem associated with the degree of compaction of natural and fill soils. All relate to the stability of geologic materials and their ability to support structures, including the perimeter dikes that protect portions of Alameda Point from flooding.

(1) Ground Shaking. The occurrence of an earthquake produces seismic waves which produce groundshaking as the waves move through the earth. The "magnitude" (M) of an earthquake is a measure of the size or energy release at the source of the earthquake. The severity of groundshaking at any particular point is referred to as "intensity" and is a subjective measure of the effects of groundshaking on people, structures, and earth materials. The level of intensity is commonly defined by comparison to the Modified Mercalli Intensity (MMI) Scale which subjectively categorizes the intensity on the basis of observed effects of seismic shaking on common objects. The level of groundshaking can also be expressed quantitatively as ground acceleration (a) measured as a fraction or percentage of gravity (g).

ABAG predicts that the amplification of seismic waves in the engineered fill materials at Alameda Point would be at the extreme high end of the response spectrum of geological materials found in the Bay Area. This means that the fill materials composing Alameda Point would be subject to extremely high levels of ground shaking in the event of an earthquake. Based on the model used by ABAG, the most damaging earthquake at Alameda Point would be one originating on the northern portion of the Hayward Fault. The intensity of ground shaking at Alameda Point, in response to an earthquake of magnitude 6.6 on the Hayward Fault, is expected to be "violent," with an intensity of IX out of XII on the Mercalli Intensity scale[158] (see Table IV.H-1 for details on Mercalli Intensity ratings). On the basis of regional geologic mapping and earthquake probability assessments, the CDMG estimates that the peak acceleration in the area of the project site (with a 10 percent chance of being exceeded in the next 50 years) to be greater than 0.7g.[159]

A site-specific study which evaluated seismic response at Alameda Point was conducted in 1992 following the Loma Prieta earthquake of October 17, 1989.[160] The epicenter of the Loma Prieta

[157] Seed, B.H., C.R. Allen, P.C. Jennings, and R.L. Wiegel, 1974. *General Review of the Seismic Hazard to Selected US Navy Installations, by the ONR Natural Hazards Review Panel.* Prepared for Earth Physics Program, Code 463, ONR.

[158] ABAG, 2001. Earthquake Hazard Map for Alameda Based on Underlying Geologic Material. Available at www.abag.ca.gov/cgibin/pickmapx.pl.

[159] CDMG, 1996. *Catellus Mixed Use Development EIR.* April.

[160] Carlisle and Rollins, 1992. *Catellus Mixed Use Development EIR.* April.

earthquake was located approximately 57 miles (92 km) south of Alameda Point. Strong motion recording instruments (accerometers) located at Building 23 in the central portion of the former NAS recorded ground motions during the 1989 earthquake. The peak ground acceleration at Alameda Point (0.21 g) averaged about three times greater than peak accelerations at nearby instrumented bedrock locations, such as Yerba Buena Island. The foundation of Building 23 did not sustain significant structural damage during the Loma Prieta earthquake, perhaps as a result of being anchored to the Merritt Sand. However, the floor slab settled 1 to 2 inches due to liquefaction of the underlying sandy fill.

Based on measurements made during the Loma Prieta earthquake and seismic response modeling, magnitude 8.25 and 7.25 earthquakes on the San Andreas and Hayward faults, respectively, are predicted to produce peak ground accelerations on Alameda Point (at Building 23) of 0.65 times and 0.41 times the acceleration of gravity, respectively.[161]

(2) Seismic Analysis of Structures. An earthquake safety investigation of structures on Alameda Point was performed[162] to estimate the potential damage that could occur in a large earthquake. The investigation selected 39 buildings and a water tower for evaluation. Of these, 26 structures were subjected to "rapid seismic analysis," which estimated the cost of damage from an earthquake with an 80 percent probability of being exceeded in 50 years. Three characteristic types of structures were identified that were considered particularly vulnerable to seismic damage – braced steel frames, concrete shear wall structures, and wood-sheathed buildings.

The investigation concluded that the most significant hazards to structures, other than ground shaking, are liquefaction and seismic settlement. It concluded that soil settlements during an earthquake could be up to 2 to 3 inches and that differential settlement of up to three-quarters of the total settlement could be expected.

(3) Liquefaction Potential. A major cause of damage to buildings, utility pipelines, roads, and ports during earthquakes is liquefaction. Liquefaction is the transformation of sandy material into a liquefied state. It is caused by increases in pore water pressure in saturated sediments during earthquakes. The pore water pressure is raised so that sand grains are forced apart temporarily. The most likely materials to liquefy are shallow, loose, water-saturated, well-sorted silts and sands with little or no clay-sized material.

ABAG predicts that, with a magnitude 7.1 earthquake on the Hayward fault, the liquefaction hazard level for Alameda Point is "high", which represents the highest level on a scale of very low to

[161] Ibid.

[162] PMB Systems Engineering, Inc., 1980. As cited in *Reuse of Naval Air Station Alameda and the Fleet Industrial Supply Center Alameda Annex and Facility, Alameda, California.* March.

high.[163] Loose, saturated sands and silty sands identified within the fill underlying Alameda Point have a high susceptibility to liquefaction. Liquefaction apparently occurred in the western portion of NAS Alameda during the 1989 Loma Prieta earthquake, causing failure of runway pavements and differential settlement of some buildings. Most of the liquefaction appears to have occurred in areas underlain by sandy saturated fill. Sandy or silty deposits within the young bay muds may also be subject to liquefaction. Liquefaction of these sediments would be expected during maximum credible earthquakes on the Hayward fault zone (HFZ) and San Andreas fault zone (SAFZ), and possibly during large earthquakes on other regional fault zones. In general, the Merritt sands are sufficiently compacted (dense) that liquefaction is not expected.

(4) Lateral Spreading. Lateral spreading is the horizontal component of soil movement in the direction of a free slope face that results from liquefaction of a supporting soil layer due to an earthquake. Fissures in a nearly horizontal or gently sloping ground surface are a common feature of lateral spreading.

Lateral spreading has not been reported in any of the geological studies of Alameda Point reviewed for this report. The lack of mention of lateral spreading suggests that the perimeter dikes and seawalls have been effective in retaining the fill material behind them. However, although not mentioned in previous studies, the lack of significant lateral spreading during the Loma Prieta earthquake does not mean that lateral spreading will not occur during future earthquakes. Based on observations at other near-water sites, lateral spreading is likely to occur in some shoreline areas during future large earthquakes on Bay Area faults.

(5) Differential Settlement. Settlement is the gradual downward movement of an engineered structure due to compaction of the unconsolidated material below the foundation. A major cause of settlement is low shear strength of the unconsolidated material.[164] The rate of settlement is usually most rapid immediately after loading and gradually decreases with time. Bay Mud frequently is associated with settlement problems in the San Francisco Bay Area because of its extremely low shear strength.[165]

Differential settlement results from spatial variations in uniformity of thickness of the Bay Mud and/or the fill overlaying it. Areas of historical tidal flats are likely to be susceptible to differential settlement because the presence of tidal channels resulted in variations in the thickness of the fill.

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[163] ABAG, 2001. Bay Area Liquefaction Map. Available at www.abag.ca.gov/liquefaction/viewer.htm.

[164] Helley, E.J., and K.R. Lajoie, 1979. *Flatland Deposits of the San Francisco Bay Region, California - Their Geology and Engineering Properties, and their Importance to Comprehensive Planning.* U.S. Geological Survey Professional Paper 943.

[165] Goldman, H.B., 1969. *Geology of San Francisco Bay.* Pp. 9-30. In: *Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology Special Report 97.* H.B. Goldman (ed).

For an underlying Bay Mud thickness of greater than 60 feet, it is estimated that about 35 percent of the ultimate settlement would take place during the first 10 years.[166] Due to the relatively old age of the fill across much of Alameda Point, most of the settlement for the current loadings has already occurred.

Geotechnical investigations conducted at sites within the Alameda Point project site have evaluated historic settlement in these areas and the potential for further consolidation and settlement.[167, 168] The field exploration and laboratory testing conducted as a part of these investigations indicate that significant consolidation has resulted in surface settlements of 1 to 2 feet during the period from the 1940s to early 1980s. It is anticipated that consolidation and settlement (up to 2 feet in the period 1981 to 2081) will continue to occur under the weight of existing fill. The amount of settlement could be increased by loading of additional fill or structures.

(6) Dike Stability. Seawall maintenance projects for Alameda Point and the adjacent proposed USFWS Wildlife Refuge land are performed as needed. No systematic study of seismic stability of seawalls at Alameda Point was performed following the Loma Prieta earthquake.[169] Information about the construction and stability of seawalls is available from two recent geotechnical studies conducted for the US Navy for dike repair projects. The first project (Phase I) included 2,000 feet of seawall east of Pier No. 3 and 3,500 feet of seawall west of Taxiway No. 6.[170] The Phase II project included 2,735 feet of seawall near the entrance to the Estuary.[171] Repairs to the seawalls were precipitated by damage caused by storms, particularly a large storm in December 1983.

Based on borings drilled through the rock dike and inboard of the dike, Geomatrix[172] concluded that the loose, medium-dense, sandy hydraulic fill material behind the dikes would be susceptible to liquefaction. In the 1991 Geomatrix report, it was concluded that no significant shaking-induced strength losses of the dike or underlying natural soils would occur in future earthquakes, and they

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[166] Lee, C.H. and M. Praszker, 1969. *Bay Mud Developments and Related Structural Foundations.* Pp. 41-86. In: *Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology Special Report 97.* H.B. Goldman (ed).

[167] Kaldveer and Associates, Inc., 1981. *Catellus Mixed Use Development EIR.* April.

[168] Tejima and Associates, Inc.,1989. *Catellus Mixed Use Development EIR.* April.

[169] Faris, R., 1996. EFA West, San Bruno, California, communication with Tetra Tech, Inc. March 19.

[170] Geomatrix Consultants, Inc., 1986. *Catellus Mixed Use Development EIR.* April.

[171] Geomatrix Consultants, Inc., 1991. *Geotechnical Study, Special Project R2-85, Repair Seawalls, Phase II, Naval Air Station, Alameda, California.* Prepared for Department of the Navy, Western Division, Naval Facilities Engineering Command. September.

[172] Geomatrix Consultants, Inc., 1986. *Catellus Mixed Use Development EIR.* April.

found no evidence of slope failure or significant lateral spreading attributable to the 1989 Loma Prieta earthquake.

e. Regulatory Considerations.

(1) State of California. The California Code of Regulations (24 CCR Part 2), also known as the California Building Code (CBC), contains the enforceable State building standards. The City of Alameda Building Official is responsible for enforcing these standards within the City. Section 1629A.2 of the CBC requires that every structure have sufficient ductility and strength to undergo the displacement caused by the "upper bound earthquake" motion without collapse. The upper bound earthquake ground motion is defined as the motion having a 10 percent probability of being exceeded in a 100-year period or the maximum level of motion that may ever be expected at the building site within the known geological framework.

Under California Public Resources Code Section 2622, the CDMG has delineated seismic zones that are deemed to be "sufficiently active and well-defined as to constitute a potential hazard to structures from surface faulting or fault creep." The State geologist is also required to continually review new geologic and seismic data and to revise the earthquake fault zones or to delineate new zones based on new information. As previously stated, no active faults have been identified at Alameda Point. The nearest delineated active fault zone is the Hayward Fault, located approximately 5 miles east of Alameda Point.

(2) Uniform Building Code. The City of Alameda has adopted provisions in Chapter 33 of the Uniform Building Code (UBC) for grading and excavation activities where the existing or resulting slope will exceed 20 percent or where more than 5 cubic yards of soil will be disturbed. The grading permit application requires a site map and grading plan, including a drainage plan and a soils report prepared by a registered civil engineer.

(3) General Plan Policies. Policies from the current *General Plan* that relate to geology and soils are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed *General Plan* amendments related to geology and soils are discussed in the Environmental Analysis subsection below.

The Health and Safety Element of the City of Alameda *General Plan* (1991) requires that a soils and geologic report be submitted to the Department of Public Works prior to issuing all grading and building permits to evaluate the potential for lateral spreading, liquefaction, differential settlement, and other types of ground failures. It requires all structures of three or more stories to be supported on pile foundations that penetrate Bay Mud deposits and are anchored in firm non-compressible materials, unless geotechnical findings indicate a more appropriate design. It also provides for the identification and evaluation of existing structural hazards and abatement of those hazards to acceptable levels of risk.

The Health and Safety Element of the City of Alameda *General Plan* contains the following policies that minimize potential geologic hazards:

8.1a A soils and geologic report will be submitted if required by the Director of Public Works prior to the issue of all grading and building permits and submission of final maps, in accordance with the Subdivision Ordinance, to evaluate the potential for lateral spreading, liquefaction, differential settlement, and other types of ground failure.

8.1.b Require design of new buildings to resist the lateral effects and other potential forces of a large earthquake on any of the nearby faults, as required by the Uniform Building Code.

8.1.c Require building design to incorporate recommendations contained in the soils and geologic report.

8.1.d Require all structures of three or more stories to be supported on pile foundations that penetrate Bay Mud deposits to firm, non-compressible materials, unless geotechnical findings indicate a more appropriate design.

8.1.e Design underground utilities to minimize the effect of differential ground displacements.

8.1.f Continue to provide for the identification and evaluation of existing structural hazards, and abate those hazards to acceptable levels of risk.

8.1.g Design building entrances, exits, and other vital features to accommodate expected settlement.

8.1.j Amend the local Uniform Building Code, as frequently as may be prudent, to incorporate standards for new and modified construction pertaining to development on areas of fill or underlain by Bay mud or Merritt Sand.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to geology and soils, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to geology and soils. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the General Plan), which includes several policies related to geology and soils. Those policies are detailed below.

8.3.j Requires shoreline owners to maintain dikes to applicable standards. **[New Policy]**

8.3.k Leave adequate setback along waterfront areas for the expansion of seawalls and levees. **[New Policy]**

8.3.l Regularly inspect and maintain seawalls around the City. **[New Policy]**

Alameda Point Element **[New Element]**

9.6.r Support integration of Alameda Point into the City of Alameda's Emergency Operations Plan.

9.6.s Create and integrate provisions for emergency management in Alameda Point into the City of Alameda's Emergency Operations Plan.

9.6.t Identify "critical facilities" in Alameda Point area, as defined in Alameda's 1976 Safety Element, and integrate them into the City's existing "critical facilities" list and emergency provision plan.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant geology and soils impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. A potentially significant impact would result if the project would result in or expose people or structures to any of the following:

- 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 know fault;
- Strong seismic ground shaking;
- Seismic-related ground failure, including liquefaction;
- Landslides;
- Substantial soil erosion or the loss of topsoil;
- Geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse;
- Expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

For the purpose of this EIR, significant geologic hazards would pertain to soil and/or seismic conditions so unfavorable that they could not be overcome by reasonable design, construction, and

maintenance practice; in addition, exposing an increased number of people to risk of injury would constitute a significant impact.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at buildout of the GPA.

Policy Implementation. Implementation of the new policies and policy revisions proposed as part of the GPA would not result in significant impacts. GPA Policies 9.6.r through 9.6.t which relate to geology and soils would have a beneficial impact by supporting the integration of Alameda Point into the City's Emergency Operations Plan and by creating emergency management measures. GPA Policy 9.6.t would be consistent with existing *General Plan* policies of the Safety Element. The GPA would be subject to existing *General Plan* Policies 8.1.a through 8.1.j pertaining to adequate design of buildings to meet seismic safety standards. In addition, CBC design standards are in place to ensure that adverse effects of seismic hazards are minimized and that risks to property and life are reduced or avoided.

Plan Buildout. Development that may occur under buildout of the GPA would be required to comply with Health and Safety Element policies of the existing *General Plan*, as described above. Underground utilities would be designed and built to minimize the effect of differential ground displacement. Less-than-significant impacts related to seismic, liquefaction, differential settlement, dike stability, and expansive soils that may result under buildout of the GPA are described below.

Impact GEO-1: The number of people and structures exposed to seismic shaking would increase under buildout of the proposed GPA. (LTS)

ABAG studies suggest that ground shaking in the vicinity of Alameda Point, from a strong earthquake centered on the San Andreas or Hayward Faults, would have a Mercalli intensity of IX.[173] Although the proposed project would not increase the likelihood of an earthquake, more people would reside and work in Alameda Point as a result of new development. Therefore, the number of people and structures subject to seismic shaking risks would increase.

Damage to structures generally would be greatest in older buildings, but damage could also occur in new construction. Single-family housing units built to existing code represent a relatively low life-safety risk. However, damage resulting from a strong earthquake could make these structures uninhabitable. A recent ABAG report[174] suggests that on average, about 8 percent of the post-1939 one- to three-story single-family wood-frame houses and about 15 percent of the post-1939 multi-

[173] ABAG, 2001. Earthquake Hazard Map for Alameda. Available at www.abag.ca.gov/cal-bin/pickmapsx.pl.

[174] Perkins, J.B., B. Chuaqui, J. Harrald, and D. Jeong, 1996. *Shaken Awake, Estimates of Uninhabitable Dwelling Units and Peak Shelter Populations in Future Earthquakes Affecting the San Francisco Bay Region.* Association of Bay Area Governments, publication number P96002EQK.

family wood-frame structures would be uninhabitable after an earthquake with a Mercalli intensity of IX. Since many of the existing structures in these categories throughout the Bay Area were not built to current standards, the proportion of uninhabitable new housing units at Alameda Point should be much lower.

Some existing structures at Alameda Point are not in conformance with CBC design standards. Existing structures adaptively reused at Alameda Point need to conform with the CBC standards and are required to be rehabilitated and upgraded prior to reuse. As a result of these upgrades, adaptively reused structures would experience reduced impacts from most earthquake types.

The amount of ground shaking that would occur in geologic materials at the western edge of the Civic Core planning area[175] in a magnitude 7.25 earthquake on the Hayward Fault is approximately equal to the level of ground movement assumed by the CBC in formulating their design standards. An earthquake similar in magnitude to the 1906 San Francisco Earthquake would produce ground accelerations more than one and a half times the CBC design level.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Policies 9.6.r through 9.6.t would help minimize this impact to human life by supporting integration of Alameda Point into the City's Emergency Operations Plan and identifying critical facilities.

Existing General Plan Policies. Policies 8.1.a, 8.1.b, 8.1.c, 8.1.d, 8.1.f, and 8.1.j are in place to ensure that adverse effects of seismic hazards are minimized and that risks to property and life are reduced or avoided. In addition, CBC design standards reduce the effects of most earthquake types and the probability of an earthquake occurring that exceeds CBC design standards is low.

Mitigation Measure GEO-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact GEO-2: Structures, roads, and utilities that may be developed under buildout of the GPA could be adversely affected by liquefaction. (LTS)

During a strong earthquake, liquefaction would be likely throughout Alameda Point where the site is underlain by a shallow water table and loose, sandy sediments. The severity of the impact would vary, depending on the nature of the structure and on site-specific geologic conditions. Generally,

[175] Carlisle, H., and K. M. Rollins, 1994. *Ground-Response Studies at the Alameda Naval Air Station. In: The Loma Prieta, California, Earthquake of October 17, 1989 - Strong Ground Motion.* U.S. Geologic Survey Professional Paper 1551-A. R.D. Borcherdt (ed).

liquefaction does not represent a significant life safety hazard but could extensively damage foundations and supported structures. Liquefaction can cause rapid differential settlements within the footprint of a structure or between the foundation of the structure and the surrounding ground.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. There are no GPA policies proposed that address liquefaction.

Existing General Plan Policies. Policies 8.1.a, 8.1.b, 8.1.c, 8.1.d, and 8.1.e. are in place to ensure that the effects of liquefaction on new development are addressed.

Mitigation Measure GEO-2: No mitigation measures are necessary. Implementation of the existing policies described above will ensure that no significant impact results.

Impact GEO-3: Differential settlement may occur and impact development under buildout of the GPA. The differential settlement could damage foundations, tilt or buckle structural supports, and mis-align horizontal features, such as doorways, utility connections, or other rigid transitions. (LTS)

Portions of Alameda Point have experienced significant ground surface settlement (and related damage to structures and utilities) caused by consolidation of sediment under the load of fill and structures. The areas most susceptible to settlement are underlain by relatively thick deposits of young Bay Mud. The mud is poorly consolidated and has low strength. The weight of the overlying materials (which include shallower Younger Bay Mud, fill, and structures) causes consolidation of the sediments over time. As the sediments consolidate at depth, the ground surface settles. If the settlement is not uniform (i.e. differential settlement), structural damage can occur. The potential for settlement of any particular structure includes areal settlement related to settlement of Younger Bay Mud beneath fill throughout much of Alameda Point and foundation settlement directly related to site-specific structural building loads. Buried utilities may also experience differential settlements along their alignments.

The future placement of artificial fill should be limited to reduce the potential for increased loading and associated settlement in areas underlain by thick Younger Bay Muds. Increased areal settlement could have implications on flooding potential as well as foundation design.

This impact may be economically significant, but is unlikely to affect life safety. Differential settlement is a potential hazard throughout Alameda Point, and would be most severe in areas with recently placed uncompacted fill or in areas underlain by thick Younger Bay Mud. Areas that have not previously been developed, such as the Northwest Territories sub-area, are particularly susceptible as significant loading (imposed by the weight of buildings and of the improvements) of the underlying has not occurred.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. There are no GPA policies proposed that address differential settlement.

Existing General Plan Policies. Policies 8.1.a, 8.1.b, 8.1.c, 8.1.d, 8.1.e., 8.1.f, 8.1.g, and 8.1.j are in place to address effects related to differential settlement.

Mitigation Measure GEO-3: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact GEO-4: Flooding of the interior of Alameda Point could occur if the perimeter dikes were breached. (LTS)

A breach in one of the exterior dikes could result in flooding the interior lands. Dike failure could occur as a result of seismic shaking or intense wave action. A failure of one of the western perimeter dikes may result in flooding of the Civic Core or Marina planning areas. Based on existing studies of perimeter dikes, catastrophic dike failure due to seismic shaking is unlikely to occur because the dikes are founded on relatively firm, dense silty sands that are not highly susceptible to liquefaction. However, liquefaction of the Merritt Sands cannot be ruled out. Dike failure could occur due to erosion during one or more large storms. Based on past performance of the dikes during large storms, significant damage to the dikes is likely in future storms, although a single storm is unlikely to result in a breach in the dikes. The dikes have been inspected periodically and maintained by the US Navy and are thought to be in good condition.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Policies 9.6.r through 9.6.t do not address the stability of dikes, but would help minimize this impact to human life by supporting integration of Alameda Point into the City's Emergency Operations Plan and identifying critical facilities. Policy 8.3.j requiring shoreline owners to maintain dikes to applicable standards, Policy 8.3.k requiring adequate setbacks to allow for levee expansion, and Policy 8.3.l requiring inspection and maintenance of seawalls would help minimize this impact to less than significant.

Existing General Plan Policies. There are no existing General Plan policies addressing this impact.

Mitigation Measure GEO-4: No mitigation measures are necessary. Implementation of the proposed policies described above will ensure that no significant impact results.

Impact GEO-5: Expansive soils could cause damage to foundations or pavements. (LTS)

Some clay-rich soils are classified as "expansive" due to their tendency to swell upon wetting and shrink upon drying. The volumetric changes in soils which have a high shrink-swell potential can cause damage to foundation elements and pavements. The soils through most of Alameda Point are mapped as Xeropsamments. Theses soils are predominantly sandy fill materials that were dredged from Oakland Harbor and San Francisco Bay. The sandy soils have a low shrink-swell potential (USDA, 1981) and would not be expected to present adverse conditions associated with expansive soils. In the event that clayey, expansive fills were present at individual development sites within Alameda Point, the requirements for a soils report under Policy 8.1a of the *General Plan* would ensure that localized, adverse soil conditions would be evaluated by a qualified professional.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. There are no GPA policies proposed that address expansive soils.

Existing General Plan Policies. *General Plan* Policy 8.1.a, which requires that a soils and geologic report shall be submitted if required by the Director of Public Works, would help minimize this impact by identifying areas of expansive soils in the vicinity of proposed projects. *General Plan* Policy 8.1.c requires that building design incorporate the recommendations contained in the geotechnical report, and *General Plan* Policy 8.1.j recommends amending the local UBC with new standards for development on Bay mud or Merritt Sand. Implementation of both of these policies would help minimize this impact.

Mitigation Measure GEO-5: No mitigation measures are necessary. Implementation of the existing policies described above will ensure that no significant impact results.

Impact GEO-6: In the event of a dike failure, lateral spreading may occur upslope of the dike failure. (LTS)

As mentioned in the setting section (above), existing data are not adequate to rule out the possibility of a catastrophic dike failure due to a large earthquake. Subsequent to a large-scale dike failure, lateral spreading may occur.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Policies 9.6.r through 9.6.t do not address the stability of dikes, but would help minimize this impact to human life by supporting integration of Alameda Point into the City's Emergency Operations Plan and identifying critical facilities. *General Plan* Policy 8.3.j, which requires shoreline owners to maintain dikes to applicable standards, would also help minimize this impact.

Existing General Plan Policies. There are no existing General Plan policies that address this impact.

Mitigation Measure GEO-6: No mitigation measures are necessary. Implementation of the proposed policies described above will ensure that no significant impact results.

(3) Significant Impacts and Mitigation Measures. No significant impacts related to geology and soils would result from implementation of the GPA.

I. UTILITIES

This section presents an overview of the utility systems in the City of Alameda and at Alameda Point, including water distribution, sanitary wastewater, industrial wastewater, solid waste management, natural gas, steam, telephone, electricity, and cable television. Table IV.I-1 presents a detailed list of the utility providers for each of the sites. The service areas of local utility providers are identified as well as current capacity levels. The potential effect of buildout of the GPA on these facilities is assessed, the need for new or replacement facilities to serve the development that may occur is documented, and specific measures required to mitigate any adverse impacts are presented.

Table IV.I-1: Utility Infrastructure Service Provider: Alameda Point

Utility System	Service Provider
Water Distribution	EBMUD
Sanitary Wastewater	EBMUD
Industrial Wastewater	Trident
Solid Waste	Waste Management Incorporated
Telephone	Alameda Power and Telecom; Pacific Bell
Electricity	Alameda Power and Telecom
Natural Gas	PG&E
Cable Television	AT&T Broadband; Alameda Power and Telecom

[a] EBMUD provides treatment while Alameda and Oakland pipelines convey the wastewater.

Source: LSA Associates, Inc., 2001.

The study area for impact analysis of the proposed project on utilities consists of Alameda Point and the City of Alameda. The *NAS Reuse EIR* contains information on utility services in the City of Alameda and Alameda Point. This information was updated and confirmed through written and personal correspondence with the City of Alameda (including the Alameda Point Leasing and Property Management Division of the Development Services Department and the Public Works Department), East Bay Municipal Utility District (EBMUD), the US Navy, Alameda County Waste Management Agency, and Alameda Power & Telecom (AP&T). Additionally, written correspondence between the City of Alameda and EBMUD were reviewed and drawn upon, as were documents produced by EBMUD and AP&T. Public utility and service providers who are anticipated to serve the Project site were contacted as part of this analysis, and their recommendations for system upgrades and improvements have been considered in the preparation of proposed mitigation measures.

1. Setting

A description of the existing setting for each utility provider that serves the Alameda Point GPA Planning Area is provided below.

a. Potable and Reclaimed Water. The primary source of water for Alameda Point is the Pardee Reservoir on the Mokelumne River in the Sierra Nevada mountains. Raw water is treated at EBMUD's Orinda filter plant and conveyed to Alameda via pipeline. EBMUD operates and maintains the water distribution system under a Joint Powers Agreement. In 2000, average water usage at Alameda Point was 0.25 million gallons per day (mgd).[176]

[176] McGowan, William, 2001. Personal communication.

Two distinct water distribution systems serve Alameda Point: one provides potable water and water for fire fighting; the other serves fire protection sprinkler systems within industrial area buildings. EBMUD supplies the water distribution systems through three metered points of connection. The combined maximum rated flow is 4,200 gallons per minute (gpm).[177] Water pressure is increased to meet industrial and fire protection requirements.

The distribution systems are comprised primarily of cast iron and transite (asbestos cement) pipeline with some steel, copper, and polyvinyl chloride (PVC) pipeline. The systems are over 50 years old, with the exception of the PVC pipe, which was installed in the mid-1980s in the southern portion of Alameda Point. Older pipes remain in service, but there have been failures during the past 10 years in the cast-iron piping, requiring extensive repair work and replacement of failed lead joints.[178]

Water recycling or reclamation, is a key element of EBMUD's Water Supply Management Program (WSMP), which was adopted in 1993. EBMUD and its customers currently use more than 14.5 mgd of nonpotable water, and the WSMP's 2020 goal is to recycle an additional 8.0 mgd, bringing the total to approximately 22.5 mgd (nearly 9 billion gallons annually). Typical uses for recycled water include irrigation, toilet flushing, cooling towers, and process water. Large commercial and industrial projects are currently encouraged to install separate piping systems to permit use of reclaimed water for irrigation or manufacturing processes.[179] EBMUD will request installation of these dual distribution facilities at Alameda Point. EBMUD has completed a Facilities Plan and EIR for the East Bayshore Recycled Water Project[180] which will serve northern Alameda from the College of Alameda in the east to Alameda Point in the west.[181] The impacts of using reclaimed water at Alameda Point are analyzed and disclosed in that document.

b. Wastewater.

(1) Collection and Transport. Under a cooperative agreement between the Navy and the City of Alameda, the City operates and maintains the majority of the sanitary wastewater collection system for Alameda Point. This system comprises lateral and branch pipelines augmented by 18 lift or pump stations. Pump Station No. 1, serves Alameda Point. In 2000, the process of transferring ownership of this pump station to EBMUD was initiated, and EBMUD is in the process of rehabili-

[177] US Navy, 1985e (as cited in City of Alameda, 2000).

[178] ARRA, 1995a (as cited in City of Alameda, 2000).

[179] East Bay Municipal Utility District 2001. *East Bayshore Recycled Water Project Final EIR*. SCH No. 2000052128. Prepared by Parsons.

[180] Ibid.

[181] McGowan, William, 2001. Personal communication.

tating it to modern municipal standards. When EBMUD completes this rehabilitation in 2001, Pump Station No. 1 will have a rated capacity of 7.5 mgd.[182]

Wastewater from Alameda Point is directed by the collection system to Pump Station No.1. From the pump station, a 20-inch diameter force main traverses southeasterly to its discharge point at the Alameda Interceptor located in Mariner Square Drive. Near the Alameda Estuary shoreline, the 60-inch diameter Alameda Interceptor splits into three smaller diameter gravity pipelines that cross under the Estuary ("siphons"), then discharge to EBMUD's 96-inch diameter South Interceptor located in Alice Street in Oakland.[183] Two of these siphons have been in operation for decades; the third was constructed in 2000. The new siphon has an available capacity of approximately 8.0 mgd; however, Alameda has contractual agreements with EBMUD for 9.53 mgd.

The sanitary wastewater collection system was constructed more than 50 years ago, and other than recently installed and rehabilitated facilities and portions of the collection system that were repaired and replaced in 1989, the majority of the system suffers from non-standard design, deterioration, and contamination from historic land uses and practices. An extensive survey of the existing collection system at Alameda Point (including former FISC Annex, adjacent to, but not within the project area) found that approximately 45 percent of its almost 30 miles of pipeline does not meet municipal design or material standards. This total includes approximately 13,000 feet of asbestos cement pipe.[184]

City Public Works officials have indicated that nonconforming pipes may remain in service and be repaired as needed during an interim period, but that they must be replaced as part of any long-term reuse. In addition to non-standard pipelines, some of the lift and pump stations serving Alameda Point do not meet current worker safety standards.[185] Generally due to deterioration, the system is suspected of having wet weather inflow and infiltration (I/I)—whereby high ground water enters the system through pipeline cracks or joint separation–but the extent of this problem is not known. Finally, high levels of chlorinated hydrocarbons were detected periodically in sanitary wastewater samples. These materials likely were associated with past industrial activity that was discontinued, and there appears to be no continuing contamination problem.[186]

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[182] East Bay Municipal Utility District, Water Resources Projects Division, 2001. Urban Water Management Plan 2000. February.

[183] City of Alameda, 1999a. *Draft Initial Study for the Naval Air Station Alameda Replacement Wastewater Interceptor System Project*. October.

[184] Asbestos-cement sewer lines were manufactured of concrete that is reinforced with asbestos fibers, a hazardous material.

[185] Moffatt & Nichol Engineers, undated. *Utility Study, Alameda Naval Air Station, Phase 1 – Preliminary Investigation.*

[186] City of Alameda, 1999b. *Draft EIR for the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility, Alameda, California.* May.

(2) Treatment. Alameda is served by EBMUD's Special District No. 1 (SD-1), which treats domestic, commercial, and industrial wastewater for the cities of Alameda, Albany, Berkeley, Emeryville, Oakland, and Piedmont, and for the Stege Sanitary District, which includes El Cerrito, Kensington, and part of Richmond. In 2000, the average daily wastewater flow from SD-1 was 77 mgd. The Main EBMUD wastewater treatment plant (WWTP), located at the foot of the San Francisco-Oakland Bay Bridge, treats wastewater from SD-1. With a total secondary treatment capacity of 168 mgd, the Main WWTP operated at 46 percent of that capacity in 2000.[187]

The bilge oily wastewater treatment system on Wharf 2 between Pier 2 and Pier 3 treats wastewater pumped from berthed ships. This system removes heavy metals and oil with a maximum treatment capacity of 150 gpm. It was installed in March 1995 and is in good condition. The US Navy cleaned the bilge oily wastewater treatment system and received certification from EPA before turning it over to the current operator, Trident, now responsible for the system's Pollution Discharge Elimination System (NPDES) permit. This system currently treats oily waste/waste oil from Maritime Administration (MARAD) ships.[188]

c. Solid Waste Management.

(1) Waste Disposal. In 2000, the City of Alameda disposed of slightly less than 50,000 tons of solid waste at several different landfills, with the majority of nonhazardous solid waste (approximately 85 percent by weight) transported to the Davis Street Transfer Station located in San Leandro and disposed at the Altamont Landfill located in unincorporated Alameda County.[189,190] In 2000, the Altamont Landfill received a total of 1,491,958 tons of refuse from all sources, or an approximate daily average of 4,100 tons per day (tpd).[191] The landfill has a permitted throughput of 11,150 tpd, and, on average in 2000, operated at approximately 37 percent of this permitted throughput.[192] The remaining capacity of the landfill is expected to be reached in approximately 30 years.

(2) Waste Diversion. The City of Alameda has not developed a Citywide solid waste management plan, but requires preparation of a project-specific solid waste management plan as part

[187] East Bay Municipal Utility District 2001. *East Bayshore Recycled Water Project Final EIR.* SCH No. 2000052128. Prepared by Parsons.

[188] Ibid.

[189] California Integrated Waste Management Board (CIWMB), 2001, *Jurisdiction Profile on the City of Alameda.*

[190] California Integrated Waste Management Board (CIWMB), 2001, *2000 Landfill Tonnage Report.*

[191] Ibid.

[192] California Integrated Waste Management Board (CIWMB), 2001. *Solid Waste Information System (SWIS): Facility/Site Summary Details.*

of the review of any demolition or building permit for redevelopment.[193,194] According to data published by the CIWMB, the City of Alameda achieved a diversion rate of diverted 48 percent in 1995, and 59 percent by 1998. The current diversion rate, approved and accepted by the CIWMB for the year 2000, indicates a City diversion rate of 65 percent.[195] In order to increase the diversion rate and facilitate compliance with the California Integrated Waste Management Act and Measure D (see below), the City Municipal Code requires all persons receiving residential solid waste collection to also have recyclable materials collected.[196]

d. Telephone. The Alameda Point telephone system is operated and maintained by Alameda Power & Telecom (AP&T). **AP&T is a citizen-owned utility, and department of the City of Alameda.** In 1985, the US Navy installed a new copper wire telephone system at Alameda Point, consisting of a private branch exchange switch with a remote switch and cables. Most of the outside cable, conduit, and manholes were replaced in 1990. The exchange switch at Alameda Point was shut down at the time of base closure and all telephone service is now routed through the Pacific Bell Central Office in Alameda.

e. Electricity. The Alameda Point electrical system is owned by the City of Alameda, and operated and maintained by **AP&T. After closure of NAS Alameda, the US Navy provided caretaker funds for providing electricity to commercial tenants, and for electrical system maintenance. In March 2000, these caretaker funds expired, and in July 2000, operation of the electrical system was transferred to AP&T.[197] AP&T obtains power from several sources, including geothermal and hydroelectric producers, and a City-owned cogeneration plant. Geothermal** generated electricity is obtained from a geothermal power complex in which AP&T maintains part ownership as one of 11 members of the Northern California Power Agency, a consortium of power providers. The City-owned plant is located within the project boundary, east of Main Street.

Power is delivered to the main substation at the East Gate. The primary power distribution system for Alameda Point is divided into two unconnected systems separated by Main Street, an older, lower-voltage system, and a newer, higher-voltage system. To reduce line loss associated with lower-voltage distribution facilities, AP&T is upgrading facilities of the older lower-voltage distribution system with higher voltage facilities.[198]

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[193] City of Alameda, 1999b, op. cit.

[194] City of Alameda, 2000. EIR Response to Comments Addendum: *Draft EIR for the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility, Alameda, California*. March.

[195] CIWMB, 2002, *Solid Waste Information System (SWIS): Facility/Site Summary Details.*

[196] Alameda, City of, 2001. *Alameda Municipal Code*, Chapter 21, Subsection 21-15-4, Collection of Recyclable Materials.

[197] Kohler, Joe, 2001. Alameda Power and Telecom. Personal communication. May 4.

[198] Ibid.

Peak-hour usage is approximately 70 megawatts (mW) for the City of Alameda and is estimated to be approximately 6 or 7 mW for Alameda Point.[199] AP&T also calculates current and projects future electricity use for each fiscal year (July through June) as shown in Table IV.I-2. Alameda Point's electrical consumption has and in the near term is expected to continue to increase at a slightly higher rate than the City as a whole.

Table IV.I-2: Alameda Point Power Consumption

Year	Consumption (in gigawatt hours [gWh])		
	City	Alameda Point	Alameda Point as % of City
2000	391.2	25.6	6.5
2001	396.4	29.2	7.4
2002 (forecast)	405.1	31.1	7.7

Source: AP&T, 2001.

f. Natural Gas. Pacific Gas & Electric (PG&E) operates and maintains the Alameda Point natural gas distribution system. The primary uses of natural gas are steam generation, space heating, cooking, water heating, and some industrial operations. Currently, closure of the boiler plant that generates steam is proposed, and heating for most buildings on the property is expected to be converted to natural gas. Interruptible gas service supplies the boiler plant, while un-interruptible (guaranteed) gas service supplies the administration and housing areas.

The gas distribution system consists of PG&E supply and PG&E and US Navy lateral and service pipelines. The distribution system is composed of steel and polyethylene piping, with most of the steel pipelines cathodically protected. The system is approximately 55 years old and has been repaired periodically, most recently in 1993. A 1985 study found the system to be in satisfactory condition with minimal corrosion.[200]

g. Cable Network. AT&T Broadband owns, operates, and maintains a cable network system on Alameda Point. The system was installed in 1985 and was upgraded in 1989. Additionally, AP&T is in the process of adding a duplicate cable system that will compete with AT&T Broadband's system. AP&T's head end cable television facility is located at Alameda Point. The head end is the source of cable programming for AP&T, and includes satellite dishes, plus an antenna.

As of 2000, there were very few, if any, cable customers in Alameda Point. Cable is not yet available throughout the entire Planning Area, but is available in the medium-density residential housing units of the West Neighborhoods area, and in some hangars, berthed ships, and office buildings at Alameda Point. Expansion of cable service to the rest of the Planning Area is underway.

h. Regulatory Considerations.

(1) Wastewater. The Regional Water Quality Control Board (RWQCB) has regulatory responsibility for water quality standards and enforcement. Maximum contaminant levels for drinking water are established in regulations implementing the federal Safe Drinking Water Act, 42

[199] Ibid.

[200] US Navy, 1985e. *Utility Technical Study of Naval Air Station, Alameda.* January 31.

U.S.C. Section 300f, *et seq.*, 40 C.F.R. Parts 141-43, and California Safe Drinking Water Act of 1989, Cal. Health & Safety Code Section 116300 *et seq*. and 22 C.C.R. Section 64400 *et seq*. Additional water quality regulatory considerations are discussed in Section 4.5 of this document, Water Resources.

While there are no federal standards governing water reclamation, the US EPA sponsored preparation of *Guidelines for Water Reuse*.[201] In California, water reclamation is regulated under 22 C.C.R. Division 4, Section 60301 *et seq.* ("Title 22"), promulgated in 1978 by the Department of Health Services (DHS) to assure protection of public health where water use is involved. Title 22 criteria include water quality standards, as well as treatment process, operational, and treatment reliability requirements.

EBMUD operates its Main WWTP in compliance with two national NPDES permits granted by and whose conditions are enforced by, the RWQCB. These permits (one wet weather, one dry weather) regulate all EBMUD discharge points. Wastewater discharged from Alameda Point is regulated by a permit from EBMUD. This permit outlines water quality criteria for wastewater entering the EBMUD collection system. All wastewater discharges must comply with the requirements specified in EBMUD's Wastewater Control Ordinance 311. Industrial wastewater at Alameda Point requires pretreatment to meet these criteria. In addition, Ordinance 311 requires appropriate charges and fees to be paid for use of the wastewater treatment facility, including Wastewater Capacity Fees.

(2) Solid Waste. The California Integrated Waste Management Act of 1989, California Public Resources Code Section 40000, *et seq*., requires cities to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. California Public Resources Code Section 42000-42023 establishes State programs designed to increase recycling and encourage developing commercial markets for recyclable materials. In general, the State places the burden of action and responsibility on cities to meet waste diversion requirements. The Alameda County Waste Reduction and Recycling Initiative Charter Amendment (Measure D) requires the County to divert 75 percent of solid waste from landfills by the year 2010.

(3) Existing General Plan Policies. Policies from the current *General Plan* that relate to utilities are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed *General Plan* amendments related to utilities are discussed in the Environmental Analysis subsection below.

Open Space for the Preservation of Natural Resources

5.1.h Continue to support EBMUD in its efforts to promote and implement water conservation measures.

5.1.i Encourage the use of drought-resistant landscaping.

[201] Camp Dresser, McKee, Inc., *et al.* 1992.

5.1.y Work with EBMUD to implement the Alameda Reclamation Project.

5.1.z Develop a comprehensive City Water Conservation Ordinance that recognizes Alameda's unique climate, soil conditions, and development patterns.

5.l.aa Review proposed development projects for both water and energy efficiency, and integrate plans for the use of reclaimed wastewater for landscaping as a condition of approval.

Waste Management

8.4.d Continue to support the resource recovery measures specified in the Alameda County "Solid Waste Management Plan," July 1987.

8.4.j Implement the recently approved residential area curbside recycling program.

8.4.k Design and implement a recycling program for commercial and industrial businesses, including paper product recycling strategies for business parks.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to utilities, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The proposed Alameda Point GPA includes the following policy associated with utilities:

9.3.gg Explore the possibility of using reclaimed wastewater from EBMUD to irrigate the planned golf course.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant utilities impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. Implementation of the GPA would result in a significant impact related to utilities if it would:

- Require the construction of new wastewater facilities, or expansion of existing facilities to serve the new development, the construction of which would cause significant environmental effects;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

- Require water supply beyond the amount available to serve the project from existing entitlements and resources;
- Require the construction of new storm water drainage facilities, or expansion of existing facilities to serve the new development, the construction of which would cause significant environmental effects;
- Require development of new sources of energy or construction of new electrical generation or transmission facilities, the construction of which would cause significant environmental impacts;
- Require construction of new major telecommunications facilities, or expansion of existing facilities to serve the new development, the construction of which would cause significant environmental effects;
- Result in a increased demand for solid waste disposal services that would substantially decrease the remaining available space at a landfill; or
- Interfere with the accomplishment of waste diversion goals mandated by the California Integrated Waste Management Act.

(2) Beneficial and Less-than-Significant Impacts. The beneficial and less-than-significant impacts that would result from implementation of the proposed GPA and its projected buildout are discussed below.

Policy Implementation. Proposed GPA Policy 9.3.gg would be beneficial to resource conservation by encouraging the use of reclaimed water for irrigating the proposed Golf Course. The City of Alameda currently has in place several regulatory means to reduce water consumption and encourage conservation of water. Existing General Plan Policies 5.1.h, 5.1.i, 5.1.y, 5.1.z, and 5.1.aa promote and implement water conservation measures and encourage the use of drought-resistant landscaping. The Alameda Municipal Code contains guideline requirements for water conservation in landscaping (Alameda Municipal Code, Chapter 30, Subsection 30-58 and 30-59) and the proposed GPA would be consistent with existing *General Plan* and the City's Municipal Code policies for water conservation.

Plan Buildout. Less-than-significant impacts associated with electricity and telecommunications that may result from buildout of the proposed GPA are described below. These potential impacts are either considered less-than-significant based on the significance criteria listed above or they would be mitigated to a less-than-significant level through the implementation of policies proposed as part of the GPA, existing General Plan polices, mitigation measures that were adopted as part of the *NAS Reuse EIR*; and/or other existing regulations.

Telephone. AP&T does not anticipate substantial problems accommodating telephone demand resulting from buildout of the proposed Alameda GPA, nor to construct major new

telecommunications facilities the construction of which could have significant environmental impacts. The proposed project would not result in significant impacts related to telephone service.

Electricity. AP&T has forecasted annual electricity demand through fiscal year 2021 for the City and Alameda Point. Forecasts are revised annually to take into account the latest commercial and residential development plans. Citywide forecasts incorporate detailed analysis of electricity use by commercial customers at Alameda Point, Harbor Bay Business Park, and Marina Village.[202] The methodology for these forecasts is comprehensive, and annual electricity use over the past 2 years has been within 1 percent of AP&T forecasts.[203]

Within Alameda Point, AP&T forecasts assume existing buildings currently occupied at Alameda Point will continue to average about 3.5 kilowatt-hours (kWh) per square foot per year, whereas electricity usage at new buildings would be closer to the usage at Marina Village of 23.6 kWh per square foot per year. In fiscal year 2020, Alameda Point is projected to use 68.8 gWh, and by the end of fiscal year 2021, Alameda Point is expected to comprise 11 percent of AP&T's total energy sales, or about 69.1 gWh per year.[204,205] The City's electricity demand is expected to be 657.6 gWh in fiscal year 2020.[206] AP&T does not anticipate any problems accommodating these projected increases in electricity demand. Buildout of the Alameda GPA would not require development of new sources of energy or construction of new electrical generation or transmission facilities, the construction of which would cause significant environmental impacts. The proposed project would not result in significant impacts related to electrical service.

Water. The following less-than-significant impact related to water supply would result from implementation of the proposed GPA.

Impact UTIL-1: Buildout under the proposed GPA would increase water demand. (LTS)

Under buildout of the GPA, 2020 water demand would be 1.55 mgd in Alameda Point, including an irrigation demand of 0.83 mgd which may be offset in the future by recycled water from the East Bayshore Recycled Water Project. On March 21, 2001, the City of Alameda submitted a request for formal consultation with EBMUD concerning water service for Alameda Point under the proposed project (pursuant to *CEQA Guidelines* that implement SB 901). Under these guidelines, the City must consult with the public water supplier to determine whether the water demand associated with the proposed project was included in its last Urban Water Management Plan (UWMP), and to assess

[202] AP&T, 2001. Administrative Report No. 2001-071. February 26.

[203] Brown, Mike. 2001. Personal communication. May 7.

[204] Kohler, Joe, Alameda Power and Telecom, 2001. Personal communication. May 4.

[205] AP&T, 2001, op. cit.

[206] Ibid.

whether its 20-year water supply (available during normal, single-dry and multiple-dry water years) will meet the water demand associated with the proposed project.

In response to the City's request for consultation on water supply, EBMUD conducted a Water Supply Assessment pursuant to the requirements of Section 10910 of the State Water Code and Section 15083.5 of the CEQA Guidelines. In a letter dated May 14, 2001, included in Appendix E of this Draft EIR, EBMUD stated that sufficient water supplies exist to meet projected demand in a normal rainfall year. Should a drought occur, Alameda Point would experience the same deficiencies as other existing and new EBMUD customers. Important findings of the EBMUD Water Supply Assessment are that Alameda Point has been historically served by the District and does not constitute a potential new area to be served, and that the GPA would represent a slight net decrease in water demand relative to use at the operating former NAS Alameda. Use of recycled water at Alameda Point, as planned (GPA Policy 9.3.gg), would further decrease potable water demand.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Policy 9.3.gg would help minimize this impact by encouraging the use of reclaimed water for irrigating the Golf Course.

Existing General Plan Policies. Policies 5.1.h, 5.1.i, 5.1.y, and 5.1.aa would help minimize this impact by implementing water conservation measures and encouraging the use of drought-resistant landscaping. Policy 5.1.aa would help minimize this impact by encouraging the use of reclaimed water for landscaping.

Other Policies. The City adopted a comprehensive City Water Conservation Ordinance in 1992, which would be applicable to all future development.

Mitigation Measure UTIL-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

(3) Significant Impacts and Mitigation Measures. Significant impacts that would result from implementation of the proposed GPA are described below.

Impact UTIL-2: Buildout of the GPA would contribute to peak wastewater flows that could exceed the capacity of existing sewage transport facilities. (S)

During wet weather events, and in times when groundwater is at its highest level (e.g., after a high-rain winter season) ground water inflow and infiltration (I&I) to the sanitary sewer system through pipeline joints and cracks can be high. The City recognizes that potential wet weather capacity shortfalls may exist under the cumulative condition within the NAS Alameda and FISC Facility reuse planning area, and has begun to evaluate options by which effective additional capacity could be achieved. The City currently operates an I&I control program, and is evaluating enhancements to

that program to further reduce I&I entering the system. Another option under investigation is peak flow stormwater detention. If required, the City would require creation of retention systems or other facilities that would limit the amount of inflow to the system compatible with its capacity. **Finally, the City could build additional facilities to accept build-out flows. The construction and/or operation of these facilities may be subject to additional environmental review under CEQA.**[207] The required facilities would be completed prior to construction of development that could cause peak wastewater flows to exceed the limits agreed to between EBMUD and the City.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. There are no GPA policies that address wastewater generation.

Existing General Plan Policies. Policies 5.1.h and 5.1.aa would help minimize this impact by supporting water conservation measures, which would reduce wastewater flows by decreasing water usage amounts. Policy 5.1.y addresses this by implementing the Alameda Reclamation Project.

Other Policies. The City has adopted a Water Conservation Ordinance in 1992, which will also help by reducing the volume of wastewater flows.

The implementation of the policies described above will help minimize this potential impact, but would not reduce the potential impact to a less-than-significant level. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure UTIL-2: Should the City determine that it needs to further reduce its overall peak flows into the WWTP, each specific development project that occurs under the GPA shall either provide facilities to reduce peak flows or contribute its fair share of the costs associated with the design and development of a sewer retention facility or an enhanced West Alameda I&I Program. (LTS)

Impact UTIL-3: Increased generation of solid waste as a result of buildout of the GPA could jeopardize the City's compliance with State and county waste diversion requirements. (S)

Solid waste generated by the buildout of the GPA (from building demolition and generation of associated debris) could jeopardize Alameda's solid waste diversion goals.

Many Alameda Point buildings contain large-scale roof timbers, roof decking, wall-framing timbers, wood or metal siding, interior wall partitions, and concrete slab floors, as well as other systems (e.g., plumbing, fire suppression). When such structures are "deconstructed," rather than demolished,

[207] Sheets, Cheri, 1999. Deputy Public Works Director, City of Alameda. Personal communication with Andrew Leahy, Project Consultant. September 29. (As cited in City of Alameda Catellus Mixed Use Development FEIR, 2000.)

wood and fixtures are retained for resale or other reuse rather than disposed, and the majority of such materials can be diverted from the waste stream. In some cases, warehouse deconstruction has resulted in a yield of up to 87 percent reusable materials.[208] Both for-profit and non-profit entities (contractors and organizations) can divert deconstructed materials into existing recycling and reuse markets, or that can provide technical assistance to projects regarding the phasing and financing of alternative demolition procedures.[209]

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. There are no GPA policies that address solid waste generation.

Existing General Plan Policies. Policies 8.4.j and 8.4.k would help to minimize this impact by implementing commercial and industrial business and residential recycling programs.

The implementation of the policies described above will help minimize this potential impact, but would not reduce the potential impact to a less-than-significant level. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure UTIL-3: Adopt a solid waste management plan consistent with *NAS Reuse EIR* Mitigation Measure UTIL-1. Plans for managing construction debris from subsequent specific projects shall be developed that promote separation of waste types and recycling, and provide for reuse of materials on-site for reconstructing infrastructure. This plan shall be prepared in coordination with City staff, the specific Projects' sponsor(s), and demolition subcontractors, and shall be approved by City staff prior to issuance of a demolition permit. The City and sponsors of projects shall work with organizations able to provide funding and technical assistance for managing and financing deconstruction, demolition, and recycling and reuse programs, should those programs exist at the time of site clearance. (LTS)

[208] Crimmell, Pavitra, 1999. Beyond Waste, Demolition Contracting. Personal communication with Ian Moore, Brady/LSA. July 21. (As cited in City of Alameda, Catellus Mixed Use Development FEIR, 2000.) This figure was achieved through a recent warehouse demolition project at the Presidio, San Francisco, completed by Beyond Waste.

[209] City of Alameda, 2000. *Catellus Mixed Use Development FEIR.* April.

J. TRANSPORTATION AND CIRCULATION

This section describes the existing traffic and circulation setting for the Alameda Point GPA Planning Area and nearby areas, including potentially affected areas within the City of Oakland, and assesses the GPA's effects on the area's transportation system. The GPA's potential impacts on intersection and roadway levels of service, the Metropolitan Transportation System (MTS) including regional transit systems, and pedestrian and bicycle circulation are specifically considered.

1. Setting

The transportation-related context of the GPA Planning Area is described below. The section is divided into five primary sub-sections:

- Regional and local access;
- Existing intersection and roadway operations;
- Future roadway improvements;
- Transit and non-motorized transportation (e.g., pedestrians and bicycles); and
- Ongoing transportation programs and plans.

a. Regional and Local Access. The Alameda Point GPA Planning Area is located at the west end of the Island of Alameda. All regional access to Alameda and the project site is provided via local roadways in Alameda and the City of Oakland. The regional and local vehicular access routes to and from the GPA Planning Area are described below and shown in Figure IV.J-1.

(1) Regional Access Routes. The GPA Planning Area is not directly accessible by any freeway. The nearest freeway access to Alameda and the GPA Planning Area is available at Interstate 880 (I-880) and Interstate 980 (I-980) via Oakland City streets. I-880 provides access to the south and to the north, with connections to Interstate 80 (I-80) and San Francisco via the Bay Bridge. I-980 provides access to the northeast, connecting with Interstate 580 (I-580) and State Route 24 (SR 24).

The primary regional access between the GPA Planning Area and I-880/I-980 is State Route 260 (SR 260), which includes the inbound Webster and outbound Posey Tubes. The Webster and Posey Tubes connect the City of Alameda with the City of Oakland. The Webster Tube is two lanes in the southbound direction from Oakland to Alameda, while the Posey Tube provides two lanes in the northbound direction, from Alameda to Oakland. Access between Alameda and the freeways, through the Tubes, is available by traveling on local streets in Downtown Oakland.

Access to I-880 is also available from the City of Alameda across three bridges at Park Street, Tilden Way and High Street via local Oakland streets. Roadway access to the Bay Farm Island portion of Alameda is available from State Route 61, across the Bay Farm Island Bridge.

LSA

FIGURE IV.J-1

Alameda Point GPA EIR

Study Intersections and Roadway Segments

LEGEND

- STUDY INTERSECTIONS
- MTS ROADWAY SEGMENTS
- ALAMEDA CITY LIMIT
- ALAMEDA POINT GPA AREA

0 3000 6000

FEET

SOURCE: LSA ASSOCIATES, INC. AND DKS ASSOCIATES, 2002.

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Each of the regional roadways that serve the project area is part of the MTS evaluated in this EIR. These roadways are highlighted on Figure IV.J-1. The required analysis of the proposed project on the MTS and regional transit services is included in Section 2.d, at the end of this chapter.

(2) Local Access Routes. Local access roadways that serve the GPA Planning Area are described below: first, for the City of Alameda generally; second, for the Alameda Point GPA Planning Area specifically; and third, for the City of Oakland. Arterial roadway segments that are part of the MTS network are also identified and shown in Figure IV.J-1.

City of Alameda. Most of Alameda is constructed as a grid, with east-west and north-south roadways traversing the City. Important north-south roadways include:

- *Webster Street and Constitution Way*. Traffic entering Alameda via the Webster Tube is routed onto either Webster Street or Constitution Way. Webster Street is a four-lane major street with left turn pockets provided; it terminates at Central Avenue. Constitution Way is also a four-lane major street with turn pockets until it reaches Lincoln Avenue where it terminates at the Lincoln Avenue/8th Street intersection. South of Lincoln Avenue, 8th Street connects Constitution Way to Central Avenue. Signals are located at major streets that cross these roadways, such as Atlantic Avenue, Lincoln Avenue, Santa Clara Avenue and Central Avenue. Both Webster Street and Constitution Way are part of the MTS roadway system.

- *Main Street*. The primary access and frontage road to Alameda Point is Main Street, which intersects with Atlantic Avenue at the eastern end of the Alameda Point area. Main Street has four travel lanes. Signals are provided at Main Street/Atlantic Avenue, Main Street/West Midway Avenue, Main Street/Singleton Avenue (Coast Guard Housing), Main Street/Ferry Terminal, and Main Street/Pacific Avenue, also known as Main Street/Central Avenue. Main Street is part of the MTS roadway system.
- *Tilden Way*. This four-lane collector roadway provides access from the Miller-Sweeney Bridge and Oakland to Lincoln Avenue.
- *Park Street, Fruitvale Avenue/Tilden Way and High Street*. These access points are located east of Webster Street and Constitution Way. They provide indirect access to the western end of the Island, including Alameda Point, and provide a connection to I-880 via local Alameda and Oakland streets.

Primary east-west streets include:

- *Atlantic Avenue*. This is a major east-west street that serves as the primary access into and out of Alameda Point. The roadway provides two travel lanes in each direction west of Constitution Way and one travel lane in each direction between east of Constitution Way and Sherman Street, where it becomes Sherman Street. Left turn pockets are provided at major intersections along its entire length. The portion between Main Street and Constitution Way is part of the MTS roadway system.

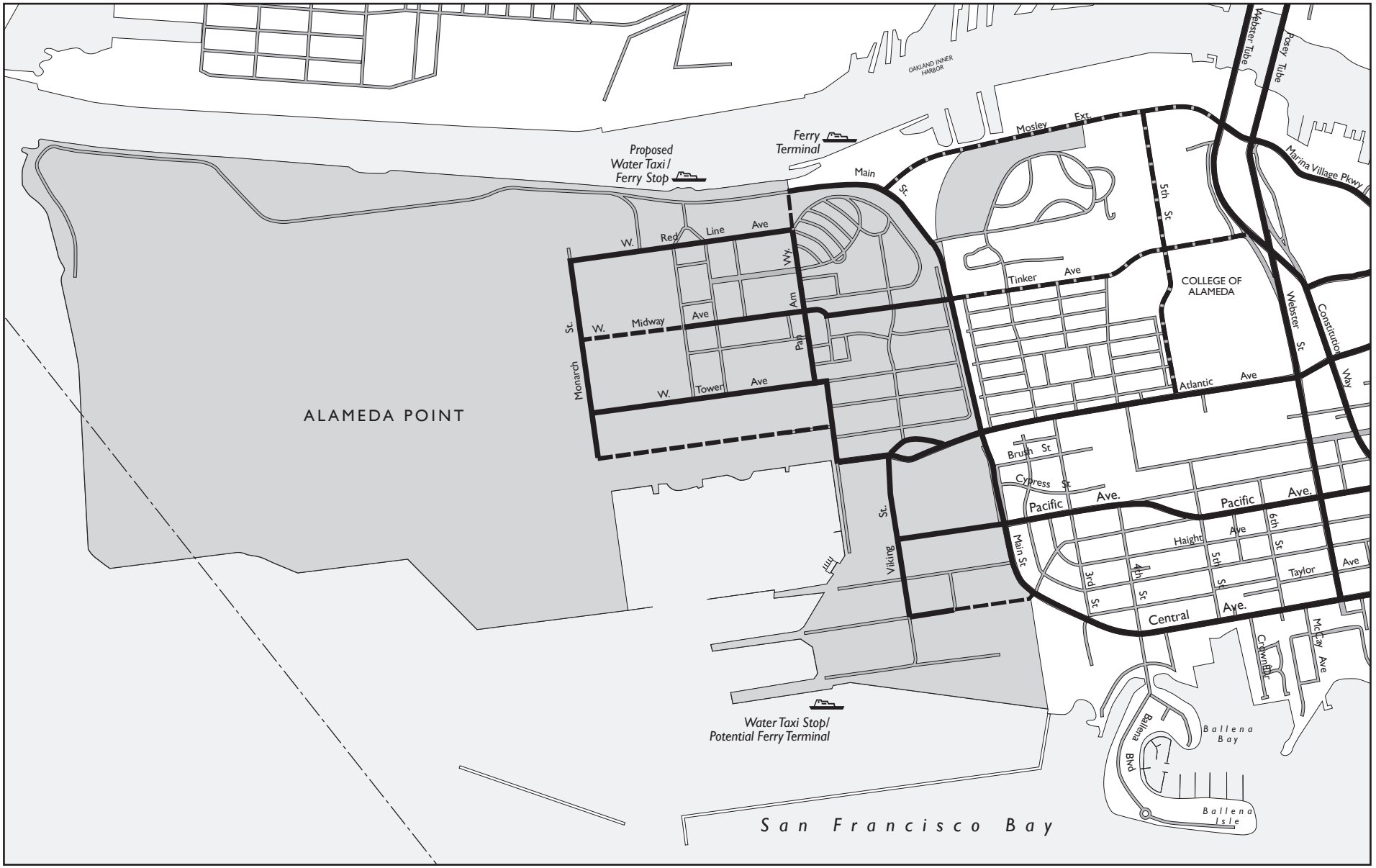
- *Pacific Avenue/Lincoln Avenue*. This four-lane major roadway provides access to other portions of Alameda east of the GPA Planning Area. It is named Pacific Avenue between Main Street and 4th Street; east of 4th Street, Pacific Avenue splits, with its southerly branch becoming Marshall Way which then becomes Lincoln Avenue at 5th Street. Lincoln Avenue continues east as a four-lane collector until it terminates at High Street. At Park Street, Lincoln Avenue intersects with Tilden Way, providing direct access to the Fruitvale (Miller/Sweeney) Bridge.
- *Santa Clara Avenue*. This two-lane major roadway serves as a primary east-west collector between Park and Webster Streets where it is part of the MTS roadway system.
- *Central Avenue*. This primary east-west major street is considered a MTS roadway between Main Street and Park Street. It is designated as State Route 61 between Webster Street and Sherman Street and continues as a two-lane major street east of Sherman Street. SR 61 continues as a four-lane roadway east of Sherman Street on Encinal Avenue.

Alameda Point GPA Planning Area. Five streets enter and exit Alameda Point: Main Street, Midway Avenue, Atlantic Avenue, Pacific Avenue, and W. Oriskany Avenue. Each of these access routes or roadways is one lane in each direction except for Atlantic Avenue, which has two lanes in each direction. The Alameda Point street system is shown in Figure IV.J-2.

Within Alameda Point, West Red Line Avenue, West Midway Avenue, West Tower Avenue, and Atlantic Avenue are east-west streets that link the former airfield and light industrial areas to the central core and residential areas. Lexington Street, Saratoga Street, Pan Am Way, and Orion Street provide north-south access from the pier facilities along the southern side of the site to the central portion of the site. Main Street also provides both east-west access and north-south access for Alameda Point.

There are no signalized intersections within Alameda Point; most of the intersections are stop sign controlled on the minor street approaches. However, signalized intersections are located adjacent to Alameda Point on Main Street at West Midway Avenue, Atlantic Avenue, Pacific Avenue, Singleton Avenue and Ferry Terminal access road.

City of Oakland. Like Alameda, the Downtown district of Oakland is aligned on a north-south, east-west grid pattern. Major north-south streets used or traveled by Alameda traffic include Broadway, Jackson Street, Webster Street, Harrison Street, Franklin Street, Madison Street and Oak Street. Generally, these streets (except Broadway and Jackson Street) run in a one-way direction. Major cross-streets are numbered and these also generally run in a one-way direction, such as 5th, 7th, 8th , 11th and 12th Streets. Traffic from western Alameda, including Alameda Point, contributes to traffic volumes on these streets, although the majority of Downtown Oakland traffic is locally-generated.



LSA

Major Street
Proposed Major Street
Minor Street
Planning Area

0 1250 2500
FEET

SOURCE: DYETT & BHATIA, 2000.

FIGURE IV.J-2

Alameda Point GPA EIR
Alameda Point Street System

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The Webster and Posey Tubes connect the City of Alameda with the City of Oakland. Access to the Webster Tube in Oakland occurs via two access points: southbound Webster Street at 7th Street and Broadway at 5th Street. Traffic exiting I-980 typically travels down Brush Street to 5th Street, and then left on 5th Street to Broadway. Traffic from I-880 southbound typically uses the Broadway/ Alameda exit and from Adeline Street turns right onto 5th Street. Traffic exiting I-880 northbound exits at Broadway, turns right onto 7th Street, and then turns right again onto Webster Street. It should be noted that the Webster Tube can be accessed via many other paths through Downtown Oakland, but these appear to be the most frequently used.

Traffic leaving Alameda via the Posey Tube enters the City of Oakland at 7th and Harrison Streets. From this point, traffic accessing I-880 southbound is directed to travel eastbound on 7th Street to Madison Street, turning right on southbound Madison Street, then left on eastbound 5th Street to the freeway on-ramp south of Oak Street. Traffic accessing I-880 northbound travels eastbound on 7th Street, turns right onto Jackson Street, and then turns right onto the I-880 Jackson Street on-ramp. Traffic accessing I-980 northbound may follow the I-880 northbound path, or use Downtown Oakland streets to reach the on-ramp at 12th and Castro Streets.

In addition to the Webster and Posey Tubes, other routes connecting Alameda and Oakland are available to reach destinations in these two cities. Park Street, Fruitvale Avenue/Tilden Way (Miller-Sweeney Bridge) and High Street all serve as alternate routes for trips to and from Alameda and Oakland. Park Street feeds into several collector streets on the Oakland side, with the primary route following 29th Avenue. Traffic from the Miller-Sweeney Bridge and the High Street Bridge could be used by drivers to connect with I-880 southbound at the High Street interchange.

b. Existing Intersection and Roadway Operations. This section includes a description of existing intersection and roadway operations.

Level of service (LOS) is a qualitative assessment of motorists' and passengers' perceptions of traffic conditions. LOS generally reflects driving conditions such as travel time and speed, freedom to maneuver, and traffic interruptions, even though it uses quantifiable traffic measures such as average speed, intersection delays, and volume-to-capacity ratios to approximate driver satisfaction. The LOS measures differ by roadway type because the user's perceptions and expectations vary by roadway type. Individual levels of service are designated by letters "A" for most favorable to "F" for the least favorable, with each representing a range of conditions. LOS A represents free flow conditions, while LOS F indicates excessive delays and jammed conditions. Table IV.J-1 and IV.J-2 show the LOS definitions for signalized intersections and roadway segments, respectively.

Table IV.J-1: Level of Service Definitions for Signalized Intersections

Level of Service	Expected Delay	Average Total Delay (Seconds/Vehicle)
A	Little or no delay	≤ 10
B	Short traffic delays	> 10 - 20
C	Average traffic delays	> 20 - 35
D	Long traffic delays	> 35 - 55
E	Very long traffic delays	> 55 - 80
F	Extreme delays potentially affecting other traffic movements in the intersection	> 80

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report No. 209, Third Edition, Washington D.C., 2000, Exhibit 16-2.

Table IV.J-2: Level of Service Definitions for Freeway and Arterial Roadway Segments

Level of Service	Roadway Operations	Actual Speeds on Facilities of Typical Free Flow Speeds				Volume to Capacity Ratio (V/C)
		Freeway	40 mph[a]	33 mph[b]	27 mph[c]	
A	Free flow conditions	≥ 60	≥ 35	≥ 30	≥ 25	≤ 0.60
B	Reasonable free flow, slight restriction to maneuverability	≥ 55	≥ 28	≥ 24	≥ 19	> 0.61 and ≤ 0.70
C	Stable operations, restricted maneuverability	≥ 47	≥ 22	≥ 18	≥ 13	> 0.71 and ≤ 0.80
D	Unstable operations, severely limited maneuverability	≥ 41	≥ 17	≥ 14	≥ 9	> 0.81 and ≤ 0.90
E	Extremely unstable, approaching or at capacity	≥ 30	≥ 13	< 10	≥ 7	**> 0.91 and ≤ 1.00**
F	Breakdown conditions, projected demand exceeds capacity	≥ 20	≥ 13	< 10	< 7	> 1.00

[a] Higher speed arterials (typical free-flow speed of 40 mph)
[b] Medium speed arterials (typical free-flow speed of 33 mph)
[c] Lower speed arterials (typical free-flow speed of 27 mph)

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report No. 209, Third Edition, Washington D.C., 2000.

(1) Existing Levels of Service. This section of the Draft EIR evaluates existing levels of service for traffic facilities that serve the GPA Planning Area.

Intersections. Table IV.J-3 presents the results of an evaluation of 29 intersections in Alameda and 33 intersections in Oakland that may be impacted by development that could occur under the GPA. The intersections analyzed in Oakland were selected based on consultation with City of Oakland staff. The locations of evaluated intersections are shown on Figure IV.J-1.

Each of the intersections reported in Table IV.J-3 currently operates at an LOS D or better in both the AM and PM peak hours, which is considered an acceptable level of service within both the City of Alameda and the City of Oakland.

Oakland/Alameda Estuary Crossing. As an island city, automobile access to and from Alameda is limited to the Webster and Posey Tubes and four bridges: Park Street Bridge, Fruitvale Avenue/Tilden Way (Miller-Sweeney Bridge), High Street Bridge, and the Bay Farm Island Bridge. Table IV.J-4 shows LOS and Volume to Capacity (V/C) ratio for each crossing, for both the AM and PM peak periods. All of the Oakland/Alameda Estuary crossings currently operate at an LOS D or better in both the AM and PM peak hours, which is considered an acceptable level of service by the City of Alameda, City of Oakland, and the Alameda County Congestion Management Agency (CMA). The Alameda General Plan does not establish a local threshold for roadway segment analysis. However, the Alameda County CMA generally considers the operation of any MTS roadway segments at a LOS F as unacceptable, and this threshold has historically been used by both the cities of Oakland and Alameda.

Table IV.J-3: Existing Intersection Levels of Service[a]

Analysis Intersection	AM Peak Hour LOS	AM Peak Hour Delay (sec/veh)[b]	PM Peak Hour LOS	PM Peak Hour Delay (sec/veh)[b]
City of Alameda				
Atlantic Avenue/Main Street[c]	B	13.0	C	22.3
Atlantic Avenue/West Campus[c]	A	9.6	A	9.2
Atlantic Avenue/Webster Street[c]	D	43.0	D	48.3
Atlantic Avenue/Constitution[c]	D	39.5	D	43.2
Pacific Avenue/Main Street	A	7.8	B	10.7
Lincoln Avenue/Webster Street[c]	A	9.7	A	8.8
Lincoln Avenue/Constitution[c]	C	30.0	C	27.7
Central Avenue/Webster Street[c]	B	17.2	B	15.6
Central Avenue/Eighth Avenue[c]	C	29.3	D	38.8
Clement Avenue/Park Street[c]	B	17.4	B	13.4
Buena Vista Avenue/Park Street[c]	B	13.3	B	12.9
Lincoln Avenue/Park Street[c]	D	44.8	C	20.3
Tilden Way/Fernside Boulevard	B	15.5	B	15.3
Lincoln Avenue/Grand Street	B	12.8	B	13.3
Otis Drive/Fernside Boulevard[c]	B	14.3	D	38.1
Otis Drive/Broadway[c]	B	10.7	B	12.1
Otis Drive/High Street[c]	B	13.9	C	20.8
Fernside Boulevard/High Street[c,d]	C	27.5	C	21.5
Sherman Street/Central Avenue[d]	C	21.3	C	20.7
Sherman Street/Buena Vista Avenue	C	21.3	C	25.8
Buena Vista Avenue/Webster Street	B	11.3	B	10.0
Buena Vista Avenue /Constitution Way	B	16.5	B	18.3
Tinker Avenue/Main Street	A	3.2	A	5.2
Tinker Avenue/Webster Street[e]	A	2.4	A	1.8
Mariner Square Drive/Constitution Way[e]	B	14.5	B	15.0
City of Oakland				
Oak Street/5th I-80 on-ramp	A	7.7	A	9.6
Oak Street/6th I-80 off-ramp	A	7.7	B	10.1
Jackson Street/7th Street	A	9.4	B	10.8

[a] The traffic counts utilized to document the current traffic conditions were gathered from several sources, including a City of Alameda comprehensive intersection traffic count survey conducted in the fall of 2000, and supplemented in 2002 with 15 additional intersections, 14 of which were in Downtown Oakland, recent City of Oakland traffic studies for select Downtown Oakland intersections; and Caltrans PSR studies for intersections in the High Street interchange area.

[b] sec/veh = seconds per vehicle.

[c] Locations with heavy pedestrian activities.

[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).

[e] Unsignalized intersection.

Table IV.J-3 *continued*

Analysis Intersection	AM Peak Hour LOS	AM Peak Hour Delay (sec/veh)[b]	PM Peak Hour LOS	PM Peak Hour Delay (sec/veh)[b]
Jackson Street/6th Street	E	65.2	D	54.4
Jackson Street/5th Street	A	9.6	B	11.1
Harrison Street/8th Street	A	7.4	A	7.9
Harrison Street/7th Street[c]	A	8.8	A	9.6
Webster Street/8th Street[d]	C	22.9	C	23.4
Webster Street/7th Street[c,d]	A	8.9	B	10.5
Broadway/5th Street[c]	C	22.5	D	36.7
Brush Street/12th Street	F	overflow	D	42.5
Brush Street/11th Street	A	5.4	A	5.6
Brush Street/5th Street	A	4.9	A	6.3
Madison Street/5th Street	A	8.6	A	9.4
Madison Street/6th Street	A	7.8	A	8.2
Madison Street/7th Street	A	8.8	A	9.7
Brush Street/7th Street	A	7.6	A	8.0
Castro Street/12th Street	B	11.2	B	14.3
Clay Street/7th Street[e]	B	10.4	B	12.2
Broadway/6th Street[c]	B	19.4	B	16.6
Broadway/7th Street[c]	B	10.3	B	15.5
Franklin Street/8th Street[c]	A	6.5	A	5.7
King Way/5th Street	A	5.2	A	8.4
King Way/7th Street	A	6.3	A	6.4
Webster Street /11th Street[c]	A	8.1	A	8.6
Webster Street /12th Street[c]	A	7.3	A	8.8
Harrison Street /11th Street[c]	A	7.4	A	9.6
Harrison Street /12th Street[c]	B	10.2	B	10.0
High Street /Jensen Street	B	12.6	B	17.2
High Street / Oakport Street	D	36.4	C	30.8
High Street/ Coliseum Way	D	36.5	D	37.0
29th Avenue / Ford Street[e]	C	15.8	C	18.5

[a] The traffic counts utilized to document the current traffic conditions were gathered from several sources, including a City of Alameda comprehensive intersection traffic count survey conducted in the fall of 2000, and supplemented in 2002 with 15 additional intersections, 14 of which were in Downtown Oakland, recent City of Oakland traffic studies for select Downtown Oakland intersections; and Caltrans PSR studies for intersections in the High Street interchange area.

[b] sec/veh = seconds per vehicle.

[c] Locations with heavy pedestrian activities.

[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).

[e] Unsignalized intersection.

Source: DKS Associates, 2002.

Table IV.J-4: Existing Oakland/Alameda Estuary Crossing Levels of Service, 2002

Crossing	Direction	AM Peak Hour			PM Peak Hour		
		Volume	V/C	LOS	Volume	V/C	LOS
Posey Tube	NB	2,293	0.58	A	2,279	0.57	A
Webster Tube	SB	3,224	0.80	D	3,851	0.89	D
Park Street Bridge	NB	2,466	0.85	D	2,670	0.92	E
Park Street Bridge	SB	1,986	0.68	B	1,927	0.83	D
High Street Bridge	NB	1,085	0.75	C	1,030	0.71	C
High Street Bridge	SB	987	0.68	B	916	0.63	B
Miller Sweeney Bridge	NB	972	0.34	A	1,043	0.36	A
Miller Sweeney Bridge	SB	1,144	0.39	A	954	0.33	A
Bay Farm Island Bridge	NB	1,698	0.59	A	2,013	0.69	B
Bay Farm Island Bridge	SB	2,078	0.72	C	2,146	0.74	C

Source: DKS Associates, 2002.

c. Future Roadway Improvements. Several planned and programmed transportation improvements have been assumed as part of the traffic analysis presented below.

(1) I-880 Corridor – Broadway/Jackson Improvements. In June 2000, Caltrans approved a Project Study Report (PSR) for the I-880/Broadway-Jackson Street-Phase I Interchange Improvements. This PSR recommended proceeding into the Project Approval/Environmental Document (PA/ED) Phase of Project Development with six project elements. The PSR identified a ramp improvement from Jackson Street to northbound I-880; however, this element was eliminated from further consideration during the PA/ED phase. Consequently, the current PA/ED is proceeding with five project elements and these elements constitute Phase I of this project. The PA/ED is anticipated to be completed in early 2002.

As part of the June 2000 PSR, Caltrans analyzed a number of potential connections to I-880 from the Posey/Webster Tubes. Based upon Caltrans' initial analysis, a combination of factors were identified which raised questions about the feasibility of the direct connection alternatives being considered (e.g., costs, environmental impacts, right of way impacts, geometric issues and safety issues). Therefore, these alternatives were not further developed. At that time, both the cities of Alameda and Oakland accepted the deferral of further study of these alternatives for a future PSR in order to maintain the Project Development Process for the remaining mutually acceptable improvements. The cities of Alameda and Oakland are currently working with the CMA and Caltrans to develop a new PSR to accomplish the intent of the original alternatives. These new alternatives would potentially be part of Phase II of this project and are not assumed in this analysis.

The proposed elements included in Phase I of the project are as follows:

- Construct a new southbound off-ramp for I-880 to Martin Luther King, Jr. Way;

- Improve the northbound Jackson Street on-ramp to I-880;
- Create a dual left turn from southbound Broadway at the intersection of Broadway and 5th streets;
- Improve the existing traffic operation system to better manage traffic flow between the Posey/Webster Tubes and I-880 and I-980; and
- Provide improved signage to direct traffic from I-880/I-980 to Downtown Oakland, Jack London Square, Chinatown, and the City of Alameda.

These elements are anticipated to be completed after 2005 due to funding availability, but before 2020, and are assumed in the 2020 traffic model projections.

As identified in the Countywide Transportation Plan prepared by the Alameda County CMA, the preliminary estimated capital cost for this Phase I project is $24.5 million. Funding sources will include the State Transportation Improvement Program (STIP), federal STP/CMAQ funding, and Measure B.

(2) SR 260 Deficiency Plan. In 1998, the Alameda County CMA notified the cities of Oakland, Berkeley, and Alameda that 7th Street between the Posey Tube (SR 260) and the northbound I-880 at Jackson Street/6th Street was operating at LOS F during the PM peak hour. The CMA determined that the cities of Alameda, Oakland, and Berkeley significantly contribute to the SR 260 deficiency. The approved SR 260 Deficiency Plan identifies the following strategies to reduce the delay at the connection:

- Provide solid striping on the right lane of southbound Jackson Street between 7th Street and 6th Street to allow traffic from the Posey Tube on 7th Street to turn right on Jackson Street into its own lane without merging with southbound Jackson Street traffic.
- Provide a separate northbound left-turn lane on Jackson Street at the I-880 northbound on-ramp intersection.
- Close the 6th Street connection ramp to Broadway and eliminate the crossover to the Broadway off-ramp.
- Provide traffic responsive signal control.

(3) I-880 Access Improvements of High Street/42nd Avenue. A project to improve access for vehicles traveling between I-880 and the cities of Oakland and Alameda via 42nd Avenue and High Street is currently in design. The currently preferred alternative is the 42nd Avenue to High Street connection, defined as Alternative B in the Project Study Report/Project Report published on December 18, 2000.

(4) Alameda Roadway Improvements. Three additional roadway improvements are planned to be constructed in the vicinity of Alameda Point, and will result in additional east-west

streets that will connect Alameda Point with the remainder of the island. These improvements include the following:

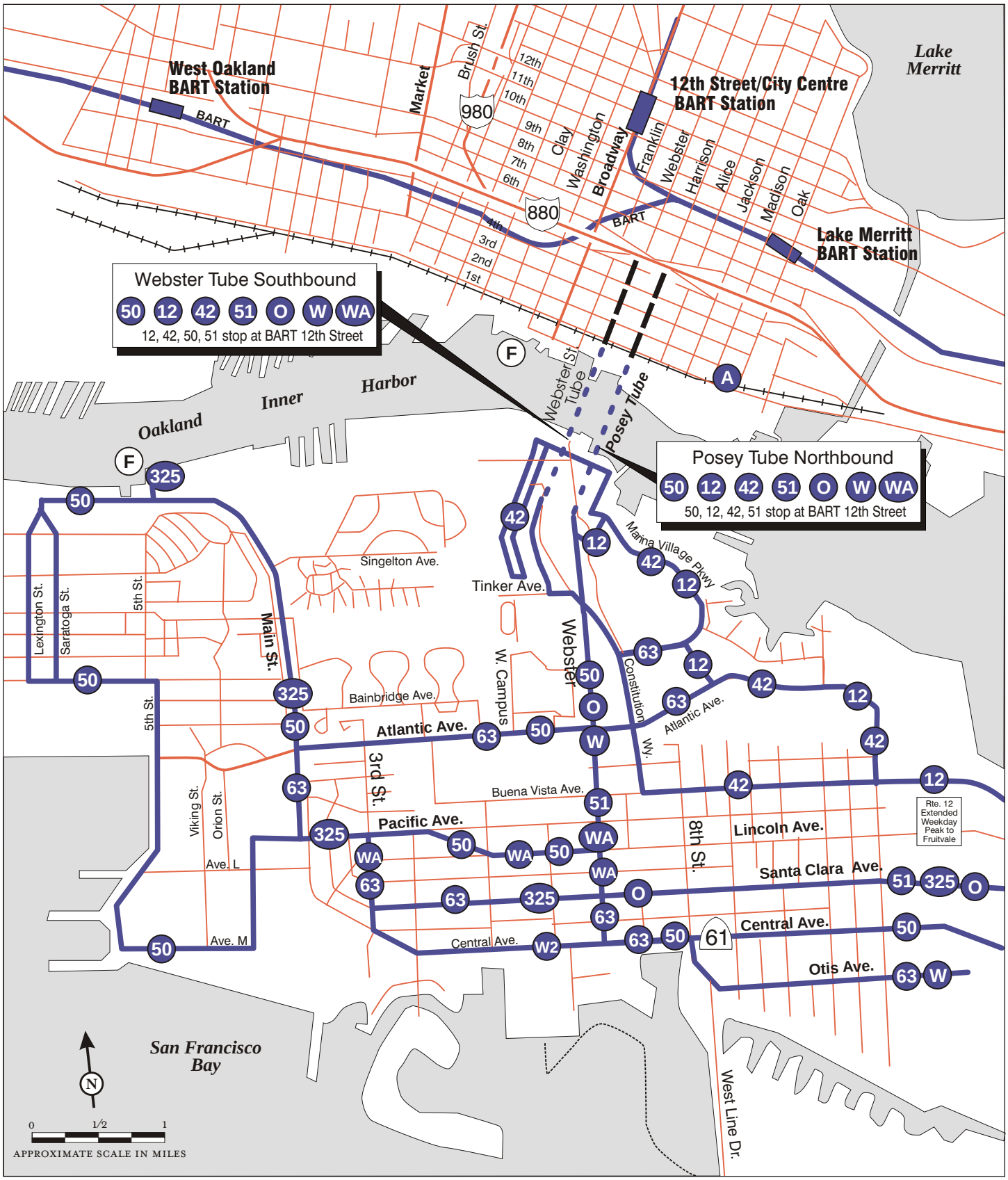
- *Tinker Avenue Extension.* This roadway project will provide a new entry point into the Planning Area, east of the project site to serve the Catellus/FISC project area. The new Tinker Avenue extension will have a signalized intersection at Webster Street, from which a two-way four-lane facility will provide access to Main Street and Alameda Point.
- *The Mitchell/Mosley Connector*. This roadway will also provide a new entry point into the Planning Area. This facility will be created by linking two two-lane roadways, enabling a continuous flow from the Marina Village area to Alameda Point. This facility will be completed with local development funding.
- *Broadway/Otis Drive and High Street/Otis Drive Intersection Channelization Improvements.* This project is currently under construction by Caltrans. It includes installation of left-turn pockets in both the eastbound and westbound directions at Broadway and High Street along Otis Drive and signal modifications to include an exclusive left-turn phasing.

d. Transit and Non-Motorized Transportation. A discussion of the existing and planned conditions for public transit, bicycle, and pedestrian facilities that serve the GPA Planning Area is provided below. A discussion of the impacts of the GPA on regional transit is included at the end of this Chapter as part of the MTS analysis.

(1) Transit. Transit service in the general vicinity of the GPA Planning Area includes BART, AC Transit, Amtrak, and ferry service as illustrated in Figure IV.J-3.

BART. The Bay Area Rapid Transit (BART) District is the spine of the regional transit network. The BART system links Oakland with San Francisco and with selected cities throughout Contra Costa County and Alameda County. While BART does not serve Alameda directly, Alameda residents can access BART via car (West Oakland and Fruitvale stations) or directly by bus at one of the three Downtown Oakland BART stations (12th Street, 19th Street, and Lake Merritt) or the Fruitvale station. BART operates between 4:00 a.m. and 1:00 a.m. Monday through Friday, between 6:00 a.m. and 1:00 a.m. on Saturdays, and between 8:00 a.m. and 1:00 a.m. on Sundays and major holidays. The last trains leave stations at midnight and arrive at the other end of each line at 1:00 a.m. Service frequencies, service route configurations, and train lengths are adjusted to meet service demands.

AC Transit. AC Transit provides bus service to residents and visitors throughout Alameda and Contra Costa Counties by an extensive network of local transit lines and into San Francisco via the Bay Bridge. Within the vicinity of Alameda Point, several streets serve as transit routes, including the Webster Street/Posey Tubes, which provide access to Oakland (linking to regional transit systems such as BART and Amtrak) and to Alameda's major east-west avenues: Atlantic, Buena Vista, Santa Clara, and Central. Table IV.J-5 provides a summary of the AC Transit services near Alameda Point.



LSA

LEGEND:

- BART STATION
- FERRY TERMINAL
- AC TRANSIT ROUTE
- AMTRAK STATION

FIGURE IV.J-3

Alameda Point GPA EIR

Transit Services

SOURCE: LSA ASSOCIATES, INC., 2002.

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Table IV.J-5: AC Transit Services Near Alameda Point

	Service Type	Weekday Peak Service Interval (Minutes)	Weekday Off-Peak Service Interval (Minutes)	Weekday After 7:00 p.m. Service Interval (Minutes)	Saturday Service Interval (Minutes)	Sunday Service Interval (Minutes)	Late Night Service
Local Service							
Line 12 Alameda-MacArthur BART via Piedmont (Nearest stop at Tinker and Mariner Square Loop)	Local	15	none	none	none	none	none
Line 42 Alameda-BART 12th Street[a] (Nearest stop at Tinker and Mariner Square Loop)	Local	15	none	none	none	none	none
Line 50 Downtown Oakland – Alameda NAS-Fruitvale (Stops within Alameda Point)	Local	30	30	30	30	30	none
Line 51 Alameda-Berkeley via Rockridge (Nearest stops on Webster Street)	Local	6-8	10	15-30	15-30	20-30	60
Line 63 Bay Farm Island – Marina Village Parkway (Nearest stops on Main Street)	Local	30	30	30 (until 9 p.m.)	none	none	none
Line 325[b] Dedicated Alameda Ferry Shuttle (Circulates through Alameda Point)	Local-Ferry Connection	60	none	none	none	none	none
Trans-Bay Services							
Line O San Francisco – Alameda (Nearest stops on Webster Street)	Transbay	10-15	45	60	60	60	none
Line W San Francisco – Alameda (Nearest stops on Webster Street)	Transbay	15	none	none	none	none	none
Line WA San Francisco – Alameda (Nearest stops on Third Street)	Transbay	20	none	none	none	none	none

[a] Route 42 is subsidized in part by the City of Alameda and private developers.
[b] AC Transit is considering elimination of this route.

Source: AC Transit Schedules, 2002. Alameda/Oakland Ferry Service.

AC Transit service is governed by a Short Range Transit Plan and a Service Deployment Plan. AC Transit is considering implementing a new short-term deployment plan and has recently been studying the route connectivity between its major transit corridors, including Route 51 within the City of Alameda. Route 51 does not operate within walking distance of Alameda Point. This restructuring is anticipated to result in changes to the trunk routes currently operating within the City; Route 51 is to be restructured to link with the Telegraph Avenue/Shattuck Avenue route segment of Route 43. The restructuring effort is not intended to result in a significant shift of AC Transit resources, and no new funding strategies are needed to implement the restructuring.

The *Alameda Long Range Transit Plan (LRTP)*, which was accepted by the City Council in September 2001, seeks to improve transit ridership and proposes AC Transit and ferry improvements to serve Alameda Point, including changes to bus frequency, route changes, water transportation such as bus barges, water taxi services, and improvements to the ferry system. All of these improvements require coordination with the transit provider. AC Transit has not acted on the LRTP and none of these improvements are assumed in this analysis.

To improve coordination between AC Transit and the City of Alameda, an inter-agency liaison committee was created in 2002. The committee includes two AC Transit Board members and two Alameda City Council members and considers issues such as scheduling, funding allocations and legislation for implementing the LRTP.

Water Transit. The City operates two ferry services: the Alameda/Oakland Ferry Service (AOFS) and the Alameda/Harbor Bay Ferry Service (AHBFS). In the past year, the AOFS has carried 450,663 passengers and the AHBFS has carried 134,601 passengers. The AOFS provides service (13 round trips per day on weekdays) across the Bay from Oakland's Jack London Square and Alameda to two locations in San Francisco: the Ferry Building at the foot of Market Street and Pier 41 near Fisherman's Wharf. Most of the service during the weekday peak commute hours is limited to the Ferry Building. On weekdays, the scheduled service ranges from about 30-minute headways during the peak commute hours to about 2 hours during the midday. Weekend service varies depending upon the season ranging from two round trips between Alameda/Oakland and San Francisco per day in the winter, to six round trips in the spring and fall, to ten round trips in the summer. The westbound ferries operate between 6:00 a.m. and 9:25 p.m. The eastbound service runs between 6:30 a.m. and 8:55 p.m. with seasonal service to PacBell Park and Angel Island State Park. The ferries are operating at approximately 20 percent of capacity.

(2) Bicycle Facilities. The City of Alameda's *Bicycle Master Plan*, adopted in January of 1999, addresses issues of safety, access, quality of life, and the effective implementation of bikeways and pedestrian ways in Alameda. The Bikeway System set forth in the plan was adopted into the General Plan. The City of Alameda has adopted the Caltrans description of bikeways (i.e., bicycle facilities) for bicycle and/or pedestrian facilities in the City. Types of bikeways are described by Caltrans in the *Highway Design Manual* (HDM) as follows:

- *Class I Bikeway*. Referred to as a "bike path" or "multi-use trail." Provides for bicycle travel on a paved ROW completely separated from any street or highway.
- *Class II Bikeway*. Referred to as a "bike lane." Provides a striped lane for one-way travel on a street or highway.
- *Class III Bikeway*. Referred to as a "bike route." Provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.

The City of Alameda has bikeway facilities for all designations (Class I, II, and III). Existing and planned bicycle facilities in the GPA Planning Area and the nearby vicinity are described below.

Existing Bikeways. As a former Naval Air Station, Alameda Point was not designed to provide bicycle linkages to or from the other neighborhoods in Alameda. In the years that NAS was operational, access was limited to guarded security gates. No bikeways currently exist within the GPA Planning Area and bikeways to the planning area are limited. Existing bikeways in the vicinity include the following:

- *Main Street.* Class I separated bike paths are located on Main Street. On the east side, the path extends from Singleton Avenue to Atlantic within the Main Street Greenway. On the west side, the path extends from the Ferry Terminal to its southern terminus near Central Avenue.
- *Singleton Avenue.* A Class II bike lane is located along Singleton Avenue.

Planned Bikeways. Many projects identified in the *Bicycle Master Plan* link Alameda Point both internally and to other destinations throughout the City. Specific bicycle routes identified in the Alameda Point GPA Planning Area and its vicinity include:

- *Class I*
  - Main Street between Singleton Avenue and Ferry Terminal.
  - A circumferential path along the waterfront around the entire project site, using roadway alignments such as Main Street and Ferry Point and abutting the Estuary and San Francisco Bay (noting that the final alignment will require coordination with other agencies).
  - Monarch Street from the Estuary to San Francisco Bay.
  - Atlantic Avenue between Webster Street and Main Street.
  - Lexington immediately south of Main Street.
- *Class II*
  - Lexington Street between West Red Line Avenue and Atlantic Avenue (extended).
  - Saratoga Street between West Red Line Avenue and Atlantic Avenue (extended).
  - Midway between Main Street and Monarch Street.

- Pan Am Way/Ferry Point between Main Street and Atlantic Avenue.
- Oriskany Avenue between Ferry Point and Third Street.
- Atlantic Avenue between Ferry Point and Main Street.
- Tinker Avenue west of Webster Street.
- Third and Fifth Streets between Central and Mosley Avenues.
- Central Avenue.
- From Main Street/Midway Street to Webster Street along Oakland Estuary (extended).
- From Main Street to Webster Street along Midway alignment (extended).
- East Campus Drive and Mariner's Square Loop from Atlantic Avenue to Marina Village Parkway.

ABAG, a regional planning agency, is also planning and implementing a continuous public access corridor (the Bay Trail) around San Francisco Bay. The Bay Trail Plan was authorized by the California legislature. The Plan contains policies, trail alignments, and specifications for bikeway classifications. ABAG's goal is to establish a trail following the shoreline as closely as possible. The Bay Trail alignment does not presently extend onto Alameda Point, but does run along Main Street. Portions of it will be constructed as part of the Catellus Master Plan on the FISC site.

The *Final Alameda Countywide Bicycle Plan* (Bicycle Plan)[210] was adopted by the Alameda County CMA Board in June 2001. The goal of the *Bicycle Plan* is to increase the potential for bicycle transportation by integrating bicycling into the Alameda County transportation system. In the City of Alameda, cross-county corridors include Route 5-Bay Trail, Route 10-Fruitvale/Joaquin Miller, and Route 15-Alameda-Doolitle Road. The Route 10 and Route 15 corridors terminate in Alameda, running along Broadway and Clement and Atlantic Avenues, respectively. These corridors follow a similar alignment to the existing or proposed Class II bike lanes along Broadway and Clement Avenue, as designated in the City of Alameda *Bike Master Plan*.

(3) Pedestrian Facilities. Existing and planned pedestrian facilities within the GPA planning area and areas that could be affected by buildout of the GPA are described below.

Alameda. Existing pedestrian facilities within the GPA Planning Area are limited to sidewalks in some of the areas. As described above, Class I bikeways are multi-use trails that serve both pedestrian and bicycle traffic on facilities that are separated from vehicle traffic. The Main Street Greenway trail serves both pedestrians and bicycles. Other pedestrian facilities in the vicinity are limited to standard sidewalks. Pedestrian activity in the immediate project vicinity is low; it significantly increases in the vicinity of the College of Alameda and along Webster Street corridor near the intersection of Webster Street and Atlantic Avenue.

[210] Alameda County Congestion Management Agency,. *Alameda Countywide Bicycle Plan: Final Report* July 2001.

A Class I bikeway, that would provide a separate pedestrian path, is planned along the south side of Atlantic Avenue within the abandoned railroad right-of-way. Several pedestrian improvements are also planned within the Catellus Mixed Use Master Plan area on the FISC site.

Downtown Oakland. Downtown Oakland contains several areas with significant pedestrian activity. In particular, the Broadway Corridor and the Chinatown area (focused on Webster Street) experience high pedestrian volumes. Chinatown is a major pedestrian area with a dense population and it is also a major thoroughfare for vehicles. Oakland Chinatown has the highest concentration of pedestrian, bicycle and vehicle collisions in the City of Oakland.[211] In recent years, the City of Oakland has taken significant steps toward improving pedestrian safety in Chinatown, including physical improvements to certain intersections, pedestrian and driver education efforts, and successful application for grant funds for a "Revive Chinatown" planning effort that will recommend additional measures to improve pedestrian safety and ensure the continued economic vitality of Chinatown.

e. On-Going Transportation Programs and Plans. Regional and local programs and plans that regulate transportation and circulation are briefly described below.

(1) Alameda County CMA Congestion Management Program. The Alameda County CMA is responsible for ensuring local government conformance with the Congestion Management Program, a short-range document that helps coordinate planning and funding of transportation improvements. Every two years the CMA prepares a 7-year capital improvement program aimed at reducing traffic congestion. The Congestion Management Program (CMP) requires that each jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level, monitor impacts to the regional network caused by development, and provide mitigation where future growth degrades service level. The CMA has review responsibility for proposed GPAs and development projects consistent with the General Plan that are expected to generate 100 or more additional PM peak hour trips and monitors impacts of land use development on the regional MTS. The required analysis of the GPA on the MTS network is provided at the end of this chapter. The CMA biennially monitors existing service levels on the CMP network. When roadways deteriorate below an acceptable LOS, the CMP requires the jurisdiction(s) which significantly contribute to the deficiency to adopt a deficiency plan.

(2) City of Alameda Transportation Systems Management (TSM) Programs. The City of Alameda has several programs related to TSM. Each program is described below.

Traffic Capacity Management Procedure (TCMP). On June 19, 2001, the City adopted a TCMP (see Appendix F) that provides a supplemental strategy to monitor and mitigate the potential capacity deficiency of the Posey and Webster Tubes. The TCMP requires that monitoring of traffic be performed in order to evaluate the remaining capacity of the Tubes. The TCMP requires any

[211] City of Oakland Revive Chinatown Grant Application, November 2001.

development west of Grand Street that is projected to generate peak hours trips through the Tubes in excess of 1 percent of the current estimated reserve capacity to prepare a traffic report. The report determines the number of project-generated peak hour trips projected to pass through the Tubes in each direction during the AM and PM peak hours.

Each report identifies the current remaining capacity, how the project will reduce the remaining capacity, and proposes feasible mitigation measures to reduce the number of peak hour trips generated by at least 10 percent for residential development and 30 percent for non-residential development. Acceptable mitigation measures include only enforceable TSM/TDM (see below) measures which have been shown to reduce trips generated by similar projects.

Citywide Development Fee. Section 27-3 of the City's Municipal Code requires the payment of a Citywide Development Fee as a condition of development to pay for traffic safety/capital replacement and transportation improvements and facilities; parks and recreation improvements and facilities; public facilities; and public safety facilities. The citywide development fee is imposed by land use category. It is imposed upon all new, or expanded existing, commercial development, on new residential development, and on use permits that intensify the use of existing commercial or residential structures as set forth in the Citywide Development Fee Resolution.

The purpose of the traffic safety/capital replacement and traffic component is to fund required improvements related to public safety such as traffic signals, street overlays, handicap ramps at intersections, and other traffic safety improvements and to mitigate the degradation in the levels of service on public roads from new developments.

TSM/TDM Plan. The City is in the process of developing a Transportation Systems Management/Transportation Demand Management (TSM/TDM) plan for the entire west end of the City. The TSM/TDM plan will include a menu of primary and supporting strategies to be utilized in order to reduce the number of peak period trips through the Tubes.

(3) Existing General Plan Policies. Policies from the current *General Plan* that relate to transportation and circulation are listed below. Amendments to existing *General Plan* policies that are proposed as part of the project (Alameda Point GPA) are not included here, but are discussed in the Environmental Analysis subsection further below.

Retail Business and Services

2.5.m Improve public transit service to shopping areas.

Street Systems

4.1.a Designate a system of major streets and minor streets as a basis for managing traffic to minimize intrusion in residential neighborhoods.

4.1.b Encourage traffic within, to, and through Alameda to use the system of major streets by providing traffic control measures to ensure smooth flow.

4.l.c Do not increase through-traffic capacity on the Main Island.

4.1.i Develop a program to restrict through-traffic on minor streets where it becomes a problem for residents.

4.1.n Evaluate the need for Atlantic Avenue extension to ensure that if the Beltline service were to be terminated, the right-of-way would not be re-used for a purpose other than extension of Atlantic Avenue.

Transportation Systems Management

4.2.a Recognizing that buildout of the City will result in unacceptable congestion unless 1990 travel habits are altered, Alameda is committed to de-emphasizing use of the single-occupant vehicle (SOV) during peak periods.

Transit

4.3.a Support AC Transit's current (1990) route restructuring plan for local and express bus service.

4.3.b Encourage AC Transit to maintain a dialogue with Alameda to ensure continued high levels of coverage and transit frequency.

4.3.c Support AC Transit's preliminary concept of a light rail line connecting Downtown Oakland, BART stations and Oakland Airport with the route passing through Alameda.

4.3.d Develop transit-oriented streets where feasible.

4.3.e Encourage AC Transit to consider Transit Centers to facilitate transfers at the following locations: South Shore Center, vicinity of Blanding and Broadway, along Webster Street, and at the Alameda Gateway and Harbor Bay Isle ferry terminals.

4.3.f Support ferry service as an effective means of reducing demand for greater road capacity, offering commute alternatives, and minimizing pollution.

4.3.g Work with the Metropolitan Transportation Commission to secure and maintain needed subsidies for ferry service from federal and State highway or transit funds.

4.3.h Work toward integrating a Citywide demand responsive shuttle service, which incorporates para-transit, BART, AC Transit, Dial-A-Ride, and shopper needs.

4.3.i Seek both technologies and service providers capable of expanding transit use in Alameda.

Pedestrian Routes

4.4.a Ensure that automobile circulation improvements do not degrade the pedestrian environment.

4.4.c Identify potential conflicts between bicyclists and pedestrians and develop projects to minimize such conflicts (e.g. BFI Bridge and Shoreline paths).

Bikeways

4.5.a Provide a system of bike paths, bike lanes, and bike routes that will encourage both commute and recreational cycling.

4.5.b Maintain communication between bike riders and City staff responsible for bikeways design and budgeting to ensure effective use of available funds.

4.5.c Encourage transit systems to provide bicycle transport for commuter and recreational bicyclists.

4.5.d Consider providing public amenities for bicycle riders such as staging areas with bicycle lockers at transit connections.

4.5.e Require places of employment to provide ample, safe storage for bikes.

4.5.f Prepare a bikeways implementation program that includes priorities and a schedule.

Movement of Goods

4.6.c Maintain a system of truck routes that enables efficient deliveries with minimum disturbance of residential neighborhoods.

2. Environmental Analysis

This subsection of the EIR contains five parts:

- GPA policies that are relevant to transportation and circulation;
- Thresholds of significance;
- Description of the impact analysis methodology;
- Effects of the proposed GPA on local transportation facilities in Alameda and Oakland; and
- Effects of the proposed GPA on the regional MTS, which includes transit facilities and services.

a. General Plan Amendment Policies. The Alameda Point GPA includes amendments to General Plan policies that relate to transportation and circulation, in addition to a buildout scenario for Alameda Point. The traffic analysis in this section evaluates that buildout scenario and the policies.

The proposed GPA policies that relate to transportation and circulation are detailed below.

Transportation Element

4.2.c Require development west of Grand Street which significantly impacts peak hour traffic volumes in the Webster/Posey Tubes to provide transportation alternatives such as: pricing and management of the parking supply; providing preferred carpool parking; provision of transit stops; implementing

compressed work weeks, telecommuting, staggered hours, flex time; providing discounted transit passes; providing subsidized shuttle service; providing bicycle facilities; working with BART to expand parking at stations; implementing shuttle or contribute toward expanding AC Transit service to ferry terminals and BART stations.

Every three years, or more frequently as the capacity of the Tubes is close to being reached, the City will conduct a study of traffic conditions on key roadways affecting the capacity of the Tubes to revise, based on actual traffic conditions and already permitted development, the estimated number of trips that may be produced by new development or redevelopment without exceeding the capacity of the Tubes. **[New Policy]**

Alameda Point Element **[New Element]**

9.2.c Create a district that is well integrated with the surrounding neighborhoods and has a high level of accessibility via a variety of transportation modes.

9.2.e Achieve human-scale transit-oriented development.

9.2.f Focus uses that create pedestrian traffic in all areas.

9.2.g Integrate Alameda Point into the community by creating transit and physical connections to adjacent community centers such as Marina Village and Webster Street.

9.3.b Develop housing to serve workplaces and public and institutional uses anticipated in the Civic Core. Focus residential development adjacent to the Shoreline open space promenade to create opportunities for pedestrian centers and foster a transit orientation.

9.3.c Improve public transit service, including connections to ferry service to serve the public, institutional, and workplace uses in the Civic Core.

9.3.j Encourage development of Pacific Avenue as a landscaped boulevard with separated bike paths and pedestrian routes.

9.3.p In case of redevelopment or replacement of existing structures, encourage development of uses that promote pedestrian vitality and are oriented to the marina.

9.3.t Consider the need for workforce housing.

9.3.u Encourage clustered and pedestrian- and bicycle friendly development, in conjunction with greenways and open space.

9.3.y Encourage residential development at densities of between 15 and 21.8 dwelling units per net acre in the vicinity of the ferry terminals, along with parks and community serving businesses and institutions, in order to promote accessibility via alternative modes of transit.

9.4.a Promote street connectivity within Alameda Point and with the surrounding neighborhoods.

9.4.b Design transportation improvements to anticipate future growth and minimize traffic congestion.

9.4.c Reflect the existing primary grid of the City of Alameda in all new development.

9.4.d Require roadway improvements that will allow acceptable levels of future traffic levels within the Alameda Point local roadway system.

9.4.e Work with the City of Oakland, Alameda County, Caltrans and other regional organizations to develop plans for design, phasing, funding, and construction of a new vehicle access to and from Interstate 880 (bridge, tunnel or other vehicle connection).

9.4.f Minimize vehicle trips to and from Alameda Point that must use the Webster/Posey Tubes by providing alternative travel modes and connections to the regional transportation system.

9.4.g Plan for the extension of Tinker and Mosley Avenues to provide additional access routes to Alameda Point.

9.4.n Optimize the use of transit and other alternative modes of transportation in all development at Alameda Point through increased accessibility to local and regional transit systems and improving the safety and reliability of transit and alternative modes.

9.4.o Expand water transportation by establishing a water taxi or ferry in the Marina district with potential destinations including San Francisco, Angel Island, Treasure Island, and Alcatraz.

9.4.p Preserve opportunities to develop future transit links including transit exclusive corridors.

9.4.q Explore the feasibility of transit connections between Alameda Point and the West Oakland BART Station, including through the use of technologies such as a people mover system.

9.4.r Redesign Atlantic Avenue to include a landscaped transit corridor for buses, jitneys, or future light-rail development.

9.4.s Explore feasibility of establishing shuttle service to the ferry terminal(s), Civic Core, Webster Street and Marina Village.

9.4.t Integrate pedestrian and bicycle uses into the design of the roadway system and fabric of neighborhoods.

9.4.u Provide a system of connections for pedestrians and bicyclists including sidewalks, crosswalks, and paths connecting residential, schools, parks, transit stops, employment, and other areas of community activity on Alameda Point.

9.4.v Develop Tinker Avenue, Atlantic Avenue, and Main Street with pedestrian and bicycle-oriented paths, and landscaping as a means to maximize alternative modes of transportation and minimize impacts of vehicle traffic and noise to the residential neighborhood.

9.5.d Establish a pedestrian- and bicycle-accessible perimeter shoreline trail throughout Alameda Point. Ensure that this trail is open year round, that the trail meets minimum multi-use trail standards, and that landscape treatment of the open spaces adjacent to the Estuary and the San Francisco Bay does not block distant views.

b. Thresholds of Significance. The potential impacts of the proposed project were evaluated using criteria based on the *CEQA Guidelines* and City of Alameda thresholds of significance.

The GPA would result in a significant impact if it would:

- Reduce intersection LOS to below D in the project plus background future traffic condition.
- Increase traffic volume at any intersection operating at LOS E or LOS F currently or in the future.
- Cause a roadway or freeway segment on the MTS to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.
- Create or contribute to known safety hazards for pedestrians, bicycles, or automobiles as a result of traffic using the on-site circulation system.
- Disrupt or interfere with existing or planned transit services and facilities or conflict with policies, plans or programs of the City of Alameda General Plan that support alternative transportation.
- Result in inadequate parking capacity based on City of Alameda plans, or conflict with policies or programs of the City of Alameda General Plan.
- Result in inadequate emergency access due to limited or circuitous access routes to the project site or lack of sufficient clear width (20 feet) on roadways to provide emergency vehicle access.
- Result in construction traffic that would cause unacceptable congestion or other adverse circulation effects.

c. Impact Analysis Methodology. The methods utilized to analyze the transportation and circulation impacts associated with buildout of the GPA are described below.

To assess the transportation impacts of the GPA, the City of Alameda utilized a version of the Alameda County CMA's Alameda countywide traffic model.[212] The primary benefits of using a traffic model are to provide an improved and more sensitive method for forecasting future roadway and intersection level of service information. Because the Countywide Model is a proven traffic-forecasting tool developed for the CMA and MTC, the Alameda version of the model is designed to be consistent with the Countywide Model, and it retains the existing four-step model structure (described below), retains the software package, and retains the existing zones and network except where additional detailing is needed in Alameda.

(1) Land Use and Socio-Economic Assumptions. The Association of Bay Area Government's (ABAG) *Projections 2000* serve as inputs to the model. ABAG provides projections of future demographic and socioeconomic data, including population, income, and employment data, for the nine Bay Area counties. For the GPA traffic analysis, the ABAG projections for 2020 in

[212] The "model" is actually a system of models that address trip generation, distribution, mode choice, and assignment. The word "model" may refer to the full system of models, or to individual models, depending on context.

Alameda have been adjusted to take into account all recently approved projects in Alameda, such as the Catellus/FISC project and all reasonable foreseeable development, such as development that may occur as the result of ongoing efforts to update the Housing Element and complete a new Northern Waterfront Specific Plan. These adjustments have been undertaken to ensure that the GPA traffic analysis takes into account all reasonably foreseeable future development in Alameda and does not underestimate congestion in future years. Specifically, for the City of Alameda, the 2020 With Project analysis assumes that the number of jobs in Alameda will increase from 24,940 in 2000 to 49,750 in 2020. The number of households in Alameda will increase from 29,501 in 2,000 to 33,482 in 2020. (Less then half of the additional households would be located at Alameda Point.) For other Alameda County cities, land use/socioeconomic inputs for the TAZs were taken from allocations for the *Projections 2000* data, based on ABAG allocations for those cities. Therefore, the forecasted traffic conditions for 2020 that are presented in this analysis are the result of not only development at Alameda Point, but a combination of that development and other reasonably foreseeable development that may occur over the next 20 years in Alameda, Oakland, and the larger region.

(2) Travel Analysis Zones. The refinements to the Countywide Model for the GPA traffic analysis include addition of more detailed travel analysis zones in Alameda. These refinements allow the model to produce information for a larger number of roadways in Alameda than would otherwise be the case. The area that a travel model covers is divided into a set of travel analysis zones (TAZs). The original 40 analysis zones for the City of Alameda in the Countywide Model were split into 162 analysis zones in the Alameda version of the model. Outside of the City of Alameda, the TAZs in the Countywide Model were retained.

(3) Transit and Highway Networks. The Alameda version of the Countywide Model has retained the same structure and coding procedures as the existing Countywide Model, but the street network for the City of Alameda has been updated to include more streets. AC Transit line codings were also updated. The Alameda version of the Countywide Model uses speed and capacity estimates that are consistent with the Countywide Model. Even where new streets were added to the Alameda version of the Countywide Model, the speed and capacity values by facility type (i.e., Arterial Street) are consistent with the same values used for similar facility types elsewhere in the model. The only exception to this is the Posey and Webster Street tunnels, where more reliable and refined capacity assumptions were available from recent capacity analysis.

(4) Trip Generation. Trip generation is the process which estimates the number of trips generated for a given set of land use assumptions. Trip generation determines how many trips are produced in each TAZ and how many trips will be attracted by each TAZ. Trips are generated in different purpose categories because people make different types of trips at different times of the day, and are more willing to travel longer distances for some trip purposes than for others. The trip generation process in the Countywide Model has been maintained and applied to the refined land use datasets used for the Alameda version of the Countywide Model.

The primary factor that the Countywide Model uses to generate trips is the forecasted number of jobs and households. It is not based upon building size. This distinction is particularly important in the

case of Alameda Point, which includes many large structures, such as plane hangers. Because these buildings are proposed to be re-used and do not reflect the types of buildings typically considered when preparing site trip generation tables, the GPA EIR traffic analysis is based upon an estimated number of jobs (6,124) and estimated number of housing units (1,987) (see Table IV.B-3 in Chapter IV.B, Population, Employment and Housing, for more detail on the projected employment at Alameda Point).

As shown in Table IV.J-6, the proposed 6,124 jobs and 1,987 housing units would result in 29,297 daily vehicle trips. This increase in vehicle trips would result in 2,704 new AM peak hour vehicle trips and 2,911 PM peak hour vehicle trips in 2020. It is important to note that these figures do not assume any reductions in trips as a result of transportation demand management (TDM) efforts or increases in transit service or transit use. For comparison purposes, there are about 6,315 total daily trips being generated at Alameda Point today. Approximately 418 of these trips occur as AM peak period vehicle trips and 645 occur as PM peak period vehicle trips.

Table IV.J-6: Trip Generation[a]

	GPA Trips 2005			GPA Trips 2020		
	Home Trip Ends	**Non-Home Trip Ends**	**Total**	**Home Trip Ends**	**Non-Home Trip Ends**	**Total**
Daily Person Trips						
Home-Based Work	3,018	2,520	5,538	3,020	7,314	10,334
Home-Based Shop	4,181	1,259	5,440	3,878	4,185	8,063
Home-Based Social/ Recreation	1,977	1,250	3,227	1,876	1,917	3,793
Non-Home Based[b]	2,719	2,408	5,127	6,629	5,232	11,861
Home-Based School	1,593	1,759	3,352	1,593	1,744	3,337
Home-Based University	255	0	255	246	0	246
Total Daily Person Trips	13,743	9,196	22,939	17,242	20,392	37,634
Transit Person Trips	437	224	661	411	381	792
Daily Vehicle Trips	9,566	7,311	16,877	12,516	16,781	29,297
	Origin	**Destination**	**Total**	**Origin**	**Destination**	**Total**
Peak Hour Vehicle Trips						
AM Peak Hour	847	941	1,788	971	1,733	2,704
PM Peak Hour	849	764	1,613	1,829	1,082	2,911

[a] This table does not assume TSM/TDM and mitigation measures.
[b] For non-home based trips, data are origin trip ends and destination trip ends.

Source: DKS Associates, September 2002.

(5) Trip Distribution. The trip distribution process estimates the direction of travel for each trip that is produced and attracted by the trip generation estimates. Trip distribution creates an origin TAZ and a destination TAZ for each trip made. The Countywide Model uses a conventional gravity model[213] to distribute trips among zones. The Alameda version of the Countywide Model applies the same gravity distribution equations as the Countywide Model. Table IV.J-7 shows the trip distribution patterns for the GPA in 2020.

Table IV.J-7: Estimated 2020 Trip Distribution of Alameda Point PM Vehicle Traffic (Project Conditions)

Vehicles Leaving an Alameda Point	Percentage
Vehicles Remaining within Alameda Point	10.0%
Vehicles Traveling to Alameda Elsewhere	25.0%
Vehicles Traveling to Oakland	29.7%
Vehicles Traveling North of Oakland	23.9%
Vehicles Traveling South of Oakland	11.4%
Vehicles Arriving to an Alameda Point	
Vehicles Remaining within Alameda Point	16.9%
Vehicles Arriving from Alameda	28.7%
Vehicles Arriving from Oakland	30.7%
Vehicles Arriving from North of Oakland	16.3%
Vehicles Arriving from South of Oakland	7.4%

Source: DKS Associates, September 2002.

(6) Network Assignment. Once the trips in the model have been generated, their destinations and origins determined in the trip distribution step, and their mode of travel chosen,[214] each trip can then be assigned an exact travel route on the model network. The model network contains both highway and transit links. Trips are assigned to the links on the network according to logical algorithms that take into account link capacities, free-flow link speeds, the amount of congestion on each link, and the directness of the route, in order to minimize each trip's travel time. The procedures for highway assignment for the Alameda version of the Countywide Model are unchanged from the Countywide Model.

Once the trips are assigned to each roadway (travel route on the model network), the projected level of service (LOS) can be determined for the roadway itself and for the adjacent intersections. The Countywide Model's projected level of service findings for roadways and intersections are provided in tables in the following section of this chapter.

d. Effects of the General Plan Amendment on Transportation and Circulation.

(1) Summary of Major Findings. A summary of the transportation analysis findings for the GPA is provided below.

[213] A conventional gravity model is based on the concept that the amount of travel between zones is proportional to the production and attractions in the zones, and inversely proportional to the square of the impedance (usually travel time) between zones.

[214] In the mode choice estimates, the method of travel is determined for each trip. For the Alameda version of the Countywide Model, the mode choice splits from the Countywide Model were replicated and directly applied to the trip tables.

1. Due to regional growth that is expected to occur over the next 15 to 20 years, including growth in Oakland, at Alameda Point, and elsewhere in Alameda, traffic congestion on regional freeways, major arterials, and local streets in Alameda and Oakland will increase significantly. However, due to the grid system of streets throughout Alameda and Downtown Oakland, the increase in traffic will be distributed over a large number of streets; therefore, significant increases in traffic congestion are expected to occur at a limited number of locations where the grid systems force traffic onto a single roadway or freeway off-ramp. These conditions are found at the access points to Oakland/Alameda Estuary crossings (tubes and bridges) and at access points to the freeways.

2. The anticipated congestion on the regional network cannot be avoided by reducing buildout of Alameda Point. Where significant congestion is forecast to occur, such as on regional freeways and roadways (including the Posey Tubes), the worsening conditions are projected to occur whether or not the GPA is adopted. Even if no additional jobs or housing units are added at Alameda Point in the next 20 years, the projected unacceptable levels of service will occur on regional roadways and freeways. Only on a limited number of local roadways (see MTS Analysis below) is the approval of the Alameda Point GPA projected to cause the volume-to-capacity ratio on a congested roadway to increase more than 3 percent. These conditions are found at the Posey Tube, and at two roadways providing access to the I-880 interchange at High Street (High Street and Alameda Avenue).

3. Adoption of the GPA will contribute traffic to two Oakland intersections that will be operating at LOS F in 2020. The intersection of 6th Street and Jackson Street (which provides access to I-880 northbound) and the intersection of 12th Street and Brush Street (which serves the 12th Street off-ramp for southbound I-980) are both projected to operate at LOS F in 2020. Adoption of the GPA will contribute additional traffic to these two intersections, but, as with the regional roadways, even if the GPA is not adopted, both intersections will operate at LOS F in 2020.

4. The relatively small contribution of the GPA to the worsening regional and local traffic conditions identified in the GPA traffic analysis may be explained by the following:

   - The GPA represents a mixed-use document scenario with a good jobs/housing balance (approximately one housing unit for every 3.2 jobs provided).
   - Development at Alameda Point under the GPA represents only a fraction of the growth projected for the region and in Alameda. The GPA would contribute only 6,125 jobs or about 25 percent of the anticipated 24,810 additional jobs projected for Alameda by ABAG. The number of households in Alameda is assumed to increase from 29,501 in 2,000 to 33,482 in 2020, of which less than half would be located at Alameda Point.

5. Because the local and regional traffic problems will occur even if no new jobs or housing are provided at Alameda Point, the EIR finds that these traffic problems must be addressed through inter-jurisdictional cooperation and planing for new transportation options to relieve

the existing network, and that new development should be required to contribute a fair share of the cost of these improvements.

(2) Beneficial and Less-than-Significant Impacts. Implementation of the GPA would lead to the beneficial or less-than-significant impacts discussed below.

Policy Implementation. Implementation of the GPA policies would result in beneficial traffic impacts by encouraging transit- and pedestrian-oriented development in the Planning Area and integrating Alameda Point into the City by increasing street and transit connectivity (Policies 9.2.c, 9.2.e, 9.2.f, 9.2.g, 9.3.c, 9.3.p, 9.3.u, 9.3.y, and 9.4.a). Other GPA policies relating to street improvements would increase levels of service and improve pedestrian and bicycle safety.

The GPA would be consistent with existing *General Plan* policies relating to transportation. Policy 4.3.e encourages coordination with AC Transit to develop Transit Centers at the Alameda Gateway, and Policy 4.3.d urges development of transit-oriented streets.

The GPA would also be consistent with other transportation related policies. GPA policies promote walking and bicycling as alternatives to single-occupancy vehicles. As part of the implementation of the GPA, TDM programs are recommended that are complimentary to the City's efforts. The GPA would also incorporate recommendations of the City's *Bicycle Master Plan*. Therefore the GPA would not disrupt or interfere with existing transportation policies or plans.

Pedestrian and Bicycle Safety. Buildout of the GPA would not result in any significant impacts related to safety hazards for pedestrians, bicycles or automobiles as a result of traffic using the on-site circulation system, as described below for both the cities of Alameda and Oakland.

Alameda. The GPA would result in beneficial impacts to pedestrian and bicycle circulation within the City of Alameda. Sidewalks are proposed for many public and private streets throughout Alameda Point. In addition, several new bicycle facilities are planned for West Alameda (see discussion in the Setting section above), and Policy 9.4.t requires that all future development "integrate pedestrian and bicycle uses into the design of the roadway system and fabric of neighborhoods," and Policy 9.4.u requires that the City "Provide a system of connections for pedestrians and bicyclists including sidewalks, crosswalks, and paths connecting residential, schools, parks, transit stops, employment, and other areas of community activity on Alameda Point."

Oakland. As described in the Setting section above, Downtown Oakland contains several areas with significant pedestrian activity. In particular, the Broadway Corridor and the Chinatown area (focused on Webster Street) experience high pedestrian volumes at intersections. Oakland's Chinatown has the highest concentration of pedestrian, bicycle and vehicle collisions in the City of Oakland. The City of Oakland has about twice the state average of pedestrian injuries. According to

reports prepared for the City of Oakland,[215] the high number of pedestrian accidents in Chinatown is due to several factors, including:

- The high number of pedestrians who frequent this international business, shopping and residential area. The City of Oakland estimates that over 20,000 shoppers, tourists, and residents walk in Chinatown each weekend.
- A large number of intersections without pedestrian walk signals.
- A lack of parking, which results in frequent double parking. The City of Oakland estimates that an additional 510 parking spaces are needed due to the fact that existing off-street parking facilities are at capacity and on-street parking meters are often broken or malfunctioning.
- Four-lane one-way streets, which encourage higher vehicle speeds and automobile turning movements from multiple lanes.
- Signal timing that is inadequate to accommodate slower (seniors and persons with disabilities) pedestrian crossings. The City of Oakland estimates that over 24 percent of Oakland's Chinatown residents are 65 years old and over.

In response to concerns about pedestrian safety and declining sales in Chinatown, the City of Oakland recently received $250,000 in state funds to evaluate transportation and pedestrian facilities in Chinatown and recommend potential solutions to improve economic vitality and pedestrian safety. The grant funds will enable the City of Oakland to complete a comprehensive assessment of transportation conditions in Chinatown and recommend measures to improve pedestrian safety, such as redirecting traffic, changing streets from one-way to two-way, improving signalization and crossing facilities at key intersections, creating gateway features, improved parking facilities, and/or improving transit facilities and services.

The Alameda Point GPA will not have a significant impact on pedestrian safety in Chinatown or elsewhere in Oakland. Pedestrian safety is more directly related to local design features, pedestrian volumes, and the potential for incompatible land uses, rather than motor vehicle traffic volumes, as long as traffic volumes are within normal limits.[216] The Alameda GPA does not include any changes in Oakland that would alter local design features, pedestrian volumes, or land uses. Analysis of traffic conditions in Chinatown show that although traffic volumes are high, they are within the normal limits of the roadway design. The high traffic volumes can be attributed to several factors, including: the location of the Webster and Posey Tubes, signs on Broadway directing drivers to parallel routes within Chinatown for timed signals, configuration of streets within Chinatown for one-way traffic which facilitates high traffic volumes, and the commercial viability and vitality of Chinatown, which is the fourth largest Chinatown in the United States.

[215] City of Oakland Revive Chinatown Grant, November 2001.

[216] Oakland Army Base Final EIR, August 2002.

There is no evidence that an incremental increase in vehicular volume and congestion will result in a corresponding decrease in pedestrian safety. As documented by the City of Oakland studies, the number of pedestrian collisions at a particular intersection is more directly related to design features and pedestrian volume than it is to traffic volumes.[217] Therefore, certain intersections with high traffic volumes and congestion in both Alameda and Oakland may actually perform better in terms of pedestrian safety than other intersections with a lower level of traffic congestion, but a higher level of pedestrian traffic and incompatible design features. For example, the intersection of 8th Street and Jackson Street has experienced a high number of pedestrian accidents. According to the City of Oakland, between four and seven pedestrians annually were hit by automobiles between 1997 and 1999 at this intersection despite the fact that this intersection operated at a LOS A in 2000. Conversely, the intersection of 6th Street and Jackson Street operated at a LOS E in the AM and LOS D in the PM, yet the number of pedestrian accidents at the 6th Street/Jackson Street intersection was less than at the intersection of 8th Street and Jackson Street, which is located closer to the Chinatown core where the majority of pedestrians are crossing the street.

As shown in the intersection level of service tables (Tables IV.J-8 and IV.J-9), the GPA's contribution to traffic volumes in Chinatown is extremely small. For example, at Jackson Street/7th Street, Harrison Street/8th Street, Webster Street/8th Street, and Webster Street/7th Street, the GPA will increase delay by approximately 5 seconds or less. The largest increases in traffic volumes from the GPA in Chinatown are projected to occur along roadways leading to and from the Posey and Webster Tubes and from Chinatown and Downtown Oakland to and from the freeway on-ramps. However, these increases in volumes are quite small relative to the existing and projected traffic volumes on these corridors. For example, in 2020 in the PM peak, buildout of the GPA will add approximately 17 vehicles on Franklin Street between 8th Street and 10th Street, nine vehicles on Webster Street (between 8th Street and 10th Street), and 68 vehicles on Harrison Street between 8th Street and 10th Street. (The vehicle volume on Harrison Street between 8th Street and 10th Street will increase from 1,077 in 2020 without the GPA to 1,145 vehicles in 2020 with the GPA.

As shown in Table IV.J-8, the intersection of Jackson Street/6th Street is projected to experience significant congestion in 2020. These worsening conditions are projected to occur with or without the GPA, due to growth projected throughout the region and within Oakland. EIRs for several recent City of Oakland projects[218] conclude that Downtown Oakland growth will contribute to the anticipated congestion at intersections in Chinatown, yet none of the Oakland projects were found to result in pedestrian safety impacts in Chinatown.[219]

[217] Oakland Army Base Final EIR, August 2002.

[218] Projects at 426 Alice Street, 220 Broadway, and 300 Harrison Street would all contribute traffic to an expected LOS F in 2020 at 6th Street/Jackson Street, yet none of the EIRs for these Oakland projects identified any off-site impacts to pedestrian safety in Chinatown that might result from the increased traffic volumes in Chinatown.

[219] A review of recent City of Oakland environmental impact reports for Downtown projects found that the City of Oakland has not identified a significant off-site pedestrian safety impact for any Oakland project that has contributed traffic to intersections in the Downtown and Chinatown areas.

Since there is no correlation between increased vehicle volumes and the number of pedestrian collisions, there is no substantial evidence to conclude that an incremental increase in vehicle volumes and congestion would result in a corresponding increase in pedestrian collisions.

Nevertheless, the City of Alameda is committed to working with the City of Oakland and Chinatown residents and business owners to manage the potential effects of Alameda Point related traffic in Chinatown. As described in the traffic impact section of this chapter, the City of Alameda is committed to contributing a fair share contribution to traffic improvements at intersections that are adversely impacted by traffic increases, coordinating construction related traffic routing with the City of Oakland staff, soliciting input from the City of Oakland and Chinatown residents and businesses on the City of Alameda's trip reduction strategies for future development, and working closely with the City of Oakland and area residents on feasibility studies for an additional Oakland/Estuary crossing.

Parking. The proposed GPA does not include any proposals that would require the City of Alameda or the City of Oakland to modify existing parking code requirements, nor does the proposed GPA require the removal of any existing parking in Alameda or Oakland. Therefore the GPA would not result in any significant parking impacts. Furthermore, all future projects at Alameda Point will be subject to a project-specific review at which time parking adequacy can be evaluated.

On-Site Circulation and Access. Alameda Point contains a number of roadways in a grid pattern that allow for multiple access points, and most of these will be maintained under the proposed GPA. As development plans take shape, specific circulation and access strategies will be proposed which would be consistent with the City requirements, so no specific significant impacts are identified.

Emergency Vehicle Access. The grid layout of the Alameda Point area allows multiple access routes into, out of and throughout the development. In addition, no intersections adjacent to or within Alameda Point are anticipated to operate at deficient levels of service. Thus, access for local police, fire and emergency service will not be significantly impacted by adoption of the GPA.

(3) Significant Impacts and Mitigation Measures. Significant impacts that would result from implementation of the GPA in Alameda and Oakland are described below for both the construction and operational periods. Potential impacts to the MTS including transit services are included in Section 2.d (4).

Construction-Period Impacts. The GPA would result in one construction period impact.

<u>Impact TRANS-1</u>: Development allowed by the GPA could generate additional truck traffic and temporarily close lanes during construction periods which could impede local circulation. (S)

During construction, development allowed by the GPA would generate additional trips by construction laborers and associated trucks delivering materials and equipment or removing materials and/or soil from the area. Construction period truck trips would utilize the Webster/Posey Tubes, Atlantic Avenue, and other local streets. Temporary lane closures on local streets could be required during construction, and could require rerouting of autos, buses, bicycles and/or emergency vehicles. Furthermore, some equipment and/or materials may not be transportable through the Tubes. These special occurrences may require use of other bridge crossings or delivery by ferry or barge. Generally, the adequate levels of service on-site and the availability of alternative routes should allow such disruptions to occur without creating significant impacts.

Existing and proposed policies that would minimize this potential impact are described below.

Proposed GPA Policies. There are no GPA policies that address construction related impacts.

Existing General Plan Policies. Policy 4.6.c directs the maintenance of a system of truck routes that would minimize truck impacts in residential neighborhoods in the City.

The following two-part mitigation measure is recommended in addition to existing Policy 4.6.c.

Mitigation Measure TRANS-1a: Each development project shall prepare a Traffic Control Plan (TCP) to address the impacts of construction vehicles on regional and local roadways. The TCP shall address construction truck routes and access as well as needed local lane closures. Where bus routes, bike routes, sidewalks or emergency routes are affected, appropriate signage to indicate detour routes should be provided. Bus stops that must be temporarily relocated shall also be identified and presented in the TCP. The TCP may recommend installation of directional signs for trucks and designate time periods when construction truck traffic would be allowed. The TCP shall be reviewed and approved by the City of Alameda Public Works Department after consultation with the City of Oakland prior to issuance of any building or grading permits.

Mitigation Measure TRANS-1b: Construction truck traffic shall be restricted to designated truck routes within the cities of Alameda and Oakland. (LTS)

Operation-Period Traffic Impacts. The time frame for buildout of the GPA is approximately 20 years. Because this buildout would occur incrementally as specific development projects are approved, the full impact of the project's traffic on the surrounding roadway network will not be fully realized until 2020. During that same 20-year period, other cumulative local and regional growth will also occur, contributing traffic to the local and regional roadway network. The GPA's impact to local intersections and roadway segments is described below.

Impact TRANS-2: Buildout under the GPA would contribute to significant traffic impacts at the intersections of Jackson Street/6th Street and Brush Street/12th Street in Oakland. (S)

Tables IV.J-8 and IV.J-9 present the results of an evaluation of 29 intersections in Alameda and 33 intersections in Oakland that may be impacted by development that could occur under the GPA. As discussed above, the intersections analyzed in Oakland were selected based on consultation with City of Oakland staff. The locations of evaluated intersections are shown on Figure IV.J-1.

Each of the intersections reported in Tables IV.J-8 and IV.J-9 is projected to operate at an acceptable LOS in both the PM and AM peak hours after complete buildout of Alameda Point and other reasonably foreseeable development in Alameda and the region in the year 2020 except for the following Downtown Oakland intersections: Jackson Street/6th Street and Brush Street/12th Street.

These findings are consistent with recent City of Oakland traffic studies. Recently approved City of Oakland projects in combination with local and regional growth would result in LOS F at both of these intersections. The EIR for 426 Alice Street, certified in 2002 by the City of Oakland, stated that the project would contribute to an expected LOS F in 2020 at the intersection of 6th Street/Jackson Street. The certified EIR for the project at 220 Broadway stated that the project would contribute to an anticipated LOS F condition at 6th Street/Jackson Street. The Housewives Market Project and the City Center Project EIRs both certified in 2000, acknowledged project contributions to an expected LOS F condition at the 12th Street/Brush Street intersection.

As with the City of Oakland studies, this EIR on the Alameda Point GPA finds that the GPA would contribute to traffic to these two intersections.

- *Jackson Street/6th Street*. The intersection at Jackson Street/6th Street currently operates at LOS E in the AM and LOS D in the PM. The level of congestion at this intersection in the year 2020 with the GPA intersection is expected to *worsen* to a LOS F in both the AM and PM peak hours. As shown in Table IV.J-9, the LOS F condition cannot be attributed solely to the GPA, because the LOS F condition will also occur in the 2020 Baseline (without the GPA). (The 2020 Without GPA scenario assumes no additional employment or housing at Alameda Point over current levels.) Given the limitations of the traffic model to accurately estimate contributions to an "overflow" condition, it is not possible to isolate the exact contribution of the GPA to the total anticipated delay. Therefore, to provide a conservative assessment of potential impacts, it is assumed that the GPA would contribute to the anticipated level of congestion and a significant impact is identified.
- *Brush Street/12th Street*. The intersection of Brush Street/12th Street currently operates at LOS F in the AM, and is expected to continue to operate at LOS F in the AM in the 2020 with GPA scenario. As shown in Table IV.J-9 and described above, this intersection is also projected to operate at LOS F in the 2020 Without GPA scenario, due to regional and Downtown Oakland growth.

Table IV.J-8: Intersection Level of Service Comparison – 2020 AM Peak Hour

Analysis Intersection	Existing Conditions		2020 Without GPA		2020 With GPA	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
City of Alameda						
Atlantic Avenue/Main Street[b]	B	13.0	C	27.0	C	24.6
Atlantic Avenue/West Campus[b]	A	9.6	B	10.1	B	13.1
Atlantic Avenue/Webster Street[b,c]	D	43.0	D	37.8	D	46.5
Atlantic Avenue/Constitution[b]	D	39.5	D	44.6	D	44.9
Pacific Avenue/Main Street	A	7.8	A	8.4	A	7.6
Lincoln Avenue/Webster Street[b]	A	9.7	B	11.3	B	15.8
Lincoln Avenue/Constitution	C	30.0	C	32.7	C	32.9
Central Avenue/Webster Street[b]	B	17.2	C	29.9	C	31.8
Central Avenue/Eighth Avenue[b]	C	29.3	C	34.4	D	37.1
Clement Avenue/Park Street[b]	B	17.4	B	12.4	B	12.8
Buena Vista Avenue/Park Street[b]	B	13.3	B	16.6	B	16.7
Lincoln Avenue/Park Street[b,c]	B	14.2	B	14.8	B	15.1
Tilden Way/Fernside Boulevard	B	15.5	B	18.3	C	20.5
Lincoln Avenue/Grand Street	B	12.8	B	14.2	B	15.7
Otis Drive/Fernside Boulevard[b]	B	14.3	B	17.1	B	15.8
Otis Drive/Broadway[b]	B	10.7	B	14.2	B	14.0
Otis Drive/High Street[b]	B	13.9	B	18.8	B	18.6
Fernside Boulevard/High Street[b,d]	C	27.5	C	24.9	C	27.7
Sherman Street/Central Avenue[d]	C	21.3	C	25.6	C	26.1
Sherman Street/Buena Vista Avenue	C	21.3	C	20.3	B	19.3
Buena Vista Avenue/Webster Street	B	11.3	B	13.3	B	13.3
Buena Vista Avenue/Constitution Way	B	16.5	B	18.6	C	20.3
Tinker Avenue/Main Street[b]	A	3.2	A	8.2	A	9.7
Tinker Avenue/Webster Street[e]	A	2.4	A	8.7	A	9.4
Tinker Avenue/Mosley Avenue[b,f]	N/A	N/A	A	9.3	A	8.3
Tinker Avenue/Fifth Street[b]	N/A	N/A	A	9.8	A	9.8
Webster Street/College Entrance[b]	N/A	N/A	B	13.1	B	15.3
Atlantic Avenue/Fifth Street[b]	N/A	N/A	A	7.8	A	9.5
Mariner Square/Constitution Way	B	14.5	B	10.2	A	9.6
City of Oakland						
Oak Street/5th I-80 on-ramp	A	7.7	A	9.7	A	9.8
Oak Street/6th I-80 off-ramp	A	7.7	A	9.3	A	9.3
Jackson Street/7th Street	A	9.4	A	1.4	B	11.7

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Cells that are shaded indicate intersections operating at an unacceptable LOS.

Table IV.J-8 *continued*

Analysis Intersection	Existing Conditions		2020 Without GPA		2020 With GPA	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Jackson Street/6th Street	**E**	**65.2**	**F**	**Overflow[g]**	**F**	**Overflow**
Jackson Street/5th Street	A	9.6	A	9.9	A	9.9
Harrison Street/8th Street[b]	A	7.4	A	8.0	A	8.0
Harrison Street/7th Street[b,c]	A	8.8	A	8.6	A	8.5
Webster Street/8th Street[b,d]	C	22.9	C	26.0	C	26.8
Webster Street/7th Street[b]	A	8.9	B	13.4	B	18.0
Broadway/5th Street[b]	C	22.5	C	25.8	C	26.2
Brush Street/12th Street	**F**	**Overflow**	**F**	**Overflow**	**F**	**Overflow**
Brush Street/11th Street	A	5.4	A	8.4	B	12.5
Brush Street/5th Street	A	4.9	A	3.8	A	3.8
Madison Street/5th Street	A	8.6	A	8.9	A	9.0
Madison Street/6th Street	A	7.8	A	8.1	A	8.1
Madison Street/7th Street	A	8.8	A	8.1	A	8.1
Brush Street/7th Street	A	7.6	A	7.3	A	8.0
Castro Street/12th Street	B	11.2	B	11.4	B	11.4
Clay Street/7th Street[b,e]	B	10.4	B	11.3	B	11.6
Broadway/6th Street[b]	C	19.4	C	24.5	C	20.6
Broadway/7th Street[b]	B	10.3	B	13.3	B	15.7
Franklin Street/8th Street[b]	A	6.5	A	5.1	A	4.9
King Way/5th Street	A	5.2	A	6.8	B	11.0
King Way/7th Street	A	6.3	A	5.6	A	5.4
Webster Street/11th Street[b]	A	8.1	A	7.7	A	7.6
Webster Street/12th Street[b]	A	7.3	A	8.2	A	8.4
Harrison Street/11th Street[b]	A	7.4	A	7.6	A	7.5
Harrison Street/12th Street[b]	B	10.2	B	10.8	B	11.0
High Street/Jensen Street	B	12.6	C	22.2	C	22.7
High Street/Oakport Street[c]	D	36.4	D	37.3	C	34.4
Alameda Ave./42nd Street/Oakport Street	N/A	N/A	C	20.1	C	20.7
High Street/Coliseum Way[c]	D	36.5	C	29.6	C	30.0
29th Avenue/Ford Street[c,e]	C	15.8	A	9.5	A	9.5

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Cells that are shaded indicate intersections operating at an unacceptable LOS.

Source: DKS Associates, 2002.

Table IV.J-9: Intersection Level of Service Comparison – 2020 PM Peak Hour

Analysis Intersection	Existing Conditions		2020 Without GPA		2020 With GPA	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
City of Alameda						
Atlantic Avenue/Main Street[b]	C	22.3	C	21.7	C	23.8
Atlantic Avenue/West Campus[b]	A	9.2	A	9.1	B	10.2
Atlantic Avenue/Webster Street[b,c]	D	48.3	C	29.3	D	35.1
Atlantic Avenue/Constitution[b]	D	43.2	D	40.6	D	40.0
Pacific Avenue/Main Street	B	10.7	A	7.4	A	6.3
Lincoln Avenue/Webster Street[b]	A	8.8	A	9.7	A	9.9
Lincoln Avenue/Constitution	C	27.7	C	28.8	C	29.5
Central Avenue/Webster Street[b]	B	15.6	C	30.2	C	30.5
Central Avenue/Eighth Avenue[b]	D	38.8	C	32.0	C	32.8
Clement Avenue/Park Street [b]	B	13.4	B	15.2	B	16.2
Buena Vista Avenue/Park Street[b]	B	12.9	B	14.3	B	14.8
Lincoln Avenue/Park Street[b]	C	20.3	B	18.1	B	19.7
Tilden Way/Fernside Boulevard	B	15.3	C	20.7	C	22.4
Lincoln Avenue/Grand Street	B	13.3	B	14.6	B	16.0
Otis Drive/Fernside Boulevard[b]	D	38.1	D	45.8	D	38.7
Otis Drive/Broadway[b]	B	12.1	B	16.9	B	16.4
Otis Drive/High Street[b]	C	20.8	C	21.5	C	23.1
Fernside Boulevard/High Street[b,d]	C	21.5	C	21.7	C	22.8
Sherman Street/Central Avenue[d]	C	20.7	C	21.7	C	29.5
Sherman Street/Buena Vista Avenue	C	25.8	C	21.9	C	22.1
Buena Vista Avenue/Webster Street	B	10.0	B	10.5	B	10.7
Buena Vista Avenue/Constitution Way	B	18.3	C	20.5	C	20.5
Tinker Avenue/Main Street[b]	A	5.2	A	8.6	B	10.4
Tinker Avenue/Webster Street[e]	A	1.8	B	16.2	C	25.9
Tinker Avenue/Mosley Avenue[b,f]	N/A	N/A	A	6.6	A	6.5
Tinker Avenue/Fifth Street[b]	N/A	N/A	A	10.0	B	10.4
Webster Street/College Entrance[b]	N/A	N/A	B	10.2	B	10.5
Atlantic Avenue/Fifth Street[b]	N/A	N/A	A	7.7	A	9.2
Mariner Square/Constitution Way	B	15.0	D	48.6	D	45.0
City of Oakland						
Oak Street/5th I-80 on-ramp	A	9.6	B	12.3	B	12.1
Oak Street/6th I-80 off-ramp	B	10.1	A	9.4	A	9.3
Jackson Street/7th Street	B	10.8	B	11.5	B	11.3
Jackson Street/6th Street	**D**	**54.4**	**F**	**Overflow[g]**	**F**	**Overflow[g]**

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Cells that are shaded indicate intersections operating at an unacceptable LOS.

Table IV.J-9 *continued*

Analysis Intersection	Existing Conditions		2020 Without GPA		2020 With GPA	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Jackson Street/5th Street	B	11.1	B	11.3	B	11.3
Harrison Street/8th Street[b]	A	7.9	A	7.5	A	7.3
Harrison Street/7th Street[b]	A	9.6	B	15.1	B	18.9
Webster Street/8th Street[b,d]	C	23.4	C	23.7	C	24.2
Webster Street/7th Street[b]	B	10.5	B	10.7	B	11.0
Broadway/5th Street[b]	D	36.7	D	40.4	D	39.8
Brush Street/12th Street	D	42.5	D	36.2	D	37.9
Brush Street/11th Street	A	5.6	A	7.0	A	6.7
Brush Street/5th Street	A	6.3	A	3.5	A	3.5
Madison Street/5th Street	A	9.4	B	10.8	B	10.9
Madison Street/6th Street	A	8.2	A	8.8	A	8.8
Madison Street/7th Street	A	9.7	B	10.1	B	10.1
Brush Street/7th Street	A	8.0	A	8.0	A	7.8
Castro Street/12th Street	B	14.3	B	14.9	B	15.2
Clay Street/7th Street[b,e]	B	12.2	B	12.0	B	12.0
Broadway/6th Street[b]	C	16.6	C	20.6	C	20.7
Broadway/7th Street[b]	B	15.5	B	16.1	B	16.3
Franklin Street/8th Street[b]	A	5.7	A	4.8	A	4.6
King Way/5th Street	A	8.4	A	7.1	A	7.0
King Way/7th Street	A	6.4	A	6.6	A	6.7
Webster Street/11th Street[b]	A	8.6	A	8.5	A	8.5
Webster Street/12th Street[b]	A	8.8	A	8.9	A	9.0
Harrison Street/11th Street[b]	A	9.6	B	10.2	B	10.3
Harrison Street/12th Street[b]	B	10.0	B	10.6	B	10.9
High Street/Jensen Street	B	17.2	C	33.8	D	47.5
High Street/Oakport Street[c]	C	30.8	D	52.0	D	46.5
Alameda Ave/42nd St /Oakport Street	N/A	N/A	C	24.0	C	26.2
High Street/Coliseum Way[c]	D	37.0	C	29.0	C	29.7
29th Avenue/Ford Street[e,c]	C	18.5	B	11.1	B	11.7

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Cells that are shaded indicate intersections operating at an unacceptable LOS.

Source: DKS Associates, 2002.

Existing and proposed policies that would help minimize the significant unavoidable traffic-related impacts are discussed below.

Proposed GPA Policies. Policy 4.2.c would help minimize this impact by requiring adherence to the Traffic Capacity Management Procedure (TCMP) (discussed below). Policies 9.3.b, 9.3.t, and 9.3.y would help to minimize traffic-related impacts by encouraging the development of housing in Alameda Point in close proximity to employment centers. Policies 9.2.c, 9.2.g, and 9.3.c, would help to minimize this impact by integrating Alameda Point into existing transit connections within the City. Policies 9.4.b, 9.4.e, 9.4.f, 9.4.n, 9.4.o, 9.4.p, 9.4.q, and 9.4.s would help to minimize this impact by supporting access to regional transit systems and would help to reduce traffic on Oakland streets connecting to the Posey Tube.

Existing General Plan Policies. Policy 4.2.b would help to minimize this impact by directing the City to support and promote trip reduction and incentive programs. Policies 4.3.a, 4.3.b, 4.3.c, 4.3.d, 4.3.e, 4.3.f, 4.3.g, 4.3.h, and 4.3.i support the provision of transit services and connectivity.

The two impacted intersections provide access to and from the regional freeway system and are therefore particularly sensitive to the growth in freeway traffic over the next 20 years. Because these intersections are part of the regional transportation system and are located within the City of Oakland, any solutions to future traffic problems at these locations must be developed cooperatively between the City of Oakland, the City of Alameda, the CMA, and Caltrans.

The City of Alameda cannot act unilaterally to require a specific improvement to an intersection in another jurisdiction. Therefore, the City of Alameda must make a finding that the impacts at the two Oakland intersections are significant and unavoidable. However, the City of Alameda is committed to working with the City of Oakland, the CMA, and Caltrans to identify appropriate solutions to mitigate these traffic impacts and contribute a fair share to the improvement costs of a mutually acceptable solution.

Implementation of the following six-part mitigation measure will help minimize the effects of this impact.

Mitigation Measure TRANS-2a: The City of Alameda will work with the City of Oakland, the CMA, and Caltrans to consider various improvement options, which could include signal timing improvements or additional lanes on the ramp leading to the intersection of Brush Street/12th Street.

Mitigation Measure TRANS-2b: The City of Alameda will work with Caltrans, the CMA and the City of Oakland to consider various improvement options, which could include signal timing improvements, dedicated lanes, or additional lanes to relieve congestion at 6th Street/ Jackson Street. The City of Alameda will also take the lead responsibility for managing

completion of the Broadway/Jackson Phase II study identified in the Countywide Long Range Transportation Plan as "SR260 to I-880 Connection Improvements" to determine mutually acceptable, technically feasible means to relieve congestion resulting from peak hour traffic entering and exiting the Posey Tube, as those improvements would benefit conditions at 6th Street/Jackson Street.

Mitigation Measure TRANS-2c: The City of Alameda will amend the City of Alameda *Guidelines for the Preparation of Traffic Studies* to ensure that all future major project development proposals within the Alameda Point GPA Planning Area and other areas of the City prepare a traffic analysis that includes an assessment of the proposed project's contribution to anticipated unacceptable levels of service at Brush Street/12th Street, and Jackson Street/6th Street. Based upon this assessment, the City shall require each future development to fund, on a fair-share basis, any improvements to these two intersections that have been mutually agreed to by the cities of Alameda and Oakland pursuant to Mitigation Measures TRANS-2a or TRANS-2b.

Mitigation Measure TRANS-2d: Prior to approval of development entitlements implementing the GPA for Alameda Point, the City shall create and maintain a Transportation Demand Management Plan (TDM Plan) for Western Alameda, designed to reduce demand for single-occupant, peak hour trips, and to increase access to transit opportunities. The plan shall differentiate between commuter (both work and school) and recreational/shopping trips and provide for strategies focused on both types of users. The plan shall identify funding needs and sources associated with implementing these strategies. The plan should provide a variety of strategies that address all available transportation alternatives. These strategies may include financial incentives for alternative mode use; preferential car/van pool parking; parking charges for SOVs; ridematching services; flexible scheduling; telecommuting and improvements to public transit such as queue jump lanes for transit/HOV at the tube entrance; provision of Transit Signal Prioritization; subsidized shuttles to/from BART and/or increased AC Transit service; and subsidies for enhanced transit connections between ferries and major destinations. Major project area developers shall fund the TDM Plan on a fair share basis. The TDM Plan shall be funded at a level that would enable the goal of a 30 percent reduction in single-occupancy, peak hour ridership for commercial uses and a 10 percent reduction for residential uses.

Mitigation Measure TRANS-2e: To ensure that development at Alameda Point considers traffic, air quality, and noise impacts identified in this EIR, it is recommended that the proposed GPA Policy 9.2.j be amended (shown as underlined text) as follows:

> 9.2.j Maintain overall development in Alameda Point in accordance with Table 2-7 while permitting flexibility in the location and mix of development types in the three mixed use areas. Establish zoning regulations for Alameda Point

that regulate future development consistent with the development intensity and density assumed in the Alameda Point GPA EIR.

Mitigation Measure TRANS-2f: The City shall work with the City of Oakland, BART, AC Transit, and other local and regional agencies to complete feasibility studies for a new alternative transportation corridor between Alameda and Oakland, such as a gondola between Alameda Point and West Oakland BART or other acceptable terminus. (SU)

Impact TRANS-3: Development under the buildout of the GPA would contribute to an unacceptable level of service (LOS) F within the Posey Tube in 2020. (S)

All of the Oakland/Alameda Estuary crossings are part of the MTS roadway network, which is analyzed in the following section of this chapter. However, because of Alameda's island setting, levels of service at the Estuary crossings are of particular interest to Alameda residents. Therefore, the result of the crossings analysis has been separated from the MTS analysis and presented below. Consistent with the MTS network analysis, a significant impact is identified if adoption of the GPA would cause a roadway or freeway segment on the MTS to operate at LOS F or increase the V/C ratio by 0.03 or more for a roadway segment that would operate at LOS F without the project.

In the year 2020, GPA-related development in combination with other development in Alameda, Oakland, and the larger region will cause increases in traffic volumes on all of the Oakland/Alameda Estuary crossings. Despite the increases in traffic, all of the Oakland/Alameda Estuary crossings are projected to continue to operate at acceptable level of services, with the exception of the Posey Tube in the PM peak hour commute. As shown in Table IV.J-10, the projected LOS F condition will not be caused by the GPA, but the GPA is projected to increase the V/C ratio in the Posey Tube by more than 3 percent.

Existing and proposed policies that would help minimize the significant unavoidable traffic-related impact are discussed below.

Proposed GPA Policies. Policy 4.2.c would help minimize this impact by requiring adherence to the TCMP (discussed below). Policies 9.3.b, 9.3.t, and 9.3.y would help minimize traffic-related impacts by encouraging the development of housing in Alameda Point in close proximity to employment centers. Policies 9.2.c, 9.2.g, 9.3.c, would help to minimize this impact by integrating Alameda Point into existing transit connections within the City. Policies 9.4.b, 9.4.e, 9.4.f, 9.4.n, 9.4.o, 9.4.p, 9.4.q, and 9.4.s would help to minimize this impact by supporting access to regional transit systems in order to reduce traffic on Oakland streets connecting to the Posey Tube.

Table IV.J-10: Oakland/Alameda Estuary Crossing Level of Service Comparisons - 2020 PM Peak Hour

Location	Direction	2020 Without GPA			2020 With GPA			Significant*
		Volume	V/C	LOS	Volume	V/C	LOS	
Bay Farm Island Bridge SR 61 (Doolittle Drive, Otis Drive to Oakland City Limits	SB	1,989	0.69	B	2,069	0.71	C	No
Bay Farm Island Bridge SR 61 (Doolittle Drive, Oakland City Limits to Otis Drive)	WB	2,426	0.84	D	2,439	0.84	D	No
Webster Posey Tube SR 260 (Webster Street, Constitution Way to 7th Street)	NB	4,209	1.05	F	**4,539**	**1.13**	**F**	**Yes**
Webster Posey Tube SR 260 (Webster Street, 7th Street to Constitution Way)	SB	3,667	0.92	E	3,722	0.94	E	No
Park Street Bridge Park Street (Clement Street to 29th Avenue)	NB	2,510	0.87	D	2,670	0.92	E	No
Park Street Bridge Park Street (29th Avenue to Clement Street)	SB	1,882	0.65	B	1,927	0.66	B	No
High Street Bridge High Street, Fernside Drive to Howard Street	NB	1,353	0.93	E	1,411	0.97	E	No
High Street Bridge High Street, Howard Street to Fernside Drive	SB	1,082	0.75	C	1,114	0.77	C	No
Miller-Sweeney Bridge Fruitvale Avenue/Tilden Way, Park Street to I-880	NB	1,438	0.50	A	1,595	0.55	A	No
Miller-Sweeney Bridge Fruitvale Avenue/Tilden Way, I-880 to Park Street	SB	1,397	0.46	A	1,447	0.50	A	No

Note: Cells that are shaded indicate roadway segments that the GPA would cause to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.

Source: DKS Associates, 2002.

Existing General Plan Policies. Policy 4.2.b would help to minimize this impact by directing the City to support and promote trip reduction and incentive programs. Policies 4.3.a, 4.3.b, 4.3.c, 4.3.d, 4.3.e, 4.3.f, 4.3.g, 4.3.h, and 4.3.i support the provision of transit services and connectivity between public and private forms of transit.

No feasible mitigation measures have been identified that would reduce the impacts to a level that is less than significant. Increasing tube capacity by adding lanes would not be feasible because of high cost, adverse impacts to air quality, and other factors. Implementation of TDM measures would reduce the potential impact, but adoption of TDM measures cannot ensure that the expected

congestion would be reduced to acceptable levels. In recent years, the City of Alameda, City of Oakland, Caltrans, and the CMA have considered a variety of potential physical improvements to the Webster-Posey Tubes and the connections between the Tubes and I-880. As described above, these studies have found that adding lanes to expand the capacity of the tubes is environmentally and financially infeasible. Studies evaluating the construction of a raised ramp from the Posey Tube to I-880 within the City of Oakland have not been supported by the City of Oakland. However, the City of Alameda is committed to working with the City of Oakland, the CMA, and Caltrans to identify appropriate solutions to mitigate these traffic impacts and contribute a fair share to the improvement costs of a mutually acceptable solution to this impact.

Implementation of the following five-part mitigation measure will help minimize the effects of this impact.

Mitigation Measure TRANS-3a: Adopt Mitigation Measure TRANS-2c (TDM Plan).

Mitigation Measure TRANS-3b: The City of Alameda shall work with Caltrans, the CMA and the City of Oakland to consider various improvement options, which could include signal timing improvements, dedicated lanes, or additional lanes to relieve congestion at the Posey Tube. The City of Alameda will also take the lead responsibility for managing completion of the Broadway/Jackson Phase II study identified in the Countywide Long Range Transportation Plan as "SR260 to I-880 Connection Improvements" to determine mutually acceptable, technically feasible means to relieve congestion resulting from peak hour traffic entering and exiting the Posey Tube.

Mitigation Measure TRANS-3c: The City of Alameda will amend the City of Alameda *Guidelines for the Preparation of Traffic Studies* to ensure that all major project development proposals within the Alameda Point GPA planning area and other areas of the City include a traffic analysis in accordance with the City's Traffic Capacity Management Procedure (Resolution 13345) that incorporates an assessment of the proposed project's contribution to the anticipated unacceptable levels of service at the Webster and Posey Tubes. Based upon that assessment, the City shall require that each future development reduce peak hour trips through the tubes by at least 10 percent for residential and 30 percent for non-residential development. (The TCMP ordinance is designed to allow the City to monitor Tube capacity and limit future development based upon remaining available capacity.) The City will require each future development to fund appropriate trip reduction measures to reduce the project's traffic impact on the Posey Tube (consistent with Mitigation Measure TRANS-3a) and fund, on a fair-share basis, any mutually-agreed-to improvements to the Posey Tube/I-880 connection that have been established through Mitigation Measures TRANS-3b.

Mitigation Measure TRANS-3d: The City shall adopt Mitigation Measure TRANS-2e (Intensity- Based Development Regulations).

Mitigation Measure TRANS-3e: The City shall adopt Mitigation Measure TRANS-2f (Gondola/Alternative Transit Corridor Feasibility Studies). (SU)

(4) Alameda County Congestion Management Program Metropolitan Transportation System Impact Analysis.

Introduction. California law requires urban areas to develop and update a congestion management program (CMP) that describes the strategies that will be used to address congestion problems. In Alameda County, the Alameda County CMA with assistance from the Metropolitan Transportation Commission (MTC), transit agencies, local governments, the California Department of Transportation (Caltrans) and the Bay Area Air Quality Management District (BAAQMD) administers the CMP.

The CMP includes a program to analyze the impacts of land-use decisions made by local jurisdictions on regional transportation systems.[220] The land-use analysis program in Alameda County includes a process designed to improve upon decisions about land-use developments and the investment of public funds on transportation infrastructure in Alameda County. For purposes of the land-use program, the Metropolitan Transportation System (MTS) is used to assess transportation impacts of land-use development. With the passage of the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), MTC was required to develop an MTS that included both transit and highways. By using the MTS for the land-use analysis program, the CMP requires an analysis of the broader "regional transportation systems," which include not only regional roadways but also the regional transit system.

Local jurisdictions are responsible for modeling the potential impacts of proposed GPAs and major development projects consistent with the General Plan using the most recent CMA-certified travel demand model (the "Countywide Model"). The Countywide Model has been updated to reflect ABAG's forecasts in *Projections 2000* for base years 2005 and 2020. To assess the transportation impacts of the GPA, the City of Alameda utilized a refined version of the Alameda County CMA Countywide Model. For a detailed discussion of the Alameda version of the Countywide Model, see the Impact Analysis Methodology discussion, above.

For the CMP-required analysis on the MTS, the GPA EIR assumes a capacity of 2,000 vehicles per lane per hour on freeway segments and 800 vehicles per lane per hour for most of the arterial roadway segments. Under certain conditions (e.g., with signal coordination and design treatments), arterial roadways can carry a significantly greater amount of traffic than 800 vehicles per lane per hour. Specific adjustments to arterial roadway capacities have therefore been made for the following facilities:

[220] California Government Code Section 65089(b)(4).

- Through detailed operational studies undertaken by the City of Alameda Public Works Department for the Traffic Capacity Management Procedure,[221] a revised assumption for the capacity of the Webster/Posey Tubes was determined. These studies found that the maximum capacities of the Webster and Posey Tubes are 3,976 vehicles per hour, and 4,007 vehicles per hour, respectively. To account for actual roadway conditions, these capacities were computed based on the Highway Capacity Manual operational method.
- The capacity assumed for the Oakland/Alameda Estuary bridges was increased to 1,450 vehicles per lane based on the actual saturation flow rates of adjacent intersections.

For the CMP land use analysis, project impacts on the MTS are determined by comparing levels of service on regional roadways in 2005 and 2020 that would be expected with implementation of the GPA to the levels of services that may be expected in 2005 and 2020 without implementation of the GPA. The latter condition (Without GPA) in 2005 and 2020 assumes regional and local growth consistent with ABAG's *Projections 2000* outside of Alameda Point. At Alameda Point, this condition assumes that no additional jobs or housing units are added at Alameda Point.

Impact TRANS-4: Development under buildout of the GPA would increase the V/C ratio by more than 3 percent on roadway segments that are projected to operate at LOS F in 2020 without the GPA. (S)

Results of the CMP analysis are shown below in Tables IV.J-11 and IV.J-12. The tables show that as a result of forecasted growth in Alameda, Oakland, and the larger region, levels of service on many segments of the MTS network are expected to worsen over the next 20 years. However the tables show that in no case would adoption of the GPA cause a roadway segment on the MTS to operate at LOS F in 2005 or 2020. In all cases, segments forecasted to operate at LOS F in 2005 or 2020 will operate at LOS F either with or without GPA implementation. Therefore, GPA adoption would not cause any roadway segment to operate at LOS F that is not already projected to operate at LOS F in either 2005 or 2020 without GPA implementation.

On the following three roadway segments, the level of service is projected to be LOS F in the year 2020 and adoption of the GPA is projected to increase the V/C ratio by more than 3 percent:

- SR 260 (Webster Street), Constitution Way in Alameda to 7th Street in Oakland (the Posey Tube).
- High Street, Howard Street to I-880 in Oakland.
- Alameda Avenue, Fruitvale Avenue to High Street in Oakland.

This increase in V/C ratio of more than 3 percent on a roadway projected to operate at LOS F is considered a significant impact on the MTS.

[221] City of Alameda Resolution No. 13345 adopted on June 19, 2001.

Table IV.J-11: Roadway Segment Level of Service Comparison – 2005 PM Peak Hour

Analysis Roadway	Direction	2005 Without GPA			2005 With GPA			Significant
		Volume	V/C	LOS	Volume	V/C	LOS	
Freeways								
I-80/I-580, I-580 to north of Berkeley	NB	8,622	1.08	F	8,623	1.08	F	No
I-80/I-580, north of Berkeley to I-580	SB	8,677	1.08	F	8,752	1.09	F	No
I-80, Toll Plaza to I-80/I-580	EB	11,085	1.11	F	11,128	1.11	F	No
I-80, I-80/I-580 to Toll Plaza	WB	8,657	0.87	D	8,676	0.87	D	No
I-880,south of 98th Avenue to I-980	NB	7,829	0.98	E	7,862	0.98	E	No
I-880, I-980 to south of 98th Avenue	SB	8,202	1.03	F	8,214	1.03	F	No
I-880, I-980 to I-80/I-580	NB	4,790	0.80	C	4,783	0.80	C	No
I-880,I-80/I-580 to I-980	SB	4,040	0.67	B	4,110	0.69	B	No
I-980, I-880 to I-580	NB	5,057	0.84	D	5,189	0.86	D	No
I-980, I-580 to I-880	SB	2,801	0.47	A	2,810	0.47	A	No
I-580, I-80 to I-980/Hwy 24	EB	9,109	.91	E	9,123	0.91	E	No
I-580, I-980/Hwy 24 to I-80	WB	7,933	0.79	C	7,908	0.79	C	No
SR 24, I-580 to Fish Ranch Road	EB	9,510	1.19	F	9,557	1.19	F	No
SR 24, Fish Ranch Road to I-580	WB	5,532	0.69	B	5,512	0.69	F	No
Alameda Arterial Roadway Segments								
SR 61 (Doolittle Drive), Otis Drive to Oakland City limits	EB	1,798	0.62	B	1,786	0.62	B	No
SR 61 (Doolittle Drive), Oakland City limits to Otis Drive	WB	2,259	0.78	C	2,277	0.79	C	No
SR 61 (Otis Drive), Park Street to Doolittle Drive	EB	1,243	0.78	C	1,210	0.76	C	No
SR 61 (Otis Drive), Doolittle Drive to Park Street	WB	1,306	0.82	D	1,332	0.83	D	No
SR 61 (Broadway), Otis Drive to Encinal Avenue	NB	643	0.40	A	654	0.41	A	No
SR 61 (Broadway), Encinal Avenue to Otis Drive	SB	824	0.52	A	811	0.51	A	No
SR 61 (Encinal Avenue), Central Avenue to Broadway	EB	446	0.28	A	423	0.26	A	No
SR 61 (Encinal Avenue), Broadway to Central Avenue	WB	342	0.21	A	352	0.22	A	No
SR 61 (Central Avenue), Webster Street to Encinal Avenue	EB	1,056	0.66	B	1,004	0.63	B	No
SR 61 (Central Avenue), Encinal Avenue to Webster Street	WB	601	0.38	A	627	0.39	A	No
SR 260 (Webster Street), Constitution Way to 7th Street (Webster Tube) (partially in Oakland)	SB	3,544	0.89	D	3,549	0.89	D	No

Note: Cells that are shaded indicate roadway segments that the GPA would cause to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.

Table IV.J-11 *continued*

Analysis Roadway	Direction	2005 Without GPA			2005 With GPA			Significant
		Volume	V/C	LOS	Volume	V/C	LOS	
SR 260 (Webster Street), Atlantic Avenue to Constitution Way	NB	1,199	0.50	A	1,290	0.54	A	No
SR 260 (Webster Street), Constitution Way to Atlantic Avenue	SB	1,603	0.67	B	1,649	0.69	B	No
SR 260 (Webster Street), Central Avenue to Atlantic Avenue	NB	1,124	0.70	C	1,154	0.72	C	No
SR 260 (Webster Street), Atlantic Avenue to Central Avenue	SB	1,685	1.05	F	1,660	1.04	F	No
Atlantic Avenue, Main Street to Constitution Way	EB	568	0.36	A	726	0.45	A	No
Atlantic Avenue, Constitution Way to Main Street	WB	358	0.22	A	668	0.42	A	No
Constitution Way, Atlantic Avenue to Webster Street	NB	1,220	0.76	C	1,249	0.78	C	No
Constitution Way, Webster Street to Atlantic Avenue	SB	1,595	1.00	E	1,580	0.79	C	No
Constitution Way, Lincoln Avenue to Atlantic Avenue	NB	1,173	0.73	C	1,201	0.75	C	No
Constitution Way, Atlantic Avenue to Lincoln Avenue	SB	1,570	0.98	E	1,543	0.96	E	No
8th Street, Central Avenue to Lincoln Avenue	NB	710	0.89	D	692	0.87	D	No
8th Street, Lincoln Avenue to Central Avenue	SB	725	0.91	E	702	0.88	D	No
Main Street, Central Avenue to Saratoga Street	NB	73	0.05	A	93	0.06	A	No
Main Street, Saratoga Street to Central Avenue	SB	125	0.08	A	136	0.09	A	No
Central Avenue, Main Street to Webster Street	EB	441	0.55	A	434	0.54	A	No
Central Avenue, Webster Street to Main Street	WB	373	0.47	A	371	0.46	A	No
Park Street, Clement Street to 29th Avenue (partially in Oakland)	NB	2,102	0.72	C	2,100	0.72	C	No
Park Street, 29th Avenue to Clement Street (partially in Oakland)	SB	1,829	0.63	B	1,874	0.65	B	No
Park Street, Lincoln Avenue/Tilden Way to Clement Street	NB	1,340	0.84	D	1,347	0.84	D	No
Park Street, Clement Street to Lincoln Avenue/Tilden Way	SB	1,419	0.89	D	1,419	0.89	D	No
Park Street, Otis Drive to Lincoln Avenue/Tilden Way	NB	358	0.22	A	356	0.22	A	No
Park Street, Lincoln Avenue/Tilden Way to Otis Drive	SB	454	0.28	A	457	0.29	A	No

Note: Cells that are shaded indicate roadway segments that the GPA would cause to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.

Table IV.J-11 *continued*

Analysis Roadway	Direction	2005 Without GPA			2005 With GPA			Significant
		Volume	V/C	LOS	Volume	V/C	LOS	
High Street, Otis Drive to Fernside Drive	NB	605	0.76	C	565	0.71	C	No
High Street, Fernside Drive to Otis Drive	SB	572	0.72	C	615	0.77	C	No
High Street (Bridge), Fernside Drive to Howard Avenue	NB	1,125	0.78	C	1,136	0.78	C	No
High Street (Bridge), Howard Avenue to Fernside Drive	SB	1,063	0.73	C	1,083	0.75	C	No
Oakland Arterial Roadway Segments								
7th Street, Harrison Street (SR 260) to Jackson Street	EB	1,751	0.73	C	1,896	0.79	C	No
Fruitvale Avenue/Tilden Way, Park Street to I-880 (partially in Alameda)	NB	1,150	0.40	A	1,158	0.40	A	No
Fruitvale Avenue/Tilden Way, I-880 to Park Street (partially in Alameda)	SB	1,422	0.47	A	1,367	0.49	A	No
High Street, Howard Street to I-880	NB	1,336	0.84	D	1,353	0.85	D	No
High Street, I-880 to Howard Street	SB	1,352	0.85	D	1,384	0.87	D	No
Alameda Avenue, Fruitvale Avenue to High Street	EB	781	0.98	E	772	0.97	E	No
Alameda Avenue, High Street to Fruitvale Avenue	WB	675	0.84	D	705	0.88	D	No

Note: Cells that are shaded indicate roadway segments that the GPA would cause to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.

Source: DKS Associates, 2002.

Table IV.J-12: Roadway Segment Level of Service Comparison – 2020 PM Peak Hour

Analysis Roadway	Direction	2020 Without GPA			2020 With GPA			Significant
		Volume	V/C	LOS	Volume	V/C	LOS	
Freeways								
I-80/I-580, I-580 to north of Berkeley	NB	9,212	1.15	F	9,116	1.14	F	No
I-80/I-580, north of Berkeley to I-580	SB	8,904	1.11	F	8,924	1.12	F	No
I-80, Toll Plaza to I-80/I-580	EB	11,460	1.14	F	11,435	1.14	F	No
I-80, I-80/I-580 to Toll Plaza	WB	8,676	0.87	D	8,805	0.88	D	No
I-880, south of 98th Avenue to I-980	NB	8,302	1.04	F	8,264	1.03	F	No
I-880, I-980 to south of 98th Avenue	SB	8,378	1.05	F	8,398	1.05	F	No
I-880, I-980 to I-80/I-580	NB	5,106	0.85	D	5,044	0.84	D	No
I-880,I-80/I-580 to I-980	SB	4,207	0.70	C	4,207	0.70	C	No
I-980, I-880 to I-580	NB	5,459	0.91	E	5,619	0.94	E	No
I-980, I-580 to I-880	SB	2,850	0.48	A	2,882	0.48	A	No
I-580, I-80 to I-980/Hwy 24	EB	9,215	0.92	E	9,187	0.92	E	No
I-580, I-980/Hwy 24 to I-80	WB	7,695	0.77	C	7,710	0.77	C	No
SR 24, I-580 to Fish Ranch Road	EB	10,226	1.28	F	10,240	1.28	F	No
SR 24, Fish Ranch Road to I-580	WB	5,649	1.40	F	5,657	1.41	F	No
Alameda Arterial Roadway Segments								
SR 61 (Doolittle Drive), Otis Drive to Oakland City limits	EB	1,989	0.69	B	2,069	0.71	C	No
SR 61 (Doolittle Drive), Oakland City limits to Otis Drive	WB	2,448	0.84	D	2,439	0.84	D	No
SR 61 (Otis Drive), Park Street to Doolittle Drive	EB	1,316	0.82	D	1,341	0.84	D	No
SR 61 (Otis Drive), Doolittle Drive to Park Street	WB	1,418	0.89	D	1,394	0.87	D	No
SR 61 (Broadway), Otis Drive to Encinal Avenue	NB	735	0.46	A	715	0.45	A	No
SR 61 (Broadway), Encinal Avenue to Otis Drive	SB	866	0.54	A	885	0.55	A	No
SR 61 (Encinal Avenue), Central Avenue to Broadway	EB	507	0.32	A	549	0.34	A	No
SR 61 (Encinal Avenue), Broadway to Central Avenue	WB	348	0.22	A	342	0.21	A	No
SR 61 (Central Avenue), Webster Street to Encinal Avenue	EB	1,191	0.74	C	1,245	0.78	C	No
SR 61 (Central Avenue), Encinal Avenue to Webster Street	WB	628	0.39	A	676	0.42	A	No
SR 260 (Webster Street), Constitution Way to 7th Street (Posey Tube) (partially in Oakland)	NB	4,209	1.05	F	**4,539**	**1.13**	**F**	**Yes**

Note: Cells that are shaded indicate roadway segments that the GPA would cause to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.

Table IV.J-12 *continued*

Analysis Roadway	Direction	2020 Without GPA			2020 With GPA			Significant
		Volume	V/C	LOS	Volume	V/C	LOS	
SR 260 (Webster Street), Constitution Way to 7th Street (Posey Tube) (partially in Oakland)	SB	3,667	0.92	E	3,722	0.94	E	No
SR 260 (Webster Street), Atlantic Avenue to Constitution Way	NB	1,269	0.53	A	1,394	0.58	A	No
SR 260 (Webster Street), Constitution Way to Atlantic Avenue	SB	1,768	0.74	C	1,816	0.76	C	No
SR 260 (Webster Street), Central Avenue to Atlantic Avenue	NB	1,345	0.84	D	1,296	0.81	D	No
SR 260 (Webster Street), Atlantic Avenue to Central Avenue	SB	1,820	1.14	F	1,831	1.14	F	No
Atlantic Avenue, Main Street to Constitution Way	EB	521	0.33	A	1,029	0.64	B	No
Atlantic Avenue, Constitution Way to Main Street	WB	442	0.28	A	791	0.49	A	No
Constitution Way, Atlantic Avenue to Webster Street	NB	1,362	0.85	D	1,204	0.81	D	No
Constitution Way, Webster Street to Atlantic Avenue	SB	1,656	1.04	F	1,678	1.05	F	No
Constitution Way, Lincoln Avenue to Atlantic Avenue	NB	1,242	0.78	C	1,181	0.74	C	No
Constitution Way, Atlantic Avenue to Lincoln Avenue	SB	1,691	1.06	F	1,710	1.07	F	No
8th Street, Central Avenue to Lincoln Avenue	NB	739	0.92	E	650	0.81	D	No
8th Street, Lincoln Avenue to Central Avenue	SB	720	0.90	D	723	0.90	D	No
Main Street, Central Avenue to Saratoga Street	NB	67	0.04	A	96	0.06	A	No
Main Street, Saratoga Street to Central Avenue	SB	100	0.06	A	180	0.11	A	No
Central Avenue, Main Street to Webster Street	EB	469	0.59	A	508	0.64	B	No
Central Avenue, Webster Street to Main Street	WB	366	0.46	A	376	0.47	A	No
Park Street, Clement Street to 29th Avenue (partially in Oakland)	NB	2,510	0.87	D	2,670	1.11	E	No
Park Street, 29th Avenue to Clement Street (partially in Oakland)	SB	1,882	0.65	B	1,927	0.66	B	No
Park Street, Lincoln Avenue/Tilden Way to Clement Street	NB	1,411	0.88	D	1,518	0.95	E	No

Note: Cells that are shaded indicate roadway segments that the GPA would cause to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.

Table IV.J-12 *continued*

Analysis Roadway	Direction	2020 Without GPA			2020 With GPA			Significant
		Volume	V/C	LOS	Volume	V/C	LOS	
Park Street, Clement Street to Lincoln Avenue/Tilden Way	SB	1,442	0.90	E	1,455	0.91	E	No
Park Street, Otis Drive to Lincoln Avenue/Tilden Way	NB	387	0.24	A	453	0.28	A	No
Park Street, Lincoln Avenue/Tilden Way to Otis Drive	SB	460	0.29	A	481	0.30	A	No
High Street, Otis Drive to Fernside Drive	NB	542	0.68	B	561	0.70	C	No
High Street, Fernside Drive to Otis Drive	SB	639	0.84	D	689	0.86	D	No
High Street (Bridge), Fernside Drive to Howard Street	NB	1,353	0.93	E	1,411	0.97	E	No
High Street (Bridge), Howard Street to Fernside Drive	SB	1,082	0.75	C	1,114	0.77	C	No
Oakland Arterial Roadway Segments								
7th Street, Harrison Street (SR 260) to Jackson Street	EB	2,290	0.95	E	2,380	0.99	E	No
Fruitvale Avenue/Tilden Way, Park Street to I-880 (partially in Alameda)	NB	1,438	0.50	A	1,595	0.55	A	No
Fruitvale Avenue/Tilden Way, I-880 to Park Street (partially in Alameda)	SB	1,397	0.46	A	1,.447	0.50	A	No
High Street, Howard Street to I-880	NB	1,696	1.06	F	**1,845**	**1.15**	**F**	Yes
High Street, I-880 to Howard Street	SB	1,330	0.83	D	1,359	0.85	D	No
Alameda Avenue, Fruitvale Avenue to High Street	EB	933	1.17	F	**1,021**	**1.28**	**F**	Yes
Alameda Avenue, High Street to Fruitvale Avenue	WB	736	0.92	E	726	0.91	E	No

Note: Cells that are shaded indicate roadway segments that the GPA would cause to operate at LOS F or increase the V/C by 0.03 or more for a freeway or roadway segment that would operate at LOS F without the project.

Source: DKS Associates, 2002.

Implementation of the TDM measures will reduce the potential impact, but adoption of TDM measures cannot ensure that the expected congestion would be reduced to acceptable levels. No feasible mitigation measures have been identified that would reduce the impact to a level that is less than significant. Increasing roadway or tube capacity by adding lanes would not be feasible because of high cost, adverse impacts to air quality, and other factors. Because all three roadways are part of the regional transportation system and two are located entirely within the City of Oakland, any solutions to future traffic problems at these locations must be developed cooperatively between the cities of Oakland, Alameda, the CMA, and Caltrans. The City of Alameda cannot act unilaterally to require a specific improvement to any of these locations; therefore, the City of Alameda must make a finding that the impacts are significant and unavoidable. However, the City of Alameda is committed to working with the City of Oakland, the CMA, and Caltrans to identify appropriate solutions to mitigate these traffic impacts and to ensure that future development contributes a fair share to the improvement costs of any mutually acceptable solution.

Implementation of the following five-part mitigation measure will help minimize the effects of this impact.

Mitigation Measure TRANS-4a: The City shall adopt Mitigation Measure TRANS-2c (TDM).

Mitigation Measure TRANS-4b: The City of Alameda will work with Caltrans, the CMA, and the City of Oakland to consider various improvement options, which might include signal timing improvements, dedicated lanes, or additional lanes to relieve congestion within the Posey Tube and on Alameda Avenue and High Street in Oakland.

Mitigation Measure TRANS-4c: The City of Alameda will amend the City of Alameda *Guidelines for the Preparation of Traffic Studies* to ensure that all future major project development proposals within the Alameda Point GPA Planning Area and other areas of the City prepare a traffic analysis that incorporates an assessment of the proposed project's contribution to the anticipated unacceptable Levels of Service at the Posey Tube, High Street, and Alameda Avenue. Based upon that assessment, the City shall require that each future development fund appropriate trip reduction or other measures to reduce the project's impact on the MTS segments.

Mitigation Measure TRANS-4d: The City shall adopt Mitigation Measure TRANS-2e (Intensity-Based Development Regulations).

Mitigation Measure TRANS-4e: The City shall adopt Mitigation Measure TRANS-2f (Gondola/Alternative Transit Corridor Feasibility Studies). (SU)

Impact TRANS-5: Buildout of the GPA could significantly impact the existing regional transit system. (S)

According to the 2000 Census, over 15 percent of Alamedans use transit to commute to work. Policies in the existing General Plan and proposed policies in the GPA are intended to encourage additional transit use by future residents and employees at Alameda Point. It is clearly the intent of these policies to significantly increase the number of people who use transit, use shuttles, use carpools, bike, or walk as an alternative to driving alone.

Due to the limited transit services currently available at Alameda Point and the limited capacity on-board ferry capacity and limited parking currently available for significant increases in ferry use, buildout at Alameda Point and implementation of the GPA transit policies would not be accommodated by existing transit services.

Existing and proposed policies that would minimize this potential impact are described below.

> *Proposed GPA Policies.* Proposed policies 9.2.g, 9.3.c, 9.4.e, 9.4.n, 9.4.o, 9.4.p, 9.4.r, 9.4.s would minimize impacts by supporting improvements to the transit systems.
>
> *Existing General Plan Policies.* Policies 2.5.m, 4.3.b, 4.3.c, 4.3.d, 4.3.e, 4.3.f, 4.3.g, 4.3.h, and 4.3.i would minimize impacts by supporting funding efforts and facility improvements for transit systems.

Implementation of the policies described above would help minimize the above potential impact, but would not ensure that the capacity of existing regional transit facilities serving Alameda Point would be sufficiently expanded to accommodate additional ridership. Therefore, it will be necessary for the City of Alameda to ensure that new development within Alameda Point provide supplemental services or direct funding to expand existing transit service in order to accommodate the additional demand.

Implementation of the following three-part mitigation measure will help minimize the effects of this impact.

> Mitigation Measure TRANS-5a: The City will work with AC Transit, BART, and the Blue and Gold Fleet to monitor ridership levels and develop mutually-beneficial route and service changes when necessary to maintain adequate service levels.
>
> Mitigation Measure TRANS-5b: The City will work with AC Transit, BART, the Blue and Gold Fleet, and the Water Transit Authority to advocate for additional County, State, and federal funding to support increased services.
>
> Mitigation Measure TRANS-5c: The City of Alameda shall require that all future project development proposals within the Alameda Point GPA planning area prepare a transportation analysis that includes an assessment of the proposed project's impact on transit services and supplemental services necessary to ensure that transit service capacity is not exceeded by new

ridership. Supplemental transit services may include financial support for additional AC Transit service or options for innovative alternative transit modes including but not limited to a gondola, amphibious buses, bus barges, water taxis, group rapid transit and/or light rail. Based upon that assessment, the City will require that each future development fund, on a fair-share basis, supplemental service required to support the proposed development. (LTS)

Figures

Tables

K. AIR QUALITY

This section has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).[222] In keeping with these guidelines, this chapter describes existing air quality, impacts of future traffic on local carbon monoxide levels, and consistency of the proposed GPA with the regional air quality plan. Mitigation measures to reduce or eliminate potentially significant air quality impacts, when feasible, are identified.

1. Setting

A description of the existing physical conditions in the City of Alameda that affect air quality and Alameda's existing air quality conditions is provided below. A description of relevant federal, State and local air quality regulations is also provided.

a. Data Sources, Study Area, and Methodology. The environmental setting data from previous studies prepared for Alameda Point and adjacent projects was updated using current information obtained through the Bay Area Air Quality Management District (BAAQMD), California Air Resources Board (ARB) publications and web sites, and the City of Alameda. Alameda Point and the adjoining areas of Alameda and Oakland serve as the area of analysis for air quality.

b. Climate and Meteorology. Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

Alameda Point is located in the City of Alameda and is within the boundaries of the San Francisco Bay Area Air Basin (Bay Area), encompassing the nine-county region including all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin and Napa Counties, and the southern portions of Solano and Sonoma Counties. The climate of the Bay Area is determined largely by a high-pressure system almost always present over the eastern Pacific Ocean off the west coast of North America. High-pressure systems are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, and resulting in the formation of subsidence inversions. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone, and secondary particulates, such as sulfates and nitrates.

[222] Bay Area Air Quality Management District, revised 1999. *BAAQMD CEQA Guidelines*. December.

Specifically, Alameda Point is located within the northern Alameda and western Contra Costa Counties climatological subregion of the Bay Area Air Basin. This subregion stretches from Richmond to San Leandro with the San Francisco Bay as its western boundary, and the Oakland-Berkeley Hills as its eastern boundary. In this area, marine air, traveling through the Golden Gate and across San Francisco and the San Bruno Gap, is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. Prevailing winds for most of this subregion are from the west.

Temperature in Alameda averages 60 degrees Fahrenheit annually, ranging from the low 40s on winter mornings to the mid 70s in the late summer afternoons. Daily and seasonal variations of temperature are small because of the moderating effects of the Bay and Ocean. In contrast to the steady temperature regime, rainfall is highly variable and confined almost exclusively to the "rainy" period from early November to mid-April. Alameda averages 23 inches of precipitation annually, but because much of the area's rainfall is derived from the fringes of mid-latitude storms, a shift in the annual storm track of a few hundred miles can mean the difference between a very wet year and near drought conditions.

c. Sensitive Receptors. In general, some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to the emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. Sensitive receptors are considered in federal, State, and local air quality evaluations and regulations.

Sensitive air quality receptors located at and around Alameda Point include residential areas, the Coast Guard day care center, Miller Elementary School, and the USCG housing area. Sensitive air quality receptors in surrounding areas include the private residential areas south of Atlantic Avenue and east of Main Street; the College of Alameda located at Webster and Atlantic Avenue; the day care facility which is located at the corner of Fifth Street and Atlantic Avenue; Woodstock Elementary School located at Third Street and Atlantic Avenue; Chipman Middle School located at Poggi Street and Pacific Avenue; Encinal High School located off Central Avenue; and Kiddie Campus at Second Street and Pacific Avenue.

d. Air Pollutants of Concern. National and State ambient air quality standards and emissions limits regulate individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the US Environmental Protection Agency (USEPA) has identified criteria pollutants and established National Ambient Air Quality Standards (national standards) to protect public health and welfare.

National standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants (referred to as State Ambient Air Quality Standards or State standards). Because of the unique meteorological conditions in California, there is considerable difference between State and federal air quality standards currently in effect in California. Table IV.K-1 presents both sets of ambient air quality standards (i.e., national and State) and shows the attainment status of the Bay Area with respect to both standards for criteria pollutants. Table IV.K-2 provides a brief discussion of the related health effects and principal sources for each pollutant.

Under amendments to the federal CAA, USEPA has classified air basins or portions thereof, as either attainment or nonattainment for each criteria air pollutant, based on whether or not the national standards have been achieved. In 1988, the State Legislature passed the California CAA, which is patterned after the federal CAA to the extent that areas are required to be designated as attainment or nonattainment for the State standards. Thus, air basins in California have two sets of attainment/nonattainment designations: one set with respect to the national standards and one set with respect to the State standards.

The federal CAA also requires nonattainment areas to prepare air quality plans that include strategies for achieving attainment. Air quality plans developed by states to meet federal requirements are referred to as State Implementation Plans (SIPs). The California CAA also requires plans for nonattainment areas with respect to the State standards. Areas in California may have two sets of designations and two sets of air quality plans: one to meet federal requirements relative to the national standards and one to meet State requirements relative to the State standards.

As shown on Table IV.K-1, the project site is located in an area currently designated nonattainment for State and national ozone standards and for the State PM_{10} standard. Urbanized portions of the Bay Area, including the project site, are also designated as a maintenance area for the national carbon monoxide standard. The maintenance designation denotes that the area had once been designated as nonattainment. The Bay Area is attainment or unclassified with respect to the other ambient air quality standards.

(1) Criteria Air Pollutants in the Planning Area. The BAAQMD operates a regional monitoring network that measures the ambient concentrations of the six criteria pollutants (see Table IV.K-1). Existing and probable future levels of air quality in Alameda can generally be inferred from ambient air quality measurements conducted by the BAAQMD at its monitoring stations. The major pollutants of concern in the Bay Area—ozone, carbon monoxide, and particulate matter—are monitored at a number of locations. The monitoring station closest to the site is on Alice Street near Jack London Square in Oakland. The Alice Street station is located about 2 miles east of the site and

Table IV.K-1: Federal and State Ambient Air Quality Standards and Bay Area Attainment Status

Pollutant	Averaging Time	California Standards[a]		National Standards[b]	
		Federal Primary Standard Concentration	Attainment Status	Concentration	Attainment Status
Ozone	1-Hour	0.09 ppm (180 µg/m^3)	**N**	0.12 ppm (235 µg/m^3)	**N**
	8-Hour			0.08 ppm	U
Carbon Monoxide	8-Hour	9.0 ppm (10 mg/m^3)	A	9.0 ppm (10 mg/m^3)	A
	1-Hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
Nitrogen Dioxide	Annual			0.053 ppm (100 µg/m^3)	A
	1-Hour	0.25 ppm (470 µg/m^3)	A		
Sulfur Dioxide	Annual			80 µg/m^3 (0.03 ppm)	A
	24-Hour	0.04 ppm (105 µg/m^3)	A	365 µg/m^3 (0.14 ppm)	A
	1-Hour	0.25 ppm (655 µg/m^3)	A		
Suspended Particulate Matter-Fine ($PM_{2.5}$)[c]	Annual Arithmetic Mean			15 µg/m^3	U
	24-Hour			65 µg/m^3	U
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean			50 µg/m^3	A
	Annual Geometric Mean	30 µg/m^3	**N**		
	24-Hour	50 µg/m^3	**N**	150 µg/m^3	U

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and PM_{10} are values that are not to be exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average, some measurements may be excluded. In particular, measurements are excluded that the ARB determines would occur less than once per year on the average.

[b] National standards other than for ozone and particulates, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.

[c] National standards for $PM_{2.5}$ are scheduled to take effect in 2002.

A = Attainment
N = Nonattainment
U = Unclassified

ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

Source: BAAQMD, 2002. *Bay Area Attainment Status as of January 2002.*

Table IV.K-2: Major Criteria Pollutants and Their Health Effects

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen). Often called photochemical smog.	• Eye irritation. • Respiratory function impairment.	Combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	An odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream, increase of carboxy-hemoglobin. • Aggravation of cardiovascular disease. • Impairment of central nervous system function. • Fatigue, headache, confusion, dizziness. • Can be fatal in the case of very high concentrations in enclosed places.	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	• Increased risk of acute and chronic respiratory disease.	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.
Sulfur Dioxide	A colorless gas with a pungent, irritating odor.	• Aggravation of chronic obstruction lung disease. • Increased risk of acute and chronic respiratory disease.	Diesel vehicle exhaust, oil-powered power plants, industrial processes.
Suspended Particulate Matter (PM_{10})	Solid and liquid particles of dust, soot, aerosols, and other matter that are small enough to remain suspended in the air for a long period of time.	• Aggravation of chronic respiratory disease and heart/lung disease symptoms with long exposure. • Altered lung function in children. • Particulate matter 10 microns or less in size may lodge in and/or irritate the lungs.	Combustion, automobiles, field burning, factories, and unpaved roads. Also a result of photochemical processes.

Source: Bay Area Air Quality Management District, 2000.

monitors ozone and carbon monoxide. Until 1999, PM_{10} concentrations were monitored at County Hospital in San Leandro, located approximately 12 miles southeast of the project site. Since PM_{10} monitoring was discontinued in San Leandro, data collected at the next closest monitoring station that monitors PM_{10} levels, the Fremont-Chapel Way station, has been used. Table IV.K-3 shows a 5-year summary of monitoring data from these three stations. Data from San Leandro and Fremont-Chapel Way is included because the Alice Street station does not monitor PM_{10} concentrations. Table IV.K-3 also compares measured pollutant concentrations with State and national ambient air quality standards.

Ozone. Peak ozone values in the Bay Area have declined approximately 1 percent per year, on average, since the 1986-88 base period. From 1990 through 1994, the Bay Area experienced a 5-year period with ozone concentrations that met the national 1-hour ozone standard. During the summer of 1995, the Bay Area experienced its worst ozone season in a decade, with 11 days over the national standard and 28 days over the State standard. The next year, 1996 was somewhat cleaner with 8 days over the national standard and 34 days over the State standard. Although 1997 was the cleanest year ever, the Bay Area has experienced a renewal of ozone standard exceedances since 1998. As shown in Table IV.K-3, there have been no exceedances of the State and the national 1-hour ozone standards and the national 8-hour ozone standard in the project vicinity (versus the entire Bay Area region) over the last 5 years. On-road motor vehicles emit approximately 48 percent and 49 percent of the regional inventory of ROG and $_{NOx}$, respectively, that contribute to ozone formation.[223]

Carbon Monoxide. Table IV.K-3 shows that there have been no exceedances of State and national ambient carbon monoxide standards at the Alice Street station in the past 5 years. Based on BAAQMD carbon monoxide isopleth maps,[224] background carbon monoxide concentrations in the project vicinity are approximately 3.5 and 2.6 parts per million, for the 1-hour and 8-hour average respectively.[225] On-road motor vehicles are responsible for approximately 75 percent of the carbon monoxide emitted within the Bay Area and 80 percent of the emissions in Alameda County.[226]

Suspended Particular Matter (PM_{10}). Sources of PM_{10} emissions in the Bay Area consist mainly of urban activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere. Particulate concentrations near residential sources generally are higher during the winter, when more fireplaces are in use, and meteorological conditions prevent the dispersion of directly emitted contaminants. The PM_{10} levels measured at the San Leandro and Fremont

[223] BAAQMD, 2002. Bay Area Attainment Status as of January 2002.

[224] An isopleth is a line drawn on a map through all points of equal value of some measurable quantity.

[225] Bay Area Air Quality Management District, 1999. *Op. cit.*

[226] California, State of, Air Resources Board, 1999. *Op. cit.*

Table IV.K-3: Air Quality Data Summary (1997-2001) for Alameda Point

Pollutant	Standard[b]	Monitoring Data by Year[a]				
		1997	1998	1999	2000	2001
Ozone						
Highest 1-Hour Average (ppm)[c]		0.08	0.06	0.08	0.07	0.07
Days over State Standard[b]	0.09	0	0	0	0	0
Days over National Standard[b]	0.12	0	0	0	0	0
Highest 8-Hour Average (ppm)[c]	0.08	0.06	0.05	0.06	0.05	0.04
Days over National Standard[b]		0	0	0	0	0
Carbon Monoxide						
Highest 1-Hour Average (ppm)[c]	20	8	6.3	6.4	5.4	5.0
Days over State Standard[b]		0	0	0	0	0
Highest 8-Hour Average (ppm)[c]	9.0	3.6	4.6	5.2	3.4	4.0
Days over National Standard[b]		0	0	0	0	0
Particulate Matter (PM_{10})						
Highest 24-Hour Average ($\mu g/m^3$)[c]	50	**64.7**	32.4	**87.9**	**58.1**	**57.6**
Days over State Standard[b]		1	0	2	1	3
Annual Average ($\mu g/m^3$)[c]	30	15	13	21	19	20

[a] Data are from the Alice Street station in Oakland (ozone and carbon monoxide) and County Hospital in San Leandro (PM_{10} , 1997 and 1998), and Fremont-Chapel Way (PM_{10}, 1999 through 2001).

[b] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and PM_{10} are values that are not to be exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average, some measurements may be excluded. In particular, measurements are excluded that the ARB determines would occur less than once per year on the average. National standards other than for ozone and particulates, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.

[c] ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

Note: Values in **bold** are in excess of applicable standard. NA = Not Available

Source: California Air Resources Board, 1997, 1998, 1999, 2000, 2001. *Summaries of Air Quality Data*. Website: www.arb.ca.gov/adam.

stations exceeded the State standard in 4 of the past 5 years, ranging from 1 to 3 days. Direct PM_{10} emissions in Alameda County are expected to increase by approximately 4 percent between 1996 and 2010.[227]

Other Criteria Pollutants. The standards for NO_2, SO_2, and lead are being met in the Bay Area, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future.

[227] Hilken, Henry, 2001. Personal communication with LSA Associates, Inc. August 27.

(2) Historical Emissions Sources Associated with Alameda Point. Historically, air emission sources at Alameda Point have included both stationary sources and mobile emissions from motor vehicles until the base closed in 1997.

Prior to base closure, stationary emission sources at NAS Alameda included natural gas-fired boilers and furnaces; jet engine fuel, fuel oil, and gasoline storage tanks and dispensers; solvent cleaners; paint spray booths and paint stripping bays; abrasive blasting booths; plating tanks; and jet engine test cells. During the base closure period, emissions by stationary sources decreased drastically, as shown in Table IV.K-4. The decrease in emissions over time was due primarily to the decrease in operations at Alameda Point followed by its subsequent closure in 1997.

Table IV.K-4: Stationary Source Emissions at Alameda Point

	Emissions in Pounds per Day/ Tons per Year		
Pollutant	**1990**	**1994**	**1996**
Reactive Organic Gases	779 / 144.0	88 / 17.3	NA / 10.0
Carbon Monoxide	NA	66 / 12.6	NA / 9.4
Nitrogen Oxides	1,366 / 250.2	489 / 89.3	NA / 62.9
Particulate Matter	NA	33 / 6.6	NA / 2.5
Sulfur Dioxide	192 / 35.3	6 / 1.4	NA / 1.0[a]

[a] Includes all oxides of sulfur.

Notes: NA = Not available from BAAQMD original source.

Source: Bay Area Air Quality Management District, 1997.

e. Regulatory Considerations

(1) Regulatory Agencies. USEPA is responsible for implementing the myriad programs established under the federal CAA, such as establishing and reviewing the national ambient air quality standards and judging the adequacy of State Implementation Plans (SIPs), but has delegated the authority to implement many of the federal programs to the States while retaining an oversight role to ensure that the programs continue to be implemented.

The Air Resources Board (ARB), California's State air quality management agency, is responsible for: establishing and reviewing the State ambient air quality standards; compiling the California State Implementation Plan and securing approval of that plan from the USEPA; and identifying toxic air contaminants. The ARB also regulates mobile emissions sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts, which are organized at the county or regional level. The county or regional air quality management districts are primarily responsible for regulating stationary emissions sources at industrial and commercial facilities within their geographic area and for preparing the air quality plans that are required under the federal and California CAAs. The roles and responsibilities of both the ARB and local air pollution control districts were expanded by the California CAA of 1988. Local air pollution control districts have been given added responsibility and authority to adopt transportation control and emission reduction programs for indirect and area-wide emission sources.

(2) Plans and Policies. As noted earlier, the federal and California CAAs require plans to be developed for areas designated as nonattainment (with the exception of areas designated as non-

attainment for the State PM_{10} standard). Plans are also required under federal law for areas designated as maintenance for national standards. Such plans must include strategies for attaining the standards. Currently, there are three plans for the Bay Area including the Ozone Attainment Plan for the 1-Hour National Ozone Standard[228] developed to meet federal ozone air quality planning requirements; the Bay Area 2000 CAP[229] developed to meet planning requirements related to the State ozone standard, and the Carbon Monoxide Maintenance Plan[230] developed to ensure continued attainment of the national carbon monoxide standard. The Bay Area 2001 Ozone Attainment Plan was adopted on October 24, 2001, by the BAAQMD, the Metropolitan Transportation Commission (MTC), and the Association of Bay Area Governments (ABAG). This plan is a revision to the Bay Area section of California's plan to achieve the national ozone standard. The plan was prepared in response to EPA's Federal Register notice of March 30, 2001 proposing to partially approve and partially disapprove the Bay Area's 1999 Ozone Attainment Plan.[231] The ARB approved the Bay Area 2001 Ozone Attainment Plan for the 1-Hour National Ozone Standard on November 1, 2001. On November 30, 2001, ARB submitted the 2001 Plan to USEPA for approval as a revision to the California SIP. As of August 2002, the USEPA had not approved the Ozone Attainment Plan. The USEPA has 18 months to evaluate clean air plans.[232]

(3) Stationary Emission Sources. BAAQMD has permit authority over most types of stationary emission sources in the Bay Area. BAAQMD exercises permit authority through its Rules and Regulations. Both federal and State ozone plans rely heavily upon stationary source control measures set forth in BAAQMD's Rules and Regulations. In contrast to the ozone plans, the *Carbon Monoxide Maintenance Plan* relies heavily on mobile source control measures.

BAAQMD issues permits for emissions banking which allows for credits related to air pollution reductions which occur as companies shut down old sources or voluntarily reduce emissions by adding new control equipment to existing sources. Emission reduction credit banking may also occur when a company changes its process or reformulates to less polluting materials, curtails its operations, or accepts more stringent operating conditions. To qualify for a banking credit, new controls must go beyond the control levels already required by BAAQMD regulations or Best Available Retrofit Control Technology (BARCT) levels in the CAP and must also be real, permanent, quantifiable, and enforceable. When a stationary source is permanently taken out of service, its air quality permits are normally surrendered. BAAQMD regulations establish procedures for obtaining

[228] Association of Bay Area Governments, 1999. San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard. June.

[229] Bay Area Air Quality Management District, 2000. *Bay Area 2000 Clean Air Plan and Triennial Assessment.*

[230] Association of Bay Area Governments, 1994. *Carbon Monoxide Maintenance Plan.*

[231] U.S. EPA, 2001. San Francisco Bay Area Ozone Actions. Available at www.apa.gov/Region9/air/SFBay02/index.htm.

[232] Boitmann, Ralph, 2002. Public Information Officer, Bay Area Air Quality Management District. Personal communication with LSA Associates, Inc. August 1.

credit for the resulting reduction in emissions. These emission reduction credits (ERCs) can be formally registered and banked with the BAAQMD. Banked ERCs can be used later to meet emission-offset requirements for other new stationary emission sources. ERCs can also be bought, sold, traded, or given to other parties to meet permit-related emission offset targets.

At closure of NAS Alameda, the US Navy had 254 permitted stationary sources and 332 exempt sources.[233] Most permits were canceled and the rest were transferred to the Alameda Reuse and Redevelopment Authority (ARRA). As of 2000, all remaining permits have been converted to ERCs under the BAAQMD emissions banking program. There are currently no tenants at Alameda Point who need BAAQMD permits for their emissions.[234]

Alameda Point currently has five banking certificates:

- Certificate #351 (22.79 tons per year precursor organic compounds, 54.6 tons per year non-precursor organic compounds)
- Certificate #205 (6.03 tons per year non-precursor organic compounds)
- Certificate #333 (13.49 tons per year precursor organic compounds)
- Certificate #480 (3.9 tons per year precursor organic compounds and 2.4 tons per year nitrogen oxides), and
- Certificate #486 (4.2 tons per year precursor organic compounds and 1.2 tons per year nitrogen oxides).[235]

In general, federally required air quality permit programs have been integrated into the existing State and local permit program. The BAAQMD is integrating new federal operating permit requirements into the existing permit system. The new federal operating permits (generally called Title V permits in reference to the applicable section of the 1990 Clean Air Act amendments, 42 U.S.C. Section 7661, *et seq*.) address industrial facilities as a whole, as well as discrete emission sources within the facility. Since base closure in 1997, emissions at Alameda Point have decreased significantly and are well below the Title V Major Facility Review threshold requirements. Therefore, the Title V permit for Alameda Point has been withdrawn from the BAAQMD, and Alameda Point has been removed from the Title V permit applicability list.

[233] Shahani, Mohan, 1997. EFA West, San Bruno, California, communication with Tetra Tech, Inc. August 26.

[234] Bowman, Ken, 2001. Alameda Redevelopment and Reuse Authority. Personal communication with LSA Associates, Inc. October 11.

[235] Foster, John, 2001. BAAQMD. Personal communication with LSA Associates, Inc. August 29.

(4) Toxic Air Contaminants. Regulation of toxic air contaminants is achieved through federal and State controls on individual sources.[236] Toxic air contaminants are air pollutants with short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects for which no ambient air quality standards have been established. The 1990 amendments to the federal CAA offer a comprehensive plan for achieving significant reductions in both mobile- and stationary-source emissions of certain designated toxic air contaminants.

Locally, the BAAQMD administers the Bay Area's Toxic Air Contaminant Control Program, which is intended to reduce public exposure to toxic air contaminants from stationary sources in the Bay Area. BAAQMD is currently working to control toxic air contaminant impacts through local "hot spots" and to reduce toxic air contaminant background concentrations. The control strategy involves: reviewing new stationary sources to ensure compliance with required emissions controls and limits; maintaining an inventory of existing stationary sources of toxic air contaminants; and developing new rules and regulations to reduce toxic air contaminant emissions.

Regulation of toxic air contaminants from mobile sources has traditionally been implemented through establishment of emissions standards for on-road motor vehicles (imposed on vehicle manufacturers) and through specifications for gasoline and diesel fuel sold in California (imposed on fuel refineries and retailers), rather than through land use decisions, air quality permits, or regulations addressing how motor vehicles are used by the general public.

(5) Odors. The BAAQMD regulates odors with general limitations on odorous substances and specific emission limitations on certain odorous compounds. If the BAAQMD receives 10 complaints of odor emanating beyond a property line within a 90 day period it will investigate and issue a violation and a Notice to Comply. If the violation is not corrected, the property owner could be assessed a penalty in accordance with Division 26 of the Health and Safety Code. These regulations do not apply to single family dwellings, restaurants, agricultural operations, or materials odorized for safety or public health reasons. Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant air quality impact. Buffer zones need to be established between the sources of odors and adjacent sensitive uses.[237]

(6) Existing General Plan Policies. Policies from the current *General Plan* that relate to air quality are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed *General Plan* amendments related to air quality are discussed in the Environmental Analysis subsection below.

[236] Federal environmental laws refer to "hazardous air pollutants," while California environmental laws refer to "toxic air contaminants." Both of these terms basically encompass the same constituent toxic compounds.

[237] Hilken, Harry, 2001. Personal communication with LSA Associates, Inc. August 27.

Transportation Systems Management

4.2.a Recognizing that buildout of the City will result in unacceptable congestion unless 1990 travel habits are altered, Alameda is committed to de-emphasizing use of the single-occupant vehicle (SOV) during peak periods.

4.2.b Diligently administer the Transportation Systems Management Ordinance adopted in 1990.

Transit

4.3.a Support AC Transit's current (1990) route restructuring plan for local and express bus service.

4.3.b Encourage AC Transit to maintain a dialogue with Alameda to ensure continued high levels of coverage and transit frequency.

4.3.c Support AC Transit's preliminary concept of a light rail line connecting downtown Oakland, BART stations and Oakland Airport with the route passing through Alameda.

4.3.d Develop transit-oriented streets where feasible.

4.3.e Encourage AC Transit to consider Transit Centers to facilitate transfers at the following locations: South Shore Center, vicinity of Blanding and Broadway, along Webster Street, and at the Alameda Gateway and Harbor Bay Isle ferry terminals.

4.3.f Support ferry service as an effective means of reducing demand for greater road capacity, offering commute alternatives, and minimizing pollution.

4.3.g Work with the Metropolitan Transportation Commission to secure and maintain needed subsidies for ferry service from federal and State highway or transit funds.

4.3.h Work toward integrating a Citywide demand responsive shuttle service, which incorporates para-transit, BART, AC Transit, Dial-A-Ride, and shopper needs.

4.3.i Seek both technologies and service providers capable of expanding transit use in Alameda.

Climate and Air Quality

5.5.a Strive to meet all Federal and State standards for ambient air quality.

5.5.b Support continued monitoring efforts by the Bay Area Air Quality Management District.

5.5.c Encourage use of public transit for all types of trips.

5.5.d Encourage development and implementation of Transportation System Management (TSM) programs.

5.5.e Minimize commuting by balancing jobs and nearby housing opportunities.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA that are relevant to air quality, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed below at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to air quality. The GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the General Plan), which includes several policies related to air quality. Those policies are detailed below.

Transportation Systems Management

4.2.c Require development west of Grand Street which significantly impacts peak hour traffic volumes in the Webster/Posey Tubes to provide transportation alternatives such as: pricing and management of the parking supply; providing preferred carpool parking; provision of transit stops; implementing compressed work weeks, telecommuting, staggered hours, flex time; providing discounted transit passes; providing subsidized shuttle service; providing bicycle facilities; working with BART to expand parking at stations; implementing shuttle or contribute toward expanding AC Transit service to ferry terminals and BART stations. **[New Policy]**

Alameda Point Element **[New Element]**

9.2.o Create mixed-use development that locates service-oriented uses near residences and offices.

9.2.p Create neighborhood centers similar to Alameda's neighborhood business districts, with supporting uses such as retail and local serving office and civic uses in mixed-use neighborhood centers that are acceptable for nearby residents.

9.3.c Improve public transit service, including connections to ferry service to serve the public, institutional, and workplace uses in the Civic Core.

9.3.y Encourage residential development at densities of between 15 and 21.8 dwelling units per net acre in the vicinity of the ferry terminals, along with parks and community serving businesses and institutions, in order to promote accessibility via alternative modes of transit.

9.4.a Promote street connectivity within Alameda Point and with the surrounding neighborhoods.

9.4.b Design transportation improvements to anticipate future growth and minimize traffic congestion.

9.4.d Require roadway improvements that will allow acceptable levels of future traffic levels within the Alameda Point local roadway system.

9.4.e Work with the City of Oakland, Alameda County, Caltrans and other regional organizations to develop plans for design, phasing, funding, and construction of a new vehicle access to Interstate 880 (bridge, tunnel or other vehicle connection).

9.4.f Minimize vehicle trips to and from Alameda Point that must use the Webster/Posey tubes by providing alternative travel modes and connections to the regional transportation system.

9.4.n Optimize the use of transit and other alternative modes of transportation in all development at Alameda Point through increased accessibility to local and regional transit systems and improving the safety and reliability of transit and alternative modes.

9.4.o Expand water transportation by establishing a water taxi or ferry in the Marina district with potential destinations including San Francisco, Angel Island, Treasure Island, and Alcatraz.

9.4.p Preserve opportunities to develop future transit links including transit exclusive corridors.

9.4.q Explore the feasibility of transit connections between Alameda Point and the West Oakland BART Station, including through the use of technologies such as a people mover system.

9.4.r Redesign Atlantic Avenue to include a landscaped transit corridor for buses, jitneys, or future light-rail development.

9.4.s Explore feasibility of establishing shuttle service to the ferry terminal(s), Civic Core, Webster Street and Marina Village.

9.4.t Integrate pedestrian and bicycle uses into the design of the roadway system and fabric of neighborhoods.

9.4.u Provide a system of connections for pedestrians and bicyclists including sidewalks, crosswalks, and paths connecting residential, schools, parks, transit stops, employment, and other areas of community activity on Alameda Point.

9.4.v Develop Tinker Avenue, Atlantic Avenue, and Main Street with pedestrian and bicycle-oriented paths, and landscaping as a means to maximize alternative modes of transportation and minimize impacts of vehicle traffic and noise to the residential neighborhood.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant air quality impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. The GPA would have a significant impact on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan. Based on the BAAQMD *CEQA Guidelines* , the proposed GPA would be considered consistent with the *2000 CAP* if it meets the three criteria detailed below.
  - The local plan is consistent with the 2000 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. The 2000 CAP population assumptions are based on those identified in the 1998 *ABAG Projections* report.

  - The local plan demonstrates reasonable efforts to implement the Transportation Control Measures (TCMs) included in the CAP that identify cities as the implementing agencies.
  - The local plan provides for buffer zones around existing and proposed land uses that would emit odors and/or toxic air contaminants. Buffer zones to avoid odors and toxics impacts should be reflected in local plan policies, land use maps, and implementing ordinances.

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation by:
  - Contributing to CO concentrations exceeding the State ambient air quality standards of 9 ppm averaged over 8 hours and 20 ppm for 1 hour; or
  - Resulting in total emissions of ROG, $_{NOx}$, or PM_{10} of 15 tons per year or greater, or 80 pounds (36 kilograms) per day or greater.
- Expose pollution-sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

(2) Less-than-Significant Impacts. Air quality effects related to toxic air contaminants, local carbon monoxide concentrations, and odor nuisances would be less than significant.

Toxic Air Contaminants. Although the GPA does not involve any long-term uses that would generate toxic air contaminants, uses proposed in the future could potentially generate such contaminants. Any such uses proposed in the future that could generate toxic air contaminants would need to comply with a variety of rules and regulations on toxic air contaminants as described in Section IV.M, Hazards, of this chapter. Each business or tenant using materials known to generate toxic air contaminants would be required to obtain the appropriate operation permits from the BAAQMD, under existing regulations. Therefore, the GPA would not expose sensitive receptors to toxic air contaminants generated at Alameda Point.

Local Carbon Monoxide Concentrations. A microscale impact analysis was conducted to evaluate potential localized air quality impacts at eight key intersections in the Planning Area (including Alameda and Oakland) determined most likely to be impacted by the increased traffic from the proposed GPA, as a means to expose sensitive receptors to substantial pollutants. Traffic generated under buildout of the GPA would have the potential to affect carbon monoxide concentrations along surface streets and near stagnation points such as major highways and heavily traveled and congested roadways. Caltrans' CALINE4 model, as suggested in the *Transportation Project-Level Carbon Monoxide Protocol*, was used to estimate worst-case carbon monoxide concentrations at the following eight selected intersections: Webster Street at Atlantic Avenue, Constitution Way at Atlantic Avenue, Eighth Street at Central Avenue, Lincoln Avenue at Park Street, Tilden Way at Fernside Boulevard, and Otis Drive at Fernside Boulevard (all in Alameda), and Jackson Street at 6th Street, and Harrison Street at 7th Street (both in Oakland). These intersections were selected because they are among the intersections with either the worst levels of service (LOS) or with the highest

traffic volumes during peak hours in the GPA Planning Area. It is assumed that, if project-generated traffic did not result in adverse CO impacts at these relatively high volume intersections, then impacts at other less affected intersections would be even less substantial.

The results of the CALINE4 modeling for the eight selected intersections are shown in Table IV.K-5. The data show exposure levels in 2020 that are slightly better than at present because State and federal mandates will cause exhaust emissions per vehicle to continue to improve into the future. Year 2020 was selected for this analysis because it has the highest traffic volumes after implementation of the GPA and is thus considered the worst-case scenario. In addition, existing background 1-hour and 8-hour CO concentrations were used as the base for the future year 2020 condition, further ensuring that the analysis is a conservative one (which does not underestimate potential impacts).

There would be no exceedance of either the State or federal CO standards for the 1-hour or the 8-hour durations at any of the eight intersections analyzed.

As shown in Table IV.K-5, the existing 1-hour CO concentrations range from 7.9 to 10.3 ppm in Alameda and from 10.1 to 13.0 ppm in Oakland, all below the State's 20 ppm standard. With one exception, the 8-hour CO concentrations range from 5.8 to 7.4 ppm in Alameda and from 7.3 to 8.6 in Oakland. The exception involves the 8-hour CO concentration calculated at the intersection of Harrison Street and 7th Street in Oakland, which (at 9.3 ppm) currently exceeds the State's 9 ppm standard. Other than the intersection of Harrison and 7th Streets in Oakland, all of the 8-hour concentrations are below the State's 9 ppm standard. The estimated 1-hour CO concentration near all eight intersections ranges from 7.1 ppm to 11.5 ppm for the 2020 With Project condition, which is well below the 20 ppm State standard and the 35 ppm Federal standard. No significant local CO impacts are anticipated as a result of the proposed project.

Odor Nuisances at Residential Receptors. Though offensive odors from stationary sources rarely cause any physical harm, they are unpleasant and can lead to public distress. The occurrence and severity of odor impacts depend on the nature, frequency and intensity of the source; wind speed and direction; and the sensitivity of receptors. Odor impacts should be considered for any proposed new odor sources located near existing receptors, as well as any new sensitive receptors located near existing odor sources. Generally, increasing the distance between a receptor and the source to an acceptable level will mitigate odor impacts.

Table IV.K-6 shows BAAQMD-recommended buffer zones (distance between receptor and source) for known odor-emitting sources.

No new stationary odor sources are proposed as part of the GPA. There are no existing sources of odor near proposed sensitive land uses. Therefore there would be no odor-related impacts on sensitive receptors.

Table IV.K-5: Traffic-Related CO Concentrations

Intersection	Distance to Receptor Location from Roadway Centerline (meters)	Existing CO Concentration 1-Hour/8-Hour[a] (ppm)	2020 Without GPA 1-Hour/8-Hour (ppm)	2020 With GPA 1-Hour/8-Hour (ppm)	GPA-Related Increase 1-Hour/8-Hour (ppm)
Webster & Atlantic	14	9.1/6.6	7.6/5.6	7.7/5.6	0.0/0.0
	14	8.7/6.3	7.5/5.5	7.6/5.6	0.0/0.0
	15	8.6/6.3	7.5/5.5	7.6/5.6	0.0/0.0
	17	8.6/6.3	7.4/5.4	7.6/5.6	0.0/0.0
Constitution & Atlantic	14	8.8/6.4	7.6/5.6	7.6/5.6	0.0/0.0
	14	8.8/6.4	7.6/5.6	7.5/5.5	0.0/0.0
	19	8.7/6.3	7.5/5.5	7.5/5.5	0.0/0.0
	21	8.7/6.3	7.5/5.5	7.5/5.5	0.0/0.0
Eighth & Central	8	8.5/6.2	7.3/5.3	7.4/5.4	0.0/0.0
	8	8.4/6.1	7.2/5.3	7.3/5.3	0.0/0.0
	8	8.2/6.0	7.1/5.2	7.2/5.3	0.0/0.0
	8	8.1/5.9	7.0/5.1	7.1/5.2	0.0/0.0
Lincoln & Park	8	8.7/6.3	7.9/5.8	7.9/5.8	0.0/0.0
	8	8.7/6.3	7.8/5.7	7.9/5.8	0.0/0.0
	8	8.5/6.2	7.7/5.6	7.8/5.7	0.0/0.0
	8	8.4/6.1	7.7/5.6	7.8/5.7	0.0/0.0
Tilden & Fernside	10	8.2/6.0	7.5/5.5	7.6/5.6	0.0/0.0
	10	8.1/5.9	7.3/5.3	7.5/5.5	0.0/0.0
	10	8.0/5.8	7.3/5.3	7.4/5.4	0.0/0.0
	17	7.9/5.8	7.3/5.3	7.4/5.4	0.0/0.0
Otis & Fernside	7	10.3/7.4	8.4/6.1	8.4/6.1	0.1/0.1
	12	10.3/7.4	8.3/6.0	8.3/6.0	0.1/0.0
	14	10.2/7.4	8.1/5.9	8.1/5.9	0.0/0.0
	14	10.0/7.3	8.0/5.8	8.0/5.8	0.0/0.0
Jackson & 6th (Oakland)	7	11.0/7.9	10.4/7.5	10.4/7.5	0.0/0.0
	10	10.7/7.7	10.0/7.2	10.1/7.3	-0.1/-0.1
	10	10.2/7.4	9.8/7.1	9.9/7.2	0.0/0.0
	12	10.1/7.3	9.5/6.9	9.5/6.9	0.0/0.0
Harrison & 7th (Oakland)	10	13.0/**9.3**	11.2/8.1	11.5/8.3	0.0/0.0
	10	12.0/8.6	10.4/7.5	10.6/7.7	0.0/0.0
	13	11.4/8.2	10.2/7.4	10.4/7.5	0.0/0.0
	21	11.3/8.1	9.9/7.2	10.1/7.3	0.0/0.0

[a] Includes 1-hour background concentration of 6.1 ppm and 8-hour background concentration of 4.5 ppm.

Note: Values in **bold** exceed applicable standard.

Source: LSA Associates, Inc., 2002.

(3) Significant Impacts and Mitigation Measures. Three significant air quality impacts would result from implementation of the GPA.

Construction-Period Impacts. The construction of new development and/or redevelopment would result in one significant impact related to air quality.

Table IV.K-6: Buffer Zone Distances for Potential Odor Sources

Type of Operation	Buffer Zone
Wastewater Treatment Plant	1 mile
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shops)	1 mile
Rendering Paint	1 mile
Coffee Roaster	1 mile

Source: BAAQMD, 1999. *CEQA Guidelines*, Assessing Air Quality Impacts of Projects and Plans.

<u>Impact AIR-1</u>: Construction and demolition activities associated with new development under the GPA would generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions. (S)

Construction activities would occur intermittently at Alameda Point through the year 2020 as the GPA is implemented. Although the related impacts at any one location would be temporary, construction of individual projects under the GPA could cause adverse effects on the local air quality. Construction activities would generate substantial amounts of dust (including PM_{10} and $PM_{2.5}$) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) and lesser amounts of other criteria air pollutants primarily from operation of heavy equipment construction machinery (primarily diesel operated) and construction worker automobile trips (primarily gasoline operated).

Fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the prevailing weather. Sources of fugitive dust during construction would include vehicle movement over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM_{10} concentrations may be adversely affected on a temporary and intermittent basis during the construction period. In addition, the fugitive dust generated by construction would include not only PM_{10}, but also larger particles, which would fall out of the atmosphere within several hundred feet of the individual construction site and could result in nuisance-type impacts. Demolition of buildings constructed prior to 1980 often involves hazardous materials such as asbestos used in insulation, fire retardants, or building materials (floor tile, roofing, etc.) and lead-based paint. Airborne asbestos fibers and lead dust pose a serious health threat. The demolition, renovation and removal of asbestos-containing building materials is subject to the requirements of BAAQMD Regulation 11, Rule 2.

The BAAQMD's approach to analyses of construction impacts of all types is to rely on implementation of effective and comprehensive control measures rather than detailed quantification of emissions. The District considers any project's construction related impacts to be less than significant if

the required dust-control measures are implemented. Without these measures, the impact would be considered to be significant.

Construction activities would also result in the emission of other criteria pollutants from equipment exhaust, construction-related vehicular activity and construction worker automobile trips. Emission levels for construction activities would vary depending on the number and type of equipment, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and $_{NOx}$ from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during project construction. BAAQMD *CEQA Guidelines* recognize that construction equipment emits ozone precursors, but indicate that such emissions are included in the emission inventory that is the basis for regional air quality plans. Therefore construction emissions are not expected to impede attainment or maintenance of ozone standards in the Bay Area.[238] The recommendations of the BAAQMD for dust control are provided in Appendix G of this EIR and would be implemented for all construction projects under the GPA. No further mitigation measures would be necessary.

> Mitigation Measure AIR-1: Contractors shall implement all BAAQMD dust control measures included in Appendix G of this EIR. (LTS)

Operation-period impacts. Adoption of the GPA and buildout of its allowable land use program would result in two significant impacts related to air quality.

Impact AIR-2: Buildout of the GPA would contribute to exceedance of the BAAQMD threshold for NO_x. (S)

Under GPA buildout, vehicular emissions of nitrogen oxides (NO_x) are projected to exceed the BAAQMD 80 lb/day threshold. The increase in NO_x emissions caused by additional automobile trips generated by GPA-related development would contribute to the formation of ozone levels and conflict with the applicable Clean Air Plan.

Based on the trip generation summary prepared for this project,[239] there will be 29,297 daily vehicle trips in the year 2020 with project condition, with an average trip length of 5.77 miles. Table IV.K-7 lists the air pollutant emissions of concern associated with these projected daily vehicle trips.

As shown in the table, Alameda Point vehicle emissions would be below the BAAQMD thresholds for ROG and PM_{10}. However, the GPA would exceed the BAAQMD threshold for NO_x in the 2020 With Project condition.

[238] Bay Area Air Quality Management District, 1999. *Op. cit.*

[239] DKS Associates, July 2002.

Existing and proposed policies that would help minimize this potential impact are described below.

Table IV.K-7: Vehicular Emissions (lbs/day)

Category	Daily Trips	ROG	NO_x	PM_{10}
2020 Without GPA	4,269	3.3	20.6	0.5
2020 With GPA	28,287	21.6	136.7	3.6
BAAQMD Threshold	–	80	80	80

Source: DKS Associates and LSA Associates, Inc., July 2002.

Proposed GPA Policies. The following policies set forth in the proposed GPA for Alameda Point would help reduce regional and local air quality impacts associated with implementation of the proposed GPA: 9.2.c, 9.2.e, 9.2.f, 9.2.g, 9.2.o, 9.3.c,9.3.u, 9.3.y, 9.3.aa, 9.3.cc, 9.3.mm, 9.3.oo, 9.4.o, 9.4.o, 9.4.p, 9.4.q, 9.4.r, 9.4.s, 9.4.t, 9.4.u, 9.4.v.

Existing General Plan Policies. There are no existing *General Plan* polices that specifically address regional and local air quality impacts beyond the scope of the proposed policies listed above.

While these policies would lessen the extent to which the GPA would lead to emissions that would exceed the BAAQMD threshold for NO_x, they would not reduce this impact to a less-than-significant level and the residual impact is considered significant and unavoidable.

The BAAQMD identifies several CAP transportation control measures (TCMs) for implementation by local government. The GPA is consistent with the BAAQMD TCMs evaluated in Table IV.K-8. Implementation of the following mitigation measure will help minimize the effects of this impact.

Mitigation Measure AIR-2: Major developers shall fund on a fair share basis BAAQMD-recommended feasible TCMs for reducing vehicle emissions from commercial, institutional, and industrial operations, as well as all CAP TCMs the BAAQMD has identified as appropriate for local implementation. Each major developer of development under the GPA shall fund its fair share toward some or all of the following TCMs:

- *Rideshare Measures:* Implement carpool/vanpool program (e.g., carpool ride matching for employees, assistance with vanpool formation, provision of vanpool vehicles, etc.) (Effectiveness 1 percent to 4 percent of work trips, BAAQMD *CEQA Guidelines*).[240]
- *Transit Measures:* (i) Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc. (Effectiveness 0.5 percent to 2 percent of all trips); (ii) Design and locate buildings to facilitate transit access (e.g., locate building entrances near transit stops, eliminate building setbacks, etc.) (Effectiveness 0.1 percent to 0.5 percent of all trips).

[240] The BAAQMD *CEQA Guidelines* provide estimates of the relative effectiveness of each TCM on the reduction in work trips. These reductions are expressed as percentages of total work trips.

Table IV.K-8: Consistency With Clean Air Plan Transportation Control Measures

Transportation Control Measure	Project Consistency
Support Voluntary Employer-Based Trip Reduction Programs	The City's Traffic Capacity Management Procedure (TCMP) discussed in Section 4.J, Transportation and Circulation, requires projects to identify enforceable TSM/TDM measures to reduce traffic trips. Proposed Policy 4.2.c also requires developments to provide transportation alternatives, and existing Policy 5.5.d encourages TSM programs.
Local Clean Air Plans, Policies and Programs	Several of the proposed policies listed earlier in this section incorporate air quality beneficial policies and programs into local planning and development activities, with a particular focus on subdivision, zoning and site design measures that reduce the number and length of single occupant automobile trips.
Pedestrian Travel	Proposed policies 9.4.u and 9.4.v encourage increases in pedestrian trips at major transportation nodes and pedestrian oriented or pedestrian friendly development, and development of pedestrian paths or amenities where existing transportation infrastructure has none.
Promote Traffic Calming Measures	The City will promote traffic calming measures in the area through installing physical barriers, traffic lane channelization, turning movement restriction and lower speed limits in order to reduce the number and speed of motor vehicles as determined necessary in each of the traffic studies completed for each individual project pursuant to the City's TCMP. These measures would reduce air emissions by reducing the attractiveness and convenience of driving compared to the attractiveness and convenience of transit, bicycling and walking.

Source: City of Alameda, 2002.

- *Services Measures:* (i) Provide on-site shops and services for employees, such as cafeteria, bank/ATM, dry cleaners, convenience market, etc. (Effectiveness 0.5 percent to 5 percent of work trips); (ii) Provide on-site child care, or contribute to off-site child care within walking distance. (Effectiveness 0.1 percent to 1 percent of work trips).
- *Shuttle Measures:* (i) Establish mid-day shuttle service from work site to food service establishments/commercial areas (Effectiveness 0.5 percent to 1.5 percent of work trips); (ii) Provide shuttle service to transit stations/multimodal centers (Effectiveness 1 percent to 2 percent of work trips).
- *Parking Measures:* (i) Provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles (Effectiveness 0.5 percent to 1.5 percent of work trips); (ii) Implement parking fees for single occupancy vehicle commuters (Effectiveness 2 percent to 20 percent of work trips); (iii) Implement parking cash-out program for employees (i.e., non-driving employees receive transportation allowance equivalent to value of subsidized parking) (Effectiveness 2 percent to 20 percent of work trips).
- *Bicycle and Pedestrian Measures:* (i) Provide secure, weather-protected bicycle parking for employees (Effectiveness 0.5 percent to 2 percent of work trips); (ii) Provide safe, direct access for bicyclists to adjacent bicycle routes (Effectiveness 0.5 percent to 2

percent of work trips); (iii) Provide showers and lockers for employees bicycling or walking to work (Effectiveness 0.5 percent to 2 percent of work trips); (iv) Provide secure short-term bicycle parking for retail customers or non-commute trips (Effectiveness 1 percent to 2 percent of non-work trips); (v) Provide direct, safe, attractive pedestrian access from Planning Area to transit stops and adjacent development (Effectiveness 0.5 percent to 1.5 percent of all trips).

- *Other Measures:* (i) Implement compressed work week schedule (e.g., 4 days/40 hours, 9 days/80 hours) (Effectiveness 2 percent to 10 percent of work trips); (ii) Implement home-based telecommuting program (Effectiveness 0.5 percent to 1.5 percent of work trips).

Implementation of the existing and proposed policies including the TCMP together with measures detailed above would help minimize this impact, but not reduce it to a less-than-significant level. (SU)

<u>Impact AIR-3</u>: Adoption of the GPA would result in a General Plan that is not consistent with the population assumptions used in the *Bay Area 2000 Clean Air Plan (CAP)*. (S)

The BAAQMD *CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans* states that a local plan, or an amendment of a local plan, found to be inconsistent with the *Bay Area 2000 Clean Air Plan (CAP)* would have a significant impact on air quality. In accordance with the BAAQMD *CEQA Guidelines*, the GPA would be considered consistent with the *2000 CAP* if it meets several criteria, one of which is:

> *The local plan is consistent with the 2000 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. The 2000 CAP population assumptions are based on those identified in the 1998 ABAG Projections report.*

The amended General Plan would not be consistent with the population assumptions included in the *2000 CAP*, which are the population projections included in *ABAG Projections '98*. As described in Chapter III, Project Description, a primary objective of the Alameda Point GPA is to designate an appropriate amount of land for residential development to allow the City to meet its Regional Housing Needs Determination ("fair share") as determined by the State of California Housing and Community Development Department and ABAG. Accomplishing the Regional Housing Needs Determination as envisioned by the Housing Element and the GPA would mean that the total number of people living in Alameda in 2020 would exceed the *1998 ABAG Projections* for Alameda population in 2020. Therefore, adoption of the GPA would result in a conflict with the *2000 CAP*.

The only mitigation available to the City of Alameda to remedy this conflict between plans would be to modify the GPA to reduce the number of housing units to be built in Alameda. This is not a

feasible mitigation measure because it would result in a General Plan that is internally inconsistent with the City of Alameda Housing Element and inconsistent with State planning and zoning law, which requires cities to amend their general plans to accommodate the Regional Housing Needs Determination. Therefore, this impact is considered significant and unavoidable. However, it is anticipated that when the BAAQMD next updates the CAP it will use population projections for local jurisdictions that are consistent with the most recent Regional Housing Needs Determination for local jurisdictions. Therefore, the inconsistency between the plans is considered significant, but temporary.

Mitigation Measure AIR-3: No feasible mitigation is available. This impact would remain significant and unavoidable. (SU)

L. NOISE

1. Setting

This section provides a brief introduction to noise terminology, an overview of existing noise conditions, and noise-related regulatory considerations at Alameda Point. Baseline noise conditions are described for both Alameda Point and the City of Alameda.

a. Data Sources, Study Area, and Methodology. Information from the *NAS Reuse EIR* was updated using data collected in a 2001 noise survey conducted by the City of Alameda, as well as a survey conducted by LSA on June 25, 2002 to reconfirm the continued validity of the earlier work. The study area includes Alameda Point and the immediate vicinity.

b. Noise Terminology. Sound travels through the atmosphere in the form of waves of air pressure fluctuations generated by vibrations. Sound waves generally travel away from the noise source in an expanding spherical surface. Consequently, the energy contained in a sound wave is spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the source.

Sound level meters measure sound pressure levels caused by sound waves, with separate measurements for different sound frequency ranges. These measurements are reported using a logarithmic decibel (dB) scale. Decibel scales indicate the relative intensity of sound levels; a 10 dB increase in sound is generally perceived as a doubling of loudness.

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to all frequencies, different frequency weighting schemes have been used to develop composite decibel scales that approximate the way the human ear responds to noise levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. The A-weighted scale reduces the measured pressure level for low frequency sounds while increasing the measured pressure level for higher frequency sounds to appropriately account for human responses to noise.

Varying noise levels are often described in terms of the equivalent level. Equivalent noise levels (L_{eq}) are used to develop single value descriptions of average noise exposure over various periods. Such average noise exposure ratings often include additional weighting factors for potential annoyance due to time of day or other considerations. The L_{eq} data used for these average noise exposure descriptors are generally based on A-weighted sound level measurements.

Average noise exposure over a 24-hour period often is presented as a community noise equivalent level (CNEL). CNEL values are calculated from hourly equivalent noise level values, with a 5 dBA annoyance penalty added to the evening (7:00 p.m. to 10:00 p.m.) equivalent noise level values and a 10 dBA penalty added to the nighttime (10:00 p.m. to 7:00 a.m.) equivalent noise level values.

c. Existing Noise Conditions. The existing noise environment for the project area and its surroundings is described below.

(1) Sensitive Receptors. Sensitive receptors are land uses such as residences, schools, hospitals, and convalescent homes, that are considered to be sensitive to noise. Sensitive noise receptors located on and around Alameda Point include residential areas, the Coast Guard day care center, Miller Elementary School located off Singleton Avenue, and the USCG housing area. Sensitive noise receptors on surrounding areas include the private residential areas south of Atlantic Avenue and east of Main Street, the College of Alameda located at Webster Street and Atlantic Avenue, Woodstock Elementary School located at 3rd Street and Atlantic Avenue, Chipman Middle School located at Poggi Street and Pacific Avenue, Encinal High School located off Central Avenue, and Kiddie Campus at Second Street and Pacific Avenue.

(2) Noise Conditions. The Health and Safety Element of the *General Plan* identifies aircraft and surface traffic as the City's primary noise sources. Aircraft noise in Alameda is generated by flights from two airports—Metropolitan Oakland International (MOIA) and San Francisco International (SFO). The site is over 2 miles from any airport, and in 1999, Alameda Point was removed from its County Airport Policy Plan.

In addition to the aircraft flight noise, several stationary sources generate noise levels in the project vicinity. These sources include the Bay Ship & Yacht Company, Schnitzer Steel scrap metal processing, Port of Oakland shipping container dock, boat horns in the Oakland Inner Harbor, and rail operations serving the Port facilities on the Oakland side of the harbor. Natural noise associated with weather (wind) and animal life (dogs and birds) is low compared to industrial sources, but is distinguishable at times when industrial noise is not audible. The existing noise levels obtained by noise monitoring and noise modeling in the vicinity of the project site are described below.

The highest surface street noise levels in the Alameda Point vicinity (60 to 70 dBA) occur at the southern terminus of the Webster and Posey Tubes. The highest surface street noise levels within the planning area (60 to 65 dBA) occur along Main Street, north of Atlantic Avenue. Noise from industrial sources has a more localized effect, affecting land uses directly adjacent to these individual sources. Noise generated by Schnitzer Steel scrap metal processing and the Port of Oakland shipping container dock is intermittent, and was measured in the 50- to 65-dBA range along the northern edge of Alameda Point. Aircraft flights generate noise levels ranging from 50 to 70 dBA in the project area. Noise levels from train horns in Oakland railyards were measured at approximately 52 to 56 dBA along the northern edge of Alameda Point. Boat horn noise levels in the Oakland Inner Harbor were measured at approximately 60 to 64 dBA. Other noise sources (e.g., construction) also contribute to the ambient noise in the project area. Existing noise levels in the project vicinity are shown in Table IV.L-1.

Table IV.L-1: Existing Vehicular Traffic Noise Conditions

Street Name	Volume (cars/day)	Distance to CNEL Contour (Feet)				CNEL (dB) 50 Ft. Out From Outermost Lane Centerline
		70	65	60	55	
ROADWAY SEGMENTS IN ALAMEDA						
Constitution Avenue/8th Avenue						
south of Central Avenue	19,620	< 50	77	166	358	67.1
north of Central Avenue	13,260	<50	60	128	276	65.4
north of Santa Clara Avenue	14,360	<50	63	135	291	65.8
north of Lincoln Avenue	23,905	56	112	236	507	67.9
north of Buena Vista Avenue	26,110	59	118	250	537	68.3
Central Avenue						
west of 5th Street	4,270	<50	<50	78	162	60.4
east of 5th Street	6,080	<50	<50	97	205	62.0
west of Webster Street	6,080	<50	<50	97	205	62.0
east of 8th Street	11,485	<50	71	146	312	64.7
east of Atlantic Avenue	4,860	<50	<50	66	141	61.1
Buena Vista Avenue						
east of 8th Street	8,255	<50	<50	93	201	63.4
Lincoln Avenue						
east of 8th Street	12,630	<50	75	156	332	65.1
west of 8th Street	1,920	<50	<50	<50	97	56.9
Atlantic Avenue						
west of Webster Street	11,515	<50	71	146	312	64.7
east of 3rd Street	10,680	<50	68	140	297	64.4
west of 3rd Street	9,220	<50	63	127	269	63.8
at Main Street	9,220	<50	63	127	269	63.8
Main Street						
south of Midway Avenue	9,450	<50	64	129	274	63.9
north of Midway Avenue	6,400	<50	<50	101	212	62.1
Webster Street						
at Santa Clara Avenue	13,810	<50	79	165	352	65.5
at Atlantic Avenue	27,955	61	124	262	562	68.6
Tinker Avenue						
at Webster	2,560	<50	<50	58	117	58.2
ROADWAY SEGMENTS IN OAKLAND						
Embarcadero						
at Oak Street	7,015	<50	<50	107	225	62.6
east and west of tube	10,930	<50	69	142	302	64.5
extreme east of tube	12,710	<50	76	156	333	65.2
extreme west of tube	6,710	<50	<50	104	218	62.4
at Broadway	5,595	<50	<50	93	194	61.6

Table IV.L-1 *continued*

Street Name	Volume (cars/day)	Distance to CNEL Contour (Feet)				CNEL (dB) 50 Ft. Out From Outermost Lane Centerline
		70	65	60	55	
Oak Street						
north of Embarcadero	1,320	<50	<50	<50	77	55.3
north of 7th Street	13,450	<50	78	162	346	65.4
Webster Street						
at 7th Street	13,450	<50	61	130	278	64.9
between 7th Street 5th Street	22,870	< 50	86	184	396	67.2
at 11th Street	18,205	<50	74	158	340	66.2
Madison Street						
north of 7th Street	12,480	<50	75	154	329	65.1
Harrison Street						
south of 11th Street	7,790	<50	<50	90	194	62.5
north of 11th Street	6,220	<50	<50	99	208	62.1
Broadway						
north of 9th Street	12,820	<50	76	157	335	65.2
at 11th Street	5,090	<50	<50	87	182	61.2
at 12th Street	1,990	<50	<50	<50	96	57.1
south of 2nd Street	4,480	<50	<50	81	168	60.6
north of 2nd Street	5,910	<50	<50	96	201	61.8
7th Street						
at Brush Street	3,580	<50	<50	88	177	60.2
west of Market Street	5,300	<50	<50	111	228	61.9
west of Adeline Street	7,900	<50	57	115	243	63.1
Market Street						
at 8th Street	14,950	<50	103	212	451	66.4
at Embarcadero	8,250	<50	59	118	250	63.3
8th Street						
at Broadway	2,770	<50	<50	61	123	58.5
between Webster & Harrison Streets	10,170	<50	66	135	287	64.2
9th Street						
at Oak Street	330	<50	<50	<50	<50	49.3

Source: LSA Associates, Inc., July 2002.

d. Regulatory Considerations. The following summarizes two sets of City regulations related to noise—the Health and Safety element of the *General Plan*, and the City of Alameda Noise Ordinance.

(1) City of Alameda Health and Safety (Noise) Element of the General Plan. The Health and Safety element of the *General Plan* includes a noise sub-element which establishes exterior

noise standards for the evaluation of compatibility between land uses and future noise levels in the City. Noise-sensitive uses include hospitals, nursing homes, churches, schools, libraries, assembly halls, and other recreational and residential uses. Table IV.L-2 lists the Noise and Land Use Compatibility Standards adopted by the City (which were originally established by the Office of Noise Control of the California Department of Health Services).

Policies from the current *General Plan* that relate to noise are listed below. Amendments to existing policies proposed as part of the project (Alameda Point GPA) are not included here. Proposed *General Plan* amendments related to noise are discussed in the Environmental Analysis subsection below.

Noise

8.7.a Minimize vehicular and stationary noise sources, and noise emanating from temporary activities.

8.7.b Require site and building design to achieve noise compatibility to the extent feasible.

8.7.c Recognize that residential, school, hospital, church, or public library properties in commercial areas and commercial development in industrial areas will be subject to noise levels associated with noisier permitted uses.

8.7.d Maintain efforts to mitigate impacts of aircraft noise while pursuing actions to reduce aircraft noise or avoid noise increases.

8.7.e Require acoustical analysis for new or replacement dwellings, hotels, motels, and schools within the projected 60 dBA contour. One family dwellings not constructed as part of a subdivision requiring a final map require acoustical analysis only within the projected 65 dBA contour.

8.7.f Require new or replacement dwellings, hotels, motels, and schools within the noise impact areas described in Policy 8.7.e, above, to limit intruding noise to 45 dBA CNEL in all habitable rooms. In new dwellIngs subject to a noise easement, noise is not to exceed 40 dBA CNEL in habitable rooms. If this requirement is met by inoperable or closed windows, a mechanical ventilation system meeting Uniform Building Code requirements must be provided.

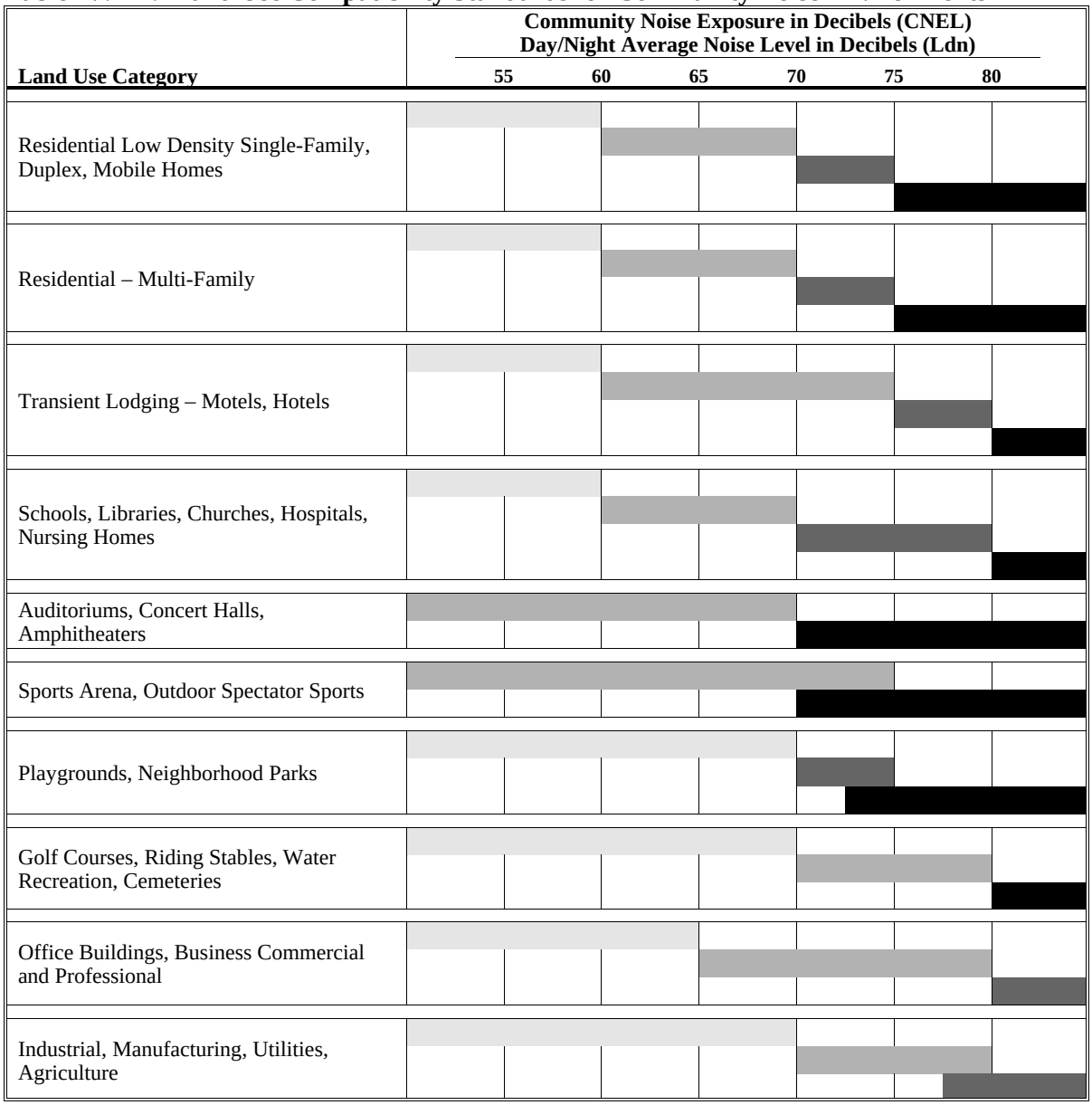
8.7.g Minimize the impact of aircraft, railroad, and truck noise by requiring that noise levels caused by single events be controlled to 50 dBA in bedrooms and 55 dBA in living areas within the 60 dBA CNEL contour.

8.7.h In making a determination of impact under the California Environmental Quality Act (CEQA), consider the following impacts to be "significant":

- *An increase in noise exposure of 4 or more dBA if the resulting noise level would exceed that described as normally acceptable for the affected land use, as indicated in Table 8-l.*
- *Any increase of 6 dBA or more, due to the potential for adverse community response.*

8.1.i Continue to enforce the Community Noise Ordinance.

Table IV.L-2: Land Use Compatibility Standards for Community Noise Environments



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

NORMALLY UNACCEPTABLE
New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development clearly should not be undertaken.

Source: Modified from State of California General Plan Guidelines, June 1987 (in City of Alameda *General Plan*, 1991).

8.7.j Enforce compliance with noise emissions standards for all types of automotive vehicles established by the California Vehicle Code and by Federal regulations.

8.7.k Urge AC Transit to use small buses for routes on minor streets as a noise-reduction measure.

8.7.1 Maintain day and nighttime truck routes that minimize the number of residents exposed to truck noise.

8.7.m With the cooperation of the U.S. Coast Guard and the City of Oakland, enforce California noise emission standards for engine-driven vessels.

(2) City of Alameda Community Noise Ordinance. Article II of Chapter 4 of the Alameda Municipal Code (the Community Noise Ordinance) establishes exterior noise standards, requires submission of noise reduction plans for noncomplying sources, and requires implementation of noise-reducing actions determined by the Planning Board to be cost-effective. The noise level standards for specified land uses are presented in Table IV.L-3. The standards in this table do not apply to construction period noise.

Table IV.L-3: Noise Level Standard for Specified Land Uses

Receiving Land Use	Cumulative Number of Minutes in 1-Hour Time Period	Maximum Allowable Noise Level, dBA	
		Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Residential, School, Hospital, Church or Public Library	30*	55	50
	15	60	55
	5	65	60
	1	70	65
	0	75	70
Commercial	30	65	60
	15	70	65
	5	75	70
	1	80	70
	0	85	80

Note: Daytime noise associated with construction is exempt from these standards.

* For example, the measured daytime noise level may not exceed 55 dBA for more than 30 minutes in any 1-hour time period.

Source: Alameda Municipal Code, 1999.

According to the Noise Ordinance, the maximum allowable noise levels would be adjusted downward by 5 dBA if the offending noise includes tones, speech or music, or recurring impulsive noise such as jackhammers, pile drivers, or similar commercial bells or horns. Additionally, the standard noise levels would be adjusted upward to reflect the prevailing existing ambient noise levels. Daytime noise associated with construction or maintenance of residential property is exempt. While no construction noise limits are assigned, construction activities are to be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturday.

2. Environmental Analysis

This section details the policies proposed for the GPA that are relevant to noise, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the impacts and mitigation measures subsection.

a. Proposed Project. The Alameda Point GPA includes one policy that relates to noise:

9.4.v Develop Tinker Avenue, Atlantic Avenue, and Main Street with pedestrian and bicycle-oriented paths, and landscaping as a means to maximize alternative modes of transportation and minimize impacts of vehicle traffic and noise to the residential neighborhood.

b. Impacts and Mitigation Measures. This section describes the criteria used to determine any significant impacts to sensitive uses, and discusses the potential impacts. The impacts and their associated mitigation measures are presented in the following order: beneficial and less-than-significant impacts, followed by significant impacts.

(1) Criteria of Significance. Implementation of the GPA would result in a significant impact related to noise if it would:

- Expose existing or future noise-sensitive uses to exterior noise levels of 60 dBA CNEL or higher (as defined by current 60 dBA CNEL contours), regardless of the source, including airplanes;
- Generate human noise exposure in excess of standards established in the Health and Safety Element of the *General Plan* or the City's Community Noise Ordinance (an increase in noise exposure of 4 dBA or more if the resulting noise level would exceed that described as normally acceptable for the affected land use);
- Create a substantial permanent increase in ambient noise levels (6 dBA or more) in the project vicinity above levels existing without the project; or
- Generate excessive groundborne vibration or noise levels.

The reaction to noise level changes involves both physiological and psychological factors. As a result, the extent of change in a noise level can be as important as the resulting overall noise level. A readily noticeable increase in noise level (i.e., 6 dBA or more, per *General Plan* Policy 8.7.h, listed above) often would be considered a significant effect by local residents, even if the overall noise level is still within land use compatibility guidelines. On the other hand, noise level increases that are not noticeable to most people generally are not considered a significant change, even if the overall noise level is close to or somewhat above land use compatibility guidelines.

(2) Beneficial and Less-than-Significant Impacts. The beneficial and less-than-significant impacts that would result from implementation of the GPA are discussed below.

Policy Implementation. Proposed GPA Policy 9.4.v would be beneficial by encouraging pedestrian and bicycle transportation as an alternative to noisier automobile transportation along Tinker Avenue, Atlantic Avenue, and Main Street. The policy also proposes adding pedestrian and bicycle paths and landscaping, which would act as a buffer between sensitive development and traffic noise.

The GPA would be augmented by several existing *General Plan* policies. Policy 8.7.e would require acoustical analysis for new or replacement dwellings, hotels, motels, and schools within the 60 dBA contour—ensuring adequate analysis of any noise impacts to, or as a result of, new development. Existing *General Plan* Policy 8.7.f sets allowable noise standards within new or replacement dwellings, hotels, motels, and schools, ensuring that new or replacement development is in conformance with Community Noise Ordinance Standards. Existing *General Plan* Policy 8.7.h sets guidelines for determining noise impacts for the City, and would be applicable to the GPA area.

Long-Term Aircraft Noise Impacts. The project site experiences frequent aircraft flights from MOIA and SFO. Single event aircraft flight noise measured in the Alameda Point area ranged from 50 to 70 dBA. Standard design characteristics for commercial/office buildings would reduce the aircraft noise to a less-than-significant level.

Proposed residential and other sensitive uses could also be exposed to aircraft flight noise. However, such noise is estimated to be below the recommended 60 dBA CNEL standard. The Health and Safety Element of the *General Plan* indicates that single-family homes and other sensitive land uses (schools, hotels, new/replacement multi-family dwellings) require acoustical study when located within the 60 dBA CNEL. Therefore, audible aircraft noise would not generate significant impacts on the proposed land uses, and no mitigation would be required. Since aircraft noise would be below 60 dBA CNEL, single event noise exposure from aircraft flights in this area would be below the allowable levels identified in the existing *General Plan* Policy 8.7h.

Long-Term Train Operation Noise Impacts. As discussed in the Setting section, trains servicing the Port operations generate relatively high horn noise, as required when approaching rail crossings in the Alameda Point vicinity (across the Oakland Estuary). Train horn noise was measured at 50 to 56 dBA along the northern edge of Alameda Point. Other train noises, such as wheel/track interaction, engine, and exhaust, are not discernible in the Alameda Point area. Train horn noise similar to the levels measured would not cause significant impacts to the proposed on-site land uses. No significant impacts would result.

(3) Significant Impacts and Mitigation Measures. Buildout of the GPA would result in the two significant impacts described below.

Plan Buildout Construction-Period Impacts. Buildout of the GPA would result in the construction-related noise impacts discussed below.

<u>Impact NOISE-1</u>: Buildout of the GPA could result in demolition, construction, and remodeling activities which could impact neighboring land uses. (S)

Construction activities as a result of the GPA would involve building demolition, building construction, and utility and roadway reconstruction, which would create noise and vibration. Construction activities would be intermittent or occur over an extended period; market conditions could have a significant influence on the extent, timing, and location of construction activities.

Construction noise and vibration could impact neighboring residential and mixed-uses, such as Main Street, the Miller School, and other existing residential and park areas within Alameda Point.

Because most of Alameda Point was established on fill material, some new structures may require the installation of piles for adequate foundation support. Pile driving equipment is noisier and, due to its repetitious nature, more annoying than other types of construction equipment. Noise-sensitive land uses within approximately 600 feet of a pile driving site may experience temporary disturbance from construction noise. Such land uses include Catellus housing, Miller School, and existing open space in the Oakland Estuary and dog park. Pile driving may also produce noticeable vibration for nearby land uses, depending on the proximity and soil characteristics.

To reduce pile driving noise, "vibratory" pile driving should be used where ever possible. The vibratory pile driving technique, despite its name, does not generate vibration levels higher than the standard pile driving technique. It does, however, generate lower, less-intrusive noise levels.

Existing and proposed policies that would help minimize this potential impact are described below.

> *Proposed GPA Policies.* There are no GPA policies that would address construction-related noise impacts.
>
> *Existing General Plan Policies.* Policy 8.7.i of the *General Plan* requires enforcement of the Community Noise Ordinance, which limits weekday construction activity to the hours of 7:00 a.m. to 7:00 p.m., and Saturday construction activity to the hours of 8:00 a.m. to 5:00 p.m.

Buildout is expected by 2020. Construction is expected to occur throughout Alameda Point. In some cases, building will be reused; however, construction activities may also involve demolition, selected remediation, grade correction and site preparation, excavation and filling, and infrastructure installation, including new roads and utilities. Subsequent development activities would include construction of internal circulation, buildings, parking, landscaping, etc.

Noise levels would increase within the Alameda Point and adjacent areas from operation of construction equipment. Details of GPA-related constructions (e.g., equipment to be utilized, proximity to sensitive receptors) are not yet fully defined. Because the severity of this impact depends upon details that are not yet known, the impact must be considered potentially significant. However, since implementation of Mitigation Measure NOISE-1 ensures compliance with the *General Plan* and the City of Alameda Noise Ordinance, the residual impact is considered less than significant.

Construction-related noise is not expected to impact sensitive receptors in Oakland. The nearest park or residential area is more than 5,000 feet from Alameda Point and is separated from Alameda Point by Port of Oakland maritime activities and I-980.

> Mitigation Measure NOISE-1: Developers and/or contractors shall develop and implement development-specific noise reduction plans. This measure shall be enforced via contract

specifications. Each developer and/or contractor should be contractually required to demonstrate knowledge of the Alameda Noise Ordinance, and to perform construction activities in a manner such that noise levels do not exceed Alameda Noise Ordinance criteria. Contractors may elect any combination of legal, non-polluting methods to maintain or reduce noise to thresholds levels or lower, as long as those methods do not result in other significant environmental impacts or create a substantial public nuisance. The developer and/or contractor shall perform a site-specific acoustical analysis, and, if necessary, shall develop and implement a noise reduction plan subject to review and approval by the City. The plan for attenuating construction-related noises shall be implemented prior to the initiation of any work that triggers the need for such a plan. (LTS)

Plan Buildout Operation-Period Impacts. Adoption of the GPA and buildout of its allowable land use program would result in one significant noise-related impact.

Impact NOISE-2: Buildout of the GPA could result in traffic-related noise impacts along the Tinker Extension through western Alameda. (S)

Buildout of the GPA would increase traffic volumes for several on-site roadways and major access roadways in the cities of Alameda and Oakland. Table IV.L-4 provides the noise levels adjacent to roads in the project vicinity under the year 2020 With Project condition. These noise levels represent the worst case scenario, which assumes that no shielding is provided between the roadway traffic and the location where the noise is experienced. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix H of this EIR.

Traffic noise levels increase slowly with increasing traffic volumes. Assuming that all other factors remain the same, an increase of 3 dBA would result only from a doubling of traffic volumes. The Health and Safety Element of the *General Plan* uses a CNEL value of 60 dBA as a general land use compatibility standard for noise-sensitive residential, educational, and health care land uses. An increase in noise levels would occur in the GPA Planning Area and the surrounding areas due to increases in traffic along Atlantic Avenue and Midway Avenue, and the proposed extension of Tinker Avenue.

The Health and Safety Element identifies CNEL values of 60 to 70 dBA as "conditionally acceptable" for noise-sensitive land uses, which would be applicable to the areas along Atlantic Avenue and near Tinker Avenue where noise levels up to 69.1 dBA CNEL are projected—a level which would be conditionally acceptable for uses such as residential, transient lodging, schools, and libraries. Acceptability would depend upon adequate building design to control interior noise levels and the extent of outdoor activity associated with the use.

The increase in noise levels along the proposed extension of Tinker Avenue would result in an increase of up to 4.5 dBA, as shown in Table IV.L-4. The distance of the 65 dBA CNEL from the

Table IV.L-4: Projected 2020 Traffic-Related Noise

Street Name	2020 Without GPA		2020 With GPA		GPA-related Increase	
	Projected Volume (cars/day)	CNEL (dB) 50 Feet Out from Outer-most Lane Centerline	Projected Volume (cars/day)	CNEL (dB) 50 Feet Out from Outer-most Lane Centerline	Change From 2020 Without GPA	Change From Existing Level
ROADWAY SEGMENTS IN ALAMEDA						
Constitution Avenue						
south of Central Avenue	20,850	67.3	21,720	67.6	0.3	0.4
north of Central Avenue	14,650	65.8	13,880	65.6	-0.2	0.5
north of Santa Clara Avenue	15,925	66.1	15,645	66.1	0.0	0.2
north of Lincoln Avenue	26,505	68.3	27,110	68.4	0.1	0.6
north of Buena Vista Avenue	29,530	68.8	28,960	68.7	-0.1	0.5
Central Avenue						
west of 5th Street	4,810	60.9	5,150	61.2	0.3	0.7
east of 5th Street	4,580	60.7	5,090	61.2	0.5	-0.9
west of Webster Street	8,350	63.3	8,840	63.6	0.3	1.5
east of 8th Street	11,180	64.6	11,530	64.7	0.1	0.2
east of Atlantic Avenue	4,250	60.5	4,740	61.0	0.5	-0.2
Buena Vista Avenue						
east of 8th Street	9,610	64.0	10,120	64.2	0.2	0.9
Lincoln Avenue						
east of 8th Street	13,980	65.6	16,200	66.2	0.6	1.0
west of 8th Street	2,070	57.3	3,790	59.9	2.6	2.0
Atlantic Avenue						
west of Webster Street	9,630	64.0	16,650	66.3	2.3	1.4
east of 3rd Street	5,440	61.5	14,910	65.8	4.3	1.1
west of 3rd Street	2,800	58.6	12,730	65.2	6.6	0.9
at Main Street	840	53.4	5,020	61.1	7.7	-2.8
Main Street						
south of Midway Avenue	1,670	56.3	2,760	58.5	2.2	-5.1
north of Midway Avenue	1,800	56.7	630	52.1	-4.6	-4.4
Webster Street						
at Santa Clara Avenue	16,530	66.3	13,480	65.4	-0.9	0.0
at Atlantic Avenue	31,450	69.1	31,685	69.1	0.0	-0.2
Tinker Avenue						
at Webster	5,210	61.3	9,380	63.8	2.5	5.0
ROADWAY SEGMENTS IN OAKLAND						
Embarcadero						
at Oak Street	12,160	65.0	12,410	63.7	-1.3	2.4
east and west of tube	10,380	64.3	10,540	64.3	0.0	-0.2
extreme east of tube	12,860	65.3	12,410	65.1	-0.2	0.1
extreme west of tube	11,200	64.6	9,130	63.7	-0.9	2.2
at Broadway	8,980	63.6	7,815	63.0	-0.6	2.1
Oak Street						
north of Embarcadero	2,030	57.2	1,940	57.0	-0.2	1.8
at 7th Street	8,340	63.3	8,555	63.4	0.1	-2.0

Table IV.L-4 *continued*

Street Name	2020 Without GPA		2020 With GPA		GPA-related Increase	
	Projected Volume (cars/day)	CNEL (dB) 50 Feet Out from Outer-most Lane Centerline	Projected Volume (cars/day)	CNEL (dB) 50 Feet Out from Outer-most Lane Centerline	Change From 2020 Without GPA	Change From Existing Level
Webster Street						
at 7th Street	15,390	65.5	15,570	65.5	0.0	0.6
between 7th and 5th Streets	23,560	67.9	24,520	68.1	0.2	0.7
at 11th Street	13,555	64.9	13,670	65.0	0.1	-1.3
Madison Street						
at 7th Street	14,660	65.8	18,890	66.9	1.1	0.7
Harrison Street						
north of 11th Street	8,140	63.2	8,980	63.6	0.4	1.2
south of 11th Street	11,140	64.1	11,745	64.3	0.2	2.4
Broadway						
north of 9th Street	14,800	65.8	15,940	66.1	0.3	0.8
at 11th Street	7,210	62.7	7,400	62.8	0.1	1.5
at 12th Street	3,460	59.5	3,520	59.6	0.1	2.4
north of 2nd Street	6,410	62.2	8,550	63.4	1.2	1.6
south of 2nd Street	8,430	63.4	6,500	62.2	-1.2	1.6
7th Street						
at Brush Street	5,530	62.1	6,480	62.8	0.7	2.8
west of Market Street	7,370	63.3	7,580	63.5	0.2	1.6
west of Adeline Street	16,550	66.3	16,810	66.4	0.1	3.3
Market Street						
at 8th Street	19,200	67.5	19,890	67.7	0.2	1.4
at Embarcadero	11,200	64.6	11,210	64.6	0.0	1.3
8th Street						
at Broadway	3,890	60.0	4,710	60.8	0.8	2.6
btwn Webster & Harrison Streets	12,860	65.2	14,630	65.8	0.6	1.6
9th Street						
at Oak Street	400	50.1	9,370	63.8	13.7	0.8

Source: LSA Associates, Inc., July 2002.

centerline of Tinker Avenue is projected to be up to 76 feet. Existing sensitive uses located north of this segment of Tinker Avenue include single-family attached homes, which are approximately 70 feet from the future centerline of Tinker Avenue. At 70 feet, noise levels at the nearest residences would be located within the 65 dBA CNEL, depending on the type of intervening surface.

Residential development is approved for the areas south of Tinker Avenue as part of the Catellus Mixed Use Development project. Assuming that adequate setbacks are maintained along this roadway segment to meet the City's Land Use Compatibility Standards, no land use compatibility problems are anticipated. Residences should be set back from the centerline of Tinker Avenue or

proposed noise attenuation measures shall be constructed to maintain noise levels at or below 60 dBA CNEL, consistent with the mitigation measures included in the *Catellus Mixed Use Development EIR.* A similar impact for this roadway segment is included in the adopted Mitigated Negative Declaration for the Tinker Avenue Extension Project.

Prior to operation of the extension of Tinker Avenue, the City shall ensure that mitigation measures will reduce operational noise levels to the 60 or 65 dBA CNEL standard for usable outdoor space and the 45 dBA CNEL standard for the interior of residential units. Mitigation measures may include window glazing and supplemental ventilation on existing residential units located adjacent to the proposed Tinker Avenue, or installation of a noise attenuation wall (as a last resort).

Existing and proposed policies that would help minimize potential impacts around Alameda roadways are described below.

Proposed GPA Policies. Proposed GPA Policy 9.4.v would mitigate this impact by encouraging pedestrian and bicycle transportation as an alternative to noisier automobile transportation along Tinker Avenue, Atlantic Avenue, and Main Street. The policy also proposes adding pedestrian and bicycle paths and landscaping, which would act as a buffer between sensitive development and traffic noise.

Existing General Plan Policies. General Plan Policy 8.7.b, which requires that site and building designs achieve noise compatibility to the extent feasible, would help to minimize this impact. Policy 8.7.c also recognizes that development of sensitive uses in commercial areas may subject users to noise levels associated with noisier permitted uses. In addition, *General Plan* Policies 8.7.e and 8.7.f relate to acoustical analysis for new or replacement dwellings, hotels, motels, and schools within the 60 dBA CNEL contour, and sets standards for allowable noise within new or replacement dwellings, hotels, motels, and schools, thereby ensuring that new or replacement development are in conformance with Health and Safety Element Standards.

Mitigation Measure NOISE-2: The following noise attenuation measures for the Tinker Avenue segment shall be required to reduce noise levels at existing or planned adjacent uses:

- Prior to the roadway's operation, measures which reduce the operational noise of Tinker Avenue should be provided, such as additional vegetation adjacent to Tinker Avenue from the western property line of the U.S. Coast Guard housing complex to the eastern-most residence, and the use of soft road surfaces like rubberized asphalt, to meet either the 60 or 65 dBA standard for usable outdoor space. As a last resort, a noise wall should be provided on the north side of Tinker Avenue from the western property line of the U.S. Coast Guard housing complex to the easternmost residence of that housing development. If necessary, the noise wall should be of a height sufficient to interrupt the noise propagation path (approximately 6 feet, depending on location of the wall relative to

final elevation differences between source and receiver) and to meet either the 60 or 65 dBA standard for usable outdoor space.

- Prior to the roadway's operation, glazing which reduces interior noise to 45 dBA (CNEL or Ldn) and supplemental mechanical ventilation should be provided in the upstairs rooms of U.S. Coast Guard residences located adjacent to the proposed Tinker Avenue and with upstairs windows facing the street. Provision of supplemental ventilation would allow for window closure. Of the 30 units located immediately adjacent to the proposed Tinker Avenue alignment, nine of these units have no windows on the southern facade (facing the roadway) and no mitigation would be required in these units. Four units have windows facing Tinker Avenue, but they are located on the first floor only where the recommended noise wall would provide sufficient noise protection. However, there are 17 units with at least one upstairs window facing Tinker Avenue and mechanical ventilation would need to be provided in these units if the affected rooms have no other means of ventilation when the windows are closed. If the affected rooms have windows on other sides (not directly facing Tinker Avenue), mechanical ventilation could consist of a room fan. Otherwise, mechanical ventilation would involve a suitable ventilation system.
- Planned residential and school uses with frontage along the proposed Tinker Avenue shall comply with the 60 dBA (CNEL) City Land Use Compatibility Standard for residential and school uses. If they would be exposed to higher noise levels (due to smaller setbacks), noise attenuation measures will need to be incorporated into their design to ensure that City standards are met. (LTS)

M. HAZARDS

The purpose of this section is to assess environmental impacts associated with the presence of hazardous materials[241] in the area affected by the proposed GPA. Hazardous materials have historically been used, stored, and disposed of at the project site. Hazardous materials are known to be present in areas of surface and subsurface soils and groundwater at the project site as a result of historical land uses. Buildings at the project site are known to contain lead-based paint and asbestos-containing building materials. Disturbance of hazardous materials at the project site through construction or demolition activities could potentially expose construction workers or the general public to various health risks. Hazardous materials left in place following development could potentially expose future residents and workers to health risks.

Much of the information in this section relies on the *Draft EIR* and *Final EIR/Response to Comments Addendum for The Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility, Alameda, California* (State Clearinghouse #1998112078), which was certified by the City of Alameda in March 2000 and is hereby incorporated by reference in accordance with Section 15150 of the *CEQA Guidelines.* Copies of these documents are available for review at the City of Alameda Planning and Building Department. This information has been updated, as required, by a review of environmental documents for the project site published since the previous EIR was prepared and discussions with City staff.

1. Setting

a. Regulatory Framework. The existing setting relating to hazardous materials is one that involves a complex framework of federal, State, and local agencies, laws, regulations, and policies.

(1) Regulatory Agencies. The US Environmental Protection Agency (USEPA) is the primary federal agency responsible for the implementation and enforcement of hazardous materials regulations. California EPA (Cal/EPA) is the primary State agency. In most cases, enforcement of environmental laws and regulations established at the federal and State levels are delegated to local agencies, such as the Alameda County Environmental Health Department (ACEHD) and the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). Two exceptions are that the USEPA provides regulatory oversight for National Priority List (NPL; commonly referred to as Superfund) sites, such as Alameda Point, while the Cal/EPA Department of Toxic Substances Control (DTSC) serves as the lead agency for remediation of closed military bases in California not listed on the NPL. At former military base sites where petroleum products are the sole contaminants, the RWQCB often serves as lead agency.

[241] The California Health and Safety Code defines a hazardous material as "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (Health and Safety Code § 25501)

A listing of the regulatory agency framework for hazardous materials and existing plans, programs, and permits administered by those agencies is included as Appendix I-1.

(2) Applicable Federal/DOD Laws, Regulations, Policies, and Programs. The investigation, remediation, and transfer of federal properties affected by hazardous materials, such as the project site, are regulated by several laws, regulations, policies, and programs.

RCRA. The Resource Conservation and Recovery Act (RCRA; 42 U.S.C. Section 6901, et seq.) is the primary federal statute governing operating hazardous waste storage, treatment, and disposal sites, and includes guidelines for facility investigations where hazardous waste violations have been documented or are suspected. Prior to RCRA, the State of California had passed the Hazardous Waste Control Law of 1972 (California Health and Safety Code Section 25100, *et seq.*). This law authorizes regulations that equal or exceed the federal standards set by RCRA for hazardous waste management. DTSC enforces both RCRA and the Hazardous Waste Control Law in California.

CERCLA. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA; 42 USC. Section 9601, et seq.), passed in 1980, created national policies and procedures to identify and remediate sites affected by hazardous substance releases. CERCLA regulations contain criteria for evaluating sites employing a Preliminary Assessment (PA) and Site Inspection (SI). The evaluation that results is a priority ranking of the site used to determine whether it should be placed on the National Priorities List (NPL). Facilities placed on the NPL are commonly referred to as "Superfund" sites.

For those sites where potential hazardous substance issues are identified during the PA and SI, the CERCLA investigation process typically continues with a Remedial Investigation (RI) to collect sufficient sampling data to evaluate the nature and extent of contamination at the areas of concern. A Feasibility Study (FS) would then be conducted to evaluate options for remediating the identified contamination. In California, a State-mandated document, a Remedial Action Plan (RAP) would then be drafted to describe the chosen remedial option. The federal equivalent of the RAP, a Record of Decision (ROD), provides closure for the CERCLA investigation. The RAP and ROD are typically combined into one document.

Federal properties that contain or potentially contain released hazardous substances may only be conveyed or transferred prior to completion of environmental remediation if the requirements of Section 120(h)(3)(c) of CERCLA are met. This process is known as a CERCLA (Section 334) Early Transfer. The requirements for a Section 334 Early Transfer include the following:

- Agreement by the USEPA and the Governor that the property is suitable for the intended use, and that the intended use is consistent with protection of human health and the environment.
- Public notice and comment.

- Property use restrictions, if necessary, to ensure that human health and the environment are protected and that the necessary remedial actions can take place.
- Assurances from the federal government that conveyance or transfer of the property will not substantially delay response actions at the property, including identification of the schedule for investigation and completion of all response actions, and that the federal government will continue any necessary response actions after conveyance or transfer.
- A federal budget request for adequate funding to complete the remedial actions on schedule.

The federal government can enter into an agreement with the acquiring entity for completion of remediation. Such an arrangement might enable reuse activities to begin sooner by allowing construction and remediation activities to occur simultaneously in some circumstances, as appropriate. In all other circumstances, contaminated or potentially contaminated properties cannot be conveyed or transferred until all remedial action has been taken.

CERFA. CERCLA was amended in 1992 through the passage of the Community Environmental Response Facilitation Act (CERFA; 42 USC. Section 9620(b)(3) (5)). CERFA Section 334 was intended to expedite the identification of uncontaminated real property within closing federal facilities offering the greatest opportunity for reuse and redevelopment.

The CERFA process begins with an Environmental Baseline Survey (EBS). An EBS is a preliminary evaluation and summary of all known and suspected hazardous materials or petroleum products. Using the EBS, the Base Realignment and Closure (BRAC) team classifies parcels in one of seven categories:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred and all removal or remedial actions to protect human health and the environment have been taken.[242]
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred and removal or remedial actions are under way, but all required remedial actions have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred but required actions have not yet been implemented.

[242] CERFA provides that all remedial action has been taken if construction and installation of an approved remedial design has been completed and the remedy has been demonstrated to be operating properly and successfully.

- Category 7: Areas that have not been evaluated or require additional evaluation.

Parcels in CEQA categories 1 through 4 are "CERFA-eligible" and may be transferred subject to a covenant of the federal government to remediate any contamination that may be discovered after the transfer. Other areas, where required investigation and/or remediation is not completed (CERFA categories 5 through 7), may be transferred under CERFA's Early Transfer Authority if, in addition to the covenant to remediate contamination discovered following the transfer, the requirements of Section 120(h)(3)(C) of CERCLA (discussed above) are met.

FOSL/FOST Policies. Prior to the CERCLA-required completion of remediation, the DOD has established a policy for leasing contaminated or potentially contaminated properties. The DOD, with participation from regulatory agencies, can develop a site-specific or supplemental environmental baseline survey, or in specific cases, use the basewide Environmental Baseline Survey (EBS) and a Finding of Suitability to Lease (FOSL) or Finding of Suitability for Transfer (FOST) for the property. The FOSL may include specific land use restrictions to protect human health and the environment, and to ensure government access for final investigations and remediation. With the exception noted above for leasing federal property prior to completion of remediation, a FOST may be issued only for properties on which all remedial actions necessary to protect human health and the environment have been taken pursuant to CERCLA 120(h)(3). Public notice and a 30-day comment period are required for issuance of a FOST.

Installation Restoration Program (IRP). In 1981, the US Navy initiated a program to evaluate health and environmental hazards at naval facilities where past hazardous materials operations and waste disposal activities had taken place. This direction resulted in the Installation Restoration Program (IRP), as currently defined by the *US Navy Environmental and Natural Resources Program Manual.*[243] The purpose of the IRP is to identify, assess, characterize, and clean up or control contamination from past hazardous waste disposal operations and hazardous material spills at US Navy and Marine Corps facilities.

Federal Facility Agreement (FFA). An FFA is a negotiated legal agreement governing the CERCLA and RCRA administrative process for cleanup at NPL sites. The provisions of these agreements are both a factor in setting project execution priorities through risk management, and a tool for formalizing commitments so that selection of remedial action will be less adversarial. FFAs typically outline the working relationship among the states, USEPA, and the Department of Defense and clearly define mutual obligations.

Community Participation Programs. The NAS Alameda Restoration Advisory Board (RAB) provides public input to the US Navy's cleanup program. In addition, there is a 30-day public comment period during each Draft RAP/ROD review process, as required by California law. At least

[243] US Navy, 1994. *US Navy Environmental and Natural Resources Program Manual.*

one public meeting is held during the public review period, and the US Navy must consider these public comments when drafting the final RAP/ROD.

(3) Additional State and Local Regulatory Requirements Affecting the Project.

State School Siting Provisions. Section 17210 et seq. of the State Education Code, Section 21151.2, Section 21151.4, and Section 21151.8 of the Public Resources Code require that prospective school sites be reviewed to determine that such sites are not a current or former hazardous waste disposal site, a hazardous substance release site, or the site of hazardous substance pipelines. These laws also require consultation with local hazardous materials agencies and air quality districts to ensure that no sites within ¼ mile of a school that handle or emit hazardous substances would potentially endanger future students or workers at the prospective school site.

Recently-enacted State legislation (SB 162 and AB 387) added additional school siting requirements to the Education Code. All school districts receiving State funds must prepare a Phase I environmental assessment on prospective school sites. The Phase I assessment would detail the historical uses of the property and indicate any potential for contamination. DTSC must review this assessment and make one of the following findings: 1) that no further action is required; or 2) that concerns about contamination exist and the district must conduct a Preliminary Endangerment Assessment (PEA).

The PEA entails site sampling and the development of a detailed risk assessment of any contaminants present on the proposed school property. DTSC must review this more detailed assessment and make one of three determinations:

- No further action is required.
- The project may proceed straight to cleanup. This determination is possible for sites with relatively uncomplicated cleanup needs. A Removal Action Work Plan (RAW) is prepared and once approved by DTSC after a 30 day public comment period, the district can then undertake the cleanup work.
- The project must go through the formal CERCLA investigation and remediation process, as described above.

City Excavation Ordinance. On February 15, 2000, City Ordinance No. 2824 (the Excavation Ordinance) was adopted by the City Council. The Excavation Ordinance requires the City's Chief Building Official to maintain a map showing the locations and depths where marsh crust and subtidal contamination are believed to occur. Any excavation within these areas requires an excavation permit, which includes a signed certification that the applicant is aware of potential health risks and the regulatory requirements for disposal of contaminated subsurface materials. Permits are not required for pile driving or other activities with no potential for human exposure. Permits are

also not required for emergency repairs of public infrastructure projects, although any excavated materials must be handled in accordance with applicable regulations.

Pursuant to a Memorandum of Agreement between the City and DTSC, by letter dated July 10, 2000, DTSC approved the City's map depicting the extent of the marsh crust/subtidal zone for the purposes of defining the limits of the City's Excavation Ordinance requirements.

Business Uses. Businesses that use, store, or dispose of hazardous materials are required to comply with federal, State, and local requirements for managing hazardous materials. Programs, plans, and permits required for businesses are listed in Appendix I-1.

(4) Project Site Regulatory Status.

RCRA Assessment. In 1991, a RCRA facility assessment of Alameda Point was performed for the USEPA as part of Alameda Point's RCRA Part B permit application. The purpose of this review was to identify and evaluate solid waste management units (SWMUs) and other areas of concern. Currently, approximately 180 SWMUs have been identified. Twelve facilities were permitted at the site, eight of which have been closed according to their closure plans. The DTSC required the US Navy to prepare RCRA facility investigation plans for remediation or closure of hazardous waste generator accumulation points, abandoned USTs, and fuel spill sites. As the facility investigations are completed, some sites could become additional IRP sites. Some of the facility investigation sites are in areas already under investigation as IRP sites, discussed below.

For the non-permitted areas, approximately 54 have previously achieved concurrence for no further action, approximately 78 have been recommended for no further action, and approximately 19 require further action (including two additional units not identified in the RFA). All oil water separators and wash-down areas are recommended for no further action under the RCRA program.[244]

CERCLA Investigation/IRP Sites. The Alameda Point IRP is being carried out in coordination with other federal regulatory programs, including CERCLA. Twenty-three IRP sites were identified at Alameda Point during the initial environmental assessments. Subsequent studies and evaluations added two additional IRP sites in 1998, three more sites in 2000, and one site in 2001, for a total of 29 sites.[245] To simplify the investigation process, one of the original IRP sites, the storm drainage system (IRP Site 18), was removed in November 1999. As a result, any portion of the storm drainage system underlying a particular IRP site will be considered part of that IRP site,

[244] Tetra Tech, Inc. for Southwest Division, Naval Facilities Engineering Command., 2002. Technical Memorandum. *Evaluation of Issues Related to the RCRA Facility Permit EPA ID CA 2170023236, Tiered Permits, and the Non-Permitted Areas at Alameda Point.* Draft October 8.

[245] IT Corporation, 2001. Final Comprehensive Guide to the Environmental Baseline Study. June 29.

and the storm drainage system will not be evaluated independently. IRP site locations and status are shown in Appendix I-2.

Beginning in 1997, the IRP sites were grouped into Operable Unit Designations (OUs). The purpose of the OUs is to accelerate the cleanup of the IRP sites by coordinating investigation and response actions. In cases where groundwater contamination within an OU has resulted from activities managed under non-IRP compliance programs (for instance, a leaking underground storage tank (UST) site managed under the RCRA program), the contamination will be managed as part of the OU.

There are currently six OUs at Alameda Point, as shown in Appendix I-2. The OUs were organized according to the following factors, in order of importance:

- Contaminant type, extent of contamination, and media;
- Remediation management;
- Reuse potential;
- Geographic location; and
- Commingled plumes.

For example, the six IRP sites in OU-1 were grouped together because it was believed that the contamination issues at these sites were all well-defined and that the sites could be remediated in a similar manner. By grouping these sites together, the number of separate CERCLA investigations, public review periods, and decision documents would be minimized, which could accelerate the remedial action.

A final RI for OU-1 was completed in 1999, but it was withdrawn to allow additional data to be collected. A Final RI Addendum Volume I and Draft RI Addendum Volume II for OU-1 have been submitted for approval. Currently, all of the OUs are at the RI stage of their respective CERCLA investigations. Once the RI for a specific OU has been completed, a FS will be conducted to evaluate remedial options, and a RAP/ROD will be drafted, describing the specific set of actions that will be carried out to address contamination in that OU. A Draft Final RAP/ROD for OU-3 will be completed sometime in the future, with RAP/RODs for other OUs following.[246]

A separate CERCLA investigation has been completed for marsh crust and subtidal zone contamination for Alameda Point. This investigation is discussed below under Marsh Crust and Subtidal Zones Contamination.

[246] US Navy and US Environmental Protection Agency, 2001. Federal Facilities Agreement, Alameda Point. July.

NPL Status. On July 22, 1999, Alameda Point was listed on the National Priorities List (NPL), a list of national priorities among the known or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States, commonly referred to as Superfund sites. The list is intended to guide USEPA in determining which sites warrant further investigation under CERCLA to assess the nature and extent of public health and environmental risks associated with a release of hazardous substances.

By definition, NPL sites consist of locations where releases of hazardous substances have occurred. Therefore, property that has been identified as uncontaminated at Alameda Point by the US Navy pursuant to CERCLA Section 120(h)(4)(a) and has received regulatory agency concurrence pursuant to 120(h)(4)(b) is not part of the NPL site. Parcel Numbers 39, 60, 63, 93, 101, and 194 (see Appendix I-3) were identified and received concurrence as uncontaminated, and therefore, are not part of the Alameda Point NPL site. If additional uncontaminated property at Alameda Point is identified in the future and receives appropriate regulatory agency concurrence, it will not be considered part of the NPL site. Conversely, if information becomes available indicating that hazardous substances in fact impact parcels previously thought to be uncontaminated, these parcels will be considered part of the NPL site.

The NPL listing is not intended to include the subsurface soil contamination layer known as the former marsh crust and subtidal zone. Further discussion of regulation of the marsh crust and subtidal zone is included below. All other hazardous substances in Alameda Point are included in the NPL listing.

In July 2000, USEPA selected Alameda Point as a pilot site for the Superfund Redevelopment Initiative (SRI). The SRI is a nationally coordinated effort to facilitate the return of Superfund sites to productive use by selecting response actions consistent with anticipated use. The Pilot project is focusing on two portions of Alameda Point: the Seaplane Lagoon (OU-17) and the 1943-1956 Disposal Area Landfill (OU-1). The USEPA is providing funding to the City of Alameda to hire consultants to recommend a remediation design concept for the lagoon and the landfill.

CERFA/EBS Process. A basewide EBS for NAS Alameda was completed in October 1994 and a Base Closure Plan (BCP) was prepared in March 1995. Additional phases of the EBS investigation were completed between 1994 and 2000, and a Final EBS was completed in June 2001. The Final EBS divides the property into 246 parcels, 237 of which are in or immediately offshore of the project site. A map showing parcel numbers and a table showing the current parcel classifications are shown in Appendix I-3.

During the initial phase of the EBS process, the final basewide Alameda Point EBS, published in October 1994, six parcels were identified as "CERFA-eligible" or category 1 parcels. The status of these and other sites is currently being re-evaluated due to concern over potential polynuclear aromatic hydrocarbon (PAH) contamination in fill materials, which is under investigation by the US Navy.

FFA. Although an FFA for the site was drafted and signed by USEPA and the US Navy in July 2001, it has not been signed by the State as of the date of preparation for this EIR. The FFA establishes responsibilities for actions by the USEPA and US Navy, and presents a schedule for completion of tasks. Due to changes in Navy funding, the timeline for the signing and completion of tasks is uncertain.

(5) City of Alameda General Plan. Policies from the current *General Plan* that relate to hazards are listed below. Amendments to existing policies that are proposed as part of the project (Alameda Point GPA) are not included here. Proposed *General Plan* amendments related to hazards are discussed in the Environmental Analysis subsection below.

Hazardous Materials and Waste Management

8.4.a Continue to identify and assess the risks associated with various hazardous materials transported in Alameda.

8.4.b Clarify responsibilities for resolving incidents of hazardous materials release.

8.4.c Apply the Emergency Operations Plan, if necessary, in response to a hazardous materials release disaster.

8.4.d Continue to support the resource recovery measures specified in the Alameda County Solid Waste Management Plan, July 1987.

8.4.e Continue to support implementation of the Alameda County Hazardous Waste Management Plan.

8.4.g Work to improve the training and capability of the Fire Department to handle moderate-size releases of hazardous materials without dependence on outside aid.

8.4.h Continue to remove the methane gas produced as a waste product of materials decomposing in the former dump, Mt. Trashmore.

8.4.i Require those who store hazardous materials to have the training and capacity to respond to their own emergencies.

b. Historical Land Uses at Alameda Point Associated with Hazardous Materials. Historical land uses of Alameda Point property involved the handling, storage, and use of hazardous materials. Prior to becoming a Naval Air Station, Alameda Point had several industrial land uses such as rail lines, rail yards, a civil and Army Air Corps airfield, a borax processing plant, and an oil refinery. Much of Alameda Point is constructed on fill material that was placed in the late 19th and 20th centuries. The fill may have been contaminated by past industrial practices affecting the fill source areas prior to its placement on what is now Alameda Point.

During the years the project site was used as a Naval Air Station, operations and activities have included machine shops, fueling facilities, fuel storage tanks, fabrication and maintenance shops, and waste treatment and disposal areas. Fuels, lubricants, paints, solvents, metal plating solutions, alkaline cleaning compounds, radium, and other industrial chemicals, as well as ordnance, have been used, stored, and disposed of during this time.

c. Hazardous Materials Issues at Alameda Point. Environmental investigations have identified several classes of hazardous materials in soils, groundwater, and sediments at the project site. Appendix I-2 includes a map of contaminated sites (IRP sites) identified during CERCLA investigations and a table summarizing the hazardous materials issues present at each site. In addition to hazardous materials related to prior military operations, the age of most facility buildings also presents the potential for the presence of lead-based paints and asbestos-containing materials.

The use of hazardous materials such as pesticides, lubricants, degreasers, solvents, cleaners, paints, and fuels associated with ongoing maintenance activities at Alameda Point will be necessary for the foreseeable future. Hazardous wastes will be produced due to removal of asbestos and lead paint and remediation of the US Navy properties, while other wastes will be generated by activities associated with interim leasing.

The following sections address in a topical manner the status and regulatory considerations related to hazardous materials found at Alameda Point.

(1) Contamination in the Marsh Crust/Subtidal Zone. The marshlands and nearshore areas once located adjacent to the island of Alameda (the historic marshlands) were filled with dredge material between approximately 1887 and 1975. The interface of the bottom of the fill and the original Earth surface, called the marsh crust/subtidal zone, extends westerly of the historic Alameda Island shoreline, to the western shoreline of Alameda Point. The marsh crust/subtidal zone occurs at depths ranging from approximately 4 to up to 25 feet below ground surface at Alameda Point.[247] During drilling or excavation, the marsh crust/subtidal zone is typically encountered as 2- to 6-inch thick layer of peat, often containing preserved grasses and other tidal features.

This marsh crust/subtidal zone contains, to a varying degree, elevated concentrations of petroleum-related volatile and semi-volatile organic compounds, of which polynuclear aromatic hydrocarbons (PAHs) are considered the greatest potential health concern. PAHs are a class of heavy hydrocarbons typically formed as a result of incomplete combustion of hydrocarbons and often found in high concentrations in industrial wastes such as coal tar. Several PAHs are classified as human carcinogens. The sources of this contamination are believed to be the former oil refinery located at the project site, and two manufactured gas plants located across the Estuary from the project site, which

[247] US Navy, 2001. Final RAP/ROD for the Marsh Crust at the FISC Oakland Alameda Facility/Alameda Annex and for the Marsh Crust and Former Subtidal Area at Alameda Point. February.

operated from the late 1800s until the 1920s.[248] As these contaminants are located beneath the present-day ground surface, there is no direct exposure pathway to the contaminants, although the contaminants may be encountered through excavation during construction or maintenance work.

In February 2001, a final RAP/ROD for the marsh crust/subtidal zone contamination was completed. The chosen remedy was land use controls. These land use controls include lease restrictions by the US Navy (until transfer of all properties is complete), environmental restrictions in deeds, a covenant to restrict use of the property, and the City Excavation Ordinance. The deed restrictions and covenant placed on the FISC/East Housing parcels (which were transferred to the City in July 2000) were cited as a model for land use controls for future property transfers.[249] Similar deed restrictions and covenants will be placed on Alameda Point.

(2) PAHS in Fill Materials. Elevated concentrations of PAHs have also been detected in shallow fill materials at the project site. The source is believed to be the same as for the Marsh Crust/Subtidal Zone contamination, but the concentrations found are generally lower and less uniform than in the Marsh Crust/Subtidal Zone layer. The Navy is currently collecting fill soil samples for PAH analysis to evaluate the potential health effects of PAHs in fill materials.

(3) Polychlorinated Biphenyls (PCBs). The disposal of PCB compounds is regulated under the Toxic Substances Control Act (TSCA), which in 1976 banned the manufacture and distribution of PCBs except for those used in enclosed systems. By definition, "PCB equipment" contains PCB concentrations of 500 ppm or more, whereas "PCB-contaminated equipment" contains PCB concentrations of at least 50 ppm but less than 500 ppm. The USEPA, under TSCA, regulates the removal and disposal of materials containing PCBs at concentrations of 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment. Primary federal regulations for controlling existing PCBs are found in 40 C.F.R. Part 761. California regulations are more stringent than their federal equivalents and are found in California Code of Regulations (CCR) Title 22. Within California, a waste fluid containing five ppm or more of PCBs is regulated as hazardous. The DTSC regulates PCBs as a non-RCRA hazardous waste.

In October 1999, a survey of PCBs in electrical equipment at the project site was begun by the US Navy. As of March 2002, Alameda Point sub-parcels had equipment containing PCBs.[250] The presence of PCB-contaminated transformers or other known electrical equipment must be disclosed in FOSLs/FOSTs prior to property lease, conveyance, or transfer.

[248] Ibid.

[249] Ibid.

[250] Tetra Tech EM, Inc., 2002. *Internal Draft Supplemental Environmental Baseline Survey.* March 29. This information is preliminary.

(4) Petroleum Storage Tanks and Oil/Water Separators. Both underground storage tanks (USTs) and aboveground storage tanks (ASTs) store hazardous substances and petroleum products at locations throughout Alameda Point. Because oil/water separators (OWSs) are often below ground and can create environmental issues similar to USTs, they are included in this discussion.

Underground Storage Tanks and Fuel Lines. As of December 2001, all USTs at the project site had been removed or abandoned in-place. Soil and groundwater contamination has been found at some former UST sites and site investigations are underway to determine the nature and extent of contamination at these sites.

USTs are subject to federal regulations under RCRA (40 C.F.R. Part 280), as amended by the Hazardous and Solid Waste Amendments of 1984 (42 U.S.C.A. Section 6901). The State of California has adopted UST regulations in Title 23, Division 3, Chapter 16 of the C.C.R. California regulations are more stringent than federal regulations and require secondary containment on both the tank and piping systems installed after January 1, 1984. ACEHD administers State regulations for USTs at Alameda Point.

The strategy for closing petroleum-impacted sites and decommissioning USTs is based on the State of California's adoption of risk-based corrective action (RBCA) standards developed by the American Society for Testing and Materials (ASTM). RBCA is a process by which risk-based cleanup levels can be determined based on human exposure pathways and contaminant properties present at the site. The adoption of RBCA may eliminate the need for costly removal actions through the assignment of site-specific cleanup levels.[251]

As of December 2001, all abandoned and active fuel lines have either been removed or closed in place (cleaned and grouted). About 11 miles of inactive underground fuel lines and 2 miles of active underground fuel lines have been either removed or closed in place. During removal of fuel lines, confirmation sampling is conducted to help identify and assess the extent of any releases from the lines that may have occurred. Two TPH corrective action areas (CAAs) were identified for fuel lines: Fuel Line CAA-A, located north of the runway area, and Fuel Line CAA-B, located north of the Seaplane Lagoon. Fuel Line CAA-A was submitted to RWQCB for regulatory concurrence for NFA closure.

Aboveground Storage Tanks. As of the most recent draft update to the *NAS Alameda Draft BCP* in 1998, there were 24 active and inactive ASTs in place at Alameda Point. [252] Some large ASTs at the Alameda Point power plant remain in use as the power plant is operating during the

[251] US Navy, 1998. *Draft Base Realignment and Closure Cleanup Plan, Alameda Point, Alameda, CA.* Revised June 4.

[252] US Navy, 1998., op.cit.

interim period. The potential for the reuse of other ASTs will be assessed prior to decommissioning or conveyance or transfer. All ASTs not proposed for reuse will be decommissioned.

ASTs are regulated under California Health and Safety Code, Division 20, Chapter 6.67; the Uniform Fire Code; and the National Fire Protection Association regulations. The spill prevention control and countermeasures plan (SPCC plan) prepared by the US Navy for Alameda Point describes engineering controls and emergency response measures to prevent significant releases from ASTs. ACEHD enforces State AST regulations in the City of Alameda.

Oil/Water Separators. OWSs are designed to separate oil, fuel, and grease from water by gravity because these substances are lighter than water. OWSs, in addition to waste oil rafts and a bilge and oily wastewater treatment system, were used at Alameda Point to separate petroleum, oil, and lubricants from wastewater.

All OWSs at Alameda Point were cleaned and a few were filled to prevent use. The waste oil rafts at Seaplane Lagoon, referred to as "donuts," were removed in 1995 and replaced by the bilge and oily wastewater treatment system at Pier 2. The donuts were decontaminated, and the sludge and rinse water were treated and disposed of off the site. The cleaned donuts were turned over to DRMO for sale as scrap metal. The US Navy closed the bilge oily wastewater treatment system and the ARRA obtained a new permit for it. All OWSs have been cleaned and abandoned in-place or removed.

(5) Pesticides. Pesticides historically used at the project site included chlordane, lindane, and dichlorodiphenyl-trichloroethane (DDT). These pesticides, which are no longer used at the site, do not rapidly degrade under ambient conditions, so residues of these chemicals and toxic breakdown products may linger in soils for decades after they were last used. Waste materials containing pesticides have been deposited in the West Beach Landfill. This site is under investigation as part of OU-4 (IRP Site 2). The Alameda Point pest control chemical storage area was located at Building 114 from approximately the early 1940s until 1974. The area is under investigation as part of OU-1 (IRP Site 8).

During post-demolition sampling in the East Housing area east of Main Street, elevated concentrations of pesticides were identified in soils near and beneath former building foundations.[253] Sampling was performed at the West Housing portion of the project site to determine if concentrations of pesticides are present in soils at concentrations that could present a human health risk. Relatively high pesticide concentrations similar to those observed at East Housing were not detected.

(6) Lead-Contaminated Soils. Lead is a toxic substance that can cause acute and chronic health effects in humans. Small children are particularly susceptible to the effects of lead poisoning,

[253] Tasini, Dina, 2001. Environmental Policy Manager, City of Alameda. Personal communication with Baseline Environmental Consulting. August 14.

which can lead to irreversible brain damage. At Alameda Point, lead has been used in batteries, ordnance, piping, and solder. It is a common contaminant in sand blast and abrasive residues from removal of lead-based paint. The following is a list of known lead-contaminated sites at the project site:

- *Lead-Acid Battery Storage and Maintenance Areas.* Lead-acid battery overhaul and replacement has been performed at Alameda Point. Batteries or battery acid are or have been stored at the PWC shops at Building 114, the heavy equipment maintenance facility at Building 528, and the NADEP shops at Buildings 5 and 5A.
- *Lead Disposal at West Beach Landfill.* The former landfill sites contain lead-contaminated wastes.
- *Lead Waste Storage Sites.* Buildings that have been used to store lead-containing or lead-contaminated items, lead dust, and lead waste include the overhaul-repair shops in Building 5, the auto repair shop in Building 459, the sewage lift stations at Buildings 86 and 591, and the shipboard aircraft support equipment facility in Building 167.
- *Spent Abrasive Materials Sites.* Sandblasting has been performed at Alameda Point to prepare ship hulls, aircraft, and equipment for repainting. Spent abrasives contain elevated levels of lead due to the use of lead-based paints. The EBS identified the Building 166 area as a sandblasting site with potentially contaminated fill. Spent blasting grit also was used for road surfacing in the West Beach Landfill.
- *Firing Ranges.* Alameda Point's outdoor small arms range, located at the west end of the Planning Area, has been used for years for rifle and pistol practice, resulting in spent lead ammunition being deposited in the area. The small arms range area is scheduled for remediation to remove lead from the soil. The EBS also identified potential lead contamination as an issue at the gun test facility at Building 29. Sediments immediately offshore from the former Skeet Range (IRP Site 29) are currently being investigated to evaluate contamination from spent lead shot.

(7) Asbestos and Lead-Based Paint in Building Materials. Because of the age of the vast majority of the buildings on Alameda Point, asbestos-containing building materials (ACMs) and lead-based paint (LBP) are expected to occur in buildings at the project site. Asbestos was commonly used in building materials until the early 1980s, when its use in the United States began to be phased out. Lead oxide and lead chromate were commonly used in paints until 1978, when regulations limited the allowable lead content in paint.

Asbestos. DOD policy provides that property with ACMs will not be disposed of through the BRAC process unless the ACM does not pose a threat to human health at the time of conveyance or transfer and the property complies with applicable statutes and regulations regarding ACM. Federal Property Management Regulations require a basewide survey for ACM prior to property disposal, with survey results disclosed to potential owners. A comprehensive basewide asbestos survey was completed at NAS Alameda in 1995 by Mare Island Naval Shipyard personnel. Abatement of

damaged, friable, and exposed asbestos throughout NAS Alameda was completed in 1999, and additional abatement of nonfriable asbestos is ongoing as required during maintenance or renovation activities.[254]

Abatement of ACMs is highly regulated by the USEPA, the Occupational Safety and Health Administration (OSHA), and the State of California. Asbestos fiber emissions into the air are regulated by Section 112 of the Clean Air Act, 42 U.S.C. Section 7412, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). NESHAP regulations address the demolition or renovation of buildings with ACM. The Toxic Substances Control Act, 15 U.S.C. Section 2601, *et seq*., (TSCA) and the Asbestos Hazardous Emergency Response Act, 15 U.S.C.A. Section 2601 (AHERA) provide the regulatory framework for handling ACM in school buildings, and these procedures have become the industry standard for asbestos management and removal in all types of buildings. AHERA and OSHA specify requirements to protect employees who work around or who remediate ACM. Locally, the Bay Area Air Quality Management District (BAAQMD) regulates asbestos abatement activities (BAAQMD Regulation 11, Rule 2).

Lead-Based Paint. Lead-based paint (LBP) is a potential health hazard, especially for small children, because it can occur as dust or paint chips that children can easily inhale or eat. Surfaces on which infants or small children could chew, such as door frames and windowsills, have a high potential to create hazards. Bare soil that may be affected by dust from lead-based exterior paint, such as areas around residences and playgrounds, and paint used on playground equipment also may create greater hazards for young children.

LBP is defined as any paint or surface coating that contains more than 1 milligram per square centimeter of lead or more than 0.5 percent lead (5,000 parts per million (ppm)) by weight.[255] According to a survey for lead-based paint conducted by the US Navy Public Works Center in 1995 and 1996, there is lead-based paint in all residential parts of the Planning Area. No lead was found in playground equipment. Lead dust hazards were identified in the Big Whites and CPO Quarters housing areas, and lead in excess of the HUD federal action level of 400 ppm was detected in 4 of 87 soil samples taken around housing and playground areas. LBP abatement will be required for the Big Whites and CPO Quarters in the West Neighborhood sub-area.

In non-residential buildings, lead concentrations ranging from 127 to 130,000 parts per million have been detected in paint samples from Buildings 4, 8, 14, 39, 40, 41, 78, 101, 112, 114, and 153 and

[254] IT Corporation, 2001. Final Comprehensive Guide to the Environmental Baseline Survey. June 29.

[255] US Department of Housing and Urban Development, 1997. *Guidelines for the Evaluation and Control of Lead-Based Paint*, 1997 revised edition.

from hangars 20, 21, 23, 39, 40, 41, and 78. Lead abatement was performed in Building 101, a classroom building, during renovations. [256]

All target housing in Alameda Point that will be conveyed or transferred out of federal ownership must comply with the Federal Residential Lead-based Paint Hazard Reduction Act of 1992. For target housing constructed prior to 1960, the property must be inspected for LBP. The results of the inspection must be revealed to prospective purchasers or transferees, and any LBP hazards must be abated. For target housing constructed between 1960 and 1978, the property must be inspected for LBP and the results of the inspection must be revealed to prospective purchasers or transferees, although abatement is not required.[257]

A LBP program was developed at Alameda Point in compliance with the LBP Poisoning Prevention Act, 42 U.S.C. Section 4801 *et seq.*, and Residential Lead-based Paint Hazard Reduction Act of 1992, 42 U.S.C. Section 4851 *et seq*. DOD policy is to manage LBP to protect human health and the environment and to comply with all applicable laws and regulations. The LBP program applies to "target housing," which is defined as any housing built before 1978 except housing for the elderly or disabled persons, unless children are expected to share such housing. The definition also excludes "zero-bedroom dwellings," and most bachelor quarters or barracks would therefore be excluded from target housing.[258] US Navy policy has been to include in the LBP program other structures or areas where children under 6 years old are expected to spend extended periods of time, such as child care facilities, schools, and playgrounds.[259]

There are currently no regulatory requirements to survey or abate lead hazards in nonresidential facilities.

(8) Radiological Material. Operation of nuclear-powered ships, use of radiographic test and calibration equipment, and past use of radioactive materials, such as radium for dial-painting, have entailed the use of radioactive materials at Alameda Point. Radiological activities and facilities are managed under two US Navy programs, the Naval Nuclear Propulsion Program (NNPP) and the General Radiological Material (G-RAM) program.

Naval Nuclear Propulsion Program at Alameda Point. Nuclear-powered ships have used Alameda Point port facilities. A radiological survey was performed in 1998 by the US Navy's

[256] US Navy, 1995. *Base Realignment and Closure Cleanup Plan for Naval Complex Alameda, CA.* Prepared for PRC Environmental Management. March 1.

[257] Ibid.

[258] US Navy, 1996d. Lead-Based Paint at BRAC Installations. Memorandum from T.J. Zagrobelny, Commander, Naval Facilities Engineering Command to Naval Facilities Engineering Command Division. April.

[259] Ibid.

Radiological Control Office to assess the impact of nuclear-powered ship maintenance, overhaul, and refueling on the environment. This survey concluded that the berthing and maintenance of nuclear-powered ships at Alameda Point from 1956-1997 resulted in no adverse effects on human health or the environment. The survey also concluded that an independent review conducted by the USEPA was consistent with the findings presented in the US Navy report.[260]

General Radiological Material Program at Alameda Point. Alameda Point has used and stored G-RAM during past base operations. G-RAM includes radiographic sources used for non-destructive test purposes, radiological sources used for instrument calibration, electrical instrumentation containing vacuum tubes with radioactive elements, radium dials and gauges, and thorium-enhanced products, such as welding rods and optical coatings. Through an ongoing radiological survey by the US Navy, buildings, facilities, and storage areas that are potentially contaminated from these sources of radioactivity are being surveyed to identify the presence of or to document the absence of these radioactive materials. The decommissioning plans will be used for removing radioactive materials and for specifying the required radiation surveys and radiological samples needed to verify the removal of radioactive materials.

According to the results of survey work conducted on IRP Sites 1 and 2 (which consist of the 1943-1956 Disposal Area in the Northwest Territories sub-area and the West Beach Landfill/ Wetlands in the Wildlife Refuge sub-area, respectively), none of the anomalous locations found were determined to present an immediate health hazard to individuals. Exposure rates at 1 meter from ground surface were measured at these locations and were found to range from a background value of 6 to 8 µRoentgen/hr up to 280 µRoentgen/hr. As part of ongoing CERCLA investigations, radiological issues will be further evaluated, including the risk of exposure to low-level radionuclides.

Radium instruments are known to have been painted in Buildings 5 and 400 (IRP Sites 5 and 10). A radiological survey was conducted at these buildings, including industrial drains and storm sewer drains running from each building. Work has been completed to remove radiological materials, and the Draft Radiological Closeout Survey report, dated August 2001, demonstrated that no significant radioactive contamination remains in Buildings 5 and 400. The storm sewer system from Buildings 5 and 400 are still being investigated.

(9) Mixed Hazardous and Radioactive Waste at Alameda Point. Mixed waste (waste that is both hazardous and contaminated with low level radioactivity) may exist in the landfill areas at IRP Sites 1 and 2, where disposal of radium-contaminated rags from the former dial-painting shop occurred. Mixed waste has been generated as a result of commingled petroleum and radioactive wastes.

[260] US Navy, 1998. *Historical Radiological Assessment for NAS Alameda from 1956-1997, Volume 2. General Radiological*. Radiological Control Office at Pearl Harbor Naval Shipyard. June.

(10) Medical and Biohazardous Waste. Some medical wastes from the Naval Medical Center Oakland were deposited in the West Beach Landfill. This site is undergoing investigation as IRP Site 2. NAS Alameda's Medical/Biological Waste Program is regulated under C.C.R., Title 22, Article 13. This issue will be addressed as part of ongoing CERCLA investigations at the landfill.

(11) Unexploded Ordnance. Ordnance was stored and used at Alameda Point throughout its history as a military facility. Ordnance storage includes ship and aircraft weapons systems, combat force weapons, and small arms and ammunition used by base security personnel. Unexploded ordnance that has been improperly disposed of would pose an immediate health risk to any construction or maintenance workers that may encounter it.

In September 1998, ordnance material, including both inert and live ordnance, was discovered at IRP Site 1 (landfill) in the vicinity of the Pistol Range (small arms range backstop) during a radiological survey. The ordnance consisted primarily of 20mm high explosive projectiles. It may have been disposed at the landfill. The Military Munitions rule (40 C.F.R. Part 226 Subpart M) classifies discarded inert ordnance material as solid waste and live ordnance as hazardous waste. Because of the danger posed by the type of ordnance discovered, an emergency removal action to mitigate the immediate hazard to site workers was completed in October 1998. The goal of the removal action was to clear all surface ordnance material from an 8-acre section of IR Site 1 to allow safe completion of the radiological survey.

Although the goal of the emergency removal action was accomplished, the former landfills at the project site may still potentially contain unexploded ordnance. Additional ordnance clearance will be necessary during any intrusive site work, including planned investigation and remediation activities. Because a significant number of live as well as inert ordnance items were recovered, additional survey work in the 80 acres comprising the two NAS landfill disposal areas, IRP Site 1 and IRP Site 2, was carried out and completed in May 1999 when the Remedial Investigation report for OU 3 was issued. An additional Site 1 OEW (Ordnance/Explosive Waste) characterization and surface sweep was completed in early January 2002; OEW was found at the site. Site 2 OEW characterization and surface sweep was completed in March 2002; OEW was found at the site. A time-critical removal action was completed at a former OEW disposal area in Site 2 in March 2002. The minimum ordnance clearance requirements of the Department of Defense Explosives Safety Board must also be satisfied for planned reuse of the site before the property can be transferred.[261] In addition, the US Navy has instituted site safety screening and other security measures for all individuals entering IRP Site 1.

[261] US Navy, 1998. SSPORTS Environmental Detachment Vallejo. *Unexploded Ordinance Emergency Removal Action Installation Restoration Site 1 Alameda Point.* December 1998.

(12) Radon. Radon is an odorless, tasteless, invisible radioactive gas that is heavier than air and naturally occurs in many rock and soil types. Radon is suspected of causing lung cancer, especially when it is allowed to accumulate in poorly-ventilated buildings. The USEPA has set an "action level" of 4.0 picoCuries/liter (pCi/L) for indoor air, and recommends that remedial action be taken if indoor air concentrations exceed this level. This action level was chosen based on studies that demonstrated that radon in indoor air could be reduced to 2.0 to 4.0 pCi/L in most buildings using readily available engineering controls. A 1998 study by the National Academy of Sciences noted that cancer risks due to radon in indoor air are impossible to eliminate, but that adherence to the USEPA action level would significantly reduce these risks.[262]

In 1993, radon testing was performed in some housing units and at five locations at FISC Alameda, adjacent to the project site. None of the indoor radon concentrations exceeded 4.0 pCi/L action level. An evaluation of the regional geological setting concluded that Alameda Point is unlikely to be subject to radon hazards because of low radioactive isotope concentrations in the rock and sediments underlying the region.[263]

DOD policy regarding radon on BRAC properties is to ensure that any available and relevant radon assessment data pertaining to the BRAC property will be included in property conveyance or transfer documents. No further radon assessments are planned at Alameda Point.

2. Environmental Analysis

This section details the policies proposed for the Alameda Point GPA (the "proposed project") that are relevant to hazards, describes the adverse impacts that would result from their implementation and the projected buildout, and recommends mitigation measures as appropriate. The criteria used to determine whether a potential impact is significant are detailed at the beginning of the Impacts and Mitigation Measures subsection.

a. Proposed Project. The Alameda Point GPA includes amendments to General Plan policies that relate to hazards. The proposed GPA also incorporates the Alameda Point Element (which would become Chapter 9 of the General Plan), which includes several policies related to hazards. Those policies are detailed below.

Open Space and Conservation Element

~~*5.1.f Urge the NAS the promptly clean up toxic materials found on-site.*~~ **[Policy to be deleted]**

[262] National Academy of Sciences, 1998. Biological Effects of Ionizing Radiation (BEIR) VI Report: "The Health Effects of Exposure to Indoor Radon." February 19

[263] US Navy, 1995., op. cit.

Health and Safety Element

8.4.f Continue to rely on the mutual aid services of Alameda County ~~and the Naval Air Station~~ to reduce the potential for hazardous materials accidents. **[Amended Policy]**

8.4.l Adopt procedures that provide for adequate control measures for all buildings constructed on or near areas where surface emissions of hazardous soil gases may occur. **[New Policy]**

Alameda Point Element **[New Element]**

9.6.o Continue to support cleanup of contaminated lands.

9.6.p Maintain information about contamination and clean-up activities and make the information available to the public.

9.6.q Create a land use and construction permitting program that requires consideration of residual contamination. The permitting program should include:

- *A means for tracking deed restrictions.*
- *A means for tracking remediation to help ensure that future land uses are compatible.*
- *A method for classifying land uses by exposure scenario.*
- *Identification of areas that might require special construction precautions.*
- *A system for ongoing communication with the environmental regulatory agencies.*

9.6.r Support integration of Alameda Point into the City of Alameda's Emergency Operations Plan.

9.6.s Create and integrate provisions for emergency management in Alameda Point into the City of Alameda's Emergency Operations Plan.

9.6.t Identify "critical facilities" in Alameda Point area, as defined in Alameda's 1976 Safety Element, and integrate them to the City's existing "critical facilities" list and emergency provision plan.

b. Impacts and Mitigation Measures. This section begins with a description of the criteria utilized to determine whether any significant hazards impacts would result, followed by a discussion of potential impacts. The impact discussion is organized into beneficial and less-than-significant impacts.

(1) Criteria of Significance. Implementation of the proposed GPA would result in a significant impact related to hazards if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- 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.

(2) Beneficial and Less-than-Significant Impacts. This analysis looks first at policy implementation and then at plan buildout.

Policy Implementation. Implementation of the new policies and policy revisions proposed as part of the GPA would result in beneficial impacts by supporting cleanup activities at Alameda Point and encouraging a land use and construction permitting program that takes into account the potential for encounter with residual contamination. GPA Policies 9.6.r, 9.6.s, and 9.6.t support the integration of Alameda Point into the development into the City's Emergency Operations Plan.

Plan Buildout. The GPA is not located within an area covered by an airport land use plan, in the vicinity of a private airstrip, or in an area that would expose people to a significant risk of wild-land fires. These criteria are not applicable and were not analyzed in this EIR. Buildout of the GPA would result in remediation and cleanup activities that would result in long-term beneficial impacts. The *NAS Reuse EIR* classified several potential impacts as less than significant. These impacts included human exposure to contamination during remediation activities, human and ecological exposure to unidentified subsurface hazards, hazardous materials use, hazardous waste generation, asbestos, storage tanks, lead hazards, and medical/biohazardous waste. The EIR analysis found that existing laws, regulations, permits, and programs would mitigate these potential impacts to a less-than-significant level. No potential impacts were identified for ordnance or radon.

Less-than-significant impacts that would result under buildout of the GPA are discussed below. These potential impacts would be mitigated to a less-than-significant level through the implementation of the policies proposed as part of the GPA, existing *General Plan* polices, mitigation measures that were adopted as part of the *NAS Reuse EIR* (see Appendix C); and/or other existing regulations. As a result, they are identified as less than significant.

Impact HAZ-1: Construction workers, future site users, and sensitive ecological receptors could potentially be exposed to contaminated soils and groundwater. (LTS)

Although the US Navy is required to remediate the project site prior to property transfer, use of a Lease in Furtherance of Conveyance (LIFOC), FOSL, FOST, or Section 334 early transfer could enable limited reuse and redevelopment of the project site while remediation is being conducted, subject to the restrictions of CERCLA. Much of Alameda Point is under lease to the ARRA pursuant to a June 6, 2000 LIFOC. The LIFOC requires prior Navy approval of excavation, digging, and similar activities. People who occupy portions of Alameda Point prior to its complete remediation could be exposed to risks from unremediated sites, including vacant parcels with exposed soil that might contain contaminants. It is also likely that lessees or others, such as construction or utility workers, would periodically need to excavate site soils to maintain or replace utilities, repair foundations, make other sub-surface repairs, or conduct other activities that may disturb soils or impervious surfaces covering soils. Unless properly managed, human exposure to contaminants in the soil or groundwater could occur through inhalation of volatile organic compounds that have migrated from soils to indoor or outdoor air, from inhalation or accidental ingestion of soil particles or dust containing elevated concentrations of contaminants, or from direct dermal contact with contaminated soil.

Excavation activities also could expose ecological receptors to contamination. One pathway for the transport of chemicals to San Francisco Bay or the Estuary would be surface water runoff from construction sites. Runoff that travels over potentially contaminated soil could transport dissolved chemicals and contaminated sediment to sensitive ecological receptors.

Extensive subsurface excavation may also require dewatering to maintain adequate construction conditions. Below-grade soil excavation or trenching activities that require dewatering could potentially encounter contaminated groundwater. Pumping water from excavation pits or dewatering wells at construction sites could release contaminated groundwater, exposing construction workers or the public. The City excavation ordinance requires a permit for excavation in areas affected by marsh crust/subtidal zone contamination (but does not address contamination in other areas).

Untreated water carrying dissolved chemicals could exceed water quality objectives for the Bay and impact sensitive receptors. Dredging the Seaplane Lagoon to create the marina also may disturb contaminated sediments in Bay water, increasing suspended sediment, mobilizing toxic chemicals, and reducing dissolved oxygen.

Current permitting programs by RWQCB (for discharges to storm drains) and EBMUD (for discharges to the sanitary sewer) would be required for any discharge of groundwater. These permitting programs do not allow contaminated groundwater to be discharged without appropriate treatment. The recently adopted Long Term Management Strategy program (LTMS) for managing dredging and dredge spoils would mitigate hazardous materials impacts of dredging (see Section 4E, Water Resources, for details).

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. The proposed GPA polices would help minimize this impact by supporting cleanup activities of contaminated lands, encouraging the development of a permitting program that would provide a means for tracking deed restrictions, supporting emergency management plans, and identifying areas that required special construction precautions.

Existing General Plan Policies. Policies 8.4.a through 8.4.i would help minimize this impact by supporting actions to handle hazardous waste and emergency response plans.

Other Policies. Mitigation 1 and Mitigation 2 from the *NAS Reuse EIR*, which have been adopted by the City (see Appendix C), implement a number of notifications, conditions, and restrictions designed to prevent human exposure to contaminated subsurface materials during interim land uses. These restrictions prohibit any land uses that may result in an unacceptable risk to human health and the environment and require that the interim land uses will not interfere with environmental restoration activities. Most of these requirements are already in place under CERCLA and the US Navy's FOSL and FOST programs described above.

Mitigation Measure HAZ-1: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact HAZ-2: There is a potential for contaminated subsurface materials to be discovered during development of the project site. These materials could potentially present a health risk to construction workers and/or future workers and residents at the project site. (LTS)

The scopes of environmental investigations conducted at the project site were based on available historical land use information, evidence of historical hazardous material use apparent during site inspections. As many hazardous material and other land use records were not required to be maintained during much of the developed history of the project site, there is a possibility that hazardous materials may have been used, stored, or disposed of in areas outside of the areas of concern identified during previous environmental investigations. Other unidentified subsurface hazards, such as USTs, unexploded ordnance, or buried hazardous debris, could also be present. Therefore, there may be a potential for subsurface contamination or unknown buried hazards to be present at the project site in areas that may not currently be apparent, but could be encountered

during future construction activities. If present, contamination and buried hazards could potentially present a health and safety risk to construction workers and future site users.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Proposed Policy 9.6.p would maintain information regarding contamination and remedial activities at the project site in a publicly-accessible form. Proposed Policy 9.6.q would create a land use and construction permitting program that requires consideration of residual contamination at the project site. This would be an expansion of the current excavation permitting process under the City's Excavation Ordinance, which addresses potential health and safety issues for excavations that may encounter the marsh crust/subtidal zone excavation. Proposed Policy 8.4.l would adopt procedures that provide for adequate control measures for all buildings constructed on or near areas where surface emissions of hazardous soil gases may occur.

Existing General Plan Policies. Policies 8.4.a through 8.4.i would help minimize this impact in the event that hazardous materials are uncovered during construction activities by supporting actions to handle hazardous waste and emergency response plans.

Other Policies. Mitigation 2 from the *NAS Reuse EIR*, which was adopted by the City, implements a number of measures to minimize the impacts of encountering previously unknown contaminated materials and buried hazards, including procedures to protect workers and the public. These measures include requirements for site-specific Health and Safety Plans and adherence to existing federal and State construction worker safety laws and regulations.

Mitigation Measure HAZ-2: No mitigation measures are necessary. Implementation of the existing and proposed policies described above will ensure that no significant impact results.

Impact HAZ-3: Demolition or renovation of the buildings at Alameda Point could release lead dust and asbestos fibers, potentially affecting construction workers. (LTS)

Lead-based paint and asbestos-containing building materials are known to be present in buildings in the project area. During demolition or renovation of the buildings, lead dust and asbestos fibers could be released into the air, potentially affecting construction workers at the project site.

State and federal regulations require the abatement of all asbestos-containing materials prior to demolition or renovation activities that would disturb them. State regulations (Title 8, California Code of Regulations, Section 1529) protect construction worker safety where asbestos-containing materials are present.

Loose and peeling lead-based paints would be classified as a hazardous waste and require removal prior to renovation/demolition activities. Paints that are adhering to their surfaces do not require

abatement and can be disposed of as regular construction debris regardless of their lead content. State regulations require that air monitoring be performed during and following renovation or demolition activities at sites containing lead-based paint (Title 8, California Code of Regulations, Section 1532.1). Appropriate modifications to renovation/demolition activities would be required if airborne lead levels exceed the current federal OSHA action level of 30 $\mu g/m^3$ (calculated as an 8-hour, time-weighted average).

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Proposed Policy 9.6.p would maintain information regarding contamination and remedial activities at the project site in a publicly-accessible form. Proposed Policy 9.6.q would create a land use and construction permitting program that requires consideration of residual contamination at the project site. This would be an expansion of the current excavation permitting process under the City's Excavation Ordinance, which addresses potential health and safety issues for excavations that may encounter the marsh crust/subtidal zone excavation.

Existing General Plan Policies. Policies 8.4.a through 8.4.i would help minimize this impact in the event that hazardous materials are uncovered during construction activities by supporting actions to handle hazardous waste and emergency response plans.

Mitigation Measure HAZ-3: No mitigation measures are necessary. Adherence to existing regulations requiring abatement of lead and asbestos hazards and worker health and safety procedures during demolition and renovation activities and the policies discussed above would reduce this impact to a less-than-significant level. No additional policies or mitigation measures are necessary.

Impact HAZ-4: Implementation of the GPA could result in human exposure to surface emissions of subsurface gases during routine use of and development in areas where surface emissions of hazardous soil gas occur. (LTS)

A significant and mitigable impact could result from routine use of, and development in, areas where surface emissions of hazardous soil gas may exist. The vicinity of IRP Site 1 (a former landfill) is an example of such an area. IRP Site 1 is believed to have received all wastes produced on NAS Alameda between approximately 1943 and 1956, except those discharged to the sewer system. Much of the waste disposed in this landfill would have been organic matter, which decomposes primarily into methane and carbon dioxide, two non-toxic gases. Over time, the production of these gases in a landfill decreases as the readily decomposable material is used up. Unless conditions in the landfill are unfavorable, much of the waste decomposition and concomitant gas production at IRP Site 1 would already have occurred. Appreciable gas generation may still be occurring, however.

Landfill gases are potential hazards for two reasons. First, methane is a combustible gas that can explode in the presence of an ignition source if concentrations in air exceed the Lower Explosive Limit (LEL) of 5 percent. Methane migrates through the soil into the atmosphere and can accumulate in enclosed structures, yielding an explosive mixture in air. Second, methane and carbon dioxide produced by normal decomposition in a landfill are forced out of the landfill by the pressure that builds up as they are produced. Such migration may be both lateral and vertical. As the methane and carbon dioxide migrate, they can carry with them toxic gases that may be present in the landfill from waste decomposition or evaporation of volatile wastes.

Another area where soil gases could potentially be hazardous is in the vicinity of soil, groundwater or subsurface waste containing significant concentrations of volatile organic compounds. Evaporation and subsequent upward migration of such volatile organic compounds would be particularly significant where they might accumulate in enclosed spaces, such as buildings, and expose site users to hazardous concentrations of these compounds.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Proposed Policy 9.6.p would maintain information regarding contamination and remedial activities at the project site in a publicly-accessible form. Proposed Policy 9.6.q would create a land use and construction permitting program that requires consideration of residual contamination at the project site. This would be an expansion of the current excavation permitting process under the City's Excavation Ordinance, which addresses potential health and safety issues for excavations that may encounter the marsh crust/subtidal zone excavation. Proposed Policy 8.4.l would adopt procedures that provide for adequate control measures for all buildings constructed on or near areas where surface emissions of hazardous soil gases may occur consistent with *NAS Reuse EIR* Mitigation Measure 4.

Existing General Plan Policies. There are no existing General Plan policies addressing exposure to subsurface gases.

Mitigation Measure HAZ-4: No mitigation measures are necessary. Implementation of the proposed policies described above will ensure that no significant impact results.

Impact HAZ-5: Future land uses at the project site could include the use, storage, transportation, or generation of hazardous materials. If these materials were improperly used, stored, transported, or generated, human health and/or the environment could be affected. (LTS)

Specific land uses at the project site have not been identified, but could potentially include businesses that use, store, generate, or dispose of significant quantities of hazardous materials or wastes.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. There are no proposed policies which address this impact.

Existing General Plan Policies. Policies 8.4.a through 8.4.i would help minimize this impact by supporting actions to handle hazardous waste and emergency response plans.

Other Existing Regulations. If businesses established at Alameda Point were to use, store, or dispose of hazardous materials, the businesses would be required to comply with federal, State, and local requirements for managing hazardous materials. Depending on the type and quantity of hazardous materials, these requirements could include the preparation of, implementation of, and training in plans, programs, and permits listed in Appendix I-1.

Mitigation Measure HAZ-5: No mitigation measures are necessary. Implementation of the existing policies and regulations described above will ensure that no significant impact results.

c. Significant Impacts and Mitigation Measures. One significant impacts related to hazards would result from implementation of the proposed GPA.

Impact HAZ-6: Construction workers, future site users, and/or ecological receptors could potentially be exposed to residual contamination in soils and groundwater. (S)

The US Navy is required to remediate each project site parcel for its intended use prior to transfer. This means that all areas of the site will be remediated consistent with the GPA, but not necessarily for unrestricted land use. Although remedial plans for all identified contamination have not yet been developed, it is clear that some potentially hazardous residual subsurface contamination will remain following the US Navy's remedial activities and transfer of the project site. For example, the RAP/ ROD for the Marsh Crust/Subtidal Zone contamination will allow soils with PAH concentrations exceeding human health risk thresholds to remain at the site, subject to land use controls to prevent human exposure to the contaminated materials. These types of land use controls require that a mechanism is available in perpetuity to enforce land use restrictions. Restrictions on land use may be forgotten or difficult to enforce over time or after the ownership of the property is transferred several times, which could potentially result in future human health or ecological impacts from the affected materials. In the case of the marsh crust/subtidal zone contamination, the City Excavation Ordinance establishes a permitting program to enforce the land use controls.

Existing and proposed policies that would help minimize this potential impact are described below.

Proposed GPA Policies. Proposed Policy 9.6.p would maintain information regarding contamination and remedial activities at the project site in a publicly-accessible form. Proposed Policy 9.6.q would create a land use and construction permitting program that requires consideration of residual contamination at the project site. This would be an expansion of the current excavation permitting process under the City's Excavation Ordinance, which addresses potential health and safety issues for excavations that may encounter the marsh crust/subtidal zone excavation. Proposed Policy 8.4.l would call for the adoption of procedures for control measures for all buildings constructed on or near areas where hazardous soil emissions could occur. The proposed GPA policies are consistent with Mitigation 2 and 3 of the *NAS Reuse EIR*, which have been adopted by the City (see Appendix C), address impacts from residual contamination.

Existing General Plan Policies. Policies 8.4.a through 8.4.h would help minimize this impact in the event that hazardous materials are uncovered during construction activities by supporting actions to handle hazardous waste and emergency response plans.

Mitigation Measure HAZ-6: The following implementing Policy shall be added to the Environmental Cleanup section of the GPA: "At the time of property transfer from the Navy to the City, the City shall ensure that environmental restrictions (i.e., deed restrictions) regarding Marsh Crust/subtidal zone excavation and shallow groundwater use are recorded." Implementation of the existing and proposed policies and the mitigation measure described above will ensure that no significant impact results.

V. ALTERNATIVES

The *CEQA Guidelines* require an EIR to present a reasonable range of alternatives to a project, or to the location of a project, under which most of the project's basic objectives could feasibly be attained. The considered alternatives should focus on the elimination or reduction of significant adverse impacts caused by the proposed project. The analysis of alternatives benefits decision-makers by providing more complete information about the impacts of land use decisions, and consequently a better understanding of the inter-relationships among all of the environmental topics under evaluation.

This EIR focuses on four alternatives to the GPA, which are designed to examine a range of buildout scenarios for Alameda Point. Since the project consists of reuse of a specific property to be transferred to the City by the Navy, the alternative analysis does not include the alternatives that would be located at sites other than Alameda Point. Table V-1 summarizes a potential buildout scenario for each of the four alternatives.

Each alternative is compared to the GPA, in terms of its effects on the environment relative to the significant impacts identified for the GPA. At the conclusion of the analysis of alternatives, an environmentally superior alternative is identified.

A brief background section that describes the other alternatives considered and rejected is presented in the "Background on the Development and Selection of the Alternatives " subsection at the end of this chapter.

The four alternatives evaluated include:

- **Preservation Alternative.** The Preservation alternative assumes that a GPA is adopted that is primarily designed to preserve the environmental conditions at Alameda Point and minimize impacts to Alameda and the surrounding region from Alameda Point re-use. This alternative assumes that the number of employees and residences would remain at a level similar to what existed in March 2002 (when the NOP for the Draft EIR was issued): approximately 1,000 employees and 268 occupied residential units.
- **No Project Alternative.** The No Project alternative assumes that the GPA is not adopted, and that existing regulations would continue to govern activities at Alameda Point. This alternative would continue the leasing of existing buildings located within the GPA Planning Area, consistent with the City's 1997 Master Use Permit (MUP) and Interim Lease Program for Alameda Point, which established a cap of 5,420 employees for interim uses and allows for

Table V-1: Comparison of Allowable 2020 Buildout Development

Land Use Categories	Units	GPA (Project)	Preservation Alternative[a]	No Project Alternative[a]	Mixed Used Alternative	Reuse Full Buildout Alternative
Light Industry/Business Park/Office	sq.ft.	1,140,000	921,000	921,000	2,355,000	4,105,000
Industrial/Warehousing	sq.ft.	430,500	678,000	678,000	0	0
Marina-Related Industry	sq.ft.	44,250	178,000	178,000	240,000	166,000
Civic/Institutional Buildings	sq.ft.	130,000	130,000	374,000	385,000	130,000
Commercial	sq.ft.	104,000	24,000	24,000	500,000	104,000
Visitor-Serving Recreation/Commercial	sq.ft.	130,000	234,000	234,000	234,000	130,000
Golf Clubhouse/Conference Facilities	sq.ft.	26,000	0	0	26,000	26,000
Hotel/Conference Center	sq.ft.	312,000	0	0	312,000	312,000
Total Square Feet		**2,316,750**	**2,165,000**	**2,409,000**	**4,052,000**	**4,973,000**
Sports Complex	ac.	57	0	0	57	57
Golf Course	ac.	214	0	0	214	214
Parks and Open Space	ac.	69	0	0	69	69
Total Acres		**340**	**0**	**0**	**340**	**340**
Marina Slips	slips	477	0	0	477	477
Liveaboards (10% of total slips)	slips	53	0	0	53	53
Total Slips		**530**	**0**	**0**	**530**	**530**
Total Jobs		**6,126**	**1,000**	**5,420**	**11,898**	**16,638**
Total Dwelling Units (Without Liveaboards)		**1,928**	**268**	**268**	**3,472**	**1,472**

[a] The buildout scenario for the Preservation and No Project alternative is limited by the number of jobs allowed.

Source: LSA Associates, Inc. and City of Alameda, 2002.

the occupation of 268 residential units. Some limited maintenance and upgrade of existing facilities would occur under new leases, but no significant improvements would be made to existing buildings or infrastructure within the GPA Planning Area. The No Project alternative is designed to meet the requirements for a No Project alternative pursuant to CEQA section 15126.6 (e).

- **Mixed Use Alternative.** The Mixed Use alternative assumes that a GPA is adopted, but that the intensity and density of development is increased to create a mixed-use/residential urban district. This alternative assumes at full buildout 1,544 more residential units and 5,722 more jobs than the proposed GPA. This alternative is provided in response to public comments made by AC Transit and other interested parties requesting that the EIR consider a "Transit Oriented" or "Smart Growth" alternative with densities and land uses that would support higher transit use.

- **Reuse Full Buildout Alternative.** The Reuse Full Buildout alternative assumes that the GPA is adopted, but that the intensity and density of development is increased, to create a mixed-use/job center. The Reuse Full Buildout alternative assumes at full buildout 456 fewer residential units, and 10,512 more jobs than the GPA. This alternative reflects the GPA proposed in 2001. This alternative is provided so readers can compare the project studied in the 2001 Draft EIR with the project now being proposed.

A. DESCRIPTION OF ALTERNATIVES

1. Preservation Alternative

Under this alternative, a GPA would be adopted primarily to preserve the environmental conditions at Alameda Point and minimize impacts to Alameda and the surrounding region from Alameda Point reuse. Under the Preservation alternative, the 268 residential units that are presently occupied at Alameda Point would remain occupied, but no new housing would be constructed. Existing building leases would continue under the City's current Interim Leasing Program and the 1997 Master Use Permit (MUP) for Alameda Point, with new leases executed only to replace existing business. Employment would remain the same (approximately 1,000 employees). Leased buildings would be upgraded to meet health and safety standards on an as-needed basis. Current unleased buildings would remain vacant. Facilities at Alameda Point would remain the same, and no major improvements or development would occur during the General Plan planning period. The site would be preserved in its existing condition. Required maintenance of existing facilities would continue, on an as-needed basis, but no significant new improvements would be made to the existing circulation or transit system, buildings, utilities, open space, or recreational facilities at Alameda Point. The proposed Seaplane Lagoon marina, Sports Complex, golf course, hotel/resort facility, and regional-serving parks would not be constructed.

The Preservation alternative allows for the lowest number of jobs (1,000) and households (268) of all the alternatives. The Preservation alternative has 1,660 fewer housing units and 5,126 fewer jobs than proposed in the GPA.

2. No Project Alternative

Under this alternative, the proposed GPA would not be adopted, and existing regulations governing activities at Alameda Point would continue. Existing buildings would continue to be leased under the City's current Interim Leasing Program and the 1997 Master Use Permit (MUP) for Alameda Point, which establishes an employment cap of 5,420 employees (37 percent of the total employment under the prior full operation of NAS Alameda). Interim uses complying with all the standards and requirements of the MUP would continue to be approved administratively. Leased buildings would be upgraded to meet health and safety standards or tenant needs. Alameda Point would generally remain in its current physical condition. Required maintenance of existing facilities would continue, on an as-needed basis, but no significant new improvements would be made to the existing

circulation or transit system, buildings, utilities, open space, or recreational facilities at Alameda Point. The proposed Seaplane Lagoon marina, Sports Complex, golf course, hotel/resort facility, and regional-serving parks would not be constructed.

Under the No Project alternative no new housing would be added at Alameda Point, due to the limitations of the existing General Plan designation and the interim lease program. The 268 housing units at Alameda Point would remain occupied, but no new housing would be constructed or improved. The No Project alternative allows for 5,420 jobs and 268 households, which is 1,660 fewer households and 706 fewer jobs than proposed in the GPA.

3. Mixed Use Alternative

Under the Mixed Use alternative, the proposed GPA land use designations would be adopted, but the number of housing units and amount of commercial development would be increased to establish an urban mixed-use community with a residential population of approximately 11,898. (The GPA is projected to provide homes for approximately 4,754 people.) This alternative proposes approximately 1,544 more households and 5,772 more jobs than the GPA. All other proposed land uses and improvements—including the sports complex, golf course, and hotel/resort—would occur. Under this alternative, investment in public improvements, such as transit improvements would be higher than in the GPA.

4. Reuse Full Buildout Alternative

The Reuse Full Buildout alternative reflects the development intensity and mix of uses that could occur under full buildout of the 2001 proposed GPA. Similar to the Mixed Use alternative and the currently proposed GPA, the Reuse Full Buildout alternative proposes a mixed use neighborhood containing light industry, office space, and residential uses. Under this alternative, fewer housing units are proposed (456 less than the GPA), but approximately 10,500 more jobs would be created than under the GPA. As with the Mixed Use alternative, all public improvements envisioned in the GPA would be implemented with this alternative.

B. ANALYSIS OF ALTERNATIVES

1. Land Use

The EIR found that all land use impacts associated with the GPA would be less than significant.

a. Preservation Alternative. Under this alternative, new development designed to integrate and incorporate Alameda Point into existing residential development to the east and into the community as a whole as proposed under the GPA, would not occur. Many structures at Alameda Point are older, in deteriorated condition, and surrounded by large expanses of hardscape. The condition of buildings would remain the same or could deteriorate. This alternative could eventually result in blighted conditions and land use impacts on adjacent neighborhoods, unless new outside funding

sources are identified. Under the GPA, this funding would be generated by development at Alameda Point.

b. No Project Alternative. Similar to the GPA, no significant land use impacts are expected to result from this alternative. However, similar to the Preservation alternative, the condition of buildings, would remain the same or could deteriorate. This alternative could eventually result in blighted conditions and land use impacts on adjacent neighborhoods, unless new outside funding sources are identified. Under the GPA, this funding would be generated by development at Alameda Point.

c. Reuse Full Buildout and Mixed Use Alternatives. The effects of these two alternatives are expected to essentially remain the same as under the GPA. Similar to the proposed GPA, no significant land use impacts are anticipated.

2. Population, Employment and Housing

The EIR determined that all population, employment, and housing impacts associated with the GPA would be less than significant. Table V-2 provides a comparison of the alternatives to the GPA in terms of housing created, affordable housing provided, total population, total jobs, and job-to-housing ratio.

a. Preservation Alternative. Under this alternative, population and housing at Alameda Point would remain at current levels. No new housing units would be built, and no new jobs would be created. Under this alternative, employment would remain the same, or could decrease due to changes in businesses that lease the existing buildings. This alternative would result in 415 fewer affordable housing units in Alameda, and would likely prevent the City of Alameda from meeting its regional housing needs obligation. Alameda Point is one of the few remaining areas within the City that would allow the development of housing needed to fulfill ABAG's Regional Housing Needs Allocation.

b. No Project Alternative. Under this alternative, population and housing at Alameda Point would remain the same as presently exists, but the level of employment would increase. No new housing units would be constructed. This alternative could result in an increase in jobs in the City without a corresponding increase in housing units. This alternative would result in 415 fewer affordable housing units in Alameda, and would likely prevent the City of Alameda from meeting its regional housing needs obligation. Alameda Point is one of the few remaining areas within the City that would allow the development of housing needed to fulfill ABAG's Regional Housing Needs Allocation. Of all the alternatives, the No Project alternative would create the least desirable jobs/housing balance, and this effect could be considered significant.

c. Mixed Use Alternative. The Mixed Use alternative proposes a greater increase in population, employment, and housing than the GPA. The large number of jobs proposed would be offset by the corresponding increase in housing units, creating a jobs/housing ratio similar to that of the GPA.

Table V-2: Comparison of Housing and Job Contributions for Each Alternative

	GPA (Project)	Preservation	No Project	Mixed Use	Reuse Full Buildout
Total Dwelling Units (Without Liveaboards)	**1,928**	**268**	**268**	**3,472**	**1,472**
Total Affordable Housing Units	615 (including 200 existing)	200 (existing)	200 (existing)	1,001 (including 200 existing)	501 (including 200 existing)
Total Population (2.40 persons/unit, includes liveaboards)	4,754	643	643	8,460	3,660
Total Jobs	6,126	1,000	5,420	11,898	16,638
Alameda Point Jobs/Housing Ratio	3.18	3.73	20.22	3.43	11.30

Sources: City of Alameda, 2002.

Similar to the GPA, this alternative would have a positive effect on the regional and local housing supply, and no significant population, employment, and housing impacts would result.

d. Reuse Full Buildout Alternative. The Reuse Full Buildout alternative proposes a substantial increase in employment and a decrease in housing and population compared to the GPA. This discrepancy would result in an increased demand on housing, relative to the GPA.

3. Visual Resources

The EIR determined that all visual resource impacts associated with the GPA would be less than significant.

a. Preservation Alternative. Under the Preservation alternative, no new construction, demolition of existing structures, nor significant adaptive reuse of existing buildings would occur at Alameda Point. Many structures at Alameda Point are older, in deteriorated condition, and surrounded by large expanses of hardscape. The condition of these buildings would remain the same or could deteriorate. This alternative, like the GPA, would preserve existing view corridors and the visual impacts associated with this alternative would be considered less than significant.

b. No Project Alternative. This alternative's potential effect on visual resources would be generally the same as the Preservation alternative.

c. Mixed Use Alternative. This alternative would create an overall beneficial aesthetic impact at Alameda Point and in the project vicinity similar to that of the GPA, by removing deteriorating buildings, eliminating open expanses of pavement, creating a greater continuity of land use, and introducing new public improvements, open spaces, and views.

As with the GPA, all new development would be required to comply with the City's Design Element and GPA policies to ensure view corridors from the Estuary waterfront. Scenic views to and from Alameda Point would be preserved.

d. Reuse Full Buildout Alternative. The effects of this alternative on visual resources would be essentially the same as those described for the Mixed Use alternative and the GPA.

4. Public Services

The EIR determined that public service impacts associated with the GPA would be less than significant. Although the growth in population caused by GPA would increase demand on public services, the EIR determined that existing ordinances and programs would render this impact less than significant.

a. Preservation Alternative. Under the Preservation alternative, the additional demand for public services caused by population and job growth would not occur. Demand for police and fire services would remain roughly at current levels, and would be less than that expected under the GPA. However, it is possible that vacant buildings could become nuisances, attracting and/or increasing the likelihood of vandalism and criminal activity, and resulting in a slightly increased need for police and fire services over the current condition.

b. No Project Alternative. This alternative's potential effect on public services would be generally the same as that of the Preservation alternative, although the increased level of leasing that could occur under this alternative may reduce the potential for further decay of facilities. The increased occupancy over the Preservation alternative may enable provision of additional security personnel for the area.

c. Mixed Use Alternative. The impacts of this alternative would be similar to that of the GPA. Population and employment increases as a result of this alternative would result in an increased number of calls for police and fire protection services. This increased demand would not require the construction of new facilities and could be accommodated by additional personnel. The larger number of housing units proposed under this alternative would increase student enrollment in local schools, and the School Facilities Mitigation Fee would adequately mitigate this impact. As with the GPA, implementation of this alternative would result in a positive effect on recreational resources due to the addition of parks and open space acreage including construction of the golf course, hotel/resort complex, and sports complex, all of which would contribute to an increase in the ratio of park acreage per resident within the City.

d. Reuse Full Buildout Alternative. The impacts of this alternative would also be similar to that of the GPA. Employment increases would result in an increased number of calls for police and fire protection services. This increased demand would not require the construction of new police and fire facilities and would be accommodated by additional personnel. The smaller number of housing units proposed would result in a smaller increase in student enrollment at City schools than under the

GPA. The School Facilities Mitigation Fee would adequately mitigate this impact. Similar to the GPA, implementation of this alternative would result in a positive effect on recreational resources due to the addition of parks and open space acreage to the City, and construction of the golf course, hotel/resort complex, and sports complex, all of which would contribute to an increase in the park acreage per resident ratio within the City.

5. Water Resources

The EIR identified two potentially significant impacts on water resources. One impact is related to water quality impacts due to construction activities. The other impact is related to potential contamination of deep aquifers by existing wells, which would be mitigated by a condition requiring future development to cap all existing wells at Alameda Point, in accordance with the California Department of Water Resources Well Standards, as recommended.

a. Preservation Alternative. Under the Preservation alternative, the less-than-significant impacts to water resources from construction activities, placement of new housing within the 100-year flood zone, and maintenance dredging of the lagoon associated with the GPA, would be reduced even further.

Under the Preservation alternative, a policy would be adopted to cap all the existing wells in accordance with the California Department of Water Resources Well Standards, as recommended for the GPA. However, a major new outside funding source would need to be secured to ensure that future impacts to water resources do not occur under this alternative. Alameda Point's infrastructure requires a major upgrade, including complete replacement of most of the existing drainage infrastructure. Flooding has historically occurred at Alameda Point due to poor drainage conditions, and over time the condition of existing drainage systems will continue to deteriorate, unless major improvements are made. Under this alternative, outside funding sources for the required upgrades would need to be identified, because no development would be generated at Alameda Point to fund the improvements. No such sources have been identified at this time.

b. No Project Alternative. This alternative's potential effect on water resources would be generally the same as under the Preservation alternative, as would the need for a major new funding source to ensure water quality is not impacted.

c. Mixed Use Alternative. Similar to the GPA, construction under the Mixed Use alternative would decrease the amount of impervious hardscape surfaces at Alameda Point, and would result in the installation of landscaping that would decrease urban stormwater runoff. GPA policies adopted under this alternative would integrate Alameda Point into the City's existing water quality and runoff management programs. All construction activities would be required to comply with these policies. Similar to the GPA, flood mapping of Alameda Point would occur and any existing wells at Alameda Point would be abandoned in accordance with the California Department of Water Resources Well Standards. Impacts would be similar that of the GPA.

d. Reuse Full Buildout Alternative. The effects of this alternative on water resources would be essentially the same as those described for the Mixed Use alternative and the proposed GPA.

6. Historic and Cultural Resources

The EIR determined that historic and cultural resource impacts associated with the GPA would be less than significant.

a. Preservation Alternative. Under this alternative, no new construction would occur that could cause the removal of a significant historic structure or space within the District. However, this alternative could result in the deterioration of structures due to long-term vacancy and lack of funds for maintenance. Unless additional funding sources are identified to preserve and maintain vacant historic structures, such deterioration could be extensive enough to require the ultimate demolition of some structures.

b. No Project Alternative. This alternative's potential effect on historic and cultural resources would be generally similar to the Preservation alternative. However, leasing allowed under this alternative would increase use of some buildings and generate some maintenance and improvements in those buildings, thus avoiding further deterioration.

c. Mixed Use Alternative. Under this alternative, GPA policies would be adopted to protect the character of the historic district. Impacts from this alternative would be essentially the same as under the GPA.

d. Reuse Full Buildout Alternative. The effects of this alternative on historic and cultural resources would be essentially the same as those described for the Mixed Use Retail alternative and the proposed GPA.

7. Biological Resources

The EIR identified one potentially significant impact related to bats in vacant buildings that would require mitigation to reduce the impact to less than significant: a bat survey of all vacant buildings and a suitable relocation plan for any special-status bats prepared and approved prior to commencement of construction activities.

a. Preservation Alternative. Under this alternative, no buildings would be demolished, so the potential impact to bats would be avoided.

b. No Project Alternative. Under this alternative, no buildings would demolished so the potential impact to bats would be avoided.

c. Mixed Use Alternative. This alternative would result in the same significant impact identified for the GPA. The mitigation measure recommended for the GPA would reduce this impact to a less-than-significant level.

d. Reuse Full Buildout Alternative. The effects of this alternative on biological resources would be essentially the same as those described for the Mixed Use alternative and the GPA.

8. Geology and Soils

The EIR did not identify any significant impacts related to geology and soils. The EIR determined that the risks in all cases would be less than significant as a result of existing ordinances, regulations, and standards that govern the safety of all new development.

a. Preservation Alternative. The risk of geology and soils impacts to structures and buildings would be increased under the Preservation alternative relative to the GPA. Existing buildings that remain vacant and are not seismically upgraded would remain subject to damage from liquefaction, differential settlement, lateral spreading, or other seismic hazards.

b. No Project Alternative. This alternative's potential risk to buildings and structures would be similar to the Preservation alternative. Increased use of some buildings under the No Project alternative may result in a larger number of building upgrades to meet minimum health and safety standards relative to the Preservation alternative; however, these upgrades would not necessarily include the seismic upgrades necessary to ensure that no soil/geology impacts occur.

c. Mixed Use Alternative. This alternative would result in essentially the same less-than-significant impacts as under the GPA. Existing buildings would be upgraded and improved for new tenants and new buildings would be constructed in compliance with current building code and safety regulations designed to minimize risks to future employees and residents.

d. Reuse Full Buildout Alternative. The effects of this alternative related to geology and soils would be essentially the same as those described for the Mixed Use alternative and the GPA.

9. Utilities

The GPA would result in two potentially significant impacts related to utilities. Buildout under the GPA would cause an increase in wastewater flows and an increase in solid waste. In both cases, the EIR identified conditions that could be placed on development to ensure that wastewater or solid waste utilities impacts would be reduced to a less than significant level.

a. Preservation Alternative. Under this alternative, the two potentially significant impacts that were identified for the project related to wastewater and solid waste would not occur.

b. No Project Alternative. This alternative's potential effect on utilities would be slightly greater than the Preservation alternative and slightly less than the GPA.

c. Mixed Use Alternative. Under this alternative, impacts would be incrementally greater than the GPA, due to the increased intensity of development allowed. However, no new significant impacts are anticipated under this alternative. The mitigation measures proposed for the GPA would also be effective in reducing the impacts to less than significant for the Mixed Use alternative.

d. Reuse Full Buildout Alternative. This alternative's potential effect on utilities would be generally the same as under the Mixed Use alternative.

10. Transportation and Circulation

Transportation and circulation impacts that would result from the alternatives are discussed below. The EIR found the following significant impacts associated with the GPA:

- Construction-related traffic impacts, which may be mitigated;
- Traffic impacts at two Oakland intersections, which are significant and unavoidable;
- Traffic impacts within the Posey Tube, which is significant and unavoidable;
- Traffic impacts on the MTS roadway network, which are significant and unavoidable; and
- Impacts on transit systems, which may be mitigated to a less than significant level.

a. Preservation Alternative. The Preservation alternative would avoid most of the construction-related traffic and transit system impacts since no new buildings would be constructed, no buildings would be demolished, and no new jobs or housing would be created.

Due to regional growth, the Preservation alternative would not avoid the unacceptable roadway and intersection operations. As shown in the tables below, even under the Preservation alternative, the two intersections in Oakland, the Posey Tube, and the two MTS roadway segments in Oakland will experience a LOS F in 2020, due to regional growth.

b. No Project Alternative. The No Project alternative would also avoid most of the construction-related impacts because no new buildings would be constructed. (Some renovation activity would occur that would generate a small amount of construction-related traffic.) However, the impact regarding increased transit demand would likely not be avoided since the number of jobs at Alameda would be expected to increase under the Interim Leasing Program, while the minimal transit services at Alameda Point would not increase.

As with the Preservation alternative, the No Project alternative would not avoid the LOS F condition at the two intersections in Oakland, the Posey Tube, and the two MTS roadway segments in Oakland. In each of these locations, the LOS in 2020 will remain at LOS F even under the No Project alternative, due to regional growth.

c. Mixed Use Alternative. Similar to the GPA, the Mixed Use alternative would result in impacts associated with construction traffic due to new construction and demolition of existing buildings; however, as with the GPA, these impacts can be mitigated to a less-than-significant level.

The Mixed Use alternative would also result in significant transit demand due to the significant increase in jobs and housing units; however, as with the GPA, these impacts can be mitigated to a less-than-significant level. Although the impact on transit would not be avoided under this alternative, the increased density would facilitate development of additional transit service, and would provide ridership and financial support for additional transit services greater than would be available under the GPA and the Preservation and No Project alternatives.

The Mixed Use alternative would also result in the same LOS F conditions as the GPA. However, as shown in Tables V-3 through V5 below, this alternative would also result in additional impacts at the intersection of Sherman Street and Buena Vista Avenue in Alameda and High Street and Oakport Street in Oakland, and at one additional MTS roadway segment (7th Street, Harrison Street to Jackson Street).

d. Reuse Full Buildout Alternative. Similar to the GPA, the Reuse Full Buildout alternative would result in impacts associated with construction- and operation-period traffic due to new construction and demolition of existing buildings. The Reuse Full Buildout alternative would also cause significant transit demand due to the increase in jobs and housing units. However, the increased employment density under this alternative would facilitate development of additional transit service, and would provide ridership and financial support for additional transit services greater than would be available under the Preservation and No Project alternatives. The impacts on construction traffic and transit could be mitigated to a less-than-significant level with the mitigations proposed for the GPA.

The Reuse Full Buildout alternative would also result in the same LOS F conditions as the GPA. However, as shown in the Tables V-3 and V-5 below, this alternative would also result in additional impacts at four additional Alameda intersections, two additional Oakland intersections, and seven additional MTS roadway segments.

11. Air Quality

The EIR determined that the GPA would result in three air quality impacts:

- Construction-related impacts, which may be mitigated;
- Traffic-related air quality impacts associated with exceedance of the BAAQMD threshold of 80 lbs/day for NOx, which cannot be mitigated; and
- Inconsistency with the population projections for the 2000 Clean Air Plan, which cannot be mitigated.

Table V-3: Comparison of 2020 AM Peak Hour Intersection LOS by Alternative

Intersection	GPA (Project)		Preservation		No Project		Mixed Use		Reuse Full Buildout	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
City of Alameda										
Atlantic Avenue/Main Street[b]	C	24.6	C	27.0	C	24.2	C	28.2	C	33.5
Atlantic Avenue/West Campus[b]	B	13.1	B	10.1	B	12.0	B	14.6	B	15.1
Atlantic Avenue/Webster Street[b,c]	D	46.5	D	37.8	D	39.9	D	41.9	D	41.3
Atlantic Avenue/Constitution[b]	D	44.9	D	44.6	D	45.2	D	54.3	**E**	**58.0**
Pacific Avenue/Main Street	A	7.6	A	8.4	A	8.1	A	7.6	A	7.8
Lincoln Avenue/Webster Street[b]	B	15.8	B	11.3	B	12.5	C	23.2	**F**	**82.9**
Lincoln Avenue/Constitution	C	32.9	C	32.7	C	35.0	D	37.4	D	45.3
Central Avenue/Webster Street[b]	C	31.8	C	29.9	C	31.3	C	30.5	D	47.3
Central Avenue/8th Avenue[b]	D	37.1	C	34.4	D	35.9	D	35.3	**E**	**62.2**
Clement Avenue/Park Street[b]	B	12.8	B	12.4	B	12.6	B	12.8	B	12.9
Buena Vista Avenue/Park Street[b]	B	16.7	B	16.6	B	15.8	B	15.7	C	25.5
Lincoln Avenue/Park Street[b]	B	15.1	B	14.8	B	15.2	B	15.1	B	16.1
Tilden Way/Fernside Boulevard	C	20.5	B	18.3	B	19.5	B	18.9	B	19.2
Lincoln Avenue/Grand Street	B	15.7	B	14.2	B	14.9	B	17.3	C	23.1
Otis Drive/Fernside Boulevard[b]	B	15.8	B	17.1	B	18.8	B	18.2	B	18.2
Otis Drive/Broadway[b]	B	14.0	B	14.2	B	13.8	B	13.7	B	13.9
Otis Drive/High Street[b]	B	18.6	B	18.8	B	19.0	B	18.0	B	17.2
Fernside Boulevard/High Street[b,g]	C	27.7	C	24.9	C	23.5	C	25.5	C	27.7
Sherman Street/Central Avenue[d]	C	26.1	C	25.6	C	26.5	C	26.1	**C**	**30.4**
Sherman Street/Buena Vista Avenue	B	19.3	C	20.3	B	19.5	**F**	**113.9**	B	19.9
Buena Vista Avenue/Webster Street	B	13.3	B	13.3	B	13.6	B	11.9	B	13.2
Buena Vista Avenue/Constitution Way	C	20.3	B	18.6	C	20.4	B	15.7	C	25.8
Tinker Avenue/Main Street[b]	A	9.7	A	8.2	A	9.5	B	13.9	**E**	**76.6**
Tinker Avenue/Webster Street[e]	A	9.4	A	8.7	A	8.7	A	9.3	B	10.0
Tinker Avenue/Mosley Avenue[b,f]	A	8.3	A	9.3	A	8.7	A	2.6	B	11.3
Tinker Avenue/Fifth Street[b]	A	9.8	A	9.8	A	9.6	B	12.0	C	31.5
Webster Street/College Entrance[b]	B	15.3	B	13.1	B	13.1	B	13.9	B	13.0
Atlantic Avenue/Fifth Street[b]	A	9.5	A	7.8	A	8.7	B	10.5	B	10.2
Mariner Square Drive/Constitution Way	A	9.6	B	10.2	A	8.8	A	7.4	A	9.8
City of Oakland										
Oak Street/5th I-80 on-ramp	A	9.8	A	9.7	A	9.7	B	10.5	A	9.9
Oak Street/6th I-80 off-ramp	A	9.3	A	9.3	A	9.3	A	9.0	A	9.4

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Shaded cells indicate intersection operations at an unacceptable LOS.

Table V-3 *continued*

Intersection	GPA (Project)		Preservation		No Project		Mixed Use		Reuse Full Buildout	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Jackson Street/7th Street	A	4.1	A	1.4	A	3.0	A	1.5	A	1.4
Jackson Street/6th Street	**F**	**overflow[g]**	**F**	**overflow**	**F**	**overflow**	**F**	**overflow**	**F**	**overflow**
Jackson Street/5th Street	A	9.9	B	9.9	B	9.9	B	9.9	B	9.9
Harrison Street/8th Street[b]	A	8.0	A	8.0	A	8.6	A	8.5	A	8.5
Harrison Street/7th Street[b]	A	8.5	A	8.6	C	25.0	C	28.8	C	31.0
Webster Street/8th Street[b,g]	C	26.8	C	26.0	C	32.5	C	29.7	C	24.1
Webster Street/7th Street[b]	B	18.0	B	13.4	B	15.4	B	17.5	C	27.3
Broadway/5th Street[b]	C	26.2	C	25.8	C	27.8	C	30.6	D	50.7
Brush Street/12th Street	**F**	**overflow**	**F**	**overflow**	**F**	**overflow**	**F**	**overflow**	**F**	**overflow**
Brush Street/11th Street	B	12.5	A	8.4	B	11.9	B	10.5	C	23.4
Brush Street/5th Street	A	3.8	A	3.8	A	3.8	A	3.8	A	3.8
Madison Street/5th Street	A	9.0	A	8.9	A	9.0	A	8.9	A	9.1
Madison Street/6th Street	A	8.1	A	8.1	A	8.1	A	8.2	A	8.2
Madison Street/7th Street	A	8.1	A	8.1	A	8.1	A	8.2	A	8.2
Brush Street/7th Street	A	8.0	A	7.3	A	7.7	A	7.5	A	8.6
Castro Street/12th Street	B	11.4	B	11.4	B	11.4	B	11.2	B	11.4
Clay Street/7th Street[b,e]	B	11.6	B	11.3	B	12.0	B	11.6	B	12.0
Broadway/6th Street[b]	C	20.6	C	24.5	C	21.9	C	24.2	C	22.6
Broadway/7th Street[b]	B	15.7	B	13.3	B	14.6	B	14.0	C	27.4
Franklin Street/8th Street[b]	A	4.9	A	5.1	A	5.0	A	5.2	A	5.1
King Way/5th Street	B	11.0	A	6.8	A	4.5	A	8.8	B	10.6
King Way/7th Street	A	5.4	A	5.6	A	5.3	A	5.2	A	4.8
Webster Street/11th Street[b]	A	7.6	A	7.7	A	7.6	A	7.2	A	7.8
Webster Street/12th Street[b]	A	8.4	A	8.2	A	8.4	A	9.1	A	8.0
Harrison Street/11th Street[b]	A	7.5	A	7.6	A	7.6	A	7.4	A	7.6
Harrison Street/12th Street[b]	B	11.0	B	10.8	B	10.7	B	10.8	B	10.7
High Street/Jensen Street	C	22.7	C	22.2	C	22.3	C	25.2	C	25.1
High Street/Oakport Street[c]	C	34.4	D	37.3	C	34.1	D	38.5	D	41.3
Alameda Avenue/42nd Street/Oakport Street	C	20.7	C	20.1	B	19.8	B	19.8	C	23.9
High Street/Coliseum Way[c]	C	30.0	C	29.6	C	30.0	C	32.7	C	34.1
29th Avenue/Ford Street[e,c]	A	9.5	A	9.5	A	9.5	A	9.7	A	9.6

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Shaded cells indicate intersection operations at an unacceptable LOS.

Source: DKS Associates, 2002.

Table V-4: Comparison of 2020 PM Peak Hour Intersection LOS by Alternative

Intersection	GPA (Project)		Preservation		No Project		Mixed Use		Reuse Full Buildout	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
City of Alameda										
Atlantic Avenue/Main Street[b]	C	23.8	C	21.7	C	20.1	C	23.6	C	24.3
Atlantic Avenue/West Campus[b]	B	10.2	A	9.1	A	9.7	B	11.0	B	11.1
Atlantic Avenue/Webster Street[b]	D	35.1	C	29.3	D	33.5	C	32.2	C	33.4
Atlantic Avenue/Constitution[b]	D	40.0	D	40.6	D	34.4	D	47.2	D	37.9
Pacific Avenue/Main Street	A	6.3	A	7.4	A	6.6	A	5.9	A	5.4
Lincoln Avenue/Webster Street[b]	B	9.9	A	9.7	A	9.9	B	10.3	C	22.3
Lincoln Avenue/Constitution	C	29.5	C	28.8	C	28.2	C	29.3	C	28.4
Central Avenue/Webster Street[b]	C	30.5	C	30.2	C	30.5	C	30.7	C	31.5
Central Avenue/8th Avenue[b]	C	32.8	C	32.0	C	31.9	C	32.8	D	35.8
Clement Avenue/Park Street[b]	B	16.2	B	15.2	B	15.8	B	17.8	B	19.1
Buena Vista Avenue/Park Street[b]	B	14.8	B	14.3	B	15.1	B	15.2	B	17.0
Lincoln Avenue/Park Street[b]	B	19.7	B	17.8	B	19.6	C	20.2	C	25.5
Tilden Way/Fernside Boulevard	C	22.4	C	20.7	C	21.4	C	21.7	C	22.7
Lincoln Avenue/Grand Street	B	16.0	B	14.6	B	15.9	B	16.1	B	19.1
Otis Drive/Fernside Boulevard[b]	D	38.7	D	45.8	D	39.6	D	38.9	D	45.9
Otis Drive/Broadway[b]	B	16.4	B	16.9	B	16.4	B	15.8	B	15.7
Otis Drive/High Street[b]	C	23.1	C	21.5	C	22.2	C	20.9	B	16.1
Fernside Boulevard/High Street[b,d]	C	22.8	C	21.7	C	25.0	C	25.9	D	44.0
Sherman Street/Central Avenue[d]	C	21.0	C	21.7	C	21.4	C	21.3	C	20.4
Sherman Street/Buena Vista Avenue	C	22.1	C	21.9	C	21.5	**F**	**103.1**	C	21.4
Buena Vista Avenue/Webster Street	B	10.7	B	10.5	B	10.5	B	10.4	C	31.9
Buena Vista Avenue/Constitution Way	C	20.5	C	20.5	C	22.2	B	15.9	C	22.7
Tinker Avenue/Main Street[b]	B	10.4	A	8.6	A	8.4	D	48.6	**E**	**73.8**
Tinker Avenue/Webster Street[e]	C	25.9	B	16.2	C	23.6	D	39.9	D	49.7
Tinker Avenue/Mosley Avenue[b,f]	A	6.5	A	6.6	A	6.4	A	1.4	A	9.0
Tinker Avenue/Fifth Street[b]	B	10.4	A	10.0	B	10.3	B	12.1	B	15.5
Webster Street/College Entrance[b]	B	10.5	B	10.2	B	10.4	B	10.5	B	10.0
Atlantic Avenue/Fifth Street[b]	A	9.2	A	7.7	A	8.5	B	10.1	B	10.4
Mariner Square Drive/Constitution Way	D	45.0	D	48.6	D	40.2	D	36.3	D	48.6
City of Oakland										
Oak Street/5th I-80 on-ramp	B	12.1	B	12.3	B	12.3	B	12.3	B	12.1
Oak Street/6th I-80 off-ramp	A	9.3	A	9.4	A	9.3	A	9.1	A	9.2

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Shaded cells indicate intersection operations at an unacceptable LOS.

Table V-4 *continued*

Intersection	GPA (Project)		Preservation		No Project		Mixed Use		Reuse Full Buildout	
	LOS	Delay (sec/veh)[a]	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Jackson Street/7th Street	B	11.3	B	11.5	B	16.0	B	11.4	B	12.2
Jackson Street/6th Street	**F**	**overflow[a]**	**F**	**overflow**	**F**	**289.3**	**F**	**419.4**	**F**	**484.2**
Jackson Street/5th Street	B	24.2	C	23.7	B	11.3	B	24.3	B	26.2
Harrison Street/8th Street[b]	A	7.3	A	7.5	A	7.4	A	7.3	A	7.3
Harrison Street/7th Street[b]	B	18.9	B	15.1	B	18.1	C	21.0	D	41.4
Webster Street/8th Street[b,d]	D	24.2	D	23.7	C	30.4	C	24.3	C	26.2
Webster Street/7th Street[b]	B	11.0	B	10.7	B	10.7	B	11.3	B	10.8
Broadway/5th Street[b]	D	39.8	D	40.4	D	40.5	D	39.3	D	40.1
Brush Street/12th Street	D	37.9	D	36.2	D	36.6	D	39.8	D	40.1
Brush Street/11th Street	A	6.7	A	7.0	A	6.9	A	7.0	A	6.4
Brush Street/5th Street	A	3.5	A	3.5	A	3.5	A	3.5	A	3.5
Madison Street/5th Street	B	10.9	B	10.8	B	10.9	B	10.9	B	11.0
Madison Street/6th Street	A	8.8	A	8.8	A	8.5	A	8.8	A	9.2
Madison Street/7th Street	B	10.1	B	10.1	A	9.9	B	10.1	B	10.2
Brush Street/7th Street	A	7.8	A	8.0	A	7.8	A	7.8	A	7.8
Castro Street/12th Street	B	15.2	B	14.9	B	14.9	B	15.1	B	16.4
Clay Street/7th Street[b,e]	B	12.0	B	12.0	B	11.8	B	11.9	B	11.9
Broadway/6th Street[b]	D	20.7	C	20.6	C	20.8	C	21.6	C	22.7
Broadway/7th Street[b]	B	16.3	B	16.1	B	16.2	B	16.4	B	16.1
Franklin Street/8th Street[b]	A	4.6	A	4.8	A	4.6	A	4.6	A	4.4
King Way/5th Street	A	7.0	A	7.1	A	7.1	A	7.0	A	7.0
King Way/7th Street	A	6.7	A	6.6	A	6.6	A	6.7	A	6.7
Webster Street/11th Street[b]	A	8.5	A	8.5	A	8.5	A	8.5	A	8.5
Webster Street/12th Street[b]	A	9.0	A	8.9	A	8.9	A	9.0	A	8.9
Harrison Street/11th Street[b]	B	10.3	B	10.2	B	10.3	B	10.4	B	10.3
Harrison Street/12th Street[b]	B	10.9	B	10.6	B	10.9	B	10.9	B	10.8
High Street/Jensen Street	D	47.5	C	33.8	D	47.4	D	47.7	**E**	**59.3**
High Street/Oakport Street[c]	D	46.5	D	52.0	D	44.5	**E**	**59.9**	**E**	**55.5**
Alameda Avenue/42nd Street/Oakport Street	C	26.2	C	24.0	C	26.8	D	37.6	**E**	**60.8**
High Street/Coliseum Way[c]	C	29.7	C	29.0	C	28.8	C	29.0	C	28.7
29th Avenue/Ford Street[e,c]	B	11.7	B	11.1	B	11.6	B	12.3	B	13.3

[a] sec/veh = seconds per vehicle.
[b] Locations with heavy pedestrian activities.
[c] 2020 level of service improved by future roadway improvement.
[d] Analyzed with 1997 HCM methodology due to software limitations on unique intersection design (all others use 2000 HCM methodology).
[e] Unsignalized intersection.
[f] Intersection assumed as signalized; final control to be determined from site traffic studies.
[g] Delay is outside the capabilities of the traffic model to accurately determine.

Note: Shaded cells indicate intersection operations at an unacceptable LOS.

Source: DKS Associates, 2002.

Table V-5: Comparison of 2020 PM Peak Hour Roadway Segment LOS by Alternative

Analysis Roadway	Direction	GPA (Project)		Preservation		No Project		Mixed Use		Reuse Full Buildout	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Freeways											
I-80/I-580, I-580 to north of Berkeley	NB	1.14	F	1.15	F	1.15	F	1.13	F	1.11	F
I-80/I-580, north of Berkeley to I-580	SB	1.12	F	1.11	F	1.12	F	1.10	F	1.11	F
I-80, Toll Plaza to I-80/I-580	EB	1.14	F	1.14	F	1.14	F	1.10	F	1.13	F
I-80, I-80/I-580 to Toll Plaza	WB	0.88	D	0.87	D	0.87	D	0.82	D	0.87	D
I-880,south of 98th Avenue to I-980	NB	1.03	F	1.04	F	1.03	F	1.01	F	1.03	F
I-880, I-980 to south of 98th Avenue	SB	1.05	F	1.05	F	1.05	F	1.02	F	1.04	F
I-880, I-980 to I-80/I-580	NB	0.84	D	0.85	D	0.84	D	0.85	D	0.83	D
I-880,I-80/I-580 to I-980	SB	0.70	C	0.70	C	0.70	B	0.68	B	0.69	B
I-980, I-880 to I-580	NB	0.94	E	0.91	E	0.94	E	0.93	E	0.98	E
I-980, I-580 to I-880	SB	0.48	A	0.48	A	0.48	A	0.46	A	0.48	A
I-580, I-80 to I-980/Hwy 24	EB	0.92	E	0.92	E	0.92	E	0.91	E	0.92	E
I-580, I-980/Hwy 24 to I-80	WB	0.77	C	0.77	C	0.76	C	0.74	C	0.78	C
SR 24, I-580 to Fish Ranch Road	EB	1.28	F	1.28	F	1.28	F	1.27	F	1.30	F
SR 24, Fish Ranch Road to I-580	WB	1.41	F	1.40	F	1.40	F	1.29	F	1.39	F
Alameda Arterial Roadway Segments											
SR 61 (Doolittle Drive), Otis Drive to Oakland City limits	EB	0.71	C	0.69	B	0.70	C	0.76	C	0.78	C
SR 61 (Doolittle Drive), Oakland City limits to Otis Drive	WB	0.84	D	0.84	D	0.84	D	0.81	D	0.80	C
SR 61 (Otis Drive), Park Street to Doolittle Drive	EB	0.84	D	0.82	D	0.83	D	0.84	D	0.85	D
SR 61 (Otis Drive), Doolittle Drive to Park Street	WB	0.87	D	0.89	D	0.86	D	0.82	D	0.81	D
SR 61 (Broadway), Otis Drive to Encinal Avenue	NB	0.45	A	0.46	A	0.45	A	0.41	A	0.40	A
SR 61 (Broadway), Encinal Avenue to Otis Drive	SB	0.55	A	0.54	A	0.55	A	0.56	A	0.57	A
SR 61 (Encinal Avenue), Central Avenue to Broadway	EB	0.34	A	0.32	A	0.35	A	0.38	A	0.49	A
SR 61 (Encinal Avenue), Broadway to Central Avenue	WB	0.21	A	0.22	A	0.22	A	0.20	A	0.20	A
SR 61 (Central Avenue), Webster Street to Encinal Avenue	EB	0.78	C	0.74	C	0.81	D	0.80	D	**1.00**	**F**
SR 61 (Central Avenue), Encinal Avenue to Webster Street	WB	0.42	A	0.39	A	0.40	A	0.42	A	0.43	A
SR 260 (Webster Street), Constitution Way to 7th Street (Posey Tube) (partially in Oakland)	NB	**1.13**	**F**	1.05	F	**1.13**	**F**	**1.17**	**F**	**1.25**	**F**
SR 260 (Webster Street), Constitution Way to 7th Street (Webster Tube) (partially in Oakland)	SB	0.94	E	0.92	E	0.93	E	0.94	E	0.94	E
SR 260 (Webster Street), Atlantic Avenue to Constitution Way	NB	0.58	A	0.53	A	0.58	A	0.77	C	0.46	A
SR 260 (Webster Street), Constitution Way to Atlantic Avenue	SB	0.76	C	0.74	C	0.75	C	0.54	A	0.72	C

Note: Cells that are shaded indicate impacted roadway segments (alternative causes segment to degrade to LOS F or causes an increase in the V/C ratio of 3 percent or more at an intersection that already operates at LOS F).

Table V-5 *continued*

Analysis Roadway	Direction	GPA (Project)		Preservation		No Project		Mixed Use		Reuse Full Buildout	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
SR 260 (Webster Street), Central Avenue to Atlantic Avenue	NB	0.81	D	0.84	D	0.81	D	0.77	C	0.84	D
SR 260 (Webster Street), Atlantic Avenue to Central Avenue	SB	1.14	F	1.14	F	**1.18**	**F**	1.07	F	**1.23**	**F**
Atlantic Avenue, Main Street to Constitution Way	EB	0.64	B	0.33	A	0.59	C	0.79	C	0.85	D
Atlantic Avenue, Constitution Way to Main Street	WB	0.49	A	0.28	A	0.34	A	0.56	A	0.53	A
Constitution Way, Atlantic Avenue to Webster Street	NB	0.81	D	0.85	D	0.81	D	0.90	E	0.78	C
Constitution Way, Webster Street to Atlantic Avenue	SB	1.05	F	1.04	F	1.02	F	1.01	E	1.00	F
Constitution Way, Lincoln Avenue to Atlantic Avenue	NB	0.74	C	0.78	C	0.75	C	0.92	E	0.64	B
Constitution Way, Atlantic Avenue to Lincoln Avenue	SB	1.07	F	1.06	F	**1.09**	**F**	1.01	F	**1.15**	**F**
8th Street, Central Avenue to Lincoln Avenue	NB	0.81	D	0.92	E	0.81	D	0.78	C	0.68	B
8th Street, Lincoln Avenue to Central Avenue	SB	0.90	D	0.90	D	0.90	D	0.92	E	0.86	E
Main Street, Central Avenue to Saratoga Street	NB	0.06	A	0.04	A	0.06	A	0.09	A	0.12	A
Main Street, Saratoga Street to Central Avenue	SB	0.11	A	0.06	A	0.12	A	0.19	A	0.39	A
Central Avenue, Main Street to Webster Street	EB	0.64	B	0.59	A	0.63	B	0.65	B	0.66	B
Central Avenue, Webster Street to Main Street	WB	0.47	A	0.46	A	0.46	A	0.47	A	0.45	A
Park Street, Clement Street to 29th Avenue (partially in Oakland)	NB	0.92	E	0.87	D	0.92	E	0.95	E	**1.01**	**F**
Park Street, 29th Avenue to Clement Street (partially in Oakland)	SB	0.66	B	0.65	B	0.66	B	0.68	B	0.66	B
Park Street, Lincoln Avenue/Tilden Way to Clement Street	NB	0.95	E	0.88	D	0.95	E	0.97	E	**1.04**	**F**
Park Street, Clement Street to Lincoln Avenue/Tilden Way	SB	0.91	E	0.90	E	0.93	D	0.94	E	0.92	E
Park Street, Otis Drive to Lincoln Avenue/Tilden Way	NB	0.28	A	0.24	A	0.27	A	0.29	A	0.33	A
Park Street, Lincoln Avenue/Tilden Way to Otis Drive	SB	0.30	A	0.29	A	0.29	A	0.32	A	0.29	A
High Street, Otis Drive to Fernside Drive (High Street Bridge)	NB	0.97	E	0.93	E	0.98	E	**1.00**	**F**	**1.09**	**F**
High Street, Fernside Drive to Otis Drive (High Street Bridge)	SB	0.77	C	0.75	C	0.76	C	0.76	C	0.75	C
High Street (Bridge), Fernside Drive to Howard Street	NB	0.97	E	0.93	E	0.98	E	**1.00**	**F**	**1.09**	**F**
High Street (Bridge), Howard Street to Fernside Drive	SB	0.77	C	0.75	C	0.6	C	0.76	C	0.75	C

Note: Cells that are shaded indicate impacted roadway segments (alternative causes segment to degrade to LOS F or causes an increase in the V/C ratio of 3 percent or more at an intersection that already operates at LOS F).

Table V-5 *continued*

Analysis Roadway	Direction	GPA (Project)		Preservation		No Project		Mixed Use		Reuse Full Buildout	
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Oakland Arterial Roadway Segments											
7th Street, Harrison Street (SR 260) to Jackson Street	EB	0.99	E	0.95	E	0.99	E	**1.02**	**F**	**1.10**	**F**
Fruitvale Avenue/Tilden Way, Park Street to I-880 (partially in Alameda)	NB	0.55	A	0.50	A	0.54	A	0.60	A	0.63	B
Fruitvale Avenue/Tilden Way, I-880 to Park Street (partially in Alameda)	SB	0.50	A	0.46	A	0.47	A	0.49	A	0.49	A
High Street, Howard Street to I-880	NB	**1.15**	**F**	1.06	F	**1.14**	**F**	**1.17**	**F**	**1.26**	**F**
High Street, I-880 to Howard Street	SB	0.85	D	0.83	D	0.84	D	0.85	D	0.82	D
Alameda Avenue, Fruitvale Avenue to High Street	EB	**1.28**	**F**	1.17	F	**1.25**	**F**	**1.40**	**F**	**1.45**	**F**
Alameda Avenue, High Street to Fruitvale Avenue	WB	0.91	E	0.92	E	0.89	D	0.92	E	0.99	E

Note: Cells that are shaded indicate impacted roadway segments (alternative causes segment to degrade to LOS F or causes an increase in the V/C ratio of 3 percent or more at an intersection that already operates at LOS F).

Source: DKS Associates, July 2002.

a. Preservation Alternative. The Preservation alternative would avoid the construction-period air quality impacts and the inconsistency with the 2000 Clean Air Plan (CAP) impact. The traffic-related air quality impact would be less than significant due to the limited amount of traffic generated by Alameda Point under the Preservation alternative.

b. No Project Alternative. The No Project alternative would avoid the construction- period air quality impacts and the inconsistency with the 2000 Clean Air Plan (CAP) impact due to the lack of construction and no new housing under this alternative. However, the traffic-related air quality impact would not be avoided because the number of trips would also exceed the BAAQMD threshold of 80 lbs/day for NOx. The No Project alternative would produce 102.3 lbs/day of NOx.[264]

c. Mixed Use Alternative. The mixed use alternative would result in the same impacts as with the GPA.

d. Reuse Full Buildout Alternative. The Reuse Full Buildout alternative would result in the same impacts as with the GPA.

[264] LSA Associates, Inc., 2002.

12. Noise

The EIR identified two potentially significant impacts: one related to construction-period noise, and one related to traffic noise on Tinker Avenue (both of which can be mitigated under the GPA).

a. Preservation Alternative. The Preservation alternative would avoid the construction-related noise impact, but would not avoid the traffic-related noise on Tinker Avenue. The Tinker Avenue noise was originally identified in the Catellus Project EIR, and is expected to occur even without any additional development at Alameda Point, therefore, the recommended mitigation would be required in this alternative.

b. No Project Alternative. Under the No Project alternative, no significant construction or demolition would occur; therefore, the construction-related noise impact would be avoided. However, the noise impacts projected for Tinker Avenue from traffic noise would not be avoided under this alternative.

c. Mixed Use Alternative. Similar to the GPA , the Mixed Use alternative may result in the same two noise impacts, but the mitigation recommended for the GPA would reduce the impacts to less than significant for this alternative.

d. Reuse Full Buildout Alternative. Similar to the GPA , the Reuse Full Buildout alternative would result in the same two noise impacts and require the same two mitigations.

13. Hazards

The EIR determined that the GPA would result in one potentially significant impact related to exposure of ecological receptors, people, and/or construction workers to contaminated soils. The EIR recommends a change in GPA policy to require recorded deed restrictions to reduce this impact to a less-than-significant level.

a. Preservation Alternative. Under the Preservation alternative, the potential hazardous material impacts would be similar to the GPA because the site must be remediated consistent with protection of human health and the environment for the intended use by the Navy or by a private entity under contract with the Navy to a level that is less than significant.

b. No Project Alternative. This alternative's potential effect on hazards would be generally the same as the Preservation alternative.

c. Mixed Use Alternative. As with the GPA, this alternative would result in development that would require cleanup and remediation activities at Alameda Point.

d. Reuse Full Buildout Alternative. The effects of this alternative related to hazards would be essentially the same as those described for the Mixed Use alternative and the GPA.

C. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an environmentally superior alternative. If the "No Project" alternative is determined to be the environmentally superior alternative, CEQA requires that the EIR identify an environmentally superior alternative among the other alternatives (*CEQA Guidelines* Section 15126.6(e)). The identification of the environmentally superior alterative results from a comparison of impacts that would result from each alternative, as shown in Table V-6. This table presents a comparative evaluation of the ability of each alternative to avoid or substantially reduce each significant impact of the proposed project. The table shows the level of significance after mitigation for each impact of each alternative and also identifies whether an alternative would result in an impact not associated with the proposed project.

Based on this analysis, the Preservation alternative is the environmentally superior alternative. The Preservation alternative would result in fewer impacts and fewer significant unavoidable impacts than any of the other alternatives. The Preservation alternative would also minimize the effects of some impacts that would result from the other alternatives and the GPA.

D. ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

When considering approval of a project for which an EIR has been prepared that identifies one or more significant environmental effects, CEQA requires that the lead agency "balance the economic, legal, social, technological, or other benefits of the proposed project against its unavoidable environmental risks" (PRC 329089(a)(3)). Therefore, when considering the proposed GPA and the potentially feasible alternatives to the GPA, the community of Alameda and their decision makers must consider not only the environmental impacts but also the social, economic, and other benefits of the proposed GPA and the available alternatives.

Table V-7 evaluates the four alternatives relative to their ability to meet the project objectives as defined in Chapter III.c.1. The project objectives are a reflection of some of the "economic, legal, social, technological, or other benefits" that the community is trying to accomplish with the reuse of the former Naval Station at Alameda Point.

As shown in Table V-7, the Mixed Use alternative and the Reuse Full Buildout alternative ranked higher than the proposed GPA in terms of meeting the project objectives, while the Preservation and No Project alternatives ranked significantly lower in terms of meeting those objectives. In contrast, Table V-6 illustrated that, in terms of environmental effects, the Preservation and No

Project alternatives ranked higher than the proposed GPA, while the Mixed Use and the Reuse Full Buildout alternatives ranked lower in terms of environmental effects because the would have more environmental impacts than the GPA. Therefore, as required by CEQA, the City must balance its desire to achieve project objectives against the environmental impacts associated with each alternative when considering the proposed GPA.

Table V-6: Comparison of Alternatives to Impacts of GPA

Environmental Impacts	Level of Significance After Mitigation[a]				
	GPA (Project)	**Preservation**	**No Project**	**Mixed Use**	**Reuse Full Buildout**
A. LAND USE	LTS	0	0	0	0
No significant impact related to land use would result from implementation of the proposed General Plan Amendment.					
B. POPULATION, EMPLOYMENT, AND HOUSING					
POP-1: Implementation of the GPA would result in substantial population, employment, and housing growth.	LTS	-1 (Impact is less than GPA)	-1	+1 (Impact would be more than GPA)	+1
POP-2: Implementation of the GPA may adversely impact the City's ratio of jobs to employed residents.	LTS	0 (Impact would be same as GPA)	+1	0	+1
C. VISUAL RESOURCES					
VIS-1: Buildout of the GPA would significantly alter scenic or sensitive views from and into Alameda Point.	LTS	0	0	0	0
VIS-2: Increased light or glare from development may affect views.	LTS	0	0	0	0
D. PUBLIC SERVICES					
SVCS-1: Buildout of the GPA would increase the demand for fire and emergency medical services and police protection.	LTS	-1	0	0	0
SVCS-2: Buildout of the GPA would increase demand on AUSD schools.	LTS	-1	0	0	0
E. WATER RESOURCES					
WATER-1: The proposed project may result in placement of housing within the 100-year flood hazard area or exposure of people or structures to flooding.	LTS	0	0	0	0
WATER-2: Maintenance dredging in the vicinity of the piers and Seaplane Lagoon may cause impacts to water quality at the dredging and disposal sites.	LTS	-1	-1	0	0

Notes: The numbered impacts (e.g., POP–1, HYD-1, etc.) are impact statements that were identified for the proposed Project. The impact statements that are not numbered and shown in *italic* type are impact statements that are unique to one or more of the alternatives and were not identified as an impact of the proposed Project. Since the alternatives were evaluated at a less quantitative level than the project, the alternative impact statements are typically more general than those identified for the project.

LTS = Less than significant.
0 = Alternative's impacts are similar to the GPA.
-1 = Alternative's impacts are less than the GPA.
+1 = Alternative's impacts are more than the GPA.

[a] (M) indicates that mitigation is necessary for less-than-significant impact.

Table V-6 *continued*

Environmental Impacts	Level of Significance After Mitigation[a]				
	GPA (Project)	**Preservation**	**No Project**	**Mixed Use**	**Reuse Full Buildout**
WATER-3: Construction activities and post-construction site uses could result in degradation of water quality in the Oakland Estuary and the San Francisco Bay by reducing the quality of storm water runoff.	LTS (M)[a]	+1 (from existing runoff)	+1 (from existing runoff)	0	0
WATER-4: Existing wells at Alameda Point could potentially become conduits for surface and groundwater contaminants to affect deeper aquifers.	LTS (M)	+1	+1	0	0
F. HISTORIC AND CULTURAL RESOURCES					
HIST-1: New development that may occur under buildout of the GPA could impact the character of the Historic District.	LTS	+1	+1	0	0
G. BIOLOGICAL RESOURCES					
BIO-1: New development adjacent to the wildlife refuge could lead to increased predation of the California least tern.	LTS	0	0	0	0
BIO-2: The GPA could result in an increased presence of people and domestic animals in the Northwest Territories sub-area, which could impact the California least tern and the California brown pelican.	LTS	-1	-1	0	0
BIO-3: Buildout of the GPA would result in increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, and western gull nesting, as well as the haul-out site for the harbor seal near Breakwater Island.	LTS	-1	-1	0	0
BIO-4: Berthfront sediment dredging and in-water construction activities in the Marina District sub-area could impact fish and other aquatic organisms.	LTS	-1	-1	0	0
BIO-5: Stormwater runoff from the golf course, paved areas, construction, and marina-related activities could create an adverse impact on wildlife and sensitive habitats.	LTS	-1	-1	0	0
BIO-6: Development that may occur under buildout of the GPA could impact pallid bats and western mastiff bats that may roost in the abandoned buildings on-site.	LTS (M)	-1	-1	0	0

Notes: The numbered impacts (e.g., POP–1, HYD-1, etc.) are impact statements that were identified for the proposed Project. The impact statements that are not numbered and shown in *italic* type are impact statements that are unique to one or more of the alternatives and were not identified as an impact of the proposed Project. Since the alternatives were evaluated at a less quantitative level than the project, the alternative impact statements are typically more general than those identified for the project.

LTS = Less than significant.
0 = Alternative's impacts are similar to the GPA.
-1 = Alternative's impacts are less than the GPA.
+1 = Alternative's impacts are more than the GPA.

[a] (M) indicates that mitigation is necessary for less-than-significant impact.

Table V-6 *continued*

Environmental Impacts	Level of Significance After Mitigation[a]				
	GPA (Project)	**Preservation**	**No Project**	**Mixed Use**	**Reuse Full Buildout**
H. GEOLOGY AND SOILS					
GEO-1: The number of people and structures exposed to seismic shaking would increase under buildout of the GPA.	LTS	-1	-1	0	0
GEO-2: Structures, roads, and utilities could be adversely affected by liquefaction.	LTS	+1	+1	0	0
GEO-3: Differential settlement may occur, which can damage foundations, tilt or buckle structural supports, and mis-align horizontal features, such as doorways, utility connections, or other rigid transitions.	LTS	+1	+1	0	0
GEO-4: Flooding of the interior of Alameda Point could occur if the perimeter dikes were breached.	LTS	+1	+1	0	0
GEO-5: Expansive soils could cause damage to foundations or pavements.	LTS	+1	+1	0	0
GEO-6: In the event of a dike failure, lateral spreading may occur upslope of the dike failure.	LTS	+1	+1	0	0
I. UTILITIES					
UTIL-1: Buildout under the GPA would increase water demand.	LTS	-1	-1	+1	+1
UTIL-2: Buildout of the GPA would contribute to peak wastewater flows that could exceed the capacity of existing sewage transport facilities.	S (M)	-1	-1	+1	+1
UTIL-3: Increased generation of solid waste as a result of buildout of the GPA could jeopardize the City's compliance with State and county waste diversion requirements.	S (M)	-1	-1	+1	+1
J. TRANSPORTATION AND CIRCULATION					
TRANS-1: Development allowed by the GPA could generate additional truck traffic and temporarily close lanes during construction periods which could impede local circulation.	LTS (M)	-1	-1	0	0
TRANS-2: Buildout under the GPA would contribute to significant traffic impacts at the intersections of Jackson Street/6th Street, and Brush Street/12th Street in Oakland.	SU	0	0	+1	+1

Notes: The numbered impacts (e.g., POP–1, HYD-1, etc.) are impact statements that were identified for the proposed Project. The impact statements that are not numbered and shown in *italic* type are impact statements that are unique to one or more of the alternatives and were not identified as an impact of the proposed Project. Since the alternatives were evaluated at a less quantitative level than the project, the alternative impact statements are typically more general than those identified for the project.

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Table V-6 *continued*

Environmental Impacts	Level of Significance After Mitigation[a]				
	GPA (Project)	**Preservation**	**No Project**	**Mixed Use**	**Reuse Full Buildout**
TRANS-3: Development under buildout of the GPA would contribute to an unacceptable level of service (LOS) F within the Posey Tube in 2020.	SU	0	0	+1	+1
TRANS-4: Development under buildout of the GPA may cause some roadway segments on the MTS to operate at LOS F or increase the V/C ratio by more than 3 percent on segments that would operate at LOS F without the GPA.	SU	-1	-1	0	0
TRANS-5: Buildout of the GPA could significantly impact the existing regional transit system.	LTS (M)	-1	-1	0	0
K. AIR QUALITY					
AIR-1: Construction and demolition activities associated with new development under the GPA would generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions.	LTS (M)	-1	-1	0	0
AIR-2: Buildout of the GPA would contribute to exceedance of the BAAQMD threshold for NOx.	SU	-1	0	0	0
AIR-3: Adoption of the GPA would result in a General Plan that is not consistent with the population assumptions used in the *Bay Area 2000 Clean Air Plan* (CAP).	SU	-1	-1	0	0
L. NOISE					
NOISE-1: Buildout of the GPA could result in demolition, construction, utility extension and improvements, and remodeling activities which could impact neighboring land uses.	LTS (M)	-1	0	0	0
NOISE-2: Buildout of the GPA would result in traffic related noise impacts along the Tinker Avenue extension through western Alameda.	LTS (M)	0	0	0	0
M. HAZARDS					
HAZ-1: Construction workers, future site users, and sensitive ecological receptors could potentially be exposed to contaminated soils and groundwater.	LTS	-1	-1	0	0

Notes: The numbered impacts (e.g., POP–1, HYD-1, etc.) are impact statements that were identified for the proposed Project. The impact statements that are not numbered and shown in *italic* type are impact statements that are unique to one or more of the alternatives and were not identified as an impact of the proposed Project. Since the alternatives were evaluated at a less quantitative level than the project, the alternative impact statements are typically more general than those identified for the project.

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Table V-6 *continued*

Environmental Impacts	Level of Significance After Mitigation[a]				
	GPA (Project)	**Preservation**	**No Project**	**Mixed Use**	**Reuse Full Buildout**
HAZ-2: There is a potential for contaminated subsurface materials to be discovered during development of the project site. These materials could potentially present a health risk to construction workers and/or future workers and residents at the project site.	LTS	-1	-1	0	0
HAZ-3: Demolition or renovation of the buildings at Alameda Point could release lead dust and asbestos fibers, potentially affecting construction workers.	LTS	-1	-1	0	0
HAZ-4: Implementation of the GPA could result in human exposure to surface emissions of subsurface gases during routine use of and development in areas where surface emissions of hazardous soil gas occur.	LTS	0	0	0	0
HAZ-5: Future land uses at the project site could include the use, storage, transportation, or generation of hazardous materials. If these materials were improperly used, stored, transported, or generated, human health and/or the environment could be affected.	LTS	0	0	0	0
HAZ-6: Construction workers, future site users, and/or ecological receptors could potentially be exposed to residual contamination in soils and groundwater.	LTS (M)	0	0	0	0
Conclusions:					
Alternative Rating	0	-14	-9	+6	+7
Alternative Ranking		1	2	3	4

Notes: The numbered impacts (e.g., POP–1, HYD-1, etc.) are impact statements that were identified for the proposed Project. The impact statements that are not numbered and shown in *italic* type are impact statements that are unique to one or more of the alternatives and were not identified as an impact of the proposed Project. Since the alternatives were evaluated at a less quantitative level than the project, the alternative impact statements are typically more general than those identified for the project.

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Source: LSA Associates, Inc., 2002.

Table V-7: Comparative Analysis–Ability to Meet Project Objectives

Objective	GPA	Preser-vation	No Project	Mixed Use	Reuse Full Buildout
Seamless integration of Alameda Point with City	●	–	–	●	●
Foster a vibrant new neighborhood	●	–	–	●	●
Maximize waterfront accessibility	●	–	–	●	●
De-emphasize the automobile, make new development compatible with transportation capacity	■	–	■	■	■
Ensure maximum economic development	■	–	–	●	●
Create a mixed-use environment	●	–	–	●	●
Establish neighborhood centers	●	–	–	●	●
Attain land use buildout	■	–	–	●	●
Provide for the City's Regional Housing Need	●	–	–	●	■
Facilitate a no-cost economic development conveyance	●	–	–	●	●
Alternative Rating	**7**	**-10**	**-9**	**9**	**8**
Alternative Ranking	**3**	**4**	**4**	**1**	**2**

Legend: ● Completely achieves objective (+1) ■ Partially achieves objective (0) – Fails to achieve objective (-1)

Source: City of Alameda, 2002.

E. BACKGROUND ON THE DEVELOPMENT AND SELECTION OF THE ALTERNATIVES

1. Extrapolating Information Concerning Impacts of Other Alternatives

Information regarding the impacts of other alternatives can be found in this EIR, by extrapolating information from the foregoing analysis of the Project and above-described alternatives. There are literally as many potential alternatives to the Project as there are buildings proposed for development under the GPA. In other words, the addition or deletion of a commercial building or a housing unit, or any combination thereof, could be called an "alternative" to the proposed project. The general and site specific impacts of adding or deleting such buildings can be extrapolated from this EIR.

Some environmental impacts discussed in this EIR are more general to the project, because they are generated regardless of where specific buildings are located. Population, demand for public services, and traffic impacts are examples of these general impacts. Other impacts are more site specific, because they result from the location of a particular building. Historical, biological and visual impacts are examples of such site-specific impacts.

By reviewing the impact and alternatives analysis contained in this EIR, the reader can determine, for example, how a reduction in the number of housing units in the Project may result in an incremental reduction of the general impacts of the Project. That is, by eliminating 1 of the 1928 residential units the population impacts of the residential component of the Project can be reduced by about 1/1928. Thus, because this EIR provides information concerning the impacts of the project and each of the above-described alternatives, an analysis of a numerous other project alternatives can be obtained.

2. Overview

Substantial public input was provided on future development of the GPA Planning Area throughout the programmatic planning process that led to the preparation of the *NAS Alameda Community Reuse Plan* (*Reuse Plan*). The City also held numerous community meetings to solicit ideas and comments from the public regarding the specific redevelopment of Alameda in the years since the preparation of the *Reuse Plan*. Table I-1, included in Chapter I, Introduction, details the public participation process to date. Many of the ideas and comments received from the public have been incorporated into the proposed GPA, and others are reflected in the EIR alternatives selected and analyzed above or they were reflected in the alternatives that were evaluated in the *NAS Reuse EIR*.

Consideration of alternatives for the Alameda Point GPA began during development of the reuse program for NAS Alameda (now Alameda Point), as reflected in the *NAS Reuse EIR*. As disclosed in the *NAS Reuse EIR*, the City determined locational alternatives to be infeasible since the project consists of reuse of a specific property to be transferred to the City by the Navy. The *NAS Reuse EIR* evaluated five Reuse Full Buildout alternatives, as follows:

- **No Project**. The No Project alternative would have retained the area under federal ownership and in caretaker status (mothballed), with no reuse by the community.
- **Reuse Plan**. The Reuse Plan, which was the proposed project, consisted of a transit-oriented mixed-use alternative, with some reuse of existing buildings.
- **Seaport.** The Seaport alternative proposed the development of a cargo seaport plus mixed-use development, including development of a college campus. This alternative would have allowed for a higher percentage of residential development than the proposed project. This alternative proposed a new vehicular connection to Oakland.
- **Residential.** The Residential alternative proposed a substantially higher percentage of residential use than the proposed project, and included development of a college campus.
- **Reduced Density.** The Reduced Density alternative proposed mixed-use similar to the Reuse Plan, but at lower densities and intensities.

3. Alternatives Considered and Rejected in this EIR

During the preparation of the proposed GPA, and in response to comments from the public on the Notice of Preparation for this EIR, the City considered a number of ideas that were not carried forward as formal alternatives. Each alternative that was considered by the City during the preparation of the proposed GPA, but rejected as infeasible during the scooping process, is briefly described below. An explanation of why the City determined each of these alternatives to be infeasible and not necessary to provide a reasonable range of alternatives is also provided.

The following alternatives were determined to be infeasible and rejected for further in-depth analysis:

- Transit Alternative
- Maximize Housing Alternative

a. Transit Alternative. The Transit alternative was proposed by a member of the public during the EIR scoping process. This alternative was proposed to include an average housing density of 40 units per acre (which is almost 100 percent higher than the current maximum density permitted within the City and beyond the authority of the City to adopt), limit residential parking to one space per housing unit, elimination of free parking for single occupancy non-residential vehicles, mandatory BART and ferry shuttle service, elimination of free parking for ferry users, a land use pattern which would produce a jobs/housing balance of 2.5 to 1, and a system of providing incentives for employers to hire Alameda residents.

A number of the features identified in this alternative are similar to or are included within the project or one or more of the alternatives fully evaluated in this EIR. The project's proposed jobs housing ratio is approximately 3.1 to 1. The proposed GPA also includes transit policies that include the establishment or expansion of transit shuttles to BART and ferry terminals, and the establishment of a TSM program that could include parking restrictions and/or other incentives to reduce single occupancy vehicle use. The key feature of this alternative that differs from the project and all the other alternatives, is the combination of residential densities averaging 40 units per acre and the requirement to maintain a 2.5 to 1 jobs to housing ratio. Under such requirements, the Transit alternative would likely produce housing in the range of 5,000 to 6,000 units and corresponding job production of 12,500 to 15,000 jobs. In combination with aggressive TSM programs proposed, such an alternative would not be feasible without the construction of high a capacity transit system almost certainly requiring a fixed guide way between the cities of Alameda and Oakland. Such a system does not currently exist within the City of Alameda and cannot, within the scope of this EIR, be determined to be feasible. Consequently, this alternative was not brought forward for additional analysis.

b. Maximize Housing Alternative. This alternative brought forward by a member of the public during the scoping process for this EIR, is proposed to "enable decision makers to visualize changes to existing limits on housing construction" and would "prioritize housing." Specifically, the alternative would be "based on a sensitivity analysis (prepared by consultants preparing the EIR), maximize the amount of housing of the Alameda Point development program, taking into account all traffic and air quality mitigations into account and assuming changes to the City Charter to allow multi-family constructions and higher densities."

To a substantial extent, the Mixed Use alternative fully evaluated in the Alternatives chapter achieves the objective of the Maximize Housing alternative with the exception of considering housing densities not permitted under the City's Charter. The Maximize Housing alternative was not carried forward because not only is it outside the City's authority to adopt land uses with densities outside Charter limits, but such an alternative, without the provision of high capacity transit facilities which cannot be demonstrated as feasible within the scope of this EIR, would significant aggravate the traffic and air quality impacts already identified in the Mixed Use alternative.

VI. CEQA-REQUIRED CONCLUSIONS

As required by CEQA, this chapter presents discussions related to growth inducement; significant irreversible environmental changes; cumulative impacts; effects found not to be significant; unavoidable significant effects; and the relationship between short-term and long-term uses of the environment. The focus of this chapter is on the environmental effects of the proposed Alameda Point GPA policies and the growth it envisions. Future development projects could have project-specific impacts which would be addressed, as appropriate, on a project-by-project basis pursuant to CEQA based on specific development proposals.

A. GROWTH INDUCEMENT

A project is considered growth-inducing if it would directly or indirectly foster or remove obstacles to economic or population growth or the construction of additional housing.[265] Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand and development of new residential subdivisions or industrial parks in areas that currently are only sparsely developed or are undeveloped.

The GPA would facilitate new development and redevelopment within Alameda Point which would generate population, employment and economic growth over existing conditions as discussed in Chapters III and IV of this EIR. This project will induce growth in Alameda and the surrounding area; however, this growth will be limited by the physical constraints of an island community and the availability of limited infill sites outside of the Alameda Point planning area. While this development would require the construction of some new infrastructure, these infrastructure improvements would primarily serve the Alameda Point area. Alameda is largely a built-out community. This project represents one of the only large-tract redevelopment opportunities. Other development in Alameda will be infill. While new job growth at Alameda Point could generate economic activity outside of Alameda, it is speculative to predict to what extent this activity may occur.

B. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

An EIR must identify any significant irreversible environmental changes that could be caused by the proposed project. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. Irretrievable com-

[265] *CEQA Guidelines*, 2000. Section 15126.2(d).

mitments of resources should be evaluated to assure that such current consumption is justified.[266] The *CEQA Guidelines* describe three distinct categories of significant irreversible changes: 1) changes in land use which would commit future generations to specific uses; 2) irreversible changes from environmental actions; and 3) consumption of nonrenewable resources.

1. Changes in Land Use Which Would Commit Future Generations

The GPA would establish land use policy for the reuse and redevelopment of Alameda Point by amending the City's General Plan. Buildout of the proposed GPA would commit future generations to the reuse and redevelopment of up to 1,444 acres. While the GPA would allow for new development at Alameda Point, this development would occur as redevelopment of previously developed and currently underutilized areas. The land use change that would occur would be from a military base to mixed-use urban development, a commercial marina, a wildlife refuge, and a golf course.

2. Irreversible Changes from Environmental Actions

Irreversible changes to the physical environment could occur from accidental releases of hazardous materials associated with development. However, compliance with hazardous materials regulations and policies, as outlined in Chapter IV.M, Hazards, is expected to maintain this potential impact as less-than-significant. No other irreversible changes would result from the adoption and implementation of the GPA.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. No agricultural lands would be converted and no access to mining reserves would be lost with implementation of the GPA. Development that may occur under the GPA would result in the consumption of some nonrenewable resources during construction and operation, such as electricity, natural gas, gasoline, and construction materials.

C. CUMULATIVE IMPACTS

According to CEQA (Section 21083), a project may have a significant effect on the environment requiring disclosure in an EIR if its possible effects are individually limited but "cumulatively considerable." Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects. Evaluation of cumulative effects should reflect the severity of impacts as well as the likelihood of their occurrence, although the level of detail need not be as great as that for evaluation of project-specific impacts.

[266] *CEQA Guidelines*, 2000, Section 15126.2(c)

Section 15130 of the *CEQA Guidelines* provides direction regarding cumulative impact analysis as follows:

- An EIR should not discuss cumulative impacts that do not result in part from the proposed project;
- A lead agency may determine that an identified cumulative impact is less than significant, and shall briefly identify facts and analysis in the EIR supporting its determination;
- A lead agency may determine a project's incremental effect is not cumulatively considerable, and therefore is not significant, and shall briefly describe in the EIR the basis of its determination; and
- A lead agency may determine a project's cumulatively considerable contribution to a significant cumulative impact may be rendered less than cumulatively considerable and therefore residually not significant, if the project implements or funds its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

1. Cumulative Impact Analysis Methodology

The analysis of cumulative impacts for each environmental factor can employ one of two methods to establish the effects of other past, current, and probable future projects. A lead agency may select a list of projects, including those outside the control of the agency, or alternatively, a summary of projections. These projections may be from an adopted general plan or related planning document, or from a prior environmental document that has been adopted or certified, and that describe or evaluate regional or area-wide conditions contributing to the cumulative impact.

Table VI-1 lists applicable plans and projects for this cumulative impact analysis. The table identifies each environmental factor for which cumulative impacts are analyzed, and which plan(s) or project(s) were used in that analysis.

2. Cumulative Impact Analysis

Each environmental topic evaluated in Chapter IV, Setting, Impacts, and Mitigation Measures, is discussed below in terms of cumulative impacts.

a. Land Use. The GPA would allow the development of a mixture of residential, commercial, recreational, and civic land uses which would alter the land uses in the area. Large scale land use changes would result from buildout of the proposed GPA in combination with past projects, other current projects, and probable future projects. Base reuse efforts would result in land uses that would be more compatible with the character of the local community than the prior military use.

The project would not result in significant cumulative land use impacts relative to community cohesion, consistency with planning documents or policies, consistency with habitat or natural

Table VI-1: Plans and Probable Future Projects used in Cumulative Impact Analysis

Project Name	Agency	Description	Status	Environmental Factors Analyzed
Plans				
General Plan	City of Alameda	City-wide plan	Element update and EIR certified 1991, current through 2010	Public services Traffic Air quality Noise
General Plan	City of Oakland	City-wide plan	Last updated to include Estuary Policy Plan Element 1999, current through 2015.	Public services Traffic Air quality Noise
Projects				
Alameda Point Wildlife Refuge	USFWS	Wildlife refuge consisting of 565 upland acres and 413 submerged acres of land at Alameda Point. (CA least tern colony)	EA adopted 2000	Land use Biology
Catellus Mixed Use Development	City of Alameda	215-acre project involving reuse of FISC Alameda; mixed use	Buildout in 2015	Land use, Population, employment, housing Visual
Oakland Army Base Redevelopment District	City of Oakland	1,731-acre project. Light industrial and business reuse of OARB and surrounding area; rail and marine terminals	EIR certified in July 2002	Land use Visual Cultural resources
-50 Foot Navigation Improvements	Corps of Engineers and Port of Oakland	Project to dredge Oakland Outer and Inner harbors to -50 MLLW Construct 1,500-foot diameter turning basin near Alameda Gateway	EIS/EIR complete Construction in progress. Completion by approximately 2005.	Biology Water quality
Bay Bridge Replacement	Caltrans	Replacement of the Bay Bridge from Yerba Buena Island to Oakland	EIS complete Construction approximately 2002-2006	Biology Water quality
Reuse of Bay Area Military Bases	Multiple agencies	Conversion from military to community uses, including demolitions	In various stages of reuse; Buildout: Unknown	Land use Cultural resources

Source: City of Alameda, 2001.

community conservation plans, or compatibility with other area land uses. Moreover, the redevelopment and reuse of Alameda Point would afford opportunities to provide maximum feasible public access to the Bay, a substantial cumulative environmental benefit.

The GPA would not induce growth on adjacent or nearby properties. The area of the GPA is constrained by the Bay on three sides and by existing development on the remaining side. The GPA would not interfere with existing development and no significant land use or planning impacts would result from implementation of the GPA.

b. Population, Employment, and Housing.

Impact: Substantial population and housing growth.

As discussed in Chapter IV.C, Population, Employment and Housing, the proposed Project would result in a substantial increase in population, employment and housing. The provision of housing units is projected to exceed the number of units normally needed to serve new jobs that would be generated under the GPA.[267] The GPA provides for up to 1,981 housing units at Alameda Point for 6,124, which would exceed the demand generated by jobs at Alameda Point by approximately 756 units. This excess will assist the City in achieving its Fair Share Allocation.

This increase in housing units and job-generating uses at Alameda Point would, in the near-term, represent a balance and would contribute positively to the City's and region's ratio of employed residents to jobs, and would not be considered a significant cumulative impact on housing.

The Bay Area region and Alameda County have both achieved an approximate balance of jobs and employed residents and ABAG predicts that this balance will generally be maintained over the next 20 years as shown in Table VI-2.

> Mitigation Measures: No mitigation measures would be necessary to address the project's cumulative impacts related to the region's jobs/housing balance.

c. Visual Resources. In combination with other Bay Area base conversions, the proposed project would result in an overall visual setting more rich and less homogeneously industrial in nature. In addition, by improving public access, base conversions would cumulatively increase visual access to San Francisco Bay. This would be a substantial environmental benefit.

Cumulatively, the need for nighttime illumination would not be substantially different than currently exists. Modern security lighting, however, is available in designs that minimize light off-site scatter,

[267] 20 percent of new jobs generally generate the need for new housing. The GPA would generate housing for approximately 30 percent of new jobs.

and the cumulative visual effect is expected to be a reduction in light and glare. This would be an environmental benefit.

d. Public Services. In combination with the USFWS proposed wildlife refuge, the proposed project includes approximately 850 acres of parks and other open space. This would be a substantial cumulative environmental benefit.

Impact: Increased demand for fire and police services.

The GPA includes policies that address increased demand for police and fire services that could result from the buildout of the GPA. As a result, the cumulative effect of the GPA would not be considered significant.

Mitigation. No mitigation measures would be necessary for cumulative impacts to fire and police services.

Impact: Increased demand for school services.

In combination with past projects, current projects, and probable future projects, buildout of the GPA would cumulatively increase demand for AUSD services. As presented in Chapter IV.D, Public Services, the GPA and SB 50 include measures that will fully mitigate its contribution to this impact to a less-than-significant level.

Mitigation Measures. No mitigation measures would be necessary for cumulative school impacts.

e. Water Resources.

Impact: Construction-related increases in erosion and sedimentation/turbidity.

The U.S. EPA does not identify San Francisco Bay waters as significantly impacted by turbidity. Construction of component projects under the GPA concurrently with other nearby land- and water-based construction could substantially increase turbidity of receiving waters. This would be considered a potential significant cumulative impact to water quality.

Ground disturbance during construction of land-side projects could result in erosion and transport of eroded material to receiving waters, substantially increasing turbidity. Disturbance of sediments by dredging equipment during construction of water-side projects could also substantially increase turbidity.

With implementation of the mitigation measures described in Chapter IV.E, Water Resources, the GPA's incremental effect to water quality would not be considered cumulatively significant.

Mitigation Measures. No mitigation measures would be necessary.

Impact: Increases in 303(d) pollutants and toxics.

The quality of area receiving waters, specifically the San Francisco Bay, are cumulatively impacted. The U.S. EPA identifies San Francisco Bay as a 303(d) water body, meaning it does not achieve water quality standards. The EPA lists 11 separate parameters of concern impairing the quality of Bay waters:

- Metals: copper, mercury, nickel;
- PCBs;
- Pesticides: diazinon, chlordane, DDT, dieldrin;
- Dioxin compounds;
- Furan compounds; and
- Exotic species.

The EPA identifies sources of these pollutants as atmospheric deposition, industrial and municipal point, non-point, natural, resource extraction, urban runoff/storm sewer, and ballast water sources.

In addition, California's Bay Protection and Toxic Cleanup Program classifies the entire San Francisco Bay as a High Priority Candidate Toxic Hot Spot. The reason for this classification is potential risk to human health from consumption of non-migratory aquatic wildlife, primarily due to elevated levels of PCBs and mercury in fish tissue.

Intensification of (particularly waterfront) land uses, increased vehicle miles traveled, increased marina activity, and maintenance dredging could result in increases in 303(d) water pollutants and toxics and/or local increases in runoff quantities, which could contribute to further impairment of Bay waters.

With implementation of the mitigation measures described in Chapter IV.E, Water Resources, the GPA's incremental effect to water quality would not be considered cumulatively significant.

Mitigation Measures: No mitigation measures would be necessary.

f. Historic and Cultural Resources. The GPA would result in construction of new buildings and improvements within the Historic District. The GPA would be consistent with the NAS Historic District designation and any demolition or structural alteration would be subject to approval by the Historical Advisory Board. Implementation of the GPA policies would not result in any significant or cumulative significant impacts to historic or cultural resources.

Mitigation Measures: No mitigation measures would be necessary.

g. Biological Resources.

Impact: Effects to sensitive species.

Numerous special status species are known to or have the potential to occur at Alameda Point or in adjacent waters. Because these species are classified by resource agencies as sensitive, meaning their survival or recovery is uncertain, they are considered cumulatively impacted.

With implementation of the policies and mitigation measures described in Chapter IV.G, Biological Resources, the project would not result in or contribute significantly to impacts on these species. Therefore, this cumulative impact would be less than significant.

Mitigation Measures: No mitigation measures would be necessary.

h. Geology and Soils.

Impact: Exposure of persons or property to seismic risk.

The Bay Area is a seismically active region; hence, persons and property within this region are at risk from earthquake damage. By law, however, new structures must be designed to applicable building code standards, substantially reducing seismic risk. Additionally, existing City of Alameda regulations and General Plan policies further reduce seismic risk, both for new and existing structures.

With implementation of the mitigation measures described in Chapter IV.H, Geology and Soils, the project's incremental contribution to seismic risk would not be considered cumulatively significant.

Mitigation Measures: No mitigation measures would be necessary.

i. Utilities. In combination with other past, current, and probable future projects, buildout of the GPA would contribute to the need for additional utilities, all which have finite supply and/or treatment capacity. As described in Chapter IV.I, Utilities, with one exception, described below, the GPA's incremental effect regarding utilities would not be considered cumulatively significant.

Impact: Expansion of wastewater facilities.

Buildout of the GPA could result in wastewater flows that exceed the capacity of the sewerage system to transport wastewater. With implementation of the mitigation measures described in Chapter IV.I, Utilities, the GPA's incremental effect regarding utilities would not be considered cumulatively significant.

Mitigation Measure: **No mitigation measures would be necessary.**

j. Transportation and Circulation. **The results of a detailed analysis of vehicular and alternative transportation are presented in Chapter IV.J, Transportation and Circulation, including results of the cumulative impact analysis. The following cumulative impacts are identified:**

Impact: Intersection operation in peak commute hours.

Implementation of the GPA would result in three intersection impacts that would be considered cumulatively significant at Jackson Street/6th Street, and Brush Street/12th Street. The City of Alameda's contribution to this impact may be mitigated through Alameda's pro-rata fair share contribution to mitigation funding and the other measures detailed in Mitigation Measure TRANs-2. However, the City of Oakland must approve and implement any improvements within the City of Oakland.

Mitigation Measures: No mitigation measures beyond those identified in Chapter IV are available; this cumulative impact would remain significant and unavoidable.

Impact: Unacceptable level of service of the Posey Tube.

The Posey Tube is anticipated to operate at unacceptable levels by the year 2020. This impact would occur even if the number of jobs and housing units are capped at current levels.

Mitigation Measures: No mitigation measures beyond those identified in Chapter IV are available; this cumulative impact would remain significant and unavoidable.

Impact: MTS roadway segment operation in peak commute hours.

The GPA would contribute to the unacceptable operation on three MTS roadway segments. Please refer to Chapter IV.J, Transportation and Circulation for a more detailed discussion of these cumulative impacts.

Mitigation Measures: No mitigation measures beyond those identified in Chapter IV are available; this cumulative impact would remain significant and unavoidable.

k. Air Quality. The Bay Area is currently classified as non-attainment for ozone and particulate matter; as such, it does not achieve air quality standards for these two criteria pollutants. Air quality is considered cumulatively impacted for ozone and particulate matter. In combination with past, current, and probable future projects, construction and operation of the proposed project would contribute to air pollution.

Impact: Construction-related short-term emissions of criteria pollutants.

As stated in Chapter IV.K, Air Quality, during their construction, projects developed under the GPA would be required to implement BAAQMD dust control measures as appropriate. With implementation of these best management practices, the contribution of project construction to levels of particulate matter and ozone precursors would not be considered cumulatively significant.

Mitigation Measures: No mitigation measures beyond those identified in Chapter IV would be necessary.

Impact: Operations phase vehicular emissions could result in increases in ozone precursors.

As discussed in Chapter IV, development under the GPA would not be consistent with the VMT assumptions used in the regional air quality plan, and would result in increased regional emissions of criteria air pollutants. Please refer to Chapter IV.K, Air Quality, for additional discussion.

Mitigation Measures: No mitigation measures beyond those identified in Chapter IV.K, Air Quality, would be available. This impact would remain significant and unavoidable.

Impact: Inconsistency with the population assumptions used in the *Bay Area 2000 Clean Air Plan* (CAP).

Population assumptions included in the 2000 CAP are based on *ABAG's Projections 98* for the City of Alameda. These projections do not accommodate the most current Regional Housing Needs Determination required by the State and included in the City's Housing Element. Upon the next update of the CAP, the BAAQMD will include the current population projections in the CAP.

Mitigation Measures: Although this impact is significant and unavoidable, it is temporary and will become less than significant upon adoption of the updated CAP. No mitigation measures is available.

l. Noise. While construction activities and on-site stationary sources are localized noise sources and would affect only land uses immediately adjacent to the Project site, their occurrence in combination with construction and dredging activities associated with the -50 Foot Dredging Project and the Joint Intermodal Terminal Project could cumulatively affect existing residences southwest of and directly adjacent to the Project site. Although each contractor will be required to comply with the City's Municipal Code noise requirements, the cumulative construction noise impacts could be short-term, temporary adverse impacts to residences exposed to both activities. Such cumulative construction noise impacts would be considered less-than-significant due to the temporary nature of the noise impacts.

Table IV.L-4, in Chapter IV shows the cumulative traffic noise in the project vicinity in the future, with buildout of the GPA. With the implementation of mitigation measures identified for each individual project, no significant cumulative noise impacts are anticipated.

m. Hazardous Materials and Waste. The project area includes areas of contamination, as described in Chapter IV.M, Hazards. Implementation of each component project under the proposed project would remediate site contamination, a cumulative environmental benefit to Alameda Point. Throughout the Bay Area, redevelopment of military bases for community use would result in widespread remediation of hazardous waste, a substantial cumulative environmental benefit.

Additional hazardous materials may be transported, handled and disposed as a result of project implementation. These materials must be transported, handled and disposed pursuant to existing state and federal regulation protective of human health and the environment, minimizing the risk of accidental release and public exposure. Cumulative impacts related to public exposure to hazardous materials would not be considered significant.

D. EFFECTS FOUND NOT TO BE SIGNIFICANT

Each of the CEQA-defined environmental factors is considered within Chapter IV, Setting, Impacts and Mitigation Measures, of this EIR with the exception of agricultural and mineral resources. There are no known mineral resources at Alameda Point, nor has the area ever been under cultivation or considered as Farmland of Significance. Therefore, the GPA would have no effect on agricultural or mineral resources.

E. SIGNIFICANT AND UNAVOIDABLE IMPACTS

As discussed in Chapter IV of this EIR, buildout of the GPA could result in significant unavoidable impacts in the following topics:

- Air Quality; and
- Transportation and Circulation.

The project would also result in a cumulative regional housing impact.

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B. REFERENCES

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