DRAFT EIR

For the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility Alameda, California

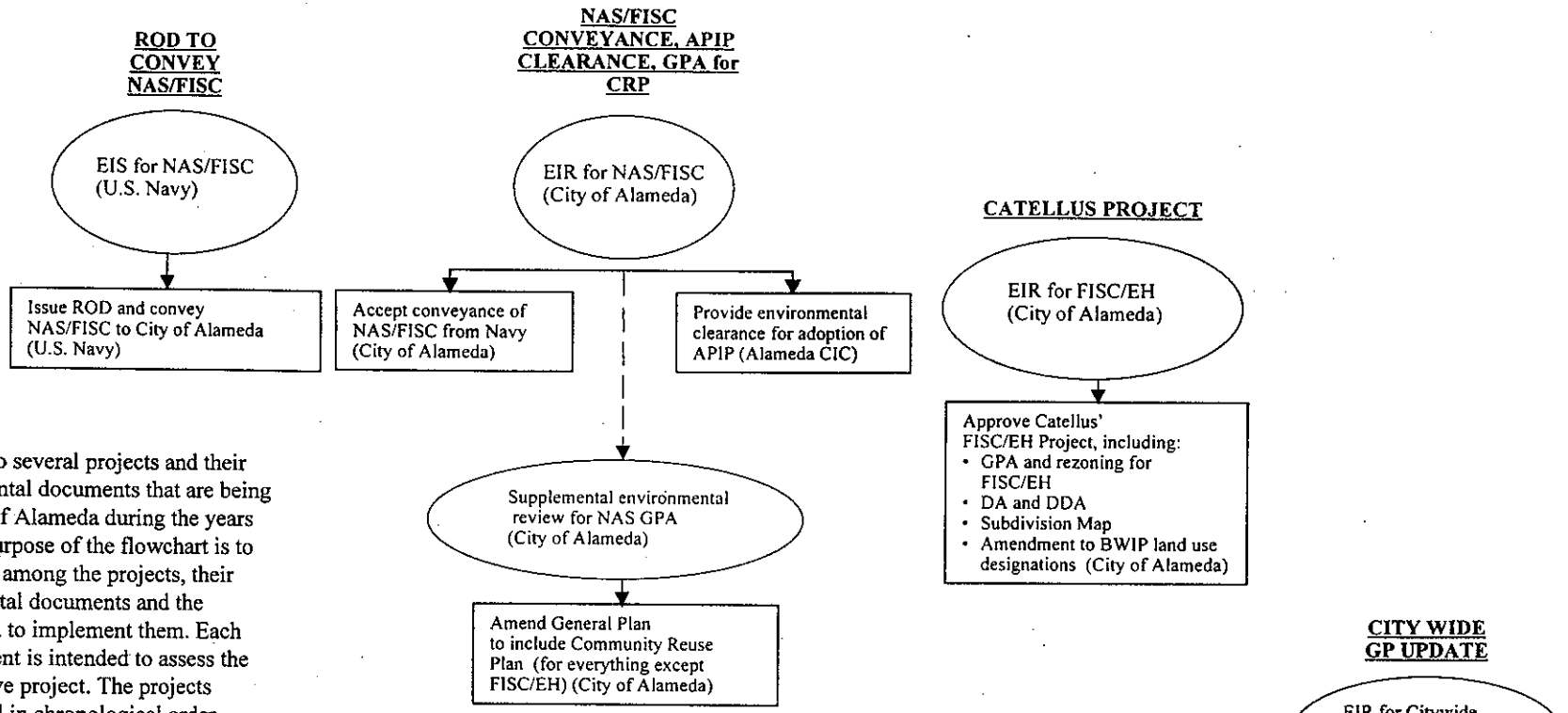
STATE CLEARINGHOUSE # 96022105

MAY 1999

THE CITY OF ALAMEDA

Roadmap to Project Interrelationships

3/18/99



This flowchart refers to several projects and their companion environmental documents that are being reviewed by the City of Alameda during the years 1999 and 2000. The purpose of the flowchart is to show the relationships among the projects, their respective environmental documents and the public actions required to implement them. Each environmental document is intended to assess the impacts of its respective project. The projects are generally presented in chronological order.

LEGEND

= Environmental Document

= Project Action/Approval

PROJECT NAME = Project Name

APIP	Alameda Point Improvement Project	DEIR	Draft EIR
BWIP	Business Waterfront Improvement Project	EH	East Housing
CIC	Community Improvement Commission	EIR	Environmental Impact Report
CRP	Community Reuse Plan for NAS/FISC	EIS	Environmental Impact Statement
DA	Development Agreement	FEIR	Final EIR
DDA	Disposition and Development Agreement	FISC	Fleet Industrial Supply Center

GP	General Plan of City of Alameda
GPA	General Plan Amendment
NAS	Naval Air Station, Alameda
ROD	Record of Decision

For the Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility Alameda, California

STATE CLEARINGHOUSE # 96022105

The City of Alameda prepared this Environmental Impact Report (EIR) based on a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) dated October 1998 and prepared by Tetra Tech, Inc. (and its sub-consultants) for the U.S. Navy and City of Alameda. The joint EIS/EIR was subsequently modified by the Navy in March 1999 and provided to the City of Alameda for its use as an EIR. The City and its consultants (LSA Associates, Inc.) have made revisions to the modified version provided to the City by the Navy and the result is this EIR.

MAY 1999

DRAFT
ENVIRONMENTAL IMPACT REPORT (EIR)
FOR THE REUSE OF
NAVAL AIR STATION ALAMEDA/FLEET AND INDUSTRIAL SUPPLY CENTER
ALAMEDA ANNEX AND FACILITY
ALAMEDA, CALIFORNIA

Lead Agency for the EIR:	City of Alameda, California
Title of Proposed Action:	Reuse of NAS Alameda/FISC Alameda, Alameda, California
Affected Jurisdictions:	City of Alameda and Alameda County, California
Designation:	Draft Environmental Impact Report
State Clearinghouse #:	SCH# 96022105

ABSTRACT

Pursuant to the Defense Base Closure and Realignment Act of 1990 (DBCRA 1990), Public Law (Pub. L.) 101-510 Title XXIX, and the specific base closure decisions approved by Congress in September 1993, Naval Air Station (NAS) Alameda closed in April 1997. In September 1998, the Fleet and Industrial Supply Center, Alameda Annex and Facility (FISC Alameda) adjacent to NAS Alameda was also closed pursuant to DBCRA 1990. In early 1996, Congress passed special legislation, Pub. L. 104-106 § 2867, giving the Navy authority to convey the FISC Alameda Annex and Facility to the City of Alameda. Both of these properties are evaluated in this reuse action. This Draft Program EIR has been prepared in accordance with the California Environmental Quality Act (CEQA), California Public Resource Code, § 21000, *et seq.*, Guidelines to analyze the potential environmental consequences from the acceptance and conveyance and reuse of Federal property available at NAS Alameda/FISC Alameda, the adoption of any necessary amendments to the City's General Plan, the adoption and implementation of the Alameda Point Improvement Project, and the designation of NAS Alameda/FISC Alameda as a Local Agency Military Base Recovery Area under the State's Local Agency Military Base Recovery Act (LAMBRA Act), Cal. Gov. Code Section 7105, *et seq.* The project evaluated is the proposed reuse of the NAS Alameda/FISC Alameda site, as proposed at a programmatic level in the NAS Alameda Community Reuse Plan developed by the Alameda Reuse and Redevelopment Authority.

The Draft EIR evaluates four reuse alternatives: Reuse Plan, Seaport, Residential, and Reduced Density Alternatives. In addition, the No Project Alternative, which is the closure of NAS Alameda/FISC Alameda with the property remaining in caretaker status under Federal ownership, is evaluated. The Draft EIR includes analysis of potential environmental impacts relating to land use, visual resources, population and housing, public services, utilities, cultural resources, biological resources, geology and soils, water resources, traffic and circulation, air quality, noise, and hazardous materials and wastes.

Potentially significant and mitigable adverse environmental impacts include impacts to land use, visual resources, population and housing, public services, utilities, cultural resources, biological resources, geology and soils, water resources, traffic and circulation, air quality, noise, and hazardous materials and waste. Mitigation measures identified in the EIR would reduce these environmental impacts to acceptable levels. Significant and not mitigable impacts are identified for visual resources, cultural resources, biological resources, and air quality. Significant and not mitigable cumulative impacts are associated with cultural resources and air quality.

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May 1999

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VOLUME II: APPENDICES

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ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway Transportation Officials
AB	assembly bill
ABAG	Association of Bay Area Governments
AC	Alameda/Contra Costa
ACFCWCD	Alameda County Flood Control and Water Conservation District
ACHCSA	Alameda County Health Care Services Agency
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACURCWP	Alameda County Urban Runoff Clean Water Program
ADA	Americans with Disabilities Act
ADC	Animal Damage Control
ADT	average daily traffic
AHERA	Asbestos Hazardous Emergency Response Act
AICUZ	Airport Installation Compatibility Use Zones
ALUC	Airport Land Use Commission
APCO	Air Pollution Control Officer
APIP	Alameda Point Improvement Project
ARAR	Applicable or Relevant and Appropriate Requirement
ARRA	Alameda Reuse and Redevelopment Authority
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
ATA	Airport Traffic Area
AUSD	Alameda Unified School District
AVR	Average Vehicle Ridership
BAAQMD	Bay Area Air Quality Management District
BADCAT	Bay Area Defense Conversion Action Team
BART	Bay Area Rapid Transit
BASRC	Bay Area Ship Recycling Complex
BCDC	Bay Conservation and Development Commission
BCP	BRAC Cleanup Plan
bgs	below ground surface
BMP	Best Management Practices
BOE	Alameda Bureau of Electricity
BRAC	Base Realignment and Closure
BRAG	Alameda Base Reuse Advisory Group
BTEX	benzene, toluene, ethylbenzene, and xylenes
BWIP	Business and Waterfront Improvement Project
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CBC	California Building Code
CBED	California Basic Educational Data
CC&R	Covenants, Conditions, and Restrictions
CCR	California Code of Regulations
CDFG	California Department of Fish and Game

CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CIC	Community Improvement Commission
CLEAN	Comprehensive Long-term Environmental Action Navy
CLG	State Certified Local Government
cm	centimeter
CMA	Congestion Management Agency
CNEL	community noise equivalent level
CNPS	California Native Plant Society
COE	US Army Corps of Engineers
CPUC	California Public Utilities Commission
CREUE	Center for Real Estate and Urban Economics
CRHA	Base Closure Community Redevelopment and Homeless Assistance Act
CRL	Community Redevelopment Law
CSC	California Species of Special Concern
CSO	Caretaker Site Office
CSP	Comprehensive Service Plan
CSU	California State University
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
d.u.	dwelling unit
dB	decibel
dBA	A-weighted decibel
DBCRA	Defense Base Closure and Realignment Act
DCE	dichloroethene
DERP	Defense Environmental Restoration Program
DID	Direct in Dial
DIOD	Direct in/out Dial
DOD	Department of Defense
DOT	US Department of Transportation
DRMO	Defense Reutilization and Marketing Office
DTSC	Department of Toxic Substances Control
EBCRC	East Bay Conversion and Reinvestment Commission
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EBS	Environmental Baseline Survey
EDA	Economic Development Agency
EFA West	Engineering Field Activity West
EIR	environmental impact report
EIS	environmental impact statement

EMT	emergency medical technician
EO	Executive Order
EPA	US Environmental Protection Agency
ERC	Emission Reduction Credits
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FFSRA	Federal Facility Site Remediation Agreement
FIP	Federal Implementation Plan
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Studies
FISC	Fleet and Industrial Supply Center
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability for Transfer
FPMR	Federal Property Management Regulations
FS	feasibility study
FTA	Federal Transportation Administration
FY	fiscal year
GAP	generator accumulation point
gpd	gallons per day
gpm	gallons per minute
G-RAM	General Radiological Material
GSA	General Services Administration
ha	hectare
HAB	Historic Advisory Board, City of Alameda
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HASP	Health and Safety Plan
HCM	Highway Capacity Manual
HFZ	Hayward fault zone
HHS	Department of Health and Human Services
HRS	Hazard Ranking System
HUD	US Department of Housing and Urban Development
ICC	Interstate Commerce Commission
IR	Installation Restoration
IRP	Installation Restoration Program
ISDN	integrated services digital network
ISTEA	Intermodal Surface Transportation Efficiency Act
ITD	Institute for Technology Development
ITE	Institute of Transportation Engineers
IWTP	industrial wastewater treatment plant
JPA	Joint Powers Authority
kg	kilogram

km	kilometer
kV	kilovolts
l	liter
LAMBRA	Local Agency Military Base Recovery Area
LBP	lead-based paint
Leq	equivalent noise level
LIFOC	Lease in Furtherance of Conveyance
LOS	Level of Service
LRA	Local Redevelopment Authority
LTMS	Long Term Management Strategy
m	meter
MARAD	Maritime Administration
MBTA	Migratory Bird Treaty Act
MDF	Main Distributing Framework
MGD	million gallons per day
MLLW	mean lower low waterline
MOA	Memorandum of Agreement
MPH	miles per hour
MPOE	Minimum Point of Entry
msl	Mean sea level
MTC	Metropolitan Transportation Commission
MUTCD	Manual on Uniform Traffic Control Devices
MX	mixed-use planned development
NADEP	Naval Aviation Depot
NAGPRA	Native American Graves Protection and Repatriation Act
NARF	Naval Air Rework Facility
NAS	Naval Air Station
NCP	National Contingency Plan
NCPA	Northern California Power Agency
NEC	National Electric Code NFPA-70
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NGVD	national geodetic vertical datum
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NNPP	Naval Nuclear Propulsion Program
NOA	Notice of Availability
NOD	Notice of Decision
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPOC	Non-Precursor Organic Compounds

NPS	National Park Service
NRHP	National Register of Historic Places
NSC	Naval Supply Center
OCHI	Oakland Community Housing, Inc.
OPNAVINST	Naval Operations Instruction
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
OU	operable unit
OWS	oil/water separators
PA	Preliminary Assessment
PAHs	polynuclear aromatic hydrocarbons
PBC	Public Benefit Conveyance
PBX	private branch exchange
PCB	polychlorinated biphenyl
pCi/L	picocurie per liter
PD	planned development
PEP	Parcel Evaluation Plan
PG&E	Pacific Gas and Electric Company
PM_{10}	inhalable particulate matter
PMSA	Primary Metropolitan Statistical Area
POC	Precursor Organic Compounds
POTW	publicly owned treatment works
ppm	parts per million
PRC	Public Resources Code
Psf	pounds per square foot
Psi	pounds per square inch
Psig	pounds per square inch gauge
PSTN	public switched telephone network
Pub. L.	Public Law
PVC	polyvinyl chloride
PWC	US Navy Public Works Center (Oakland, California)
PWCSFB	Public Works Center San Francisco Bay
QA/QC	Quality Assurance/Quality Control
R&D	research and development
RA	Remedial Action
RAB	Restoration Advisory Board
RAP	Remedial Action Plan
RBCA	risk-based corrective action
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
ROG	reactive organic compounds

ROI	region of influence
RONA	Record on Non-Applicability
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SAFZ	San Andreas fault zone
SARA	Superfund Amendments and Reauthorization Act
SB	senate bill
Scfh	standard cubic feet per hour
SD	Site Discovery
SDWA	Federal Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SI	Site Inspection
SIP	State implementation plan
SLC	State Lands Commission
SMP	site management plan
SOP	standard operating procedures
SOR	Standards of Reasonableness
SOV	single occupancy vehicle
SPCC	Spill Prevention Control and Countermeasures
SPCRR	Southern Pacific Coast Railroad
SR	state route
SVOCs	semivolatile organic compounds
SWDA	Solid Waste Disposal Act
SWMDCP	Storm Water Management and Discharge Control Program
SWMU	solid waste management unit
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	trichloroethene
TSCA	Toxic Substances Control Act
TSM	transportation system management
UBC	Uniform Building Code
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
U.S.C.	United States Code
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
UXO	unexploded ordnance
V/C	volume/capacity ratio
VOCs	volatile organic compounds
VMT	vehicle miles traveled
WECIP	West End Community Improvement Project
WET	wetland evaluation technique

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This environmental impact report (EIR) evaluates the potential impacts to the environment that may result from community reuse of Naval Air Station Alameda (NAS Alameda) and Fleet and Industrial Supply Center (FISC), Alameda Annex and Facility in Alameda, California. NAS Alameda and the FISC Alameda Annex and Facility closed pursuant to the 1990 Defense Base Closure and Realignment Act (DBCRA), Part A of Title XXIX of Pub. L. 101-510, codified as amended at 10 U.S.C. § 2687 note, commonly referred to as DBCRA 1990.

This document has been prepared in accordance with the California Environmental Quality Act (CEQA), California Public Resources Code (Cal. Pub. Res. Code) § 21000, *et seq.*, as amended, and implementing guidelines; and Title 14, California Code of Regulations (C.C.R.) § 15000, *et. seq.*

The action evaluated is the proposed acquisition by the City of Alameda and community reuse of the NAS Alameda and FISC Alameda Annex and Facility properties. In addition, adoption and implementation of the Alameda Point Improvement Project (APIP) and designation of NAS Alameda/FISC Alameda as a Local Agency Military Base Recovery Area (LAMBRA) under State law are evaluated. This document addresses the acquisition and reuse of both NAS Alameda and FISC Alameda because both Navy facilities were scheduled for closure and were covered jointly in the Alameda Reuse and Redevelopment Authority (ARRA) community planning effort. When the entire site is referenced in this document, it is called NAS Alameda/FISC Alameda.

RELATIONSHIP OF THIS EIR TO THE NAVY EIS

Since the inception of the military base disposal and Community Reuse Plan process, the City and the Navy have worked closely together in developing environmental documentation that satisfies the requirements of CEQA and the National Environmental Policy Act (NEPA) of 1969, as amended, 42 United States Code (U.S.C.) § 4321, *et seq.* Both CEQA and NEPA encourage, but do not require, the preparation of joint documents; hence, in February 1996, the City and Navy issued a Notice of Preparation and a Notice of Intention, respectively, indicating that a joint EIS/EIR would be prepared. While progressing a long way towards creating a joint document, the City and Navy have determined that it would reduce delay and expedite productive reuse of NAS Alameda/FISC Alameda to release separate environmental documents. The City's EIR is tailored to comply with CEQA and the Navy's EIS is tailored to comply with NEPA. The City will rely on

this EIR for the purposes set forth in Section 1.4.2 (Intended Uses of the EIR). The Navy will rely on the EIS to dispose of the property, as described in the Navy document. The NEPA public review process for the Navy EIS and the CEQA public review process for the EIR are generally described below in the Public Involvement section of this Executive Summary.

PURPOSE AND NEED

NAS Alameda closed on April 30, 1997, and FISC Alameda closed on September 30, 1998. The Navy has initiated the disposal process for NAS Alameda, as required by DBCRA 1990. Special legislation passed by Congress in early 1996 (Pub. L. 104-106, § 2867), gives the Navy authority to convey the FISC Alameda Annex and Facility to the City of Alameda. The Navy has determined that it will use this Congressional authority for the disposal of FISC Alameda Annex and Facility. The City of Alameda will use this document to meet the environmental analysis requirements of the proposed project under CEQA.

BACKGROUND

Location

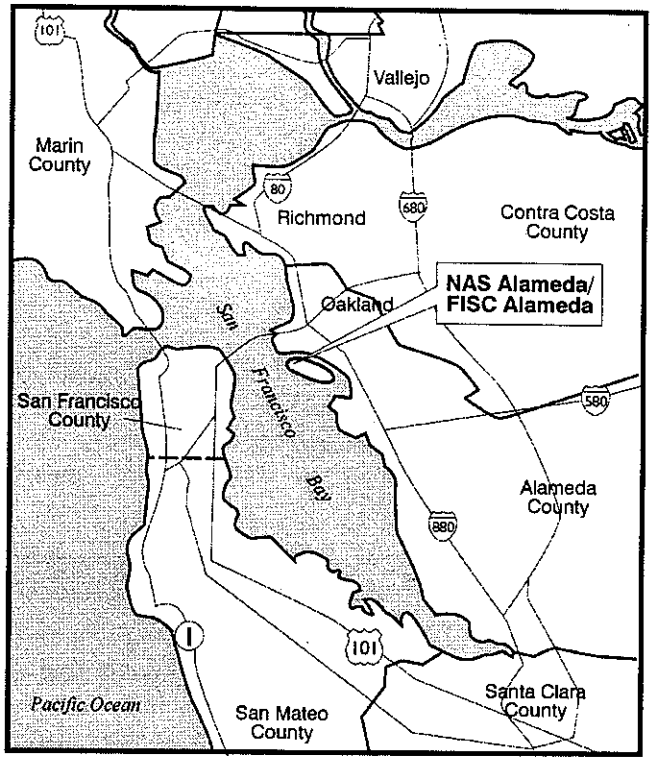
NAS Alameda/FISC Alameda is located at the western end of the City of Alameda, along the eastern side of San Francisco Bay, adjacent to the City of Oakland. The property lies almost entirely within both the City and County of Alameda, California, and is bordered by the Oakland Inner Harbor to the north, San Francisco Bay to the south and west, and the rest of the City of Alameda to the east (Figure ES-1).

History

NAS Alameda/FISC Alameda was historically a combination of submerged lands, tideland, and dry land. The first documented filling of tidal and submerged lands began sometime during the 1890s. The Navy acquired the initial acreage of land by deed from the City of Alameda and the US Army in 1936 and began constructing the Naval Air Station in 1938.

Since World War II, NAS Alameda was one of the largest and most diversified naval facilities on the West Coast, providing berthing for Pacific Fleet ships and serving as a major center of naval aviation. NAS Alameda included an airport with seven aircraft maintenance hangars, one of the largest deepwater naval ports in California, and one of the two largest complexes of aircraft maintenance buildings on the West Coast. NAS Alameda also contained a seaplane lagoon, warehouse space, administrative offices, military residences,

Figure ES-1
Regional Location



an exchange and commissary, community support facilities, and open space. Prior to the closure decision, NAS Alameda had approximately 60 military tenant commands for a combined military/civilian work force of over 18,000 personnel.

NAS Alameda is about 2 miles (3 kilometers [km]) long by 1 mile (1.6 km) wide and consists of approximately 2,676 acres (1,085 hectares [ha]), including about 1,562 acres (634 ha) of dry land and 1,114 acres (451 ha) of submerged land (see Table ES-1). Of that total, approximately 2,515 acres (1,019 ha) are held in fee ownership by the Navy, about 159 acres (64 ha) are held by the Navy under a lease with the City of Alameda, and approximately 1.5 acres (0.61 ha) are held in off-site utility easements. The acreage leased by the Navy from the City of Alameda, will revert to the City. In addition, the eight off-site utility easements, comprising approximately 1.5 acres (0.6 ha), could be assumed by the appropriate utility provider.

Table ES-1
Acreage Summary at NAS Alameda/FISC Alameda

	Dry Land Acreage	Submerged Land Acreage	Total Acreage
NAS Alameda:			
Land owned in fee by Navy	1,555.00	960.00	2,515.00
Leased Land[1]	5.00	154.21	159.21
Utility Easements[2]	1.46	-	1.46
Subtotal	1,561.46	1,114.21	2,675.67
FISC Alameda (all Navy fee-owned):	141.00	6.00	147.00
Total	1,702.46	1,120.21	2,822.67

[1] Leased by the Navy from the City of Alameda.
[2] Includes eight miscellaneous off-site utility easements that could be assumed by the appropriate utility provider.

The California State Lands Commission has jurisdiction over ungranted tidelands and submerged lands owned by the State and the beds of navigable rivers, streams, bays, estuaries, and inlets within its boundaries (Cal. Pub. Res. Code § 6301). This type of land is commonly referred to as public trust land subject to use restrictions by the State Tideland Trust. Approximately 648 acres (262 ha) of NAS Alameda is public trust land subject to State Tideland Trust use restrictions. No FISC Alameda land is public trust land.

The Alameda Facility was constructed in 1945 as the US Army Alameda Medical Depot. In 1964, the property was transferred to the Navy for Naval Supply Center (NSC) Oakland (later FISC Oakland). The Navy acquired the Alameda Annex property in 1951. These two parcels historically have been used for similar purposes, including open storage areas, warehousing, and administrative space. The parcels are known individually as the FISC Alameda Facility and the FISC Alameda Annex and, collectively, for this document, as FISC Alameda. The property includes 141 acres (57 ha) of dry land and 6 acres (2 ha) of submerged land, all of which is owned in fee by the Navy.

DISPOSAL PROCESS

Some of the property and facilities at NAS Alameda/FISC Alameda will be transferred by the Navy to other Federal agencies, and some land previously leased by the Navy from the City of Alameda will revert to City control. The remaining property will be conveyed out of Federal ownership. Disposition of land at NAS Alameda/FISC Alameda is summarized in Table ES-2.

Table ES-2
Disposition of Land at NAS Alameda/FISC Alameda

	Dry Land Acreage	Submerged Land Acreage	Total Acreage
Federal Agency Transfers:			
US Fish & Wildlife Service	525.00[1]	375.00	900.00
US Coast Guard[2]	69.00	-	69.00
Subtotal	594.00	375.00	969.00
Leased Land/Easements: (not subject to disposal)			
Leased Land[3]	5.00	154.21	159.21
Utility Easements[4]	1.46	-	1.46
Subtotal	6.46	154.21	160.67
Federal Property Available for Disposal			
NAS Alameda	961.00	585.00	1,546.00
FISC Alameda	141.00	6.00	147.00
Subtotal	1,102.00	591.00	1,693.00
Total	1,702.46	1,120.21	2,822.67

[1] The figure of 525 acres is based on an estimate taken from a USFWS drawing of the proposed transfer area, and may be revised when more data (e.g., on-the-ground survey) is available. More recent estimates indicate that the size of the refuge would be 565 to 571 acres.
[2] Includes Marina Village and North Housing areas containing 582 units. The ARRA has requested that the USCG acquire use of the property under a leaseback arrangement as provided under DBCRA 1990 rather than by property transfer. The USCG has tentatively agreed and leaseback negotiations are pending.
[3] Leased by Navy from City of Alameda.
[4] Includes eight miscellaneous off-site utility easements that could be assumed by the appropriate utility provider.

Two Federal agencies have requested the transfer of property and facilities at NAS Alameda. The US Coast Guard (USCG) requested the transfer of approximately 69 acres (28 ha), including 582 housing units in Marina Village and North Housing, and Building 545. The USCG has subsequently indicated an interest in pursuing leaseback of the property in lieu of transfer as allowed by the Defense Authorization Act for Fiscal Year 1996. The US Fish and Wildlife Service (USFWS) has requested the transfer of 525 acres (213 ha) of dry land and 375 acres (152 ha) of submerged land for a total of 900 acres (364 ha) to establish a wildlife refuge.

The Defense Authorization Act for Fiscal Year 1996 gave the Navy authority to convey FISC Alameda to the City of Alameda. This authority can be exercised exclusive of the specific Federal property disposal laws and regulations required for disposal actions pursuant to DBCRA 1990. The Navy has determined that it will use this special legislative authority for the proposed action, the disposal of FISC Alameda property directly to the City of Alameda.

In accordance with the Base Closure Community Redevelopment and Homeless Assistance Act of 1994 (Redevelopment Act), Pub. L. 103-421, the ARRA completed the NAS Alameda screening process for homeless assistance needs in July 1995. On April 23, 1996, the US Department of Housing and Urban Development (HUD) approved the NAS Alameda Community Reuse Plan, under the procedures of the Redevelopment Act, which included 16 agreements with homeless providers. Homeless screening was not required or conducted for the FISC Alameda property because the Navy has determined that it will use the special legislative authority (Pub. L. 104-106, § 2867) for allowing the transfer of FISC Alameda property directly to the City of Alameda.

Excess Federal property not transferred to other Federal agencies, or acquired under the Redevelopment Act procedures, is available for disposal by the Navy. This property, including approximately 1,102 acres (446 ha) of dry land and 591 acres (239 ha) of submerged land at NAS Alameda/FISC Alameda, will be available for conveyance to the City of Alameda or other acquiring entities.

PUBLIC INVOLVEMENT

An extensive public involvement effort was undertaken in the development of the NAS Alameda Community Reuse Plan to ensure that the public had many opportunities to provide meaningful input into decisions regarding reuse planning for NAS Alameda and the FISC Alameda sites. The process was led by the ARRA (the local redevelopment authority) and the Alameda Base Reuse Advisory Group (BRAG), a citizen's advisory group to the ARRA. The East Bay Conversion and Reinvestment Commission (EBCRC) also participated in a number of the public forums. Public involvement activities conducted by the ARRA/BRAG to date have included four public workshops, an ongoing newsletter, public preference survey, a long-range vision planning meeting, and regular open meetings of the ARRA, the BRAG, and topical BRAG subcommittees.

Scoping

The purpose of scoping is to identify potential environmental issues and concerns that would be raised by disposal and reuse, and to identify a range of reasonably foreseeable reuse alternatives. The scoping process for the NAS Alameda/FISC Alameda EIR included placing notices in local newspapers, conducting a public meeting, and using direct mail. Comments received during the scoping period were considered in determining the range of reasonably foreseeable alternative reuse options and issues to be evaluated in the EIR.

During the EIR scoping process, which ended March 29, 1996, 45 letters were received from members of the public, interested groups, and Federal, State, and local agencies. In addition, 24 people provided oral comments, written comments, or both at the public scoping meeting. The main environmental issues identified during the scoping process were the selection and analysis of an adequate range of EIR alternatives (including a request for a seaport alternative), the selection of the baseline year for analysis, protection of designated public trust land, compatibility of the proposed recreational vehicle park with surrounding neighborhoods, the size of a proposed USFWS wildlife refuge, potential effects on the California least tern colony at the proposed wildlife refuge, and traffic issues. Environmental concerns identified during scoping are addressed in the EIR. In addition, a public hearing was held on August 11, 1998 to identify the selection of the baseline year for environmental analysis.

The City circulated an Amended NOP to reflect the splitting of the EIS and EIR and to clarify the project description on March 2, 1999. The 30-day public comment period for the Amended NOP was open from March 5 through April 4, 1999. During that period, the City received 19 comment letters from interested public agencies, organizations and individuals.

Draft EIR

The public is invited to review and comment on this Draft EIR. The comment period provides an opportunity for the public and government agencies to review the issues addressed in the impact analysis and to offer comments on any aspect of the process. A public meeting will be held during the review period to formally receive oral and written comments on the Draft EIR. The date and time of the meeting is stated in the transmittal letter accompanying this document and will be announced in the media.

Final EIR

A Final EIR incorporating and responding to comments received on the Draft EIR will be available for review to the public. Following certification of the EIR, the City of Alameda will prepare a Notice of Determination (NOD) upon its approval of any reuse alternative.

The Navy EIS

The Navy published its Draft EIS for public review and comment on May 12, 1999. Written correspondence on the EIS will be accepted by the Navy through June 1, 1999. The Navy will then prepare a Final EIS that incorporates and responds to the comments received on its Draft EIS, and will furnish the Final EIS to persons who registered official comments on the

Draft EIS and to those who have requested a copy in writing. A Notice of Availability will be published in the Federal Register and in other public media, including press releases. As required under NEPA, there will be a 30-day waiting period after the Final EIS is published. During this period, the public may comment on the adequacy of the responses to comments and the Final EIS. After that time, a Record of Decision (ROD) can be issued by the Navy and the property can be conveyed.

ALTERNATIVES

Community Reuse Planning

The community planning process for reuse of NAS Alameda/FISC Alameda occurred under the direction of the ARRA, which was formed in April 1993, with input and recommendations from the BRAG and EBCRC. The primary objective of the planning process was to develop and recommend to the City of Alameda a community reuse plan for converting the entire NAS Alameda/FISC Alameda complex to civilian use. In January 1996, the NAS Alameda Community Reuse Plan (Reuse Plan) was adopted by ARRA and accepted by the Alameda City Council. The Reuse Plan was amended in May and September 1997. The Reuse Plan is intended to describe general categories of land use, not specific development proposals.

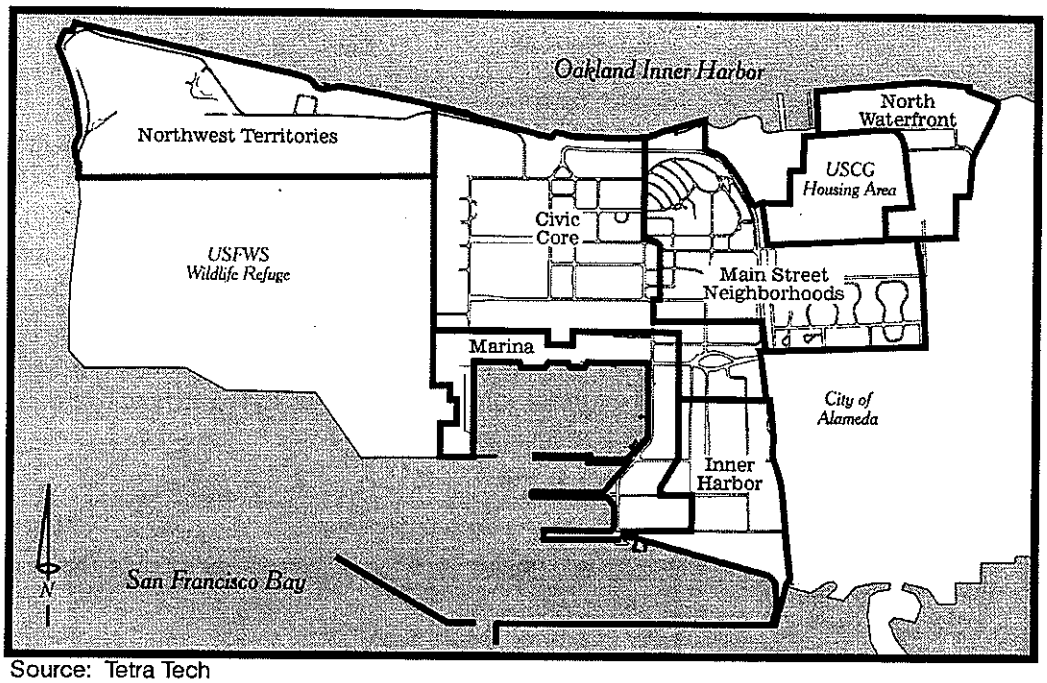
Alternatives Description

All alternatives indicate acquisition of the property by the City of Alameda. Alternatives were chosen to allow analysis of a range of uses in the planning areas identified in the Reuse Plan. For those planning areas, existing facilities, such as existing residential housing units, that lend themselves to particular uses, reuse options reflect these existing uses and are relatively similar among the various alternatives.

The Reuse Plan identifies seven planning areas within NAS Alameda/FISC Alameda, six of which are analyzed in the alternatives analysis of this EIR. The seventh planning area, the Wildlife Refuge planning area, is being transferred to USFWS and is not analyzed as part of this project. In addition, a 69-acre (28 ha) area, described as part of the Main Street Neighborhoods planning area in the Reuse Plan, is being transferred to the USCG and is not analyzed as part of this project. The locations of the six remaining planning areas are shown in Figure ES-2.

Alternatives analyzed in the EIR include the following:

Figure ES-2
NAS Alameda/FISC Alameda Planning Areas



Source: Tetra Tech

- **Reuse Plan Alternative**—The Reuse Plan Alternative is implementation of the NAS Alameda Community Reuse Plan as approved in January 1996 and amended in May and September 1997. Although the Reuse Plan Alternative is based on the Reuse Plan, which describes general categories of land use and not specific development proposals, in some cases more specific details, such as population and employment estimates, and more refined land use acreages, are projected or assumed in the EIR to assist in describing and quantifying potential impacts. Under the Reuse Plan, the NAS Alameda/FISC Alameda site would be developed as a mixed-use, transit-oriented development. It would include a mix of community, industrial, residential, and commercial uses. Community uses would include parks, schools, a links-style golf course, a sports complex, public open space, and an RV park. Industrial uses would include mixed-use office, maritime-related light industry, marina-related light industry, and research and development businesses. Residential housing would include new housing consistent with local standards and live-aboard boat slips and the reuse of existing multifamily housing, apartments, and group quarters. Commercial uses would include neighborhood shopping districts, office space, hotels, visitor-serving commercial facilities, and a conference facility. A primary goal of the

Reuse Plan is to accommodate public transit. Strategic locations throughout the site are identified as transit nodes that would serve as multi-modal stations and allow residents and employees to interchange between private and public transportation modes. These centers would include bus shelters, bicycle lockers, and transit-oriented street design.

- **Seaport Alternative**—The main distinctive feature of this alternative would be development of a 220-acre (89 ha) port facility with five containerized shipping berths instead of a golf course and maritime-related light industry. Other land uses would be similar to the Reuse Plan Alternative, except that there would be a higher component of single-family residential uses and a corresponding decrease in office/workspace uses. This alternative would include a college-level campus and a new transportation connection between Alameda and Oakland to accommodate the cargo volume generated by the port. This connection could be a bridge structure or possibly a tunnel.

- **Residential Alternative**—This alternative would have a higher emphasis on residential development. Overall, it would contain a substantially higher number of housing units than the Reuse Plan alternative, although additional housing would not be included in every planning area. Some areas would contain additional light industrial and office/workspace uses to balance the number of residents and jobs. It also would include a college-level campus.

- **Reduced Density Alternative**—Under this alternative, land uses would be similar to the Reuse Plan Alternative but would be at reduced densities in many (but not all) of the planning areas. A primary goal of this alternative would be to reduce traffic generation compared to the other reuse alternatives.

- **No Project Alternative**—Under the No Project Alternative, the property available for conveyance would remain in Federal ownership in caretaker status. Properties proposed for transfer to other Federal agencies would be transferred. Under this alternative limited interim leasing would occur, but would be phased out as individual lease terms expired.

The reuse alternatives reflect suggestions and concerns expressed by the public and agencies during the scoping process. The reuse alternatives are described at a relatively general "program" level of detail and are not intended to address specific projects. Specific uses of buildings and sites would be determined as the Reuse Plan is implemented and are beyond the scope of this analysis. Some of the alternatives also contain components designed to mitigate potentially significant environmental impacts of the Reuse Plan Alternative.

Environmentally Superior Alternative

CEQA requires that an "environmentally superior" alternative be identified. The No Project Alternative is the environmentally superior alternative because no significant impacts would occur under this alternative. However, the No Project Alternative would not allow the City of Alameda to generate jobs, tax revenues, or other benefits allowed as part of the reuse alternatives. Moreover, consistent with CEQA requirements, an alternative other than the No Project Alternative must be identified as an environmentally superior alternative. The Reduced Density Alternative is the environmentally superior reuse alternative, because when compared to the other reuse alternatives, most environmental impacts would occur at reduced levels.

AFFECTED ENVIRONMENT

Chapter 3, Affected Environment, describes existing environmental conditions at NAS Alameda/FISC Alameda and the area surrounding the Navy property. The information contained in this chapter serves as background to identify and evaluate environmental impacts resulting from the community reuse of property at NAS Alameda/FISC Alameda. The environmental baseline presented in this chapter is generally representative of full Navy operations at NAS Alameda/FISC Alameda except where noted. The setting discussion for each resource area identifies the region of influence (ROI) applicable to the specific resource area. An ROI is a geographic area in which impacts for a particular resource likely would occur. The ROI for a resource having regional impacts will be different from the ROI for a resource having localized impacts. Existing baseline conditions are described for the following resources: land use, visual resources, population and housing, public services, utilities, cultural resources, biological resources, geology and soils, water resources, traffic and circulation, air quality, noise, and hazardous materials and waste.

ENVIRONMENTAL CONSEQUENCES

Chapter 4, Environmental Consequences, which consists of an analysis of significant effects on the environment and proposed mitigation measures, describes the potential environmental consequences associated with the reuse of property at NAS Alameda/FISC Alameda. The reuse action would result in adaptive reuse of existing structures and facilities, potential new construction and would create public open space uses.

For most resource areas evaluated in this EIR, impacts of each alternative reuse action, including the No Project Alternative, are projected to the year 2020. Implementation of each reuse alternative is assumed in determining impacts. For each impact a determination has been made whether it would

constitute a significant or nonsignificant impact. In addition, where beneficial impacts are identified, the nature of the beneficial impact is discussed in the text of the document.

Table ES-3 summarizes impacts to environmental resources for the No Project Alternative, and reuse alternatives, followed by a summary of the environmental consequences associated with each resource area. The table reflects the greatest degree of impact for each resource category by alternative. The following summaries detail the significant and nonsignificant impacts for each resource category, as well as areas of beneficial impacts or no impact. Beneficial impacts are shown as nonsignificant impacts in Table ES-3.

Table ES-3
Summary of Impacts and Significance

	COMMUNITY REUSE ALTERNATIVES				
IMPACT ISSUES	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Land Use	○	◑	◑	◑	◑
Visual Resources	◴	◑	●	◑	◑
Population and Housing	○	◴	◴	◴	◴
Public Services	◴	◑	◑	◑	◑
Utilities	○	◑	◑	◑	◑
Cultural Resources	◴	◑	●	◑	◑
Biological Resources	○	◑	●	●	◑
Geology and Soils	◴	◑	◑	◑	◑
Water Resources	◴	◑	◑	◑	◑
Traffic and Circulation	◴	◑	◑	◑	◑
Air Quality	◴	◑	◑	◑	◑
Noise	○	◑	◑	◑	◑
Hazardous Materials and Waste	◴	◑	◑	◑	◑

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◴ = Nonsignificant
○ = None

Land Use

No Project. No impacts would result from implementation of the No Project Alternative because there would be minimal use of property and facilities.

Community Reuse Alternatives. A significant and mitigable impact would occur under all of the reuse alternatives from inconsistencies between land uses proposed on public trust land and allowable uses on public trust land.

A significant and mitigable impact would result from the siting of the proposed RV park next to residential areas in the Reuse Plan Alternative and the Reduced Density Alternative.

Significant and mitigable impacts under the Seaport Alternative would result from development of port facilities that would decrease public access to the shoreline and conflict with implementation of the Bay Trail project, and from demolition or relocation of existing structures for constructing a new transportation crossing for port cargo.

A beneficial impact under all of the reuse alternatives would result from the linkage of existing land uses east of the site with new on-site development. Under no alternative would the proposed project disrupt or divide an established land use configuration.

Visual Resources

No Project. A nonsignificant impact would occur from the minor deterioration of structures and landscaping resulting from implementation of the No Project Alternative.

Community Reuse Alternatives. A beneficial visual impact under all of the reuse alternatives would be improved views of the North Waterfront planning area from Jack London Square and the Oakland Ferry Terminal. A beneficial impact under the Reuse Plan and Reduced Density Alternatives would result from a golf course and a shoreline park providing positive visual features from viewing locations in Oakland. A beneficial impact would also result from providing public access to the shoreline, which would create new viewing opportunities. Under the Seaport Alternative the north shoreline area would not be open to the public, which is similar to existing conditions; therefore the impact would be nonsignificant. A nonsignificant impact under all of the reuse alternatives would result from redevelopment and reuse of existing facilities at NAS Alameda/FISC Alameda because views would continue to be similar to existing views.

A significant and mitigable impact would result from light industrial development in the Northwest Territories planning area that would decrease visual quality of the site from outside viewing locations by imparting a light industrial visual character to the south shore of the Oakland Inner Harbor. This impact would occur under the Reuse Plan Alternative and the Reduced Density Alternative. A significant and mitigable impact under the Reuse Plan

and Reduced Density Alternatives also would result from light industrial facilities blocking views to the south and southwest from portions of the shoreline park in the Northwest Territories planning area.

Significant and mitigable impacts would occur from proposed development of an RV park in the Inner Harbor planning area under the Reuse Plan Alternative, and in the Civic Core planning area under the Reduced Density Alternative. The RV park would create visual contrast with existing use, especially if viewed from nearby residential neighborhoods or public streets.

A significant and not mitigable impact would occur in the Northwest Territories planning area from port facilities imparting an industrial visual character to the south shore of the Oakland Inner Harbor under the Seaport Alternative. A significant and not mitigable impact under the Seaport Alternative also would result from large loading cranes on the waterfront disrupting views to the west from the shoreline park along the northern edge of the Civic Core planning area, as well as from some locations along the north shore of the Oakland Inner Harbor.

A nonsignificant impact related to the potential for increased light or glare to affect views would occur under each reuse alternative.

Population and Housing

No Project. There would be no population and housing impacts associated with the No Project Alternative.

Community Reuse Alternatives. Beneficial impacts under all of the reuse alternatives would be the creation of jobs and increased recreational opportunities. No significant impacts would result from an increase in population and housing under any of the reuse alternatives. No significant impacts from displacement of existing housing or existing residents would result from any of the reuse alternatives.

Public Services

No Project. Nonsignificant impacts to public services would occur under the No Project Alternative because minimal demand for police, fire, emergency medical services, schools and recreation would be generated.

Community Reuse Alternatives. A significant and mitigable impact under all reuse alternatives would result from the expansion of the geographic jurisdiction of the City of Alameda's Police Department and Fire Department beyond their capability, resulting in an inadequate level of the City's police, fire, and emergency medical services. Similarly, a significant and mitigable

impact to Alameda Unified School District (AUSD) facilities would result from each reuse alternative.

A beneficial impact under all alternatives would result from the addition of parks and open space.

Utilities

No Project. No impacts to utilities would result from the No Project Alternative because caretaker activities and limited interim leasing would generate minimal demand for utilities.

Community Reuse Alternatives. No impacts would occur under any of the reuse alternatives to the industrial wastewater or steam systems. Beneficial impacts to the stormwater drainage system would occur under the Reuse Plan and Reduced Density Alternatives. Stormwater drainage impacts would be nonsignificant under the Seaport and Residential Alternatives. Nonsignificant impacts would occur under all of the reuse alternatives for water distribution, sanitary wastewater, solid waste management, telephone, electricity, and cable television.

A significant and mitigable impact would occur under all reuse alternatives from the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements.

Cultural Resources

No Project Alternative. The No Project Alternative could result in nonsignificant impacts from the lease of contributing properties in the NAS Alameda Historic District to non-Federal entities as well as the deterioration of contributing properties during the contracted period. The Navy has indicated that it would use the appropriate standards published in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US Department of the Interior 1996b) to avoid adverse effects from these activities.

Community Reuse Alternatives. A significant and mitigable impact would result from deterioration of contributing properties in the NAS Alameda Historic District placed into layaway under all reuse alternatives. A significant and mitigable impact under all reuse alternatives would also result from the reuse or rehabilitation of contributing properties in the NAS Alameda Historic District. Construction of buildings within the NAS Alameda Historic District would result in a significant and mitigable impact by altering the general character of the Historic District under all reuse alternatives. Under the Reduced Density Alternative, a significant and

mitigable impact would result from constructing an RV Park within the Historic District in the Civic Core planning area. A significant and mitigable impact would result from demolition of contributing properties within the NAS Alameda Historic District under all reuse alternatives.

Under the Seaport Alternative, a significant and not mitigable impact would result from demolition of some or all of the Training Wall for the construction of berthing facilities along the northern shoreline.

Biological Resources

No Project. Maintaining NAS Alameda/FISC Alameda in caretaker status under the No Project Alternative would result in no impacts to biological resources.

Community Reuse Alternatives. Development of any of the reuse alternatives would not result in significant impacts to the American peregrine falcon because there would be no substantial change to the habitat of the falcon's common prey species. Dredging would not significantly impact winter-run chinook salmon because individuals of this species can move to avoid localized turbidity caused by dredging. No significant impacts would be expected to occur from the potential removal of nonsensitive species and habitat on the facility.

Significant and mitigable impacts may occur from increased predation of the California least tern under the Reuse Plan Alternative and the Reduced Density Alternative because of new development located adjacent to the proposed wildlife refuge. A decreased buffer, increased feral or domestic animal activity, landscaping, and increased night lighting associated with development of light industry, soccer fields, and golf course in the Northwest Territories planning area planning area and ball fields in the Civic Core planning area would increase predation. Increased presence of people and domestic animals in the Northwest Territories planning area could result in a significant and mitigable impact from disruption of least tern breeding and loss of individual least terns in the Reuse Plan, Seaport and Reduced Density Alternatives.

In all of the reuse alternatives, boat traffic may result in a significant and mitigable impact. The boat traffic could disrupt least tern foraging, roosting of the California brown pelican, nesting for western gulls, and the haul-out site for harbor seals near Breakwater Island. Disruption of foraging of the California least tern and other wildlife from dredging in the Marina planning area would be a significant and mitigable impact under all of the reuse alternatives. Dredging in the Oakland Inner Harbor would be conducted only under the Seaport Alternative and would similarly result in a significant

and mitigable impact. Pollutants in stormwater runoff could enter the least tern nesting site, wetlands, and surrounding water bodies, resulting in a significant and mitigable impact under all of the reuse alternatives.

Significant and not mitigable impacts would result from increased predation of the California least tern in the Seaport Alternative and the Residential Alternative, and from increased human activity in the Residential Alternative. Mitigating the impact from cranes in the Seaport Alternative is not possible because antiperching devices are not feasible on the tall cranes. Under the Residential Alternative, domestic animals, landscaping, and other features of residential development would result in increased predation of California least terns. Residential development would limit predator management to an extent that the predation impact cannot be mitigated to a nonsignificant level. The Residential Alternative would result in an increase in the number of people and domestic animals living adjacent to the USFWS wildlife refuge. Feasible measures to protect the California least terns would not be sufficient to prevent a significant loss of individuals and disruption of breeding of California least terns.

Geology and Soils

No Project. Nonsignificant impacts would occur under the No Project Alternative because there would be only a small population from caretaker and leasing activities present on NAS Alameda/FISC Alameda to be exposed to geologic hazards.

Community Reuse Alternatives. Significant and mitigable impacts from seismic activity, liquefaction, settlement, differential settlement, dike failure, and lateral spreading would be possible under all reuse alternatives. A strong earthquake centered on the northern segment of the Hayward Fault would cause moderate to extreme levels of damage to structures and utilities.

Water Resources

No Project. There would be nonsignificant impacts under the No Project Alternative because there would be no new development, no dredging, and only minimal use of the site.

Community Reuse Alternatives. No significant impacts to ground water quality or quantity would occur under any of the reuse alternatives. No significant impacts to stormwater drainage would occur under any of the reuse alternatives.

A significant and mitigable impact from surface grading and new building construction under all reuse alternatives would be the soil disturbance and

increased erosion/sedimentation entering the Oakland Inner Harbor, NAS Alameda Inner Harbor, Seaplane Lagoon, and San Francisco Bay. Construction activities and marina operations could also result in significant and mitigable contaminant spills into the surrounding water bodies. A significant and mitigable impact under all reuse alternatives would result from developing and reusing low-lying areas of the site near its bay and channel frontages subjecting residents and workers to potential flood hazards. Under all reuse alternatives, a significant and mitigable impact could occur from dispersal and disposal of contaminants due to dredging activities. Dredging and dredge material disposal could disturb and disperse contaminated materials into the water column.

Traffic and Circulation

No Project. There would be nonsignificant impacts under the No Project Alternative because of the minimal amount of traffic generated by caretaker and limited leasing activities. Total trips generated would be significantly less than under operational use of the site.

Community Reuse Alternatives. No significant impacts to transit service and on-street parking would occur under the reuse alternatives. Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at local intersections under all the reuse alternatives. Each of the reuse alternatives would generate more average daily traffic than was present during Navy use of the property.

Under all the reuse alternatives, significant and mitigable impacts would result from traffic added to nearby freeway segments and local arterial streets. The Reuse, Seaport and Residential Alternatives would have significant and mitigable impacts resulting from traffic congestion on State Route 260 (Webster/Posey Tubes). All of the reuse alternatives would generate significant and mitigable impacts to on-site traffic volumes, on-site parking demand, and increased potential for accidents.

Air Quality

No Project. Nonsignificant impacts would occur under the No Project Alternative because the minimal caretaker and interim leasing activities would generate low traffic volumes, and consequently, few emissions.

Community Reuse Alternatives. Nonsignificant impacts related to carbon monoxide concentrations or PM_{10} would occur under the Reduced Density Alternative because the amount of traffic generated would not generate emissions exceeding established standards or thresholds. Nonsignificant impacts would result from release of asbestos and lead particles during

demolition and remodeling activities under all of the reuse alternatives because complying with required Federal, State, and BAAQMD regulations would prevent significant airborne releases of these materials. Nonsignificant impacts would result from industrial source emission under all of the reuse alternatives because existing BAAQMD regulations would minimize any net increase in these emissions. Because the required updating of Federal and State air quality plans provides an automatic mechanism for addressing the regional air quality impacts of changing land use and transportation plans, air quality plan consistency is considered a nonsignificant impact under all of the reuse alternatives.

A significant and mitigable impact would result from temporary sources of fugitive dust because of demolition, construction, and remodeling activities under all of the reuse alternatives. A significant and mitigable impact would result from carbon monoxide concentrations that are localized near two congested intersections (Tinker Avenue/Webster Street and 7th Street/ Harrison Street) under the Reuse, Seaport and Residential Alternatives. A significant and mitigable impact under the Reuse Plan, Seaport and Residential Alternatives would also result from production of emissions of PM_{10} from vehicle traffic. A significant and mitigable impact under all of the reuse alternatives would result from production of emissions of ozone precursors from vehicle traffic. These increased emissions of ozone precursors and PM_{10} would exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year. However, implementing Mitigation Measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic-related carbon monoxide emissions to a nonsignificant level.

Noise

No Project. Nonsignificant noise impacts would occur under the No Project Alternative because minimal caretaker and interim leasing activities would generate low traffic volumes or other on-site activity, and consequently little noise.

Community Reuse Alternatives. Significant and mitigable impacts would occur under all reuse alternatives from demolition, construction, and remodeling activities, which would cause temporary noise and vibration disturbances to adjacent land uses. Significant and mitigable impacts would occur under all reuse alternatives from traffic noise levels.

Hazardous Materials and Waste

No Project. Under the No Project Alternative all programs related to hazardous materials and waste would proceed without disruption. There

could be significant and mitigable impacts from human exposure to unremediated areas during routine use. There would be nonsignificant impacts from human exposure to contamination during remediation activities, ecological exposure to contamination during remediation activities, hazardous materials used to support caretaker activities and interim leasing, and hazardous waste generated by caretaker and tenant operations. These uses are tightly controlled under current regulations.

Community Reuse Alternatives. All sites would be cleaned up by the Navy to levels compatible with uses proposed under the approved alternative. Under all the reuse alternatives, there could be significant and mitigable impacts from human exposure to unremediated areas during routine site use, from human exposure to unremediated areas during construction activities, from human and ecological exposure to residual contamination during construction, from human exposure to residual contamination during routine use, and from human exposure to surface emissions of subsurface gases during routine use. Under all the reuse alternatives, there would be nonsignificant impacts associated with the potential for human exposure to contamination during remediation activities, ecological exposure to contamination during remediation activities, human and ecological exposure to unidentified subsurface hazards during construction activities, and increased use of hazardous materials.

Under all the reuse alternatives, there would be nonsignificant impacts associated with the potential for human and ecological exposure to unidentified subsurface hazards during construction activities, hazardous materials use, hazardous waste generation, asbestos, PCBs, storage tanks, ordnance, lead, radioactive materials, or medical/biohazardous waste. There would be no impacts related to radon under any of the alternatives.

OTHER CEQA CONSIDERATIONS

Certain additional topics are required to be included in an EIR by CEQA. These include identifying and discussing cumulative impacts, growth-inducing impacts, unavoidable adverse impacts, short-term versus long-term environmental goals, and significant irreversible environmental changes.

Cumulative Impacts

The reuse of NAS Alameda/FISC Alameda, in conjunction with other major projects in the region, would result in cumulative impacts to several resources. The cumulative impact analysis focuses on potential impacts from the USFWS wildlife refuge, the Coast Guard housing area, and the Port of Oakland's Vision 2000 program. Significant and not mitigable cumulative impacts have been identified for cultural resources and for air quality.

Growth-inducing Impacts

The No Project Alternative would not directly induce growth in the region. Each of the reuse alternatives would induce new economic growth in the region and would create new jobs. Demands for additional employees resulting from reuse activities would be met largely by the local population. The increased economic activity would be expected to contribute to regional economic growth and would affect factors such as housing conditions and land development. The results of any growth inducement resulting from the project would be controlled by existing and undetermined future zoning requirements, off-site general plan designations, and specific environmental documentation for separate development projects.

Unavoidable Adverse Effects

The No Project Alternative would not result in any significant unavoidable impacts. Implementation of the reuse alternatives would result in significant unavoidable adverse impacts to visual resources, cultural resources, biological resources, and air quality.

The significant environmental impacts for which no feasible mitigation measures have been identified are considered to be unavoidable adverse impacts, and are summarized below.

- *Visual Resources.* Development of port facilities in the Northwest Territories planning area under the Seaport Alternative would create a significant impact by imparting an industrial visual character to the south shore of the Oakland Inner Harbor. It would not be possible to screen port facilities from public view, and therefore this impact could not be mitigated to a nonsignificant level.
- *Visual Resources.* Under the Seaport Alternative a significant and not mitigable impact would result from large loading cranes that would disrupt views to the west from portions of the Civic Core planning area as well as from some locations along the north shore of the Oakland Inner Harbor. It would not be possible to avoid disruption of views from some locations by loading cranes.
- *Cultural Resources.* All of the reuse alternatives would result in the demolition of contributing properties in the NAS Alameda Historic District. Because contributing buildings to the NAS Alameda Historic District would be demolished, this impact would be significant and not mitigable. Under the Seaport Alternative, the Training Wall would also be demolished, which would be a significant and not mitigable impact.

- *Biological Resources.* The Seaport Alternative and Residential Alternative would result in increased predation of the California least tern. Under the Seaport Alternative the installation of large loading cranes would provide perching sites for raptors and other predators. This impact cannot be mitigated because antiperching devices are not feasible on the tall cranes. Domestic animals, landscaping, and other features of residential development would result in increased predation of terns, which could not be mitigated to a nonsignificant level.

- *Biological Resources.* The Residential Alternative would result in an increase in the number of people and domestic animals living adjacent to the USFWS wildlife refuge. Feasible measures to protect the California least terns would not be sufficient to prevent a significant loss of individuals and disruption of breeding of California least terns.

Short-term Versus Long-term Environmental Goals

Short-term environmental goals would be enhanced through increased public access to open space and accompanying recreational opportunities at NAS Alameda/FISC Alameda along the Oakland Inner Harbor and San Francisco Bay that were previously restricted because of Navy use. Preserving the Alameda Training Wall and rehabilitating most of the NAS Alameda Historic District represent additional short-term gains under the Reuse Plan Alternative. Long-term benefits include providing jobs and opportunities for recreational use. Maintaining public access and open space along the Oakland Inner Harbor and the San Francisco Bay shoreline represents a proactive effort to increase long-term environmental productivity.

The reuse-related environmental impacts associated proposed peak-hour traffic congestion and the concurrent increased air emissions and noise associated with this traffic congestion could be considered as decreases to the long-term productivity of the San Francisco Bay Area's vehicle traffic flow and air and noise quality.

Significant Irreversible Environmental Changes

Implementing any of the reuse alternatives would require commitments of both renewable and nonrenewable energy and material resources for demolition and commitments for construction of the structures and improvement of the required infrastructure. These developments would represent a very large commitment of financial resources, and in the case of

light industry, port, or residential development in the Northwest Territories planning area, would represent an irreversible commitment of the NAS Alameda/FISC Alameda properties to the proposed uses.

1. PROJECT DESCRIPTION

1. PROJECT DESCRIPTION

This environmental impact report (EIR) evaluates the potential impacts to the environment that may result from the community reuse of Naval Air Station Alameda (NAS Alameda) and Fleet and Industrial Supply Center (FISC) Alameda Annex and Facility in Alameda, California. NAS Alameda and the FISC Alameda Annex and Facility are closed, pursuant to the 1990 Defense Base Closure and Realignment Act (DBCRA), Part A of Title XXIX of Pub. L. 101-510, codified as amended at 10 U.S.C. § 2687 note, commonly referred to as DBCRA 1990.

This document has been prepared in accordance with the California Environmental Quality Act (CEQA) California Public Resources Code (Cal. Pub. Res. Code) § 21000, *et seq.*, as amended, and implementing guidelines; and Title 14, California Code of Regulations (C.C.R.) § 15000, *et seq.* The action evaluated is the proposed acquisition and community reuse of the NAS Alameda and FISC Alameda Annex and Facility properties.

1.1 PURPOSE AND NEED

For the past several years, the Department of Defense (DOD) has been reducing its basing and staffing requirements to match current force structure plans. The identification of NAS Alameda and the FISC Alameda Annex and Facility (hereinafter referred to as FISC Alameda) for closure is a result of that process. This document addresses the acquisition and reuse of both NAS Alameda and FISC Alameda because both Navy facilities were scheduled for closure and were covered jointly in the Alameda Reuse and Redevelopment Authority (ARRA) community planning effort. The ARRA is the local redevelopment authority (LRA) for NAS Alameda/FISC Alameda. When the entire site is referenced in this document, it is called NAS Alameda/FISC Alameda.

DBCRA 1990 and subsequent Defense Authorization Acts established a process to close and realign military bases. As part of this process, the Base Realignment and Closure (BRAC) Commission recommended that the Secretary of Defense "close Naval Air Station (NAS) Alameda, California." The BRAC Commission recommendation was approved by President Clinton and accepted by the 103rd Congress in October 1993. NAS Alameda closed on April 30, 1997, and the property is in caretaker status.

In July 1995, the BRAC Commission recommended that the Secretary of Defense "close Navy Supply Annex, Alameda, California." The Supply Annex, which occupies two sites in Alameda, California (Alameda Annex and Facility) operated as a support facility of the Fleet and Industrial Supply Center, Oakland, which the BRAC Commission also recommended

for closure. The recommendations were approved by President Clinton and accepted by the 104th Congress in October 1995. The FISC Alameda Annex and Facility closed on September 30, 1998. In early 1996, Congress passed special legislation, Pub. L. 104-106 § 2867, giving the Navy authority to convey the FISC Alameda Annex and Facility to the City of Alameda. The Navy has determined that it will use this Congressional authority for the disposal of FISC Alameda Annex and Facility.

The decisions to close NAS Alameda and FISC Alameda were exempted by Congress from National Environmental Policy Act (NEPA) documentation requirements under DBCRA 1990, Pub. L. 101-510 § 2906. Analysis of the environmental effects of Navy disposal of the property and potential reuse are not exempted from analysis under NEPA. Accordingly, the Navy is preparing a separate environmental impact statement (EIS) that evaluates the potential impacts to the environment that may result from the Navy disposal and community reuse of the property. Requirements under DBCRA 1990 and its amendments relevant to the disposal of NAS Alameda/FISC Alameda include the following:

- Compliance with NEPA and related laws;
- Environmental restoration of the property, as soon as possible, with funds made available for such restoration;
- Consideration of the local community's reuse plan prior to disposal of the property; and
- Compliance with specific Federal property disposal laws and regulations.

The project analyzed in this EIR is reuse of the NAS Alameda/FISC Alameda property as generally described at the programmatic level in the NAS Alameda Community Reuse Plan (Reuse Plan). The purpose of adopting a reuse plan for the property is to allow for the efficient transition from military use to civilian use. By adopting a reuse plan, the City can allow for the integration of the property with its long-term planning and infrastructure goals. Actions related to reuse include any necessary amendments to the City's General Plan to incorporate elements of the Community Reuse Plan, environmental clearance for the Alameda Point Improvement Project (APIP), and the designation of the area as a Local Agency Military Base Recovery Area (LAMBRA). Note that environmental review of the APIP CIP was the subject of special legislation which allows an agency to defer preparation of an EIR for up to 30 months on an adopted redevelopment plan for closing military bases.

1.1.1 Project Objectives

The project objective is the conversion and reuse of NAS Alameda/FISC Alameda for civilian uses. The NAS Alameda Community Reuse Plan, adopted in 1996 pursuant to Pub. L. 101-510, Title XXIX, 10 U.S.C. § 2687 and President Clinton's Five-Point Plan forms the basis for future land use planning for the project area. The Reuse Plan is based on the principle that economic development and environmental protection are common interests. The Reuse Plan provides for an orderly transition from military to civilian use, while advancing the community goals of new employment, economic development, environmental protection, providing for open space, and preclusion of undesirable uses in a manner to maximize the positive effects on the community. The Vision Statement from the Reuse Plan states:

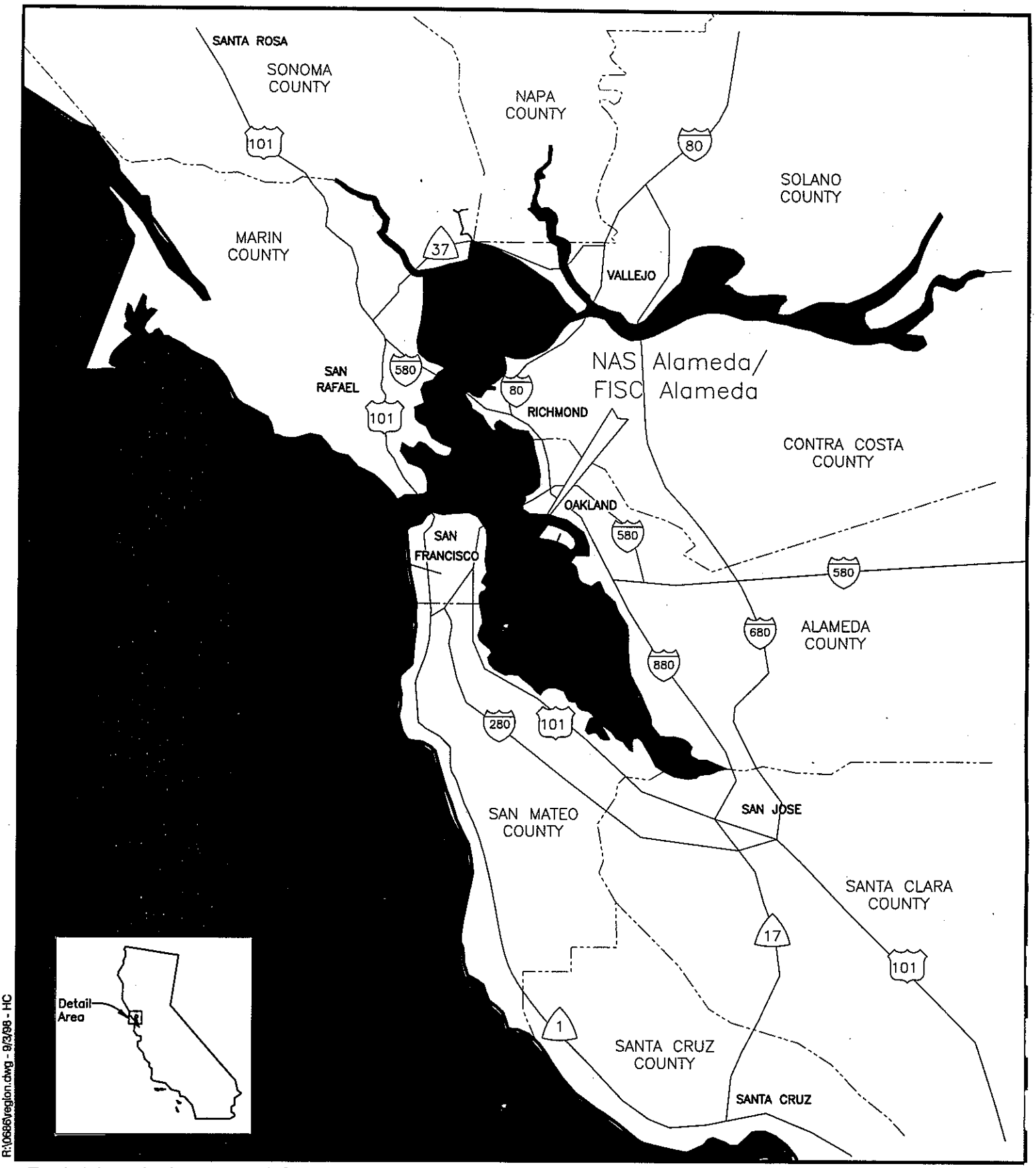
> "Between now and the year 2020, the City of Alameda will integrate the Naval Air Station property with the City and will realize a substantial part of the base's potential. Revenues will have increased and a healthy local economy will have resulted from the implementation of a coordinated, environmentally 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." (ARRA 1996)

1.2 LOCATION AND HISTORY

1.2.1 Location

NAS Alameda is located at the western end of Alameda, along the eastern side of San Francisco Bay, adjacent to the City of Oakland. The property lies almost entirely within both the City and County of Alameda, California, and is bordered by the Oakland Inner Harbor to the north, San Francisco Bay to the south and west, and a portion of the City of Alameda to the east (see Figures 1-1, 1-2, and 1-3). As shown in Figure 1-2, a small portion of the southwest corner of the NAS Alameda property, which is being transferred to the US Fish and Wildlife Service, lies within the City and County of San Francisco.

FISC Alameda Annex and FISC Alameda Facility are located adjacent to NAS Alameda to the northeast and entirely within the City and County of Alameda (see Figure 1-4).



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The site is located at the western end of Alameda island adjacent to the City of Alameda.

LEGEND:

County Lines

Federal and State Highways

N

0 6 12

Approximate Scale in Miles

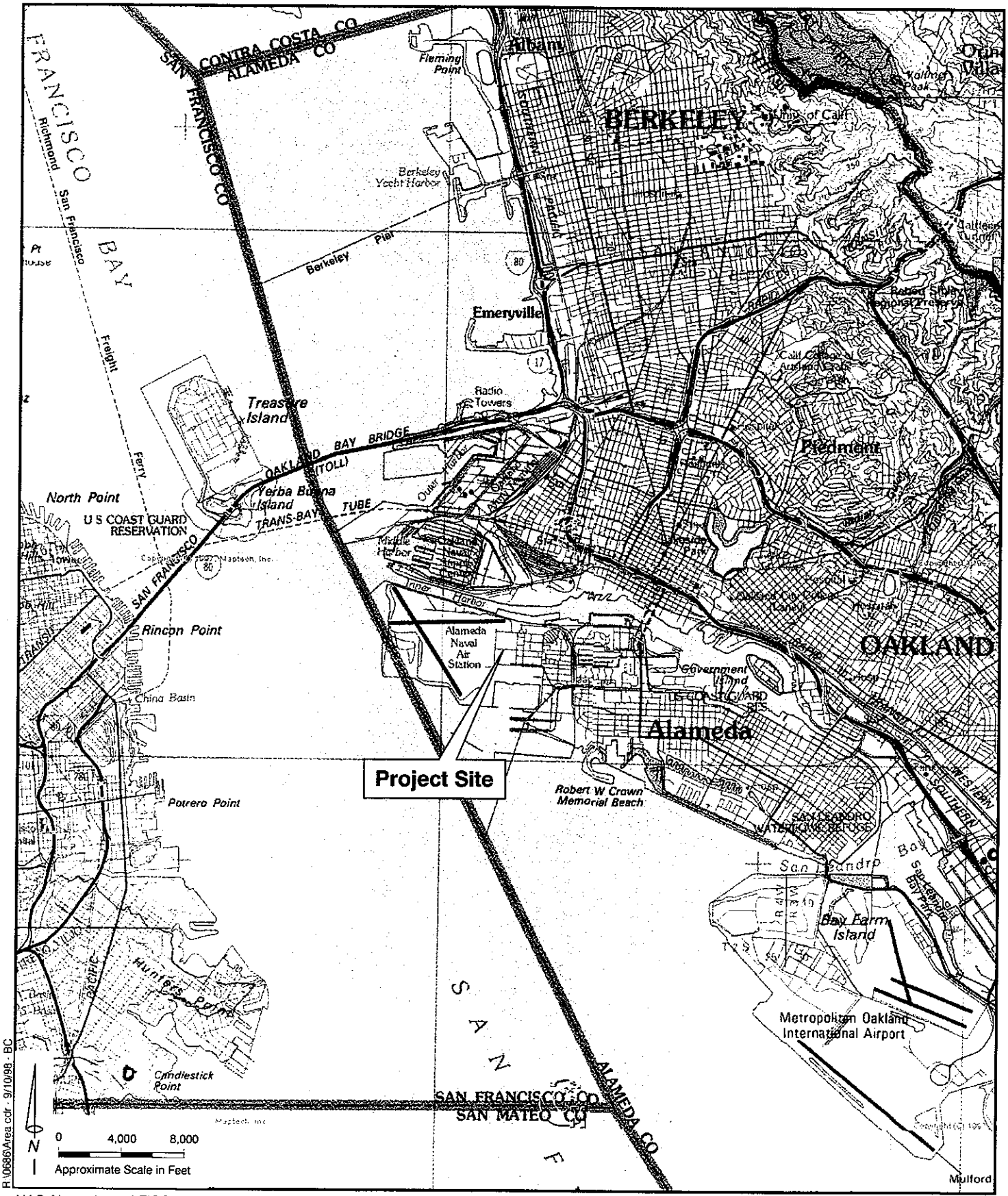
Developed by Tetra Tech

Regional Location

NAS Alameda /FISC Alameda

Alameda, California

Figure 1-1



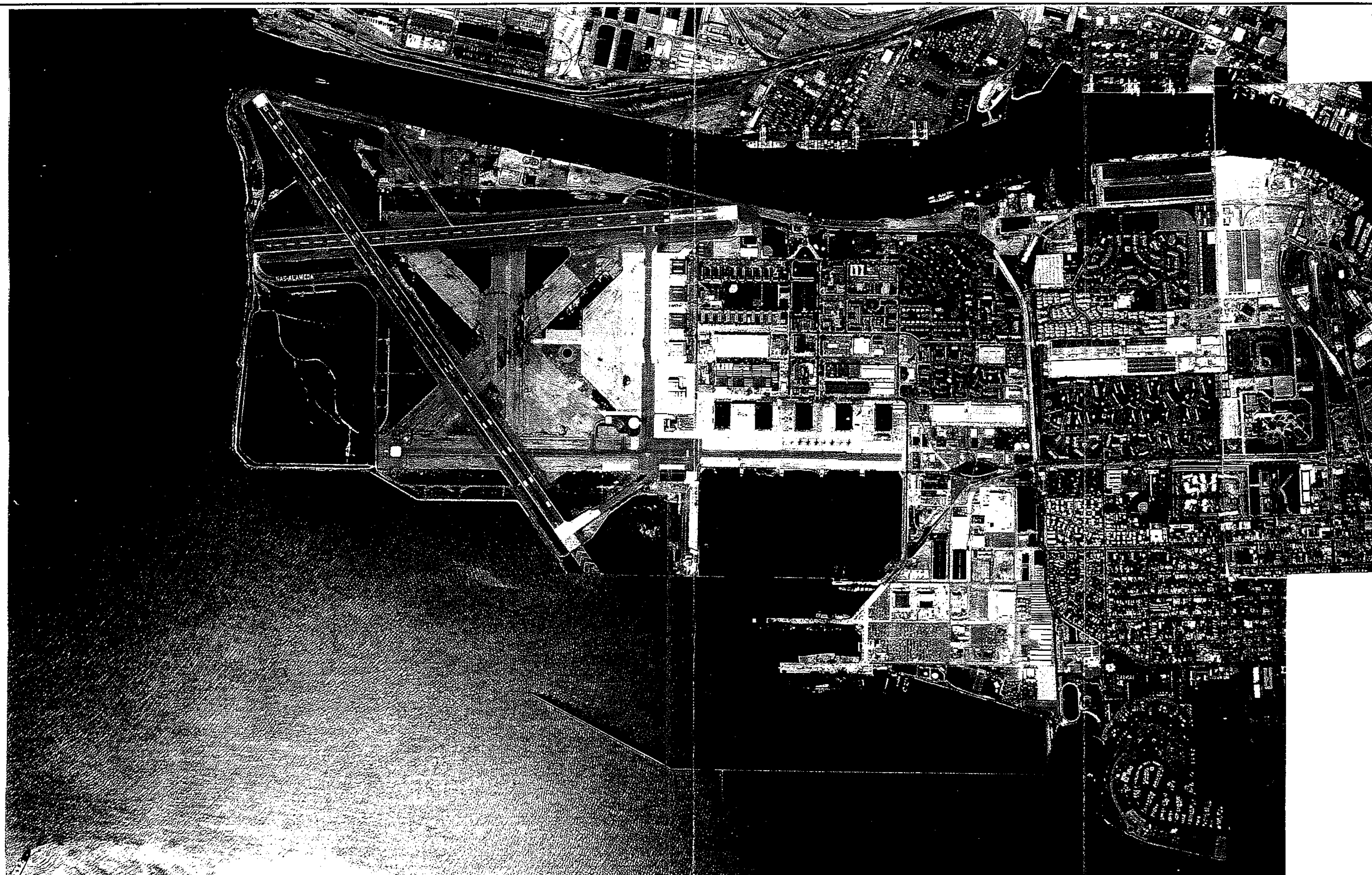
NAS Alameda and FISC Alameda are bounded by the City of Alameda, the Oakland Inner Harbor, and San Francisco Bay.

Project Area

NAS Alameda/FISC Alameda
Alameda, California

Source: USGS 1978

Figure 1-2



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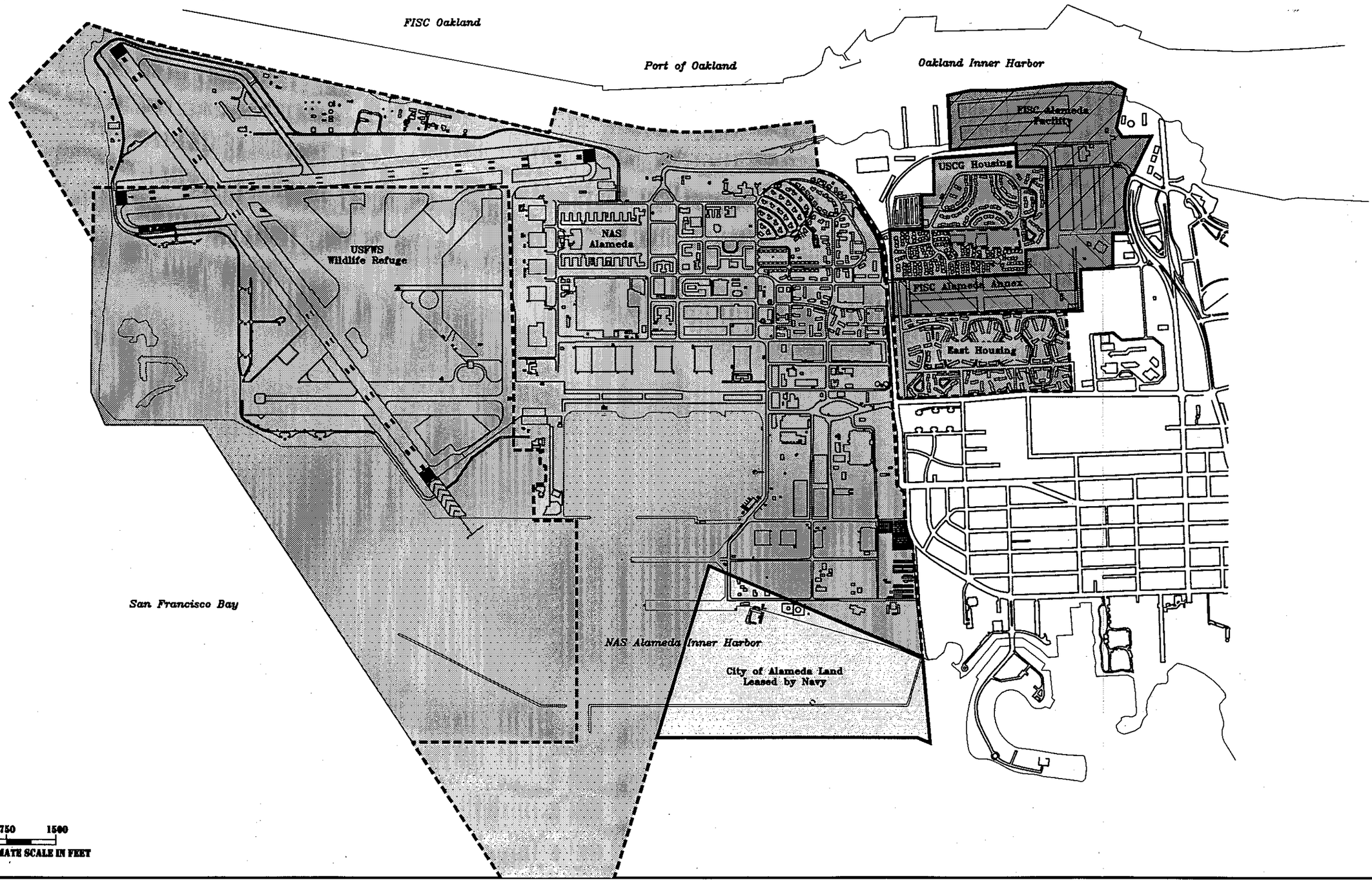
NAS Alameda/FISC Alameda is at the western end of Alameda and includes the air station, warehouses, administrative offices and military residences.

Source: Towill, Inc. 1996

Aerial View of NAS Alameda/FISC Alameda

NAS Alameda /FISC Alameda
Alameda, California

Figure 1-3



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NAS Alameda / FISC Alameda includes both dry and submerged land available for Navy disposal, land being transferred to the Federal agencies, and leased land which will revert to the City of Alameda.

LEGEND:

- FISC Alameda land available for Navy disposal
- NAS Alameda surplus land available for Navy disposal
- City of Alameda land leased by Navy
- Federal agency transfer land
- Submerged land

Source: U.S. Navy

NAS Alameda/FISC Alameda Ownership

NAS Alameda /FISC Alameda
Alameda, California

Figure 1-4

1.2.2 History

NAS Alameda

The area encompassed by NAS Alameda was historically a combination of submerged lands, tideland, and dry land. The site is relatively flat, with elevations ranging from sea level to 30 feet (9.1 meters [m]) above sea level. The property occupies the flattest portion of Alameda, reflecting its origins as diked baylands and mud flats. The first documented filling of tidal and submerged land began sometime during the 1890s. By 1927, the northern part of what later became NAS Alameda had been filled, chiefly with dredge materials from US Army Corps of Engineers (COE) projects associated with the Oakland Harbor and other harbors throughout the East Bay. The filled land was partially occupied by the Alameda Airport, a City-owned facility, and Benton Field, a minor US Army Air Corps facility.

The Navy acquired the initial acreage of land by deed from the City of Alameda and the US Army in 1936 and began constructing the Naval Air Station in 1938. Additional acreage was acquired primarily by condemnation between 1941 and 1956. Between 1963 and 1968, the Navy purchased additional property to develop housing, and also acquired Department of the Army property for this purpose (US Navy 1994d).

Construction activities at NAS Alameda initially focused on erecting permanent buildings on the eastern half of the installation and filling the southern and western portions of the facility. After World War II, filling of San Francisco Bay submerged land and tidelands increased the dry land acreage to the current level. Construction activities continued intermittently until the decision was made to close NAS Alameda.

Since World War II, NAS Alameda was one of the largest and most diversified naval facilities on the West Coast, providing berthing for Pacific Fleet ships and serving as a major center of naval aviation. Prior to the closure decision, NAS Alameda had approximately 60 military tenant commands for a combined military/civilian work force of over 18,000 personnel.

NAS Alameda is about 2 miles (3 kilometers [km]) long by 1 mile (1.6 km) wide and consists of approximately 2,676 acres (1,084 hectares [ha]), including about 1,562 acres (634 ha) of dry land and approximately 1,114 acres (451 ha) of submerged land (see Table 1-1). Of that total, approximately 2,515 acres (1,019 ha) are held by the Navy in fee ownership,

Table 1-1
Acreage Summary at NAS Alameda/FISC Alameda

	Dry Land Acreage	Submerged Land Acreage	Total Acreage
NAS Alameda:			
Land owned in fee by Navy	1,555.00	960.00	2,515.00
Leased Land[1]	5.00	154.21	159.21
Utility Easements[2]	1.46	-	1.46
Subtotal	1,561.46	1,114.21	2,675.67
FISC Alameda (all Navy fee-owned):	141.00	6.00	147.00
Total	1,702.46	1,120.21	2,822.67

[1] Leased by the Navy from the City of Alameda.
[2] Includes eight off-site utility easements that could be assumed by the appropriate utility provider.

about 159 acres (64 ha) are held by the Navy under a lease from the City of Alameda, and approximately 1.5 acres (0.61 ha) are held in off-site utility easements. The 159 acres (64 ha), leased by the Navy from the City of Alameda, will revert to the City. In addition, the eight off-site utility easements, comprising approximately 1.5 acres (0.6 ha), could be assumed by the appropriate utility provider.

NAS Alameda included an airport with seven aircraft maintenance hangars, one of the largest deepwater naval ports in California, and one of the two largest complexes of aircraft maintenance buildings on the West Coast. NAS Alameda also contained a seaplane lagoon, warehouse space, administrative offices, military residences, an exchange retail store and commissary store, community support facilities, and open space.

The California State Lands Commission has jurisdiction over ungranted tidelands and submerged lands owned by the State and the beds of navigable rivers, streams, bays, estuaries, and inlets within its boundaries (Cal. Pub. Res. Code § 6301). This type of land is commonly referred to as public trust land subject to use restrictions by the State Tideland Trust. This trust has been established by State law to protect public interests in commerce, navigation, fisheries, water-oriented recreation, habitat protection, and environmental study. Approximately 648 acres (262 ha) of NAS Alameda is public trust land subject to State Tideland Trust use restrictions. Details regarding the location, extent, and restrictions associated with public trust lands are described in Sections 2.2.2, 3.1.3, and 4.1, and shown in Figure 3-4.

FISC Alameda

In 1940, the Navy constructed the Naval Supply Center (NSC) in Oakland as a port facility to supply and support fleet units and shore activities in the Pacific region during World War II. From the 1940s through the 1980s, NSC Oakland was the main supply facility supporting DOD activities in the Pacific Basin. In addition to the Oakland facilities, NSC Oakland included fuel storage facilities at Point Molate near Richmond, California, and additional storage facilities across the Oakland Inner Harbor in Alameda.

The Alameda Facility was constructed in 1945 as the US Army Alameda Medical Depot. In 1964, the property was transferred to the Navy for NSC Oakland (later FISC Oakland). The Navy acquired the Alameda Annex property in 1951. These two parcels historically have been used for similar purposes, including open storage areas, warehousing, and administrative space. The parcels are known individually as the FISC Alameda Facility and the FISC Alameda Annex and, collectively, for this document, as FISC Alameda. The property includes 141 acres (57 ha) of dry land and 6 acres (2 ha) of submerged land, all of which is owned by the Navy in fee (see Table 1-1). No FISC Alameda land is public trust land.

1.3 NAVY DISPOSAL OF NAS ALAMEDA/FISC ALAMEDA

1.3.1 Navy Disposal Process Regulations

NAS Alameda

The disposal process for NAS Alameda is regulated by DBCRA 1990, as amended; the Federal Property and Administrative Services Act of 1949, 40 U.S.C. § 471, *et seq.*, and its implementing regulations, and the Federal Property Management Regulations (FPMR), 41 C.F.R. Parts 101-47. The Base Closure and Community Assistance Act of 1993, Title XXIX of Pub. L. 103-160, and the Base Closure Community Redevelopment and Homeless Assistance Act of 1994 (Redevelopment Act), Pub. L. 103-421, primarily amend DBCRA 1990, but they also contain self-standing provisions and amendments to other legal authorities for base closure and reuse such as the direction for the establishment of a local redevelopment authority (LRA), in this case the ARRA, responsible for base reuse planning contained within the Redevelopment Act. The Navy also must comply with the amendments to DBCRA 1990 contained in the 1994 Defense Authorization Act and other laws and regulations, including Title 10 of the US Code and Navy regulations, affecting the disposition of real property, as discussed in the introduction to this chapter.

FISC Alameda

In early 1996, the Congress passed special legislation to give the Navy the discretionary authority to convey the FISC Alameda property to the City of Alameda (Pub. L. 102-84, § 2834(b) *as amended by* Pub. L. 104-106, § 2867). This authority can be exercised exclusive of the specific Federal property disposal laws and regulations required for disposal actions pursuant to DBCRA 1990. The Navy has determined that it will use this special legislative authority for the disposal of the FISC Alameda property to the City of Alameda.

1.3.2 Property Screening Process

DOD and Federal Agency Screening

The property screening process required under the FPMR calls for first making excess Federal property available to DOD and other Federal agencies. The Navy has completed the DOD and Federal screening process for both NAS Alameda and FISC Alameda and the results are described below.

NAS Alameda. No DOD agencies expressed interest in the NAS Alameda property. However, two Federal agencies, the US Coast Guard (USCG) and the US Fish and Wildlife Service (USFWS), have requested the transfer of property and facilities. The acreage requested by both agencies is shown in Table 1-2.

The USCG requested approximately 69 acres (28 ha) at NAS Alameda, including 582 housing units in Marina Village and North Housing, and Building 545. The USCG has subsequently indicated an interest in pursuing a leaseback of the property in lieu of transfer as allowed by the Defense Authorization Act for Fiscal Year 1996.

The USFWS initially requested transfer of 595 acres (241 ha) of dry land and 375 acres (152 ha) of submerged land at NAS Alameda to establish a wildlife refuge. Their request was later revised to 525 acres (213 ha) of dry land and 375 acres (152 ha) of submerged land for a total of 900 acres (364 ha). A surveyed legal description will be required prior to property transfer to determine precise acreage of the land to be transferred to the USCG and the USFWS. The approximate location of the property being transferred to the USCG and USFWS is shown in Figure 1-4.

Table 1-2
Disposition of Land at NAS Alameda/FISC Alameda

	Dry Land Acreage	Submerged Land Acreage	Total Acreage
Federal Agency Transfers:			
US Fish & Wildlife Service	525.00[1]	375.00	900.00
US Coast Guard[2]	69.00	-	69.00
Subtotal	594.00	375.00	969.00
Leased Land/Easements:			
Leased Land[3]	5.00	154.21	159.21
Utility Easements[4]	1.46	-	1.46
Subtotal	6.46	154.21	160.67
Federal Property Available			
NAS Alameda	961.00	585.00	1,546.00
FISC Alameda	141.00	6.00	147.00
Subtotal	1,102.00	591.00	1,693.00
Total	1,702.46	1,120.21	2,822.67

[1] The figure of 525 acres is based on an estimate taken from a USFWS drawing of the proposed transfer area, and may be revised when more data (e.g., on-the-ground survey) is available. More recent estimates indicate that the size of the refuge would be 565 to 571 acres.
[2] Includes Marina Village and North Housing areas containing 582 units. The ARRA has requested that the USCG acquire use of the property under a leaseback arrangement, as provided under DBCRA 1990, rather than by property transfer. The USCG has tentatively agreed and leaseback negotiations are pending.
[3] Leased by Navy from City of Alameda.
[4] Includes eight miscellaneous off-site utility easements that could be assumed by the appropriate utility provider.

FISC Alameda. The Navy also conducted the DOD and Federal screening for the FISC Alameda property before Congress authorized conveyance of the site directly to the City of Alameda (Pub. L. 104-106, § 2867). No DOD agency expressed interest in the property. The US Department of Transportation, Maritime Administration (MARAD) expressed interest in property at the FISC Alameda Facility, but its request was disapproved by the Navy (Pirie 1998). Because the Navy plans to use the special legislation, it is not required to undergo additional property screening processes.

Homeless Assistance Screening

The Stewart B. McKinney Homeless Assistance Act, 42 U.S.C. § 11301 *et seq.*, requires DOD and other Federal agencies to give priority consideration for homeless assistance over other uses for property that is considered excess, surplus, or underutilized by Federal agencies. The US Department of Housing and Urban Development (HUD) screens properties in these categories for suitability for homeless assistance. The Base Closure Community Redevelopment and Homeless Assistance Act of 1994

(Redevelopment Act) established alternative procedures to the McKinney Act, which required that the needs of the homeless be considered during the reuse planning process, and be balanced with the need for other economic redevelopment. The ARRA elected to proceed under the alternative Redevelopment Act procedures.

NAS Alameda. In February 1995, the ARRA recognized the Alameda Homeless Providers Base Conversion Collaborative (Homeless Collaborative) as the official organization representing the homeless interests in Alameda County. The homeless screening process for NAS Alameda was initiated on April 14, 1995, and closed on July 14, 1995. The screening process resulted in 19 requests from homeless assistance providers for property and facilities at NAS Alameda. On April 23, 1996, HUD approved the NAS Alameda Community Reuse Plan under the procedures of the Redevelopment Act, which included 16 agreements with homeless providers. Under the HUD-approved agreements, specific property and facilities would be leased rather than conveyed to homeless providers.

FISC Alameda. Homeless screening was not required or conducted for the FISC Alameda property because the Navy has determined that it will use the special legislative authority for the proposed action, the disposal of the FISC Alameda property directly to the City of Alameda (Pub. L. 104-106, § 2867). However, the extensive local facilities to be provided at NAS Alameda are anticipated to accommodate local homeless assistance requirements.

Federal Property

Excess Federal property not transferred to other Federal agencies, or acquired under the Redevelopment Act procedures, is available for disposal by the Navy. This property, including approximately 1,102 acres (446 ha) of dry land and 591 acres (239 ha) of submerged land at NAS Alameda/FISC Alameda, will be available for conveyance to the City of Alameda or other acquiring entities.

1.4 CEQA COMPLIANCE

1.4.1 Use of the Navy EIS

The Navy will use the EIS to fulfill its NEPA requirements in making disposal decisions for Federal property at NAS Alameda/FISC Alameda. Following the completion of the Final EIS, the Navy will issue its Record of Decision (ROD) that will identify significant impacts that will occur as a result of disposal and reuse. After the ROD has been issued, the Navy

property can be conveyed to the City of Alameda or other acquiring entities.

1.4.2 Intended Uses of the EIR

Following certification of the Final EIR, the EIR would be used by the City of Alameda to accept the conveyance of property, to adopt any necessary amendments to the City's General Plan, to adopt any rezoning of the site resulting from the Reuse Plan, and in any other approvals needed to implement the Reuse Plan. The City of Alameda and the Community Improvement Commission (CIC) of the City of Alameda will use the EIR as they adopt and implement the Alameda Point Improvement Project (APIP) and the projects to be undertaken as part of the APIP Plan. The certified EIR also would be used to amend other applicable plans, and as a program-level document for purposes of environmental review of individual development projects. Should any approvals by the City include significant unavoidable environmental impacts, the City would adopt a statement of overriding considerations, as required by CEQA.

The Community Improvement Plan (CIP) for the Alameda Point Improvement Project (APIP) was established by City of Alameda Ordinance No. 2754, effective April 1, 1998. The CIP is based on the Preliminary Plan adopted by City of Alameda Planning Board Resolution No. 96-85 on December 9, 1996 and the Community Reuse Plan adopted by ARRA on January 31, 1996, and accepted by the City later that year. The land area included within the CIP encompasses the entirety of the former Naval Air Station Alameda and a portion of the Fleet Industrial Supply Center (FISC) for a total of 2,688 acres of land and water.

The CIP was adopted to mitigate the serious economic effects resulting from base closure and because the project area could not currently be used due to substandard infrastructure and buildings which do not meet state building standards.

Because of the long-term nature of the plan and the need for flexibility, the CIP does not offer a precise plan nor establish specific projects. Instead, the plan presents a process and a basic framework within which specific projects can later be presented. Adoption of the CIP will also assure a steady stream of funds, in the form of tax increment, over the 45-year life of the plan to carry out specific projects to stimulate the redevelopment of the area.

Environmental review of the APIP CIP was the subject of special legislation which allows an agency to defer preparation of an EIR for up to 30 months on an adopted redevelopment plan for closing military bases.

This EIR also serves as the required CEQA documentation for designating NAS Alameda/FISC Alameda as a Local Agency Military Base Recovery Area (LAMBRA) under the State's Local Agency Military Base Recovery Area Act (LAMBRA Act), Cal. Gov. Code § 7105, *et seq.* The purpose of the LAMBRA Act is to stimulate business and industrial growth in areas experiencing military base closures. The LAMBRA Act focuses on attracting companies to the area by relaxing regulatory controls and by providing tax credits and other economic incentives to private sector investors within a LAMBRA. The LAMBRA Act permits local jurisdictions to apply for LAMBRA status for a base, provided it is not already within a State-designated enterprise zone. The California Trade and Commerce Agency is authorized by the Act to designate one LAMBRA in each of five regions comprising the State. NAS Alameda/FISC Alameda has received LAMBRA status.

Although not proposed at this time, to facilitate the eventual conveyance of title, the Navy may enter into a Lease in Furtherance of Conveyance (LIPOC). A LIFOC is a lease entered into after the Navy has prepared a Finding of Suitability to Lease (FOSL), complied with NEPA, and issued a final disposal decision for the property. A LIFOC provides immediate possession of the property to the entity identified in the disposal decision as the recipient of the property. Such a lease may be long-term and may address all or part of the property identified for conveyance to the lessee in the disposal decision. Use of a LIFOC would enable the acquiring entity to conduct reuse activities on the leased area while the Navy continues with necessary remedial activities. As parcels are remediated, they could be conveyed to the acquiring entity and could be developed for new uses consistent with the Reuse Plan. As such, under the LIFOC, reuse, remediation, and comprehensive development could occur simultaneously at NAS Alameda/FISC Alameda.

The Navy may convey all or some of the parcels in an unremediated condition if the property is otherwise determined to be suitable for disposal, and the statutory conditions for deferral of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) deed convenant requirements have been satisfied. Any such conveyance must satisfy the US EPA Administrator and the Governor of California. While not currently proposed, this type of early conveyance would allow the acquiring entity to undertake remediation action or to convey all or some of the unremediated parcels to a private developer who could undertake the remediation in lieu of the Navy and in accordance with Federal and State requirements. Early (§ 334) conveyance (as set forth in Section 120[h][3][c] of CERCLA) might enable reuse activities to begin sooner than would occur if title were not conveyed until remediation is complete. As under a LIFOC, reuse, remediation and comprehensive

development could occur at the same time. No form of disposal (total transfer, LIFOC, or § 334) can occur until the environmental review processes are complete.

1.4.3 Related CEQA Documentation

The City and Navy have prepared separate environmental documentation in support of limited interim leasing actions that will occur prior to disposal of the property. In 1995, the City of Alameda prepared a Mitigated Negative Declaration for the NAS Alameda Interim Leasing Program and in 1998 prepared a Mitigated Negative Declaration for the FISC Interim Leasing Program. The Navy has prepared separate NEPA documentation (categorical exclusions) for these leases, including a lease for the continued operation of Miller Elementary School, that propose actions in conformance with historic types of uses at NAS Alameda/FISC Alameda (US Navy 1996f, 1997c,d, and 1998e).

Future specific reuse actions that will occur on property conveyed to the City of Alameda or other acquiring entities will be subject to detailed environmental analysis under CEQA at the time that specific development plans are presented to the City of Alameda for consideration. These plans would include more detailed development criteria in the areas of public access, circulation and parking, open space and natural resources, recreational facilities, land use mix, and development design standards. The applicability of CEQA review and the level of analysis (i.e., Initial Study/Negative Declaration, Mitigated Negative Declaration or EIR) would depend on the potential impact of the specific proposed uses and the adequacy of this EIR in addressing those impacts.

1.5 DOCUMENT ORGANIZATION

This EIR consists of two volumes. Volume I contains the main text of the EIR and Volume II contains the technical appendices. Document organization is outlined below.

Chapter 1, Project Description, is a discussion intended to provide the reader with an overview of the reasons for acquisition and reuse of the property. It includes descriptions of the EIR content and approach, the decision process for closing the facilities, the disposal process, and the public involvement process used to solicit input on potentially significant environmental impacts. Because NAS Alameda and FISC Alameda were considered together in the Reuse Plan, both sites are analyzed in one environmental document.

Chapter 2, Alternatives Including the Preferred Alternative, provides the reader with a description of the community planning process leading to formation of the NAS Alameda Community Reuse Plan. The EIR analyzes four community reuse alternatives: the Reuse Plan Alternative (Preferred Alternative), the Seaport Alternative, the Residential Alternative, and a Reduced Density Alternative. A No Project Alternative also is analyzed. A table at the end of Chapter 2 summarizes significant impacts and mitigation identified for each of the alternatives.

Chapter 3, Affected Environment, describes the existing environmental conditions at NAS Alameda/FISC Alameda. A region of influence (ROI) for each resource is identified that reflects the geographic area in which impacts for a particular resource are likely to occur. Identification of baseline conditions for each resource also is provided.

Chapter 4, Environmental Consequences, describes the potential environmental impacts to resources at NAS Alameda/FISC Alameda and in an ROI resulting from acquisition and community reuse of property at NAS Alameda/FISC Alameda. Each section identifies the criteria used to evaluate whether an impact would be considered significant. Direct and indirect impacts are identified. Identification of baseline conditions for each resource also is provided. Mitigation measures are identified for any impact determined to be significant.

The purpose of this chapter is to provide the public, interested agencies, and decision-makers with a clear understanding of the environmental effects of adopting the Proposed Project, or any of the other alternatives for reuse.

Chapter 5, Other Considerations Required by CEQA, addresses other topics required by CEQA regulations. These topics include cumulative impacts, growth-inducing secondary population or development growth impacts, any unavoidable adverse impacts, short-term versus long-term environmental goals, and significant irreversible environmental changes.

Chapters 6 through 10 provide background information, including consultations with interested and responsible agencies, references consulted, a list of preparers, an index, and the distribution and notification list for the EIR.

Technical appendices and supplementary information are provided in Volume II.

1.6 PUBLIC INVOLVEMENT PROCESS

The EIR process is designed to involve the public in decision-making. Public opportunities to comment on and participate in the process have been provided during preparation of this EIR, as outlined in the following sections. Comments from agencies and the public have been solicited to help identify the potential environmental issues associated with the disposal and reuse of the NAS Alameda/FISC Alameda property. Public notification included the full spectrum of area residents and community organizations. Appendix B provides copies of public involvement materials and a summary of scoping comments received. Chapter 10 presents the distribution and notification list for the EIR. Dates of meetings and publication of announcements are included in Sections 1.6.2 and 1.6.4.

Methods to involve the public during preparation of this EIR have included the following:

- Conducting a public scoping meeting to solicit comments and to identify issues of concern;
- Conducting a public meeting to identify baselines to be used in the environmental document;
- Conducting a public meeting to receive comments on the Draft EIR and providing a public comment period;
- Publishing local public notices of hearings, mailing public announcements, and coordinating media coverage, press releases, and feature articles;
- Publishing national public notices of the initial EIS Notice of Intent in the Federal Register; and
- Compiling an extensive mailing list to distribute information.

1.6.1 Reuse Planning

An extensive public involvement effort was undertaken in the development of the NAS Alameda Community Reuse Plan to ensure that the public had many opportunities to provide meaningful input into decisions regarding reuse planning for NAS Alameda and the FISC Alameda sites. The process was led by the ARRA (the local redevelopment authority) and the Alameda Base Reuse Advisory Group (BRAG), a citizens' advisory group to the ARRA. The East Bay Conversion and Reinvestment Commission (EBCRC) also participated in a number of the public forums. (See Section 2.1.1 for a detailed description of the reuse planning process.)

Public involvement activities conducted by the ARRA/BRAG to date have included four public workshops, an ongoing newsletter and public preferences survey, a long-range vision planning meeting, and regular open meetings of the ARRA, the BRAG, and the topical BRAG subcommittees.

In developing the Community Reuse Plan, ARRA prepared five preliminary reports, which were made available to the public, including:

- *Reconnaissance Phase Report;*
- *Phase II Conditions and Trends Report;*
- *Public Involvement Report;*
- *Interim Reuse Strategy;* and
- *Long Range Alternative Analysis.*

ARRA adopted the NAS Alameda Community Reuse Plan in January 1996. The Reuse Plan was amended in May and September 1997. These changes are described in Chapter 2. The Reuse Plan, which details public input efforts during the reuse planning process, is available through the ARRA office.

1.6.2 Scoping Process

The purpose of scoping is to identify potential environmental issues and concerns that would be raised by disposal and reuse, and to identify a range of reasonably foreseeable reuse alternatives. The initial scoping process for the NAS Alameda/FISC Alameda EIS/EIR included placing notices in the Federal Register and local newspapers, conducting a public meeting, and using direct mail. Comments received during the initial scoping period were considered in determining the range of reasonably foreseeable alternative reuse options and issues to be evaluated in the EIR.

A Notice of Preparation (NOP), required by CEQA, was filed with the California Office of Planning and Research on February 28, 1996, to prepare an EIR (State Clearinghouse #96022105). The NOP was sent to the California State Clearinghouse for distribution to State agencies.

Press releases were sent to the news media, and a public notice was published in the following four local newspapers on the indicated dates in 1996: Oakland Tribune on Sunday, March 3, and Tuesday, March 5; Alameda Journal on Friday, March 1, and Tuesday, March 5; Alameda Times-Star on Sunday, March 3, and Tuesday, March 5; and the San Leandro Times on Thursday, February 29. Over 900 letters announcing the scoping meeting, with an attached summary of the Reuse Plan and a

description of possible reuse alternatives and environmental issues to be considered in the EIR, were mailed to public agencies, public interest groups, and individuals either known to have an interest or thought to have an interest in the reuse of NAS Alameda/FISC Alameda. The scoping letter invited written comments and announced that a public scoping meeting would be held in the City of Alameda on March 13, 1996. The scoping meeting was attended by approximately 75 individuals, including agency representatives and members of the public. Issues identified through the scoping process are summarized in Section 1.6.3.

Subsequent to the Notice of Preparation (NOP) that was filed on February 28, 1996, the City of Alameda circulated an Amended NOP on March 2, 1999. This Amended Notice of Preparation modifies the original NOP in the following respects: (1) the City's environmental impact report will be prepared separately from the Navy's environmental impact statement; (2) the project description is clarified to specify that the environmental impact report will be used by the City of Alameda to: (a) accept conveyance of Naval Air Station Alameda and Fleet Industrial Supply Center Facility/Annex from the United States; (b) adopt any necessary amendments to the City's General Plan; (c) provide environmental clearance for the Alameda Point Improvement Plan (APIP) and the projects to be undertaken as part of the APIP Community Improvement Plan; and (d) serve as the environmental documentation for designating the Naval Air Station Alameda and Fleet Industrial Supply Center Facility/Annex as a Local Agency Military Base Recovery Area (LAMBRA) under the State's Local Agency Military Base Recovery Act (LAMBRA Act), Cal. Gov. Code Section 7105, *et seq.*

The Amended NOP was filed with the California Office of Planning and Research on March 4, 1999. The Amended NOP was mailed to the California State Clearinghouse for distribution to State agencies. In addition, the City mailed approximately 200 letters to interested agencies, organizations and individuals announcing the preparation of a Draft EIR for the project. The public comment period for the Amended NOP was open for 30 days from March 5 through April 4, 1999. The City received 19 comment letters during that period. A summary of comments received on the Amended NOP is provided in Appendix B (Table B-2).

1.6.3 Summary of Initial Scoping Issues

During the EIR scoping process, which ended March 29, 1996, 45 letters were received from members of the public, interested groups, and Federal, State, and local agencies. In addition, 24 people provided oral comments, written comments, or both at the public scoping meeting. A brief synopsis of the main issues identified in written and oral comments is presented

below. Responses and references to where the topic is covered in the EIR are also provided below. A more detailed summary of all comments received is provided in Appendix B (Tables B-1 and B-2).

Notice of Preparation—Four people commented that the NOP was deficient because it did not describe the probable environmental effects of the project adequately, did not include an alternative that reflected the original 595-acre (241 ha) dry land request by USFWS, was not adequately circulated, and did not adequately define the Proposed Action.

Response: Potential environmental effects are described in Attachment A of the NOP (see p. B-11 of Appendix B, Volume II of this EIR). Alternatives to be evaluated in the EIS and EIR are also described in the attachment to the NOP. Reasons for eliminating a 595-acre (241 ha) wildlife refuge alternative from detailed consideration is explained in Section 2.3.1 of this EIR, and are not required in the NOP. The NOP circulation included mailing over 900 announcements, publication of the NOI in the Federal Register, filing of the NOP with the California Office of Planning and Research, press releases, and publication of a public notice in local newspapers, as described in Section 1.6.2. Attachment A of the NOP also provides some detail on alternatives, including the Proposed Action.

Reuse Alternatives—Five people commented that the alternatives should be more differentiated, were developed prematurely, do not comply with the Public Trust Doctrine, do not satisfy CEQA requirements for comparisons with projects with lesser impacts, and do not address the option of using the runway.

Response: Alternatives that were considered but eliminated from detailed review, including a public trust alternative, are discussed in Chapter 2. The Reduced Density Alternative was developed to represent a project with lesser impacts (see Section 2.2.5). Limited use of the airfield would be inconsistent with use of the area by USFWS as a wildlife refuge.

Baseline—One organization commented that it had concerns with the selection of the baseline year for analysis.

Response: A public meeting to discuss baseline years to be used in the EIR was held in August 1998. Baseline years for each technical EIR section are identified in Chapter 3 and Chapter 4 of the document.

Public Trust—Eight people made comments concerning lands held in public trust. Comments included asking that each alternative be examined for compliance with the State Tideland Trust, that impacts to lands exchanged for public trust lands be analyzed, that the EIR address land uses

that conflict with public trust purposes, that impacts of different levels of cleanup on public trust resources be analyzed, and that public trust lands benefit the Statewide public.

Response: Consistency of each reuse alternative with the public trust is addressed in Section 4.1. The analysis identifies potential conflicts of proposed land uses with the public trust. Clean-up levels and proposed land uses are discussed in Section 4.13. Sections 1.2.2 and 3.1 provide background information on the State Lands Commission and the public trust at NAS Alameda. Reasons for eliminating a public trust alternative from detailed consideration are discussed in Section 2.3.2.

Recreational Vehicle (RV) Park—Sixteen people commented on the inclusion of an RV park in the Reuse Plan. Specific concerns included the effect of an RV park on air quality, noise, public health and safety, traffic, street maintenance, visual resources, neighborhood development, socioeconomics, public services, infrastructure, utilities, land use, and crime.

Response: An RV park is included in the Reuse Plan Alternative and the Reduced Density Alternative. Impacts of an RV park as a component of these reuse alternatives are analyzed in Chapter 4.

Wildlife Refuge—Eight people commented on the inclusion of a USFWS wildlife refuge in the Reuse Plan and suggested that at least one of the alternatives include the original request for a 595-acre (241 ha) refuge.

Response: Impacts of the reuse alternatives on the USFWS wildlife refuge are discussed in Chapter 4, especially Section 4.7, Biological Resources. Reasons for eliminating a 595-acre (241 ha) wildlife refuge alternative from detailed consideration are discussed in Section 2.3.1.

Seaport—Six people requested that a seaport alternative be carefully analyzed. One person opposed developing seaport facilities.

Response: The Seaport Alternative is described in Chapter 2. Environmental impacts associated with implementation of the Seaport Alternative are analyzed in Chapter 4.

California Least Tern Impacts—Seventeen people expressed concern about the effect of the Reuse Plan on the California least tern population in the adjacent USFWS wildlife refuge. Specific concerns included the wildlife refuge size, pet and rodent populations associated with residential areas, using pesticides and herbicides in the residential areas and golf course, creating raptor foraging areas and predator perches, increasing night lighting

that facilitates predator attacks, using runways that serve as the least tern habitat, and damaging food source fish species and their eelgrass bed habitats.

Response: Impacts of the Reuse Plan Alternative and the other three reuse alternatives on California least terns are analyzed in Section 4.7. The appropriate refuge size and location were determined by the USFWS, and reflected in their property transfer request (see also Section 2.3.1).

Traffic and Transportation—Fifteen people commented on traffic or transportation-related issues, including suggestions on where to locate a new bridge, tunnel, or light-rail system to connect Alameda and Oakland. Several people requested an area-wide traffic study to include impacts from port-related traffic, cumulative regional effects, potential roadway and mass transit improvements, and analyses of road, highway, and tunnel traffic.

Response: Traffic and transportation are addressed in Sections 3.10 and 4.10. The only additional bridge or tunnel between Alameda and Oakland analyzed in this EIR is a possible cargo crossing under the Seaport Alternative.

1.6.4 Public Review

Draft EIR

The public is invited to review and comment on this Draft EIR. Public notices have been mailed to those on the mailing list and published in local newspapers, and press releases have been furnished to the local news media. When the Draft EIR was published, a Notice of Completion was filed with the State of California Office of Planning and Research beginning the public comment period. A public comment period will be held for this Draft EIR. This comment period provides an opportunity for the public and government agencies to review the issues addressed in the impact analysis and to offer comments on any aspect of the process. The EIR distribution and notification list is in Chapter 10 of Volume I.

The public and concerned agencies/groups are invited to send written comments on the Draft EIR to the following:

City of Alameda
Planning Department
Ms. Cynthia Eliason
2263 Santa Clara Avenue, Room 120
Alameda, CA 94501
Telephone (510) 748-4554
Fax (510) 748-4593

A public meeting will be held during the review period to formally receive oral and written comments on the Draft EIR. The date and time of the meeting is stated in the transmittal letter accompanying this document and will be announced in the media.

Final EIR

A Final EIR incorporating and responding to comments received on the Draft EIR will be available for public review. A Notice of Availability will be published in the newspaper and in other public notices. Following certification of the Final EIR, the City of Alameda will prepare a Notice of Determination (NOD) upon its approval of any reuse alternative.

2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes the process the community used to develop a reuse plan, the selection criteria for reuse alternatives, and the reuse alternatives considered in this EIR. Reuse alternatives that were considered but eliminated from detailed consideration also are described. A summary of specific impacts and mitigation under each alternative is provided in Table 2-7 at the end of this chapter.

The project analyzed in this EIR is acquisition and reuse of the site and facilities as proposed at a programmatic level under the NAS Alameda Community Reuse Plan (Reuse Plan). The Reuse Plan will be used as a guide for any necessary amendments to the City's General Plan. Additionally, the project includes the implementation of the Alameda Point Improvement Project, and the designation of NAS Alameda/FISC Alameda as a Local Agency Military Base Recovery Area under the State's Local Agency Military Base Recovery Act (LAMBRA Act), Cal. Gov. Code Section 7.105 *et seq.* Reuse alternatives analyzed in this EIR include the No Project Alternative and the reuse alternatives: the Proposed Project (Reuse Plan Alternative), a Seaport Alternative, a Residential Alternative, and a Reduced Density Alternative.

2.1 DEVELOPMENT OF ALTERNATIVES

2.1.1 Community Reuse Planning Process

The reuse planning process for NAS Alameda began when the BRAC Commission first recommended the closure of NAS Alameda in its June 1993 report to President Clinton. FISC Alameda was included in the reuse planning process after the BRAC Commission recommended it for closure in July 1995.

The community planning process for reuse of NAS Alameda/FISC Alameda occurred under the direction of the Alameda Reuse and Redevelopment Authority (ARRA), which was formed in April 1993, with input and recommendations from the Alameda Base Reuse Advisory Group (BRAG) and the East Bay Conversion and Reinvestment Commission (EBCRC). The planning process also included a great deal of public participation as described in Section 1.6, Public Involvement Process.

The ARRA was formed to develop the NAS Alameda Community Reuse Plan (Reuse Plan). ARRA is a joint powers authority that was formed between the City of Alameda and Alameda County to direct the reuse process for NAS

Alameda and FISC Alameda. ARRA is recognized by the DOD as the local redevelopment authority (LRA) for the purpose of implementing DBCRA 1990, as amended. In its LRA capacity, ARRA conducted a comprehensive reuse planning process. The ARRA governing body was constituted to represent the broad spectrum of community and regional interests, and is composed of Councilmembers from the City of Alameda, the mayors of Alameda, San Leandro, and Oakland, the County of Alameda Supervisor from the 3rd District, and the US Congressional Representative from California's 9th District.

The BRAG was formed to advise the Alameda City Council. It is comprised of 11 subcommittees tasked with studying individual issues surrounding base closure and is a forum for citizen input and public participation. In mid-1995, the status of the BRAG was changed to an advisory group of the ARRA.

The EBCRC is a regional representative body established to improve delivery of Federal assistance and to augment local capacity to manage conversion efforts. Members include Federal, State, and East Bay elected officials, as well as representatives of public agencies, community groups, and business organizations.

The primary objective of the planning process was to develop and recommend to the Navy and the City of Alameda a community reuse plan for converting the entire NAS Alameda/FISC Alameda complex to civilian use. The community reuse plan is intended to describe general categories of land use, not specific development proposals.

The NAS Alameda Community Reuse Plan (Reuse Plan) was prepared to include both the NAS Alameda and FISC Alameda properties. It also includes Navy property that was subsequently requested by other Federal agencies, as well as land that was leased by the Navy from the City of Alameda. These lands are not part of the proposed action considered in this EIR.

The Reuse Plan acreage was estimated based on preliminary mapping and subsequent Navy estimates of acreage resulted in a preliminary determination that less property may be available for conveyance than assumed in the Reuse Plan. The property will be surveyed prior to conveyance.

In January 1996, the Reuse Plan was adopted by ARRA and accepted by the Alameda City Council. The Reuse Plan was amended in May 1997 to reflect: 1) that no specific applicant was proposing a university campus in the Civic Core planning area, and to therefore revise the designation from campus to mixed-use to allow a wider range of land uses in the Civic Core, including mixed-use office and other institutional uses; 2) the addition of a sports complex to be developed by the City of Alameda Recreation and Parks

Department; and 3) changes in the proposed method of property conveyance for the golf course area. In September 1997, the Reuse Plan was again amended to reflect a change in the boundary for the proposed wildlife refuge and to reflect discussions regarding transfer of NAS Alameda land to the USFWS for establishment of a wildlife refuge.

2.1.2 Selection of Alternatives for Environmental Analysis

The EIR Proposed Project is the reuse of the property as generally described in the Reuse Plan. Although CEQA permits alternatives to be reviewed in less detail than the proposed project, all alternatives are analyzed in a greater level of detail than required by CEQA.

Alternatives were chosen to allow analyses of the range of uses in the planning areas identified in the Reuse Plan. For those planning areas having existing facilities, such as residential housing units, that lend themselves to particular uses, reuse options reflect these existing uses and are relatively similar among the various alternatives. Because large areas of NAS Alameda, including the submerged land, are subject to public trust restrictions after conveyance from the Navy, the reuse planning process considered these restrictions when developing land uses within each planning area. Proposed land uses for each planning area are described for each of the alternatives.

Some of the property included in the Reuse Plan is being transferred to other Federal agencies. Reuse of these areas is not part of the reuse alternatives. Federal land transfers include approximately 525 acres (213 ha) of dry land and 375 acres (152 ha) of submerged land, which is being transferred to the USFWS for use as a wildlife refuge, and an approximately 69-acre (28 ha) parcel including 582 housing units, which is being transferred to the USCG for use as housing. Reuse of this property was included in the Reuse Plan, but will be addressed in this EIR as cumulative projects in Chapter 5.

The northern part of the former airfield represents the largest undeveloped portion of NAS Alameda/FISC Alameda and therefore has the greatest range of potential reuses (Figure 2-1). Primary differences in the alternatives are defined largely by land uses proposed for this portion of the site. Alternatives analyzed in the EIR include the following:

- **Reuse Plan Alternative (Proposed Project)**—The Reuse Plan Alternative is implementation of the NAS Alameda Community Reuse Plan as approved in January 1996 and amended in May and September 1997. Although the Reuse Plan Alternative is based on the Reuse Plan, which describes general categories of land use and not specific development proposals, in some cases more specific details, such as population and employment estimates, and more refined land

use acreages, are projected or assumed in the EIR to assist in describing and quantifying potential impacts. Under the Reuse Plan, the NAS Alameda/FISC Alameda site would be developed as a mixed-use, transit-oriented development. It would include a mix of community, industrial, residential, and commercial uses. Community uses would include parks, schools, a links-style golf course, a sports complex, public open space, and an RV park. Other potential uses would include a higher educational facility or institutional uses. Industrial uses would include mixed-use office, maritime-related light industry, marina-related light industry, and research and development businesses. Residential housing would include new housing consistent with local standards, live-aboard boat slips, and the reuse of existing multifamily housing, apartments, and group quarters. Commercial uses would include neighborhood shopping districts, office space, hotels, visitor-serving commercial facilities, and a conference facility. A primary goal of the Reuse Plan is to accommodate public transit. Strategic locations throughout the site are identified as transit nodes that would serve as multi-modal stations and allow residents and employees to interchange between private and public transportation modes such as buses, bicycles, and ferries. These centers would include bus shelters, bicycle lockers, and transit-oriented street design.

- **Seaport Alternative**—The main distinctive feature of this alternative would be development of a 220-acre (89 ha) port facility with five containerized shipping berths instead of a golf course, and maritime-related light industry. Other land uses would be similar to the Reuse Plan Alternative, except that there would be a higher component of single-family residential uses and a corresponding decrease in office/workspace uses. This alternative would include a college-level campus and a new transportation connection between Alameda and Oakland to accommodate the cargo volume generated by the port. This connection could be a bridge structure or possibly a tunnel.

- **Residential Alternative**—This alternative would have a higher emphasis on residential development. Overall, it would contain a substantially higher number of housing units than the Reuse Plan alternative, although additional housing would not be included in every planning area. Some areas would contain additional light industrial and office/workspace uses to balance the number of residents and jobs. It also would include a college-level campus.

- **Reduced Density Alternative**—Under this alternative, land uses would be similar to the Reuse Plan Alternative but would be at reduced densities in many (but not all) of the planning areas. A primary goal of this alternative would be to reduce traffic generation compared to the other reuse alternatives.

- **No Project Alternative**—Under the No Project Alternative, the property would remain in Federal ownership in caretaker status. Properties proposed for transfer to other Federal agencies would be transferred. Under this alternative limited interim leasing would occur, but would be phased out as individual lease terms expired.

The reuse alternatives provide a range of options to allow Federal, State, and local decision-makers, interested agencies, and the public to understand the environmental effects of disposal and reuse of the site under several different scenarios. The reuse alternatives reflect suggestions and concerns expressed by the public and agencies during the scoping process. The reuse alternatives are described at a relatively general "program" level of detail and are not intended to address specific projects. Specific uses of buildings and sites would be determined as the Reuse Plan is implemented and are beyond the scope of this analysis. In some cases, details have been developed for this EIR that are not contained in the Reuse Plan to enable a quantitative analysis of impacts, such as population and housing. Some of the alternatives also contain components designed to mitigate potentially significant environmental impacts of the Reuse Plan Alternative. Detailed descriptions of each alternative are presented in the following section.

2.2 DESCRIPTION OF ALTERNATIVES

This section presents a detailed description each community reuse alternative, and the No Project Alternative. Table 2-1 presents an overview and comparison of the land uses proposed under each of the community reuse alternatives. Table 2-2 shows those portions of the reuse planning area that are being transferred from the Navy to other Federal agencies. Reuse on these lands is not part of the alternatives analysis, but is addressed in Section 5.1, Cumulative Impacts.

2.2.1 Reuse Plan Alternative (Proposed Project)

The Reuse Plan Alternative is the implementation of the NAS Alameda Community Reuse Plan developed through the community planning process described in Section 2.1.1. The Reuse Plan is a document that expresses the community's general goals and policies for use of the land which comprises the NAS Alameda/FISC Alameda site, and provides the recommended land use direction for the City of Alameda as the property is incorporated into the City. The Reuse Plan is a general road map for future development of the site. A General Plan amendment would be required to incorporate the provisions of the approved reuse alternative into the Alameda General Plan.

Table 2-1
NAS Alameda/FISC Alameda - Comparison of Community Reuse Alternatives

Alternative / Planning Area	Reuse Plan Alternative (Preferred Alternative)	Acres	Seaport Alternative	Acres	Residential Alternative	Acres	Reduced Density Alternative	Acres
1. Civic Core 334 acres	Sports Complex	37	Campus	65	Campus	65	Research & Development	52
	Civic Open Space	57	Campus Open Space	37	Campus Open Space	37	Sports Complex	37
	Commercial	4	Civic Open Space	57	Civic Open Space	57	Civic Open Space	57
	Civic Core Housing	16	Commercial	4	Commercial	6	Commercial	4
	Mixed Core	113	Civic Core Housing	16	Civic Core Housing	80	Civic Core Housing	16
	Mixed Use	107	Mixed Core	113	Mixed Core	50	Mixed Core	113
			Mixed Use	42	Mixed Use	39	Mixed Use	42
							RV Park	13
2. Main Street Neighborhoods 265 acres	Single-family Residential	219	Single-family Residential	219	Single-family Residential	219	Single-family Residential	219
	Lodge	3	Lodge	3	Lodge	3	Lodge	3
	Attached Housing	14	Attached Housing	14	Attached Housing	14	Attached Housing	14
	School Facilities	21	School Facilities	21	School Facilities	21	School Facilities	21
	Parks	4	Parks	4	Parks	4	Parks	4
	Mixed Use Node/Commercial	4	Mixed Use Node/Commercial	4	Mixed Use Node/Commercial	4	Mixed Use Node/Commercial	4
3. Inner Harbor 120 acres	Light Industry	71	Single-family Residential	63	Single-family Residential	63	Single-family Residential	76
	Regional Park	36	Regional Park	49	Regional Park	36	Regional Park	36
	RV Park	13	School Facilities	8	Attached Housing	13	School Facilities	8
					School Facilities	8		
4. North Waterfront 88 acres	Light Industry/Research & Development	29	Office/Workplace	32	Office/Workplace	24	Light Industry	29
	Hotel	5	Support Commercial	2	Marina	20	Marina/Open Space/Visitor Serving Recreation	5
	Office/Workplace	32	Waterfront Housing	46	Support Commercial	2	Office/Workplace	32
	Support Commercial	2	School Facilities	8	Waterfront Housing	34	Support Commercial	2
	Waterfront Housing	12			School Facilities	8	Waterfront Housing	12
	School Facilities	8					School Facilities	8
5. Marina 125 acres	Marina	17	Marina	17	Marina	17	Marina	17
	Marina Housing	32	Marina Housing	32	Marina Housing	32	Marina Housing	32
	Marina Industry	15	Marina Industry	15	Marina Industry	15	Marina Industry	15
	Hotel/Conference Center	4	Hotel/Conference Center	4	Hotel/Conference Center	4	Hotel/Conference Center	4
	Visitor-serving Recreation/Comrcl	10	Visitor-serving Recreation/Comrcl	10	Visitor-serving Recreation/Comrcl	10	Visitor-serving Recreation/Comrcl Marina	10
	Marina Waterfront Open Space	47	Marina Waterfront Open Space	47	Marina Waterfront Open Space	47	Waterfront Open Space	47
6. Northwest Territories 272 acres	Maritime-related Light Industry	58	Port Facilities	220	Mixed-use Residential	200	Maritime-related Light Industry	58
	Sports Complex	17	(5 Container Ship Berths)		Attached Housing	26	Sports Complex	17
	Golf Clubhouse/Conf. Facility	6	Shoreline Open Space	52	School Facilities	8	Golf Clubhouse/Conf. Facility	6
	Shoreline Open Space	29			Shoreline Open Space	38	Shoreline Open Space	29
	Links Golf Course	162					Links Golf Course	162

Table 2-2
NAS Alameda/FISC Alameda - Federal Inter-Agency Transfer Land

US Coast Guard 69 acres	582 Residential Units	69	582 Residential Units	69	582 Residential Units	69	582 Residential Units	69
USFWS[1] 525 acres	Wildlife Refuge	525	Wildlife Refuge	525	Wildlife Refuge	525	Wildlife Refuge	525

[1] More recent estimates indicate that the size of the refuge would be 565 to 571 acres.

Source: EDAW; ARRA; US Navy; Tetra Tech

Because the Reuse Plan is written at a general level of detail, as stated in Section 2.1.2, this EIR assumes a certain configuration and intensity of land uses in order to quantify and analyze potential impacts. These assumptions are set forth in Tables 2-1 and 2-3 for the Reuse Plan Alternative, and Tables 2-4 through 2-6 for the other three reuse alternatives. A variety of different land use configurations would be feasible consistent with the general direction provided by the Reuse Plan.

The Reuse Plan identifies seven planning areas within NAS Alameda/FISC Alameda, six of which are analyzed in the alternatives analysis of this EIR. The seventh planning area, the Wildlife Refuge planning area, is being transferred to USFWS and is not analyzed as part of this project. A 69-acre (28 ha) area, described as part of the Main Street Neighborhoods planning area in the Reuse Plan, is being transferred to the USCG and is not analyzed as part of this project. The locations of the six remaining planning areas are shown in Figure 2-1.

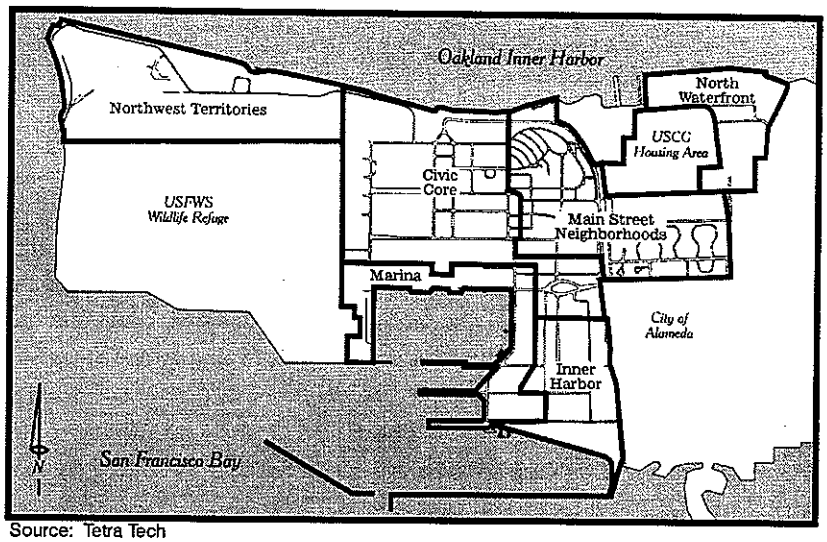
Figure 2-2 shows the existing buildings on the site, and Figure 2-3 shows buildings that would be demolished under the Reuse Plan Alternative. Photographs showing facilities and representative views of existing conditions at each planning area are contained in Appendix A.

A description of the general uses proposed in the Reuse Plan Alternative for each of the planning areas is provided in this section. For additional information regarding proposed reuses, as well as a comprehensive description of reuse goals and policies, refer to the NAS Alameda Community Reuse Plan (ARRA 1996).

The major goal of the land uses proposed in the Reuse Plan was to "seamlessly integrate" the NAS Alameda/FISC Alameda site into the City of Alameda, providing a "mixed-use neighborhood where people would live, work, and play while enhancing the character of Alameda." Under this plan, NAS Alameda/FISC Alameda would be a major source of new jobs and industry for Alameda and the region and would preserve significant regional open space resources.

Under the Reuse Plan, existing housing units would be reused or redeveloped as the Main Street Neighborhoods residential area. The core of the NAS Alameda/FISC Alameda property would be reused as a mixed-use office and institutional center allowing for a wide range of employment, educational, and commercial uses. The southeast portion of the NAS Alameda/FISC Alameda property, the Inner Harbor planning area, would be reserved for primarily light industry and research and development (R&D) uses and an RV park.

Figure 2-1
NAS Alameda/FISC Alameda Planning Areas

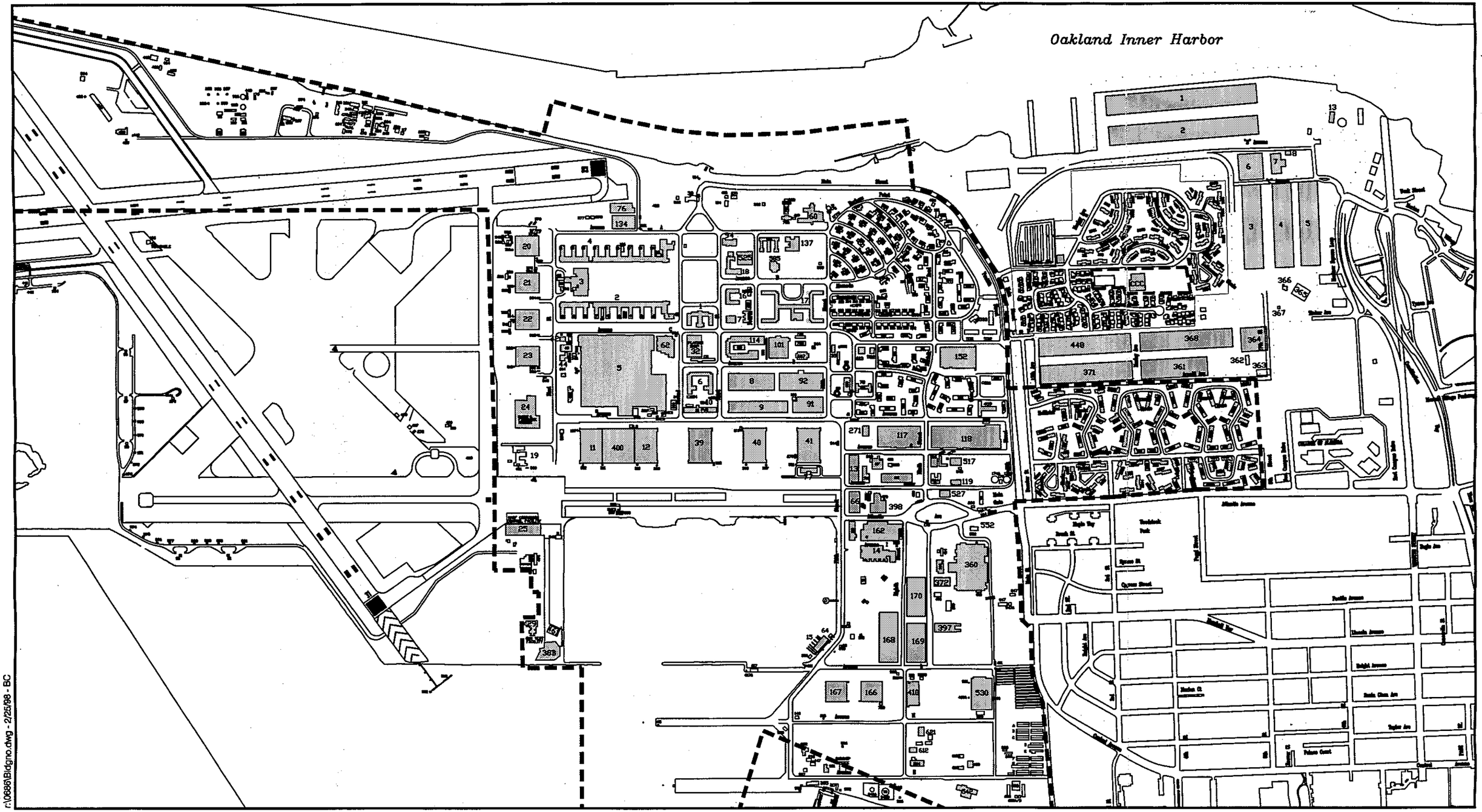


Source: Tetra Tech

The seaplane lagoon at the south end of the Civic Core planning area would be developed as a marina. The northern portion of the former airfield, referred to in the Reuse Plan as the Northwest Territories planning area, would provide a center for maritime-related light industry, a Scottish links-style golf course, a sports complex, and shoreline open space and trails. The point at the far northwestern edge would be reserved for a golf clubhouse and conference/recreation facility.

The Reuse Plan outlines improvements and repairs, which would be made to the utility systems including potable water distribution, wastewater collection, stormwater collection, and electrical and natural gas distribution. The Reuse Plan also includes establishing a fire station with two engine companies.

Following is a description of land uses in each of the six planning areas considered in the EIR. Land use categories are compatible with the Alameda General Plan land use categories. Land uses proposed under the Reuse Plan Alternative are shown in Figure 2-4, and proposed development levels within each reuse planning area are shown in Table 2-3.



r:\0686\Bldgno.dwg - 2/25/98 - BC

This figure provides numbers for most buildings exceeding 3,000 square feet, and correspond to the building numbers discussed throughout the EIS/EIR. Duplicate numbers on the buildings are a result of independent numbering for NAS Alameda and FISC Alameda buildings.

N

0 500 1,000

Approximate Scale in Feet

LEGEND:

NAS Alameda Surplus Property

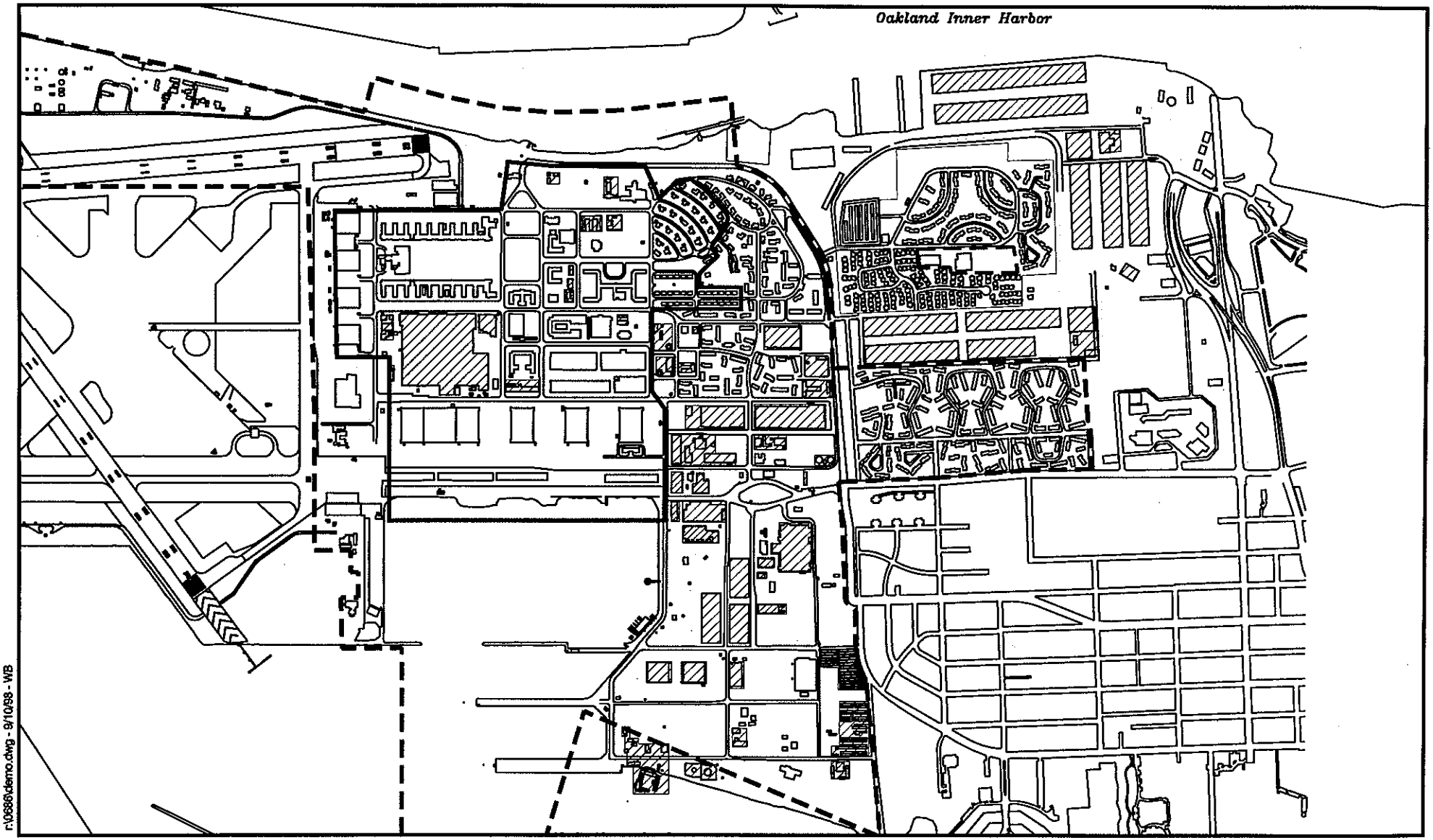
FISC Alameda Property Available for Disposal

Source: US Navy; Tetra Tech

NAS Alameda/FISC Alameda Buildings

NAS Alameda/FISC Alameda
Alameda, California

Figure 2-2



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This figure reflects long-term demolition envisioned in the Reuse Plan. FISC Alameda will be redeveloped beginning in the year 2000.

LEGEND:

- FISC Alameda Property Available for Disposal Boundary
- NAS Alameda Surplus Property Boundary
- NAS Alameda Historic District Boundary
- Buildings proposed for demolition

N

0 750 1,500

Approximate Scale in Feet

Source: ARRA 1995c

Buildings Proposed for Demolition

NAS Alameda/FISC Alameda
Alameda, California

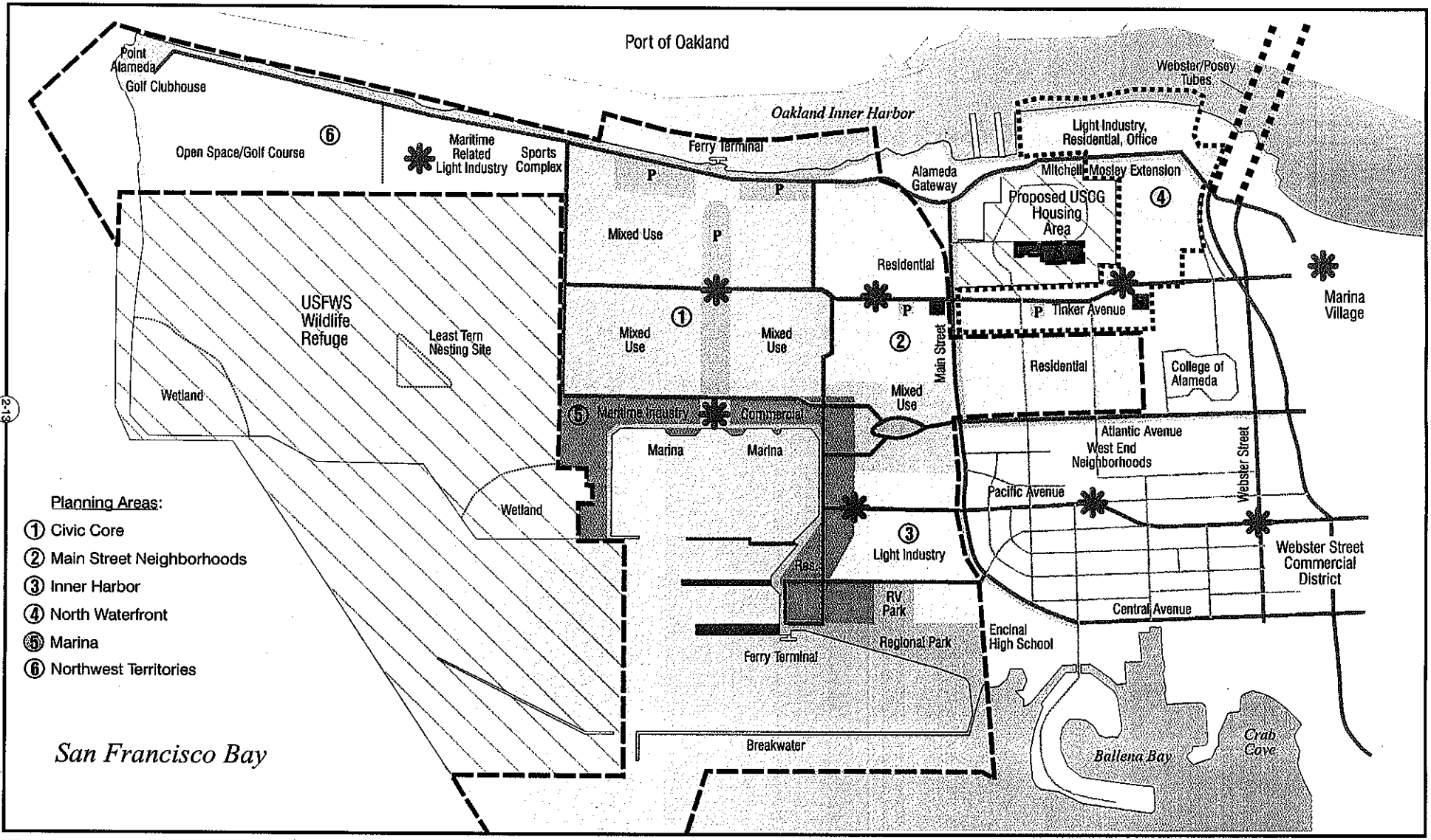
Figure 2-3

Table 2-3
Reuse Plan Alternative

Land Use Categories	Units	Planning Area					
		Civic Core	Main Street Neighborhoods	Inner Harbor	North Waterfront	Marina	Northwest Territories
Total Acres	acres	334	265	120	88	125	272
Light Industry or Business Park	sq. ft. of development[1]			910,000	993,000		980,000
Marina-Related Industry	sq. ft. of development[1]					132,000	
Mixed Core or Mixed Use or R&D or Office/ Workspace	sq. ft. of development[1]	3,195,000			418,000		
Civic/Institutional Buildings	sq. ft. of development[1]	100,000					
Marina	slips (live-aboard)					900 (100)	
RV Park	RV spaces			135			
Schools	# schools		2		1		
School Facilities	acres		21		8		
Parks	acres		4	36			
Sports Complex	acres	37					17
Open Space	acres	57				47	29
Single-family Residential (6 units per acre)	# dwelling units		1,314				
Attached Housing (12 units per acre)	# dwelling units	192	174		144	384	
Hotel/Conference Center	# rooms		70[2]		300	300	300
Commercial	sq. ft. of development[1]	52,000	52,000		26,000		
Visitor-Serving Recreation/Commercial	sq. ft. of development[1]					132,000	
Golf Clubhouse/ Conference Facilities	sq. ft. of development[1]						26,000
Links Golf Course	acres						162

[1]Note that square footage of development is derived by multiplying the total acreage of the planning area by the typical amount of building coverage for development for each type of land use. The coverage factor is called the floor area ratio (FAR).
[2]The Main Street Neighborhoods would include 70 units of community housing in the former Navy Lodge.

Source: EDAW; ARRA; Tetra Tech



The Reuse Plan Alternative is based on the NAS Alameda Community Reuse Plan and would develop the site as a mixed-use transit-oriented development.

LEGEND:

- Centers-Transit Node
- Roadway
- School
- P — Park/Open Space
- Federal Transfer Land
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

N

0 1,000 2,000

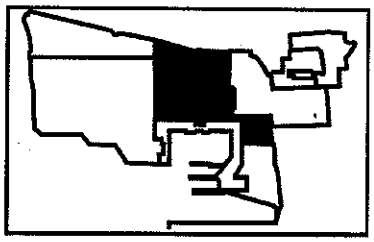
Approximate Scale in Feet

Reuse Plan Alternative

NAS Alameda/FISC Alameda
Alameda, California

Source: ARRA; EDAW; Tetra Tech

Figure 2-4



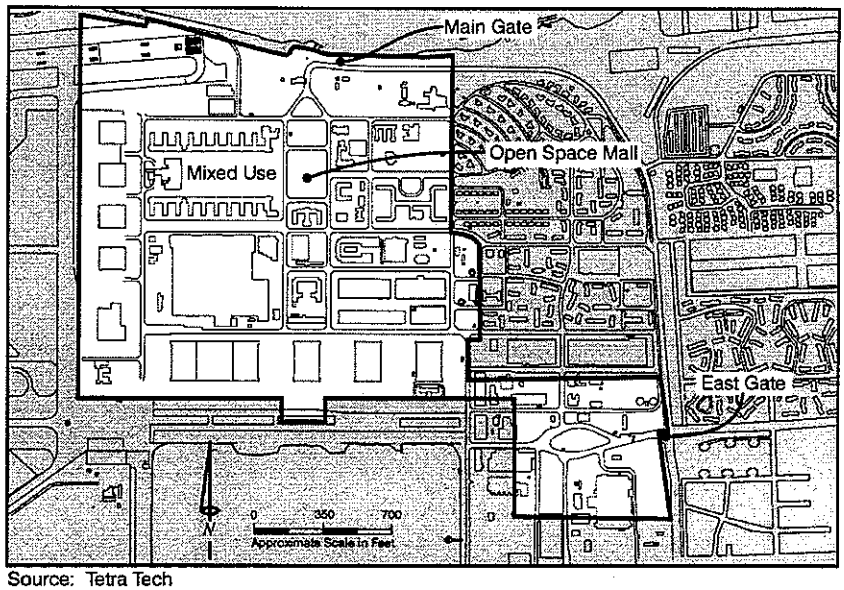
Planning Area 1. Civic Core

The 334-acre (135 ha) Civic Core planning area would be developed as a mixed-use "flex zone" to accommodate a range of uses, based on the near-term reuse of existing facilities with redevelopment and in-fill changes, additions, and demolition occurring over time. The development in the mixed-use core would emphasize international business and commerce, research and development facilities, and supporting commercial uses. Potential civic uses include public recreation facilities, a museum, a library, a teen activity center, a civic auditorium, civic office space, a place of worship, and meeting spaces.

Approximately 916,000 square feet (85,096 square m) of existing structures in the northern portion of the planning area would be used for a mixed-use office and institutional center, allowing for a wide range of employment, educational, and commercial uses.

The Alameda Recreation and Parks Department would use 100,000 square feet (9,290 square m) of existing recreation buildings and facilities and would develop new sports fields and facilities as described in the Sports Complex Master Plan (City of Alameda 1997c).

At buildout, the Civic Core could accommodate approximately 3,195,000 square feet (296,815 square m) of office park/industrial flex uses (within the planning land use categories of mixed-core and mixed-use). In addition, the area would contain 192 townhomes (approximately 12 attached units per acre on 16 acres [29.6 units per ha on 6.5 ha]), and about 52,000 square feet (4,831 square m) of supporting commercial uses. Thirty-five buildings would be demolished (about 30 percent of the total).

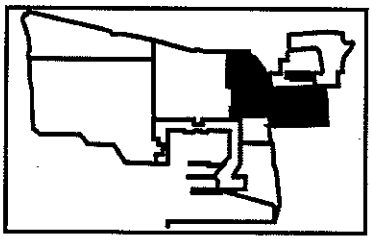


Source: Tetra Tech

Besides the recreational open space in the sports complex, an additional 57 acres (23 ha) of open space would be included in this planning area. A central north-south open space promenade or mall would create an extension of the former Navy parade ground from the Oakland Inner Harbor to the Seaplane Lagoon, opening into a public plaza at the Marina planning area. This mall would provide a central public area for recreation, plazas, and public/civic activities and events. This open space area would include approximately 100,000 square feet (9,290 square m) of civic building uses.

Existing NAS Alameda roadways would be used wherever possible. New roads would be developed or existing roads would be modified to accommodate new infill development. Transit-exclusive or transit-friendly corridors would be established to provide pedestrian and public transit routes within the Civic Core planning area, connecting neighborhood centers and other neighborhoods in the City of Alameda and the region.

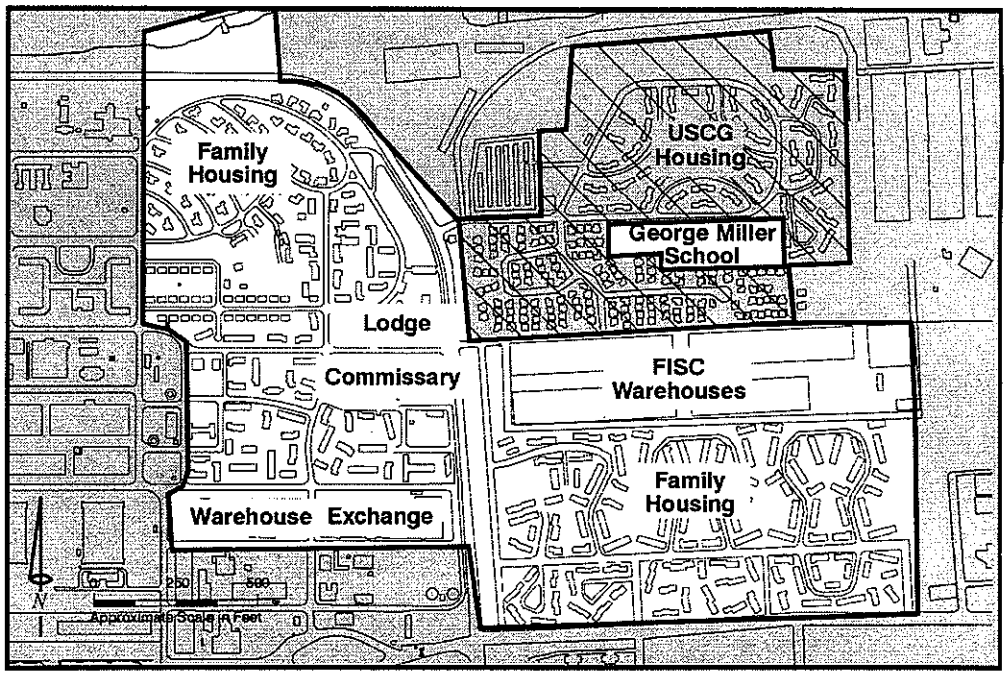
Because much of the land within this planning area was historically submerged land, it falls under public trust land use restrictions. Public trust lands are intended to be protected for uses of statewide public benefit, and only uses consistent with the public trust are permitted. Approximately 284 acres (26 ha) within the Civic Core planning area are subject to public trust restrictions. See Section 3.1.3 for a discussion of allowable uses under the public trust and Figure 3-4 for a delineation of NAS Alameda property subject to the public trust. Section 4.1 provides an analysis of the consistency of land uses proposed under the reuse alternatives with public trust land use restrictions.



Planning Area 2. Main Street Neighborhoods

The Main Street Neighborhoods planning area consists of NAS Alameda residential areas and a FISC Alameda parcel that is currently occupied by warehouses. It would be redeveloped primarily in single-family residential land uses, with pockets reserved for support services for the residential neighborhoods, including small retail centers, several schools, and small neighborhood parks. Within the approximately 265-acre (107 ha) area, about 236 acres (96 ha) would be devoted to single-family and attached residential uses; approximately 21 acres (8 ha) would be devoted to 1 existing and 1 new school (George Miller Elementary School and adjacent daycare center, and a proposed elementary school that would be needed to support planned residential development); and 4 acres (2 ha) would be reserved for neighborhood parks or open space. Four acres (2 ha) also would be developed as commercial/retail nodes.

At buildout, Main Street Neighborhoods would include 174 attached housing units (approximately 12 units per acre [30 units per ha]) and approximately 1,314 single-family residential units (approximately 6 units per acre [15 units per ha]). These new units would be developed as a mix of housing types and densities consistent with Measure A, which is a 1973 amendment of the Alameda City Charter prohibiting construction of multifamily dwelling units except replacement of low-cost housing units by the Alameda Housing Authority. The existing housing units could be reused in the near term, but the majority of the units would likely be demolished and rebuilt during the



Source: Tetra Tech

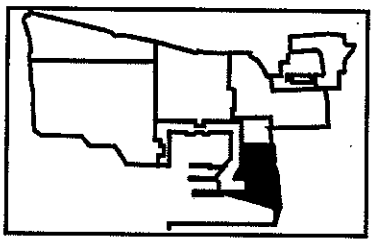
buildout period for the Reuse Plan. Specific redevelopment plans proposed in the future would require additional environmental review under CEQA. The former Navy Lodge would provide about 70 units of community-oriented housing as part of the HUD-approved Homeless Plan. Plans are for the lodge to serve as a women's shelter facility. Nearly all of the 16 nonresidential buildings in this planning area (including the former Navy Exchange/Commissary complex) would be demolished.

The USCG has requested transfer of approximately 69 acres (28 ha) of land including 582 family housing units in the adjacent North Housing and Marina Village housing developments for use by Coast Guard families. Potential impacts resulting from USCG reuse of this property are addressed in Chapter 5 under Cumulative Impacts.

The Alameda Unified School District (AUSD) has requested the Navy land on which it currently operates George Miller School, as well as the adjoining day care center site. These facilities are surrounded by the USCG housing area but are not part of the USCG transfer request. One additional school site would be identified within this planning area for the school district to accommodate future demand for elementary school facilities.

Transportation improvements would include developing the Mitchell/Mosley Street extension along the northern part of the planning area. This traffic improvement would pass through proposed USCG property, the Main Street Neighborhoods planning area and City of Alameda land. New internal roadways would be developed on a grid pattern that could be integrated into the existing Alameda roadway system. Two transit nodes would be located along Tinker Avenue, which would be extended through the planning area to the Marina Village development. The transit nodes would be the likely location for the commercial/retail areas. See Figure 2-4.

Approximately 23 acres (9 ha) within Main Street Neighborhoods are subject to public trust land use restrictions. Public trust lands are intended to be protected for uses of statewide public benefit, and only uses consistent with the public trust are permitted. See Section 3.1.3 for a discussion of allowable uses under the public trust and Figure 3-4 for a delineation of NAS Alameda property subject to the public trust. Section 4.1 provides an analysis of the consistency of land uses proposed under the reuse alternatives with public trust restrictions.

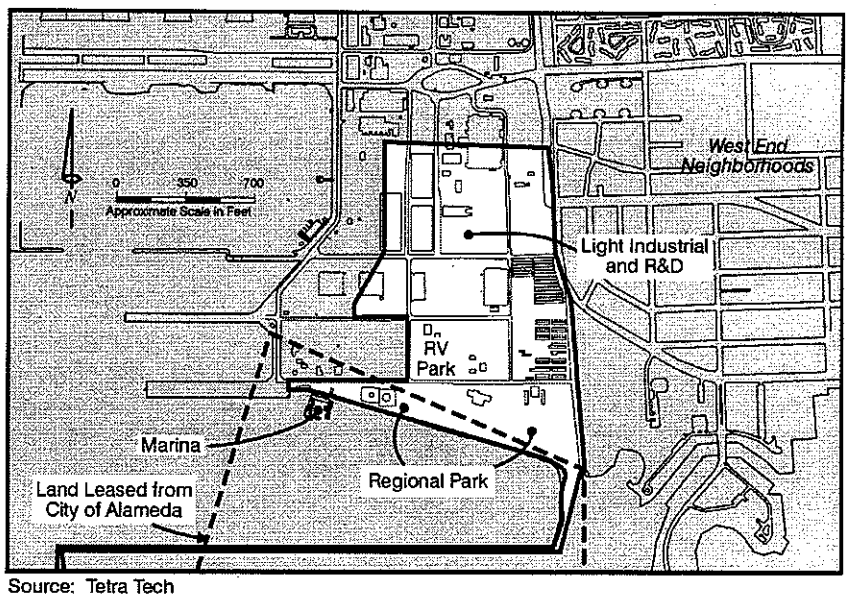


Planning Area 3. Inner Harbor

The Inner Harbor planning area is an approximately 120-acre (49 ha) site in the southeast portion of NAS Alameda. Proposed reuse would reflect the existing industrial character of the area with development of 910,000 square feet (84,539 square m) of primarily light industrial businesses in the northern portion of the planning area. The size of the site could attract a larger business that could generate a substantial number of jobs. Supporting uses could include small service industries, such as office spaces, restaurants, and other service industries catering to the employees in the light industrial uses. Nearly all of the existing buildings (10 buildings) would be demolished.

The southern shoreline in the Inner Harbor planning area would be developed as a 36-acre (15 ha) regional park. East Bay Regional Park District (EBRPD) would develop and manage a regional facility that would include opportunities for shoreline access and recreation, beach uses, a dog run, and other forms of developed recreation. The existing marina, recreation center, breakwater, boathouse, and cafe would be considered for rehabilitation for public use. The existing RV park would be expanded to 13 acres (5 ha) and would accommodate approximately 135 recreational vehicles for short-term RV camping. The intent of the regional park would be to develop a program of public service facilities that would serve international tourists, visitors, and residents. The regional park would be included in the Bay Trail System.

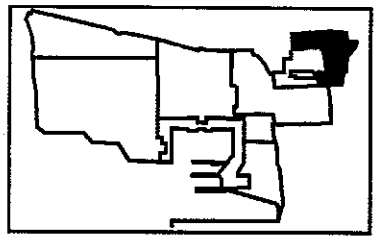
Where appropriate, roadway connections would be established to extend the street grid across Main Street to the existing West End Neighborhoods, eliminating the separation between NAS Alameda and the adjoining residential neighborhood. Pacific and Central Avenues would serve as the major roadways connecting this area to the eastern portions of Alameda.



Source: Tetra Tech

Approximately 15 acres (6 ha) within the Inner Harbor planning area are subject to public trust land use restrictions. Public trust lands are intended to be protected for uses of statewide public benefit, and only uses consistent with the public trust are permitted. See Section 3.1.3 for a discussion of allowable uses under the public trust and Figure 3-4 for a delineation of NAS Alameda property subject to the public trust. Section 4.1 provides an analysis of the consistency of land uses proposed under the reuse alternatives with public trust restrictions.

A portion of this planning area also includes land that the Navy leased from the City of Alameda. Approximately 5 acres (2 ha) of dry land and 154 acres (62 ha) of submerged land are included in the leased parcel. This property will revert to City control once any necessary site remediation is completed.

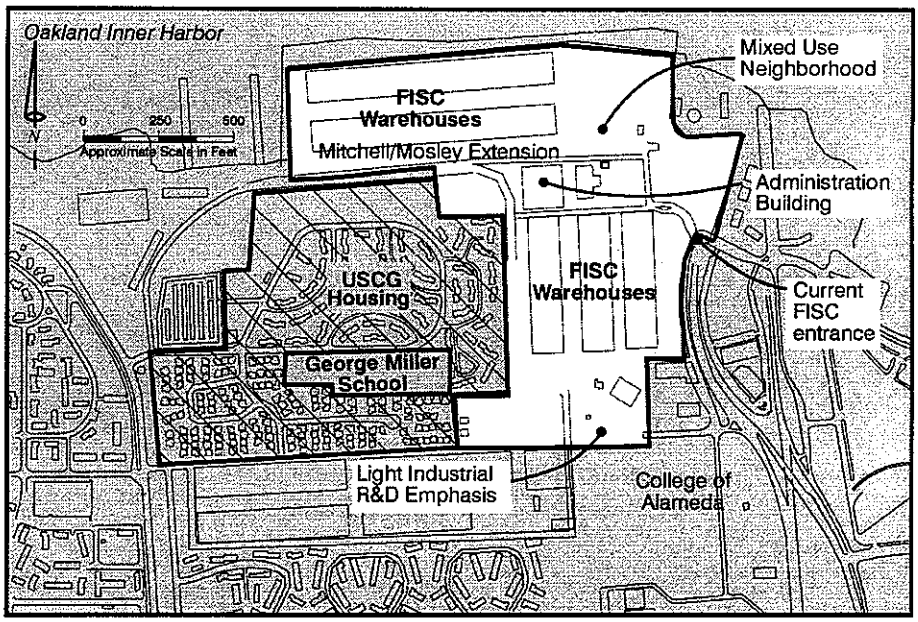


Planning Area 4. North Waterfront

The North Waterfront planning area, consisting of approximately 88 acres (36 ha), largely corresponds with the boundary of the FISC Alameda Facility and a portion of the FISC Alameda Annex. (The two parcels together are referred to in this EIR as FISC Alameda.) The only part of FISC Alameda not included in this planning area is the portion within the Main Street Neighborhoods planning area. The North Waterfront planning area is split into two sections, each with a slightly different emphasis for reuse.

As envisioned in the Reuse Plan, the northern waterfront area would become a mixed-use neighborhood with an office and workplace component. The area is opposite Oakland's Jack London Square and abuts the Marina Village waterfront area. Hotel, retail, restaurant, Oakland-Alameda water taxi/ferry service, and other supporting uses would be part of this waterfront district. Twelve acres (5 ha) would be devoted to 144 units of attached waterfront housing (approximately 12 units per acre [30 units per ha]). A pedestrian promenade would be developed along the waterfront. Development in this planning area would continue the character of the adjoining mixed-use districts in the City of Alameda. All eight of the existing buildings in this area would be demolished.

The southern portion of the planning area, between the College of Alameda and the Mitchell/Mosley Street extension, would be developed with a light industry/research and development emphasis as an extension of the existing Marina Village industrial park to the east. This portion of the planning area represents a large site that could be used to attract a single large user. It is

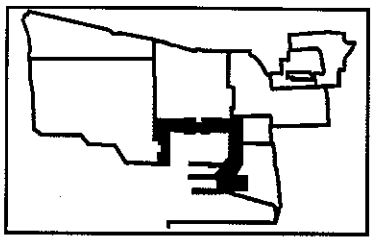


Source: Tetra Tech

considered particularly suitable for higher transportation-need businesses, such as a warehouse distribution center, as it is the area closest to transportation links to the regional roadway network. This area also is envisioned as a site for early redevelopment. The Reuse Plan includes a request by Alameda Unified School District (AUSD) for use of eight acres (3 ha) in this portion of the planning area, potentially as a continuation high school, centralized kitchen, and corporation yard for vehicle parking, storage, and maintenance operations. This eight-acre parcel is adjacent to additional land requested by AUSD in the Main Street Neighborhoods planning area. The final location for these facilities could be within either of the planning areas, or partially within each. For purposes of this EIR, these facilities are described as being located within the North Waterfront planning area.

Tinker Avenue would be extended west from Marina Village to Main Street adjacent to the southern portion of this parcel.

None of the land in the North Waterfront is subject to public trust land use restrictions.

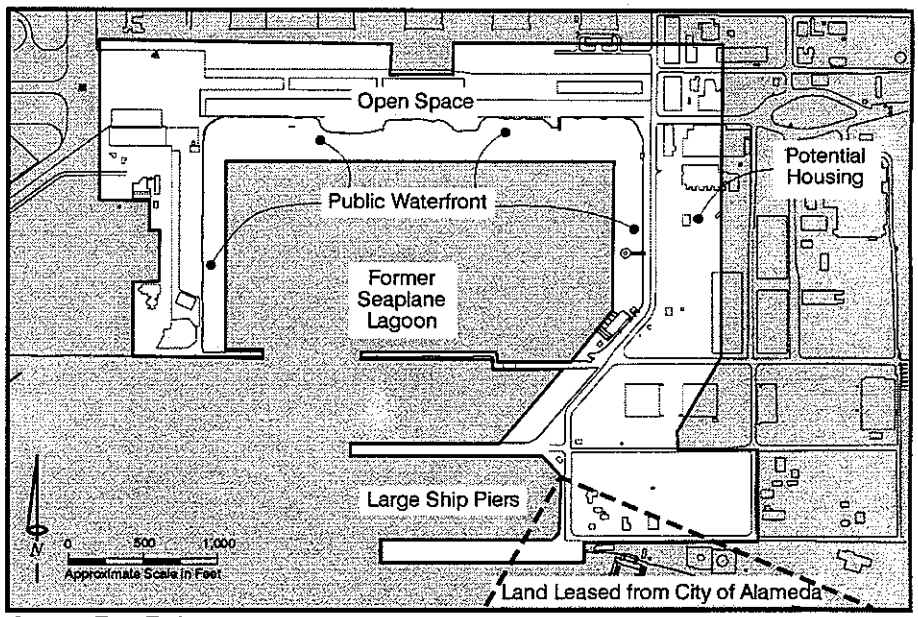


Planning Area 5. Marina

The Marina planning area consists of approximately 125 acres (51 ha) surrounding the former seaplane lagoon. The site would be developed as a commercial marina with other mixed-use amenities. A 900-slip marina would serve as a focus for public waterfront uses and would include private and public boating, boating clubs, ferry service, deep-draft yacht facilities, boat repair, sailing training facilities, and associated marine-related services (retail uses and commercial services, restaurants, educational facilities, cultural facilities, and repair services). Development of the Marina could include dredging. The piers at the southeastern edge of the planning area could be reused for docking large ships, such as cruise ships or historic landmark vessels. At buildout, the area would have approximately 132,000 square feet (12,263 square m) of marina-related light industry and 132,000 square feet (12,623 square m) of commercial services. All 10 of the large buildings in this planning area would be demolished.

A proposed open space promenade extending from the Civic Core would open into a civic plaza as it meets the water's edge in this planning area. A hotel/conference center would be built on 4 acres (2 ha). Civic uses, such as office space, a cultural arts center/theater, and recreation, could front the plaza.

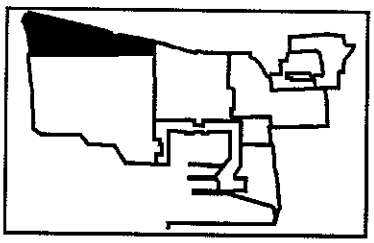
Housing in the Marina planning area would be limited to the eastern shores and provide opportunities for a mix of housing types and income levels. Housing could include artist lofts, apartments for low- to moderate-income families, and townhouses consistent with Measure A and the City Charter.



Source: Tetra Tech

Approximately 384 units are proposed at about 12 units per acre (30 units per ha). In addition, 100 live-aboard marina slips would provide additional housing.

Approximately 86 acres (35 ha) within the Marina planning area are subject to public trust land use restrictions. Public trust lands are intended to be protected for uses of statewide public benefit, and only uses consistent with the public trust are permitted. See Section 3.1.3 for a discussion of allowable uses under the public trust and Figure 3-4 for a delineation of NAS Alameda property subject to the public trust. Section 4.1 provides an analysis of the consistency of land uses proposed under the reuse alternatives with public trust restrictions.



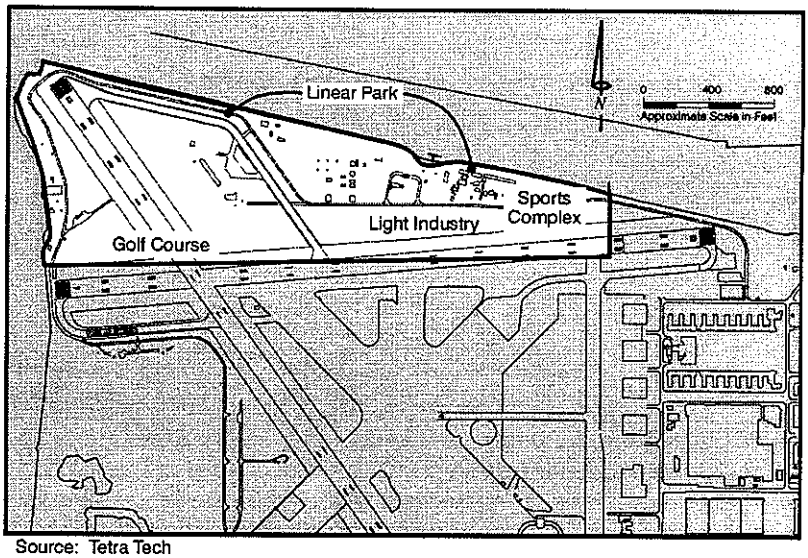
Planning Area 6. Northwest Territories

The Northwest Territories planning area consists of approximately 272 acres (110 ha) that was primarily former airfield land. Several small buildings along the northern waterfront would be demolished. About 58 acres (23 ha) of the northern edge of the former airfield would be developed as an international commerce and trade zone that would focus on maritime-related light industrial uses. Within this planning area there would be about 980,000 square feet (91,042 square m) of buildings.

Approximately 17 acres (7 ha) immediately adjacent to the Civic Core planning area would be developed as soccer fields by the Alameda Recreation and Parks Department as part of a sports complex. The main portion of the sports complex would be located in the adjacent Civic Core planning area.

About 162 acres (66 ha) would be developed as a Scottish links-style golf course. A links-style golf course emphasizes low-growing landscaping and allows grass in roughs to grow longer than at traditional courses.

Approximately 6 acres (2 ha) at Point Alameda would be developed as a golf clubhouse/conference center with 26,000 square feet (2,415 square m) of buildings. The conceptual development plan for the facility calls for a clubhouse with various commercial activities oriented towards golfers, and an executive-style conference center with overnight lodging for conference center guests. It would include meeting facilities for up to 250 guests and a parking lot for 200 cars.



Source: Tetra Tech

A 100- to 200-foot (30 to 61 m) wide, 29-acre (12 ha) linear park would be developed along the entire length of the Oakland Inner Harbor, allowing for full public access to the shoreline and shoreline park. The park would include a bay trail.

Most of this planning area is subject to public trust land use jurisdiction because it was formerly submerged land that was part of San Francisco Bay. Public trust lands are intended to be protected for uses of statewide public benefit, and only uses consistent with the public trust are permitted. The northwest point and a 200-foot (61 m) strip along the northern waterfront are the only portions of this planning area that are not in the public trust. See Section 3.1.3 for a discussion of allowable uses under the public trust and Figure 3-4 for a delineation of NAS Alameda property subject to the public trust. Section 4.1 provides an analysis of the consistency of land uses proposed under the reuse alternatives with public trust restrictions.

This EIR also considers a variation on use of the Northwest Territories under the Reuse Plan Alternative, in which the size of the golf course is slightly increased and light industrial use is eliminated. Where implementation of this variation would produce substantially different environmental impacts than the Reuse Plan Alternative, additional analysis is provided in Chapter 4, Environmental Consequences of this EIR.

Transportation Improvements

The NAS Alameda Community Reuse Plan (ARRA 1996) includes a Transportation Element that addresses various transportation impacts associated with the reuse and redevelopment of NAS Alameda and presents policies and plans to improve the operation of the City-wide transportation facilities and services. The transportation improvements identified in the Transportation Element would be implemented as part of the Reuse Plan and all other reuse alternatives and would be made over a 20- to 30-year period, consistent with the anticipated implementation timeline for the Reuse Plan.

The streets on NAS Alameda/FISC Alameda would be constructed on a grid system, with the goal of providing efficient and equitable distribution of traffic throughout the roadway system and a smooth transition into Alameda's existing street system (Reuse Plan Policy 4-6). The principle arterials of Atlantic Avenue, Tinker Avenue, and Mitchell/Mosley Avenue would serve to integrate NAS Alameda with the existing roadway system. Internally, a system of minor arterials, collectors, and local streets would be constructed to interconnect each of the planning areas. Facility upgrades and new roadways would be required as development occurs in each of the reuse planning areas (Reuse Plan Policy 4-1).

An important element of the transportation system would be the development of a Transportation System Management program, which is a set of programs and policies designed to improve performance of the transportation system by reducing traffic demand during the congested peak travel periods. These programs would be designed to shift trips from single-occupant automobiles to other travel modes or to less-congested periods.

In addition, the City of Alameda would establish truck routes and review possible requirements for operating time restrictions for truck traffic (Reuse Plan Policy 4-28).

Tinker Avenue and Mitchell/Mosley Avenue

Tinker Avenue and Mitchell/Mosley Avenue would be constructed/extended to provide more direct access to the Webster/Posey Tubes providing additional access routes to NAS Alameda/FISC Alameda, alleviate congestion at the Atlantic Avenue/Webster Street intersection, and improve access and circulation through the western end of the island (Reuse Plan Policy 4-4).

Parking Facilities

New parking facilities would be provided as new development occurs on NAS Alameda/FISC Alameda and their design and layout would be based on City of Alameda standards.

Public Transit

Alameda would support the development of transit centers on NAS Alameda/FISC Alameda that correspond with proposed activity centers located throughout the site (Reuse Plan Policy 4-13). These transit nodes would serve as multi-modal stations and allow residents and employees to interchange between private and public transportation modes such as buses, bicycles, and ferries. These centers would include bus shelters, bicycle lockers, and transit-oriented street design.

Bicycle and Pedestrian System

The City of Alameda would provide a system of pedestrian and bicycle routes to minimize the use of automobiles for internal circulation and external trips.

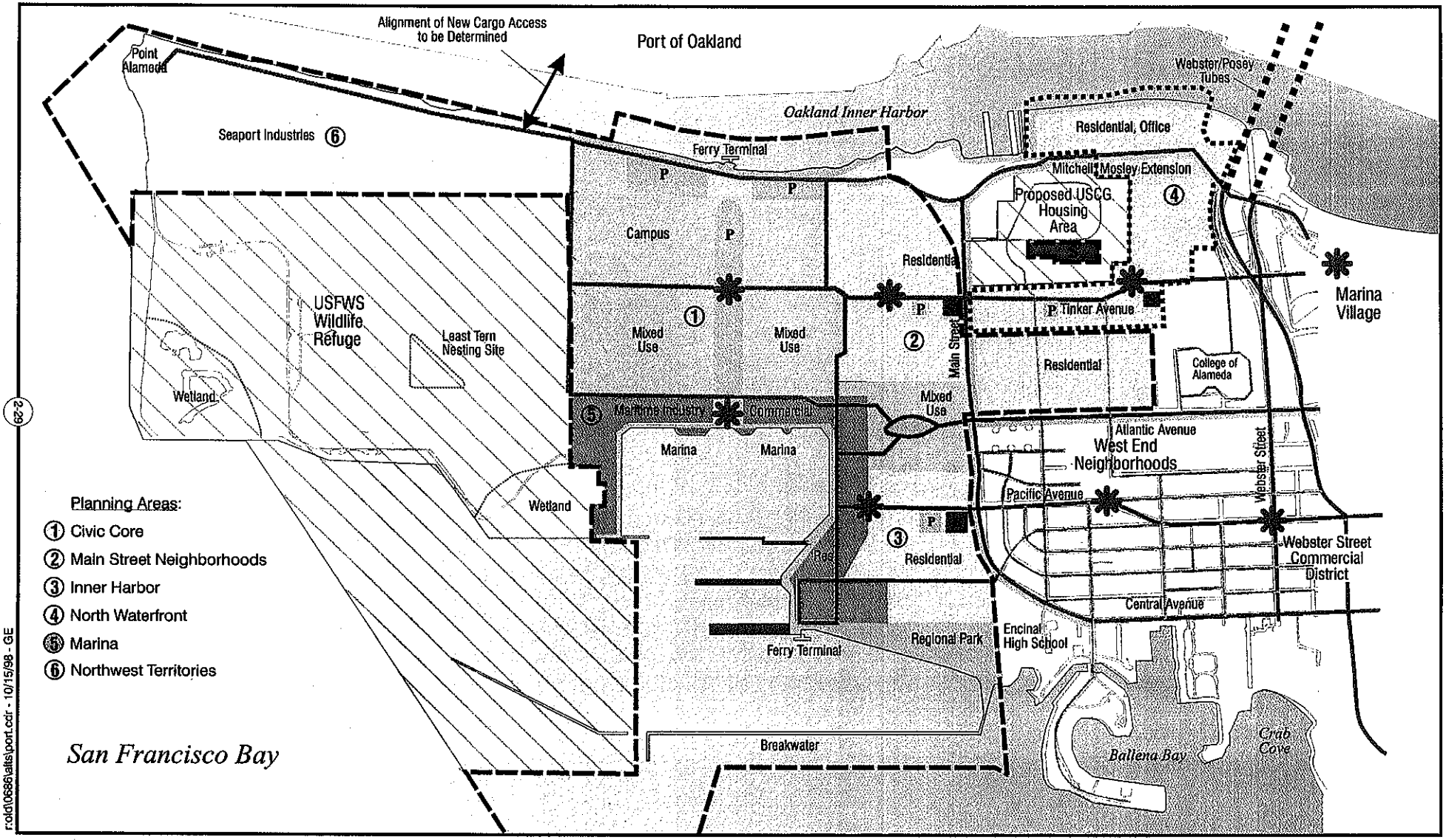
2.2.2 Seaport Alternative

The main distinctive feature of the Seaport Alternative would be development of a 220-acre (89 ha) seaport in the Northwest Territories planning area. Land uses in the other planning areas would be similar, in most cases, to the Reuse Plan Alternative. In the Civic Core planning area, about 916,000 square feet (85,096 square m) of existing buildings would be used as a college-level campus, as compared to mixed-office and institutional uses under the Reuse Plan Alternative. Utility system repairs and improvements, roadway system improvements, and establishment of an on-site fire station would be included as proposed under the Reuse Plan Alternative. Seaport Alternative land uses are shown in Figure 2-5. Proposed development levels within each reuse planning area are shown in Table 2-4. This alternative was included in the EIR in response to the San Francisco Bay Conservation and Development Commission's (BCDC) former designation of the NAS Alameda site under the category of "reserve port" in the San Francisco Bay Plan and San Francisco Seaport Plan (BCDC 1996a). This designation was removed from the site by a vote of the Commission on September 18, 1997.

The Seaport Alternative would require developing an additional transportation link (either a bridge or a tunnel) between Alameda and the Oakland mainland to support seaport operations. Following are descriptions of land uses in each planning area.

Planning Area 1. Civic Core

Under the Seaport Alternative land uses in the Civic Core planning area would be similar to the Reuse Plan Alternative, except that about 916,000 square feet (85,096 square m) of existing buildings would be used as a college-



The distinctive feature of the Seaport Alternative would be development of a 220-acre port facility with five containerized shipping berths in the Northwest Territories.

N

0 1,000 2,000

Approximate Scale in Feet

LEGEND:

- Centers-Transit Node
- Roadway
- School
- P — Park/Open Space
- Federal Transfer Land
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

Seaport Alternative

NAS Alameda/FISC Alameda
Alameda, California

Source: ARRA; EDAW; Tetra Tech

Figure 2-5

Table 2-4
Seaport Alternative

Land Use Categories	Units	Planning Area					
		Civic Core	Main Street Neighborhoods	Inner Harbor	North Waterfront	Marina	Northwest Territories
Total Acres	acres	334	265	120	88	125	272
Marina-Related Industry	sq. ft. of development[1]					132,000	
Mixed Core or Mixed Use or R&D or Office/ Workspace	sq. ft. of development[1]	2,279,000			418,000		
Campus/Civic Buildings	sq. ft. of development[1]	1,016,000					
Marina	slips (live-aboard)					500 (0)	
RV Park	RV spaces	Not Proposed					
Schools	# schools		2	1	1		
School Facilities	acres		21	8	8		
Parks	acres		4	49			
Sports Complex	acres	Not Proposed					
Open Space	acres	94				47	52
Single-family Residential (6 units per acre)	# dwelling units		1,314	378			
Attached Housing (12 units per acre)	# dwelling units	192	174		552	384	
Hotel/Conference Center	# rooms		70[2]			300	
Commercial	sq. ft. of development[1]	52,000	52,000		26,000		
Visitor-Serving Recreation/Commercial	sq. ft. of development[1]					132,000	
Golf Clubhouse/ Conference Facilities	sq. ft. of development[1]	Not Proposed					
Links Golf Course	acres	Not Proposed					
Container Berths	# of berths						5

[1]Note that square footage of development is derived by multiplying the total acreage of the planning area by the typical amount of building coverage for development for each type of land use. The coverage factor is called the floor area ratio (FAR).

[2]The Main Street Neighborhoods would include 70 units of community housing in the former Navy Lodge.

Source: EDAW; ARRA; Tetra Tech

level campus, as compared to mixed-office and institutional uses under the Reuse Plan Alternative. In addition, there would be no sports complex under this alternative.

Planning Area 2. Main Street Neighborhoods

Under the Seaport Alternative land uses in the Main Street Neighborhoods planning area would be the same as under the Reuse Plan Alternative.

Planning Area 3. Inner Harbor

The Seaport Alternative would include 63 acres (25 ha) of single-family residential development (approximately 6 units per acre [15 units per ha]) in the Inner Harbor planning area instead of light industrial uses proposed under the Reuse Plan Alternative. Eight acres (3 ha) would be reserved for a school site. Because there would be no RV park in this planning area, the regional park would be increased to 49 acres (20 ha). The regional park would be included in the Bay Trail System and would be developed and maintained by the East Bay Regional Park District.

Planning Area 4. North Waterfront

Under the Seaport Alternative, the North Waterfront planning area would emphasize residential and office/workspace uses. Waterfront housing would increase to 46 acres (19 ha), and there would be no light industry or hotel. Other land use components would be the same as under the Reuse Plan Alternative.

Planning Area 5. Marina

Under the Seaport Alternative land uses in the Marina planning area would be the same as under the Reuse Plan Alternative except that there would be 500 slips in the marina instead of 900. There would be no live-aboard slips.

Planning Area 6. Northwest Territories

Under the Seaport Alternative, 220 acres (89 ha) at the northern edge of the former airfield would be reserved for development of a five-berth containerized ship port facility. No specific development plans for the layout of this facility have been developed or analyzed in this EIR; therefore, this use is analyzed at a general level of detail. Subsequent environmental review would be required if a specific development plan for a port facility is proposed in the future. At a minimum, developing a five-berth seaport in the Northwest Territories planning area would require a significant amount of dredging and installation of several large cranes (over 200 feet [61 m] high)

along the waterfront of the Oakland Inner Harbor. Transit connections for rail lines or trucks transporting cargo containers would be developed behind the unloading facilities. Much of the land behind the cranes would be used as a container storage yard. The BCDC Seaport Plan at one time envisioned a port site with a southern boundary roughly parallel to the waterfront. This boundary was chosen for operational efficiency of port facilities and was created prior to the determination of the boundary of the wildlife refuge. Port facilities could still be created in the Northwest Territories planning area with the present land configuration; however, optimal operational efficiencies of back storage areas may not be achieved.

Development of a seaport would require construction of an additional transportation link crossing the Oakland Inner Harbor to the Oakland mainland to be used for transporting cargo. This link could be a bridge, a tunnel under the channel, or a specialized high-rise crane/bridge for moving containerized cargo. No design or location has been identified for this crossing; however, it likely would be in the Northwest Territories planning area and would connect to the Oakland side of the Inner Harbor somewhere in the vicinity of the Port of Oakland or the adjacent former FISC Oakland property. Detailed analysis of a new transportation link is beyond the scope of this document, and subsequent environmental review would be required if specific proposals for this link are developed. Therefore, the analysis contained in this EIR will consider potential impacts from a traffic link at a generalized level of detail.

The remainder of the planning area, consisting of 52 acres (21 ha), would be devoted to recreation and open space uses. Recreational uses would include a bay trail, shoreline park, and a regional Point Alameda park only at the far northwestern end of the planning area. The bay trail would be similar to the Reuse Plan Alternative but likely would be rerouted around the port facilities.

2.2.3 Residential Alternative

The Residential Alternative would significantly increase the amount of land developed for residential use compared to the Reuse Plan Alternative. Increased numbers of housing units would be developed in the Civic Core, the Inner Harbor, the North Waterfront, and the Northwest Territories planning areas, as compared to the Reuse Plan Alternative. The Main Street Neighborhoods planning area would retain the maximum level of residential development contained in the Reuse Plan Alternative. Other land uses would be similar to the Reuse Plan Alternative, except that 916,000 square feet (85,096 square m) of existing buildings in the Civic Core planning area would be used as a college-level campus, as compared to mixed-office and institutional uses under the Reuse Plan Alternative. Utility system repairs and improvements, roadway system improvements, and establishment of an on-

site fire station would be included as proposed under the Reuse Plan Alternative.

Land uses under the Residential Alternative are shown in Figure 2-6 and proposed densities within each reuse planning area are shown in Table 2-5. Following are descriptions of land uses in each planning area.

Planning Area 1. Civic Core

Under the Residential Alternative, the Civic Core planning area would have an increased housing component of 80 acres (32 ha), which is substantially higher than the 16 acres (6 ha) proposed under the Reuse Plan Alternative. All housing is assumed to be approximately 12 units per acre (30 units per ha).

There would be 6 acres (2 ha) of commercial uses to serve the increased residential population. Mixed-core and mixed-use areas would decrease to 50 acres (20 ha) and 39 acres (16 ha), respectively, but the categories of land uses in these areas would be the same as described under the Reuse Plan Alternative.

About 916,000 square feet (85,096 square m) of existing buildings in the northern portion of the planning area would be used for development of a college-level educational institution, as compared to mixed-office and institutional uses under the Reuse Plan Alternative. Civic open space would be the same as under the Reuse Plan Alternative.

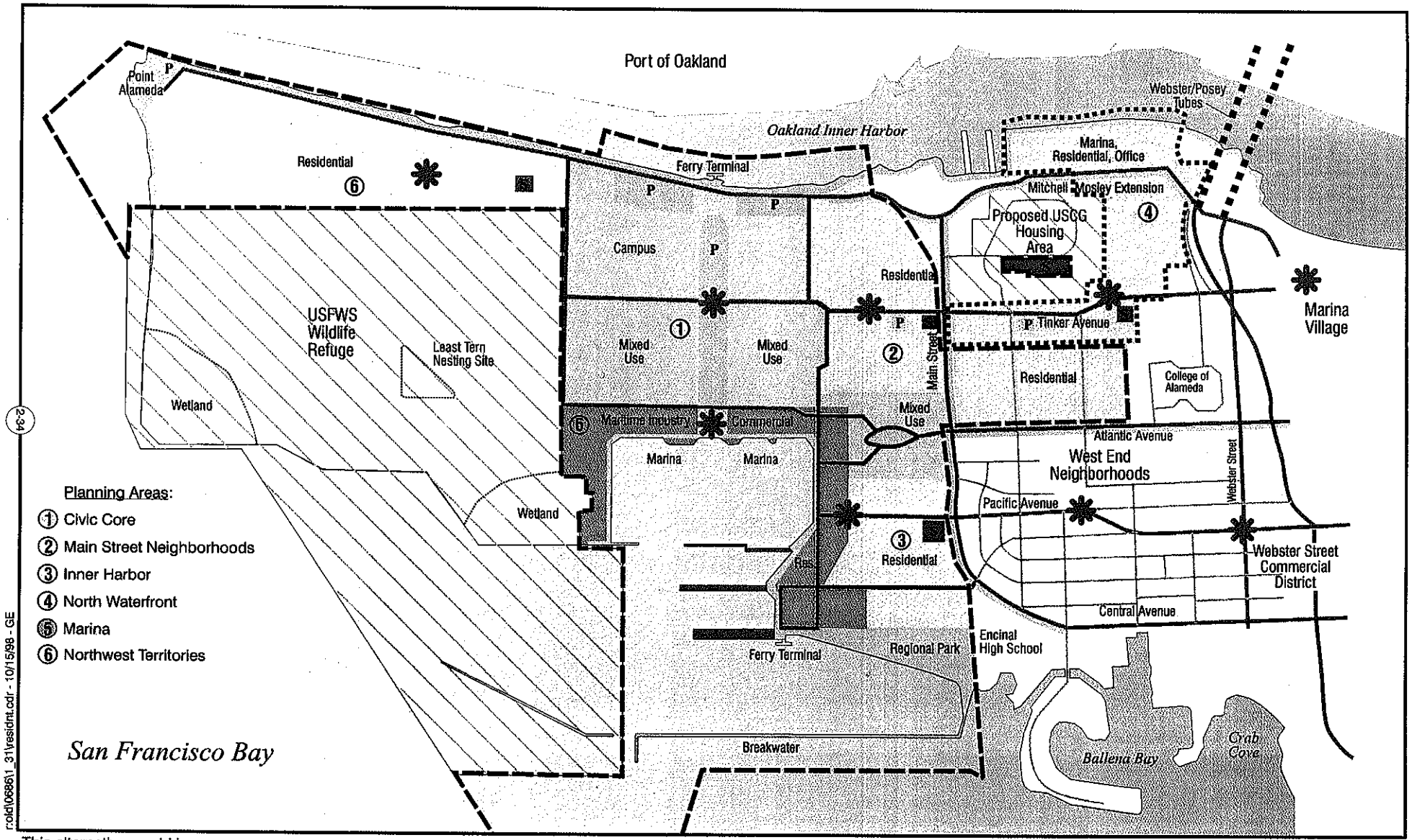
Planning Area 2. Main Street Neighborhoods

Under the Residential Alternative, land uses in the Main Street Neighborhoods planning area would be the same as under the Reuse Plan Alternative.

Planning Area 3. Inner Harbor

The Inner Harbor planning area would have 76 acres (31 ha) of residential uses under this alternative; 63 acres (25 ha) would be devoted to single-family residential uses at 6 units per acre (15 units per ha) and 13 acres (5 ha) would be for attached housing at approximately 12 units per acre (30 units per ha), consistent with Measure A and the City Charter.

An 8-acre (3 ha) site would be reserved for a school. Approximately 36 acres (15 ha) would be developed as a regional park, but there would be no RV park.



This alternative would increase residential development in the Civic Core, Northwest Territories, and the Inner Harbor planning areas over the levels proposed in the Reuse Plan Alternative.

N

0 1,000 2,000
Approximate Scale in Feet

LEGEND:

- Centers-Transit Node
- Roadway
- School
- Park/Open Space
- Federal Transfer Land
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

Source: ARRA; EDAW; Tetra Tech

Residential Alternative

NAS Alameda/FISC Alameda
Alameda, California

Figure 2-6

Table 2-5
Residential Alternative

Land Use Categories	Units	Planning Area					
		Civic Core	Main Street Neighborhoods	Inner Harbor	North Waterfront	Marina	Northwest Territories
Total Acres	acres	334	265	120	88	125	272
Marina-Related Industry	sq. ft. of development[1]					132,000	
Mixed Core or Mixed Use or R&D or Office/ Workspace	sq. ft. of development[1]	1,278,000			313,000		
Campus/Civic Buildings	sq. ft. of development[1]	1,016,000					
Marina	slips (live-aboard)				200	900 (100)	
RV Park	RV spaces	Not Proposed					
Schools	# schools		2	1	1		1
School Facilities	acres		21	8	8		8
Parks	acres		4	36			
Sports Complex	acres	Not Proposed					
Open Space	acres	94				47	38
Single-family Residential (6 units per acre)	# dwelling units		1,314	378			1,200
Attached Housing (12 units per acre)	# dwelling units	960	174	156	408	384	312
Hotel/Conference Center	# rooms		70[2]			300	
Commercial	sq. ft. of development[1]	78,000	52,000		26,000		
Visitor-Serving Recreation/Commercial	sq. ft. of development[1]					132,000	
Golf Clubhouse/ Conference Facilities	sq. ft. of development[1]	Not Proposed					
Links Golf Course	acres	Not Proposed					

[1]Note that square footage of development is derived by multiplying the total acreage of the planning area by the typical amount of building coverage for development for each type of land use. The coverage factor is called the floor area ratio (FAR).

[2]The Main Street Neighborhoods would include 70 units of community housing in the former Navy Lodge.

Source: EDAW; ARRA; Tetra Tech

Planning Area 4. North Waterfront

The North Waterfront planning area would include more waterfront housing (approximately 12 units per acre [30 units per ha]) than under the Reuse Plan Alternative, with 34 acres (14 ha) instead of 12 acres (5 ha). There would be 24 acres (10 ha) of office/workspace instead of 32 acres (13 ha) proposed under the Reuse Plan Alternative. The planning area also would include 20 acres (8 ha) for a marina with 200 slips. Support commercial and school uses would be the same as under the Reuse Plan Alternative.

Planning Area 5. Marina

Under the Residential Alternative, land uses in the Marina planning area would be the same as under the Reuse Plan Alternative, although the square footage of light industry and commercial uses would be slightly reduced.

Planning Area 6. Northwest Territories

Under the Residential Alternative, a new residential area would be developed in the Northwest Territories planning area. Approximately 200 acres (81 ha) of runway area would be developed as mixed-use residential, with both single-family and attached housing. Approximately 1,200 single-family residential units (approximately 6 units per acre [15 units per ha]) would be developed on 200 acres (81 ha), and 312 units of attached housing (approximately 12 units per acre [30 units per ha]) would be developed on 26 acres (10 ha), consistent with the requirements of Measure A and the City Charter. An 8-acre (3 ha) site would be reserved for a school.

Open space uses would total 38 acres (15 ha), including a 100- to 200-foot (30 to 61 m) wide linear park and bay trail and a regional park at Point Alameda.

2.2.4 Reduced Density Alternative

The Reduced Density Alternative would have land use designations similar to the Reuse Plan Alternative with approximately the same acreage distributions, but overall density of development would be reduced throughout the project site compared to the Reuse Plan Alternative. For some areas, development density would not be reduced compared to the Reuse Plan Alternative, while in other areas no development would occur at all. For example, under the Reuse Plan Alternative 58 acres (23 ha) in the Northwest Territories planning area is designated for light industry use, but under the Reduced Density Alternative, no industrial development would occur during the planning time frame of 20 years, so the area would function as open space. Utility system repairs and improvements, roadway system improvements, and establishment of an on-site fire station would be included as proposed under the Reuse Plan

Alternative. Figure 2-7 shows the land use configurations and Table 2-6 shows land use acreages and densities. Following are descriptions of land uses in each planning area.

Planning Area 1. Civic Core

In order to examine the impact of alternative land use in the Civic Core planning area, this alternative proposes developing 52 acres (21 ha) of research and development uses instead of mixed-use office and institutional uses. As under the Reuse Plan Alternative, a sports complex would be developed through a combination of reuse of existing facilities and development of additional playing fields. A 13-acre (5 ha) RV park would be developed along the northern edge of the planning area, adjacent to the Oakland Inner Harbor.

Planning Area 2. Main Street Neighborhoods

Under the Reduced Density Alternative, land uses in the Main Street Neighborhoods planning area would have the same acreage distribution as under the Reuse Plan Alternative but would occur at lower densities. This area would have 793 units of single-family housing (approximately 3 units per acre [7 units per ha]) and 144 units of attached housing (approximately 12 units per acre [30 units per ha]). Although development densities under the Reduced Density Alternative could be the same as under the other alternatives, not all of the designated acreage may be built out. The net effect would be clustered residential development within the planning area. In addition to the George Miller School, one additional site would be reserved for school facilities. Other uses would be the same as the Reuse Plan Alternative.

Planning Area 3. Inner Harbor

Under the Reduced Density Alternative, the Inner Harbor planning area would have a mix of low-density residential, school, and regional park uses. Approximately 228 single-family residential units (approximately 3 units per acre [7 units per ha]) would be developed in the northern 76 acres (31 ha) of the planning area.

Planning Area 4. North Waterfront

Under the Reduced Density Alternative, the North Waterfront planning area would include 29 acres (12 ha) of light industrial development and 5 acres (2 ha) of marina and waterfront open space that would include visitor-serving recreation uses.

Land uses that would be the same as under the Reuse Plan Alternative include 32 acres (13 ha) for office/workspace uses, 12 acres (5 ha) for waterfront housing, and 2 acres (0.8 ha) for commercial development.

Planning Area 5. Marina

Under the Reduced Density Alternative land uses in the Marina planning area would be similar to the Reuse Plan Alternative. It would include a 250-slip marina instead of the 900 slips included in the Reuse Plan, but there would be no live-aboard slips. Marina-related light industry would be reduced to 65,000 square feet (6,038 square m), and attached residential units would be reduced by half to 192. Marina-related commercial uses also would be reduced substantially to 50,000 square feet (4,645 square m) on the same acreage.

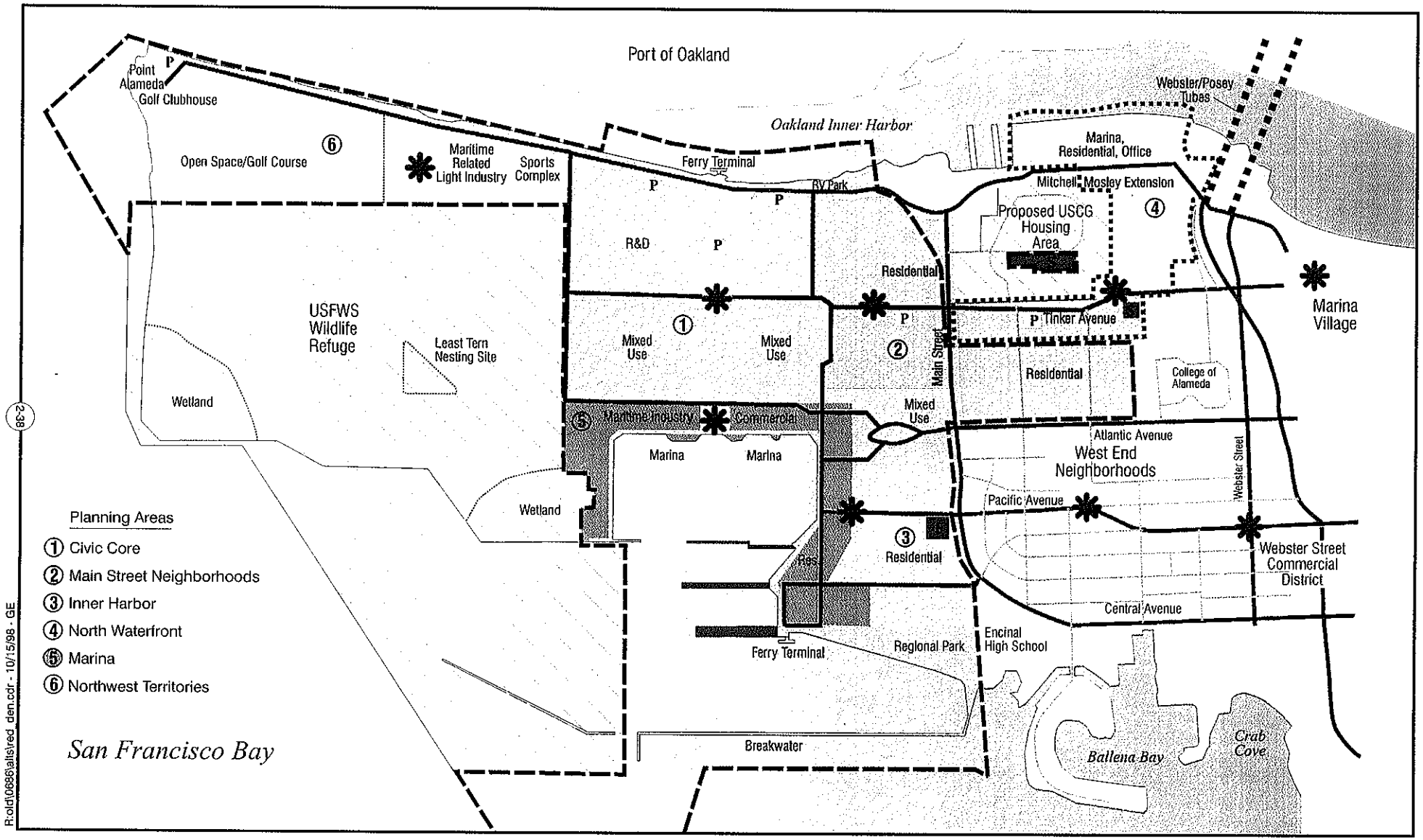
Planning Area 6. Northwest Territories

The Northwest Territories planning area would include a 162-acre (66 ha) Scottish links-style golf course with an additional 6 acres (2 ha) for a golf clubhouse and recreation facility, as described in the Reuse Plan Alternative. The Reduced Density Alternative also would include 29 acres (12 ha) of shoreline open space, as described under the Reuse Plan Alternative. As under the Reuse Plan Alternative, 17 acres (7 ha) would be developed as soccer fields as part of a sports complex. (The main facilities of the sports complex would be located in the adjacent Civic Core planning area.) Fifty-eight acres (23 ha) in the eastern portion of the site would have a General Plan designation for maritime-related industrial uses; however, this area would not be built out during the 20-year planning time frame, so it would serve as open space.

2.2.5 No Project Alternative

CEQA requires that a "no project" alternative, i.e., a description of existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services, be evaluated along with its impact. If the property is not transferred to the City, Federal activity beyond caretaker status at the facility will eventually cease and will not resume. Existing interim leases will be terminated or allowed to expire. For this reason, the No Project Alternative evaluates the facility as closed but remaining in Federal ownership with no reuse and no development.

Under the No Project Alternative, NAS Alameda/FISC Alameda would remain in Navy ownership under the administrative control of EFA West in a caretaker, or inactive, status with on-site activities limited to security, maintenance, cleanup, and other actions associated with caretaker status of properties available for disposal.



Under this alternative, land uses would be similar to the Reuse Plan Alternative but would be at reduced densities in some areas.

LEGEND:

- Centers-Transit Node
- Roadway
- School
- P — Park/Open Space
- Federal Transfer Land
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

N

0 1,000 2,000

Approximate Scale in Feet

Source: ARRA; EDAW; Tetra Tech

Reduced Density Alternative

NAS Alameda/FISC Alameda
Alameda, California

Figure 2-7

Table 2-6
Reduced Density Alternative

Land Use Categories	Units	Planning Area					
		Civic Core	Main Street Neighborhoods	Inner Harbor	North Waterfront	Marina	Northwest Territories
Total Acres	acres	334	265	120	88	125	272
Light Industry or Business Park	sq. ft. of development[1]	400,000			381,000		0[2]
Marina-Related Industry						65,000	
Mixed Core or Mixed Use or R&D or Office/ Workspace	sq. ft. of development[1]	1,422,000			418,000		
Campus/Sports Facilities	sq. ft. of development[1]	Not Proposed					
Marina	slips (live- aboard)					250 (0)	
RV Park	RV spaces	135					
Schools	# schools		2		1		
School Facilities	acres		21		8		
Parks	acres		4	36			
Sports Complex	acres	37					17
Open Space	acres	57			5	47	29
Single-family Residential (3 units per acre)[3]	# dwelling units		793	228			
Attached Housing (12 units per acre)[3]	# dwelling units	96	144		144	192	
Hotel/Conference Center	# rooms		70[4]			300	300
Commercial	sq. ft. of development[1]	26,000	52,000		26,000		
Visitor-Serving Recreation/ Commercial	sq. ft. of development[1]					50,000	
Golf Clubhouse/ Conference Facilities	sq. ft. of development[1]						26,000
Links Golf Course	acres						162

[1]Note that square footage of development is derived by multiplying the total acreage of the planning area by the typical amount of building coverage for development of for each type of land use. The coverage factor is called the floor area ratio (FAR).

[2]Fifty-eight acres would be designated for light industry but would not be built out during the planning time frame.

[3]Note that for the Reduced Density Alternative, housing would be clustered within the planning area at the specified density, but the entire area would not be built out, so the total number of units is reduced.

[4]The Main Street Neighborhoods would include 70 units of community housing in the former Navy Lodge.

Source: EDAW; ARRA; US Navy; Tetra Tech

A "Master Lease" between the Navy and the ARRA encompasses all of the property available for conveyance at NAS Alameda. Under the terms of the lease, the ARRA is allowed to enter into sub-leases at NAS Alameda on an interim basis involving existing facilities and land wherein use does not change significantly. While the term of the Master Lease continues until 2012, about 90 percent of the approximately 60 current sub-leases are for 5-year terms. A separate 5-year "Master Lease" between the Navy and the City of Alameda is anticipated for the FISC Alameda property in 1999 under the same general terms and conditions as the NAS Alameda lease with the ARRA. A list of the current sub-lease tenants at NAS Alameda/FISC Alameda is provided in Appendix C (Table C-3) of this EIR. Separate NEPA documentation was completed in support of these leases (see Section 1.4.3).

The No Project Alternative assumes that interagency property transfer by the Navy to the USFWS and the USCG would occur. Activities on these sites would not be part of the Navy caretaker action.

Currently, a number of interim leases have been granted for use of facilities at NAS Alameda/FISC Alameda, as permitted under the Military Leasing Act of 1956, 10 U.S.C. § 2667, as amended. Interim leases are limited to those uses that represent no substantial change in use or use intensity from historic Navy use of the property. The No Project Alternative assumes that existing interim leases would be phased out under caretaker status and no new leases would be completed.

The No Project Alternative assumes a caretaker workforce of approximately 63 employees, including approximately 9 administrative staff, 44 fire/security personnel, and an environmental management staff of 10. Caretaker personnel would be affiliated with the City of Alameda, contractors, or the Navy. The level of caretaker staffing would be adjusted over time to reflect the level of Navy responsibility at NAS Alameda/FISC Alameda. Approximately 100 additional workers would be temporarily located on NAS Alameda/FISC Alameda as a part of environmental cleanup activities.

One exception to the phase-out of existing leases would be the continued operation of the George Miller Elementary School. The Alameda Unified School District (AUSD) constructed, owns and operates the George Miller Elementary School on a 5-acre site in the North Housing area leased from the Navy since 1972. Although the current lease term expires in 2002, it is assumed that the lease would be continued during the caretaker period. This long-term lease would continue under the No Project Alternative. Approximately 30 teachers and staff would continue to be employed at the George Miller Elementary School and adjoining day care center during the caretaker period.

Specific caretaker actions performed by on-site employees could include the following:

- Inspection and maintenance of utility systems essential to protection of the property, telecommunications, and roads to avoid irreparable deterioration. Elements of all systems and some entire systems such as alternate systems, could be abandoned while still meeting caretaker requirements. Some utility systems could be sold.
- Periodic landscape maintenance around unoccupied structures to protect them from fire or nuisance conditions and to preserve the visual character of the area.
- Continuation of security patrols or augmentation of police services with private security as necessary.
- Maintenance of fire prevention and protection services.
- Continuation of land management programs, such as natural resource management, pest control, erosion control, and tree removal.
- Minimal maintenance of structures in a manner that facilitates future reuse.
- Maintenance of historic structures consistent with the standards published in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (Secretary of the Interior 1996b).

2.3 ALTERNATIVES ELIMINATED FROM DETAILED CONSIDERATION

Soon after the closure of NAS Alameda was approved by President Clinton and accepted by the 103rd Congress in October 1993, the ARRA was recognized by the Department of Defense as the LRA for the purpose of implementing DBCRA 1990, as amended. In its LRA capacity, the ARRA conducted a comprehensive reuse planning process. Suggestions and proposals for the future use of NAS Alameda/FISC Alameda properties were directed to the ARRA for consideration during the public reuse planning process. Alternatives for further consideration were generated from this process.

Additional reuse recommendations for the NAS Alameda/FISC Alameda site were provided during the public scoping process and have been incorporated into one or more of the alternatives analyzed in the EIR. However, two major land use alternatives suggested during public scoping were considered and eliminated from detailed review in this EIR. These were an alternative specifying a 595-acre (241 ha) wildlife refuge and an alternative designating only public trust land uses on Public Trust lands. NAS Alameda also has been proposed by several entities as a site for placement of dredge materials.

Reasons for eliminating these alternatives from detailed consideration are outlined below.

2.3.1 595-Acre Wildlife Refuge/202-Acre Northwest Territories

During the reuse planning process, it became clear that some portion of the runway area would need to be reserved for protecting the endangered California least tern. The USFWS submitted an expression of interest to the Navy for a Federal agency transfer of 595 acres (241 ha) of land plus 375 acres (152 ha) of submerged land for establishment of a wildlife refuge. This request would have resulted in a refuge with a northern boundary that ARRA believed would substantially affect any economically viable reuse for the Northwest Territories planning area. Subsequent discussions between the USFWS, ARRA, and the Navy, led the USFWS to conclude that a wildlife refuge with approximately 525 acres (213 ha) of dry land plus 375 acres (152 ha) of submerged land would provide enough acreage to accomplish the wildlife refuge goals, including protection of the California least tern. A 525-acre (213 ha) wildlife refuge would have a northern boundary within the northern runway. Subsequently, the USFWS revised its request to 525 acres (213 ha) of runway open space to be dedicated to wildlife refuge uses. The area delineated in the USFWS revised request has not been surveyed and is therefore estimated as approximately 525 acres (213 ha). Transfer of 525 acres (213 ha) of land (along with 375 acres [152 ha] of submerged land) from the Navy to USFWS is pending. Because USFWS concluded that 525 acres (213 ha) would provide adequate habitat for the least tern and revised its request accordingly, further consideration of a 595-acre (241 ha) refuge was eliminated from the EIR alternatives.

2.3.2 Public Trust Alternative

During the public scoping period, several persons suggested including a public trust alternative. Under a public trust alternative, all land use would be in accordance with public trust land use restrictions. See Section 3.1.3 for a detailed discussion of public trust land and a list of allowable uses. Lands currently subject to public trust restrictions are shown in Figure 3-4. Compliance of land uses proposed under the reuse alternatives with the public trust is discussed in detail in Section 4.1.

This alternative was eliminated from detailed consideration for several reasons. First, the City, ARRA, and the State Lands Commission have identified a sufficient quantity of appropriate land of adequate value that is available on site or in the vicinity to feasibly bring all of the existing reuse alternatives into compliance with the public trust through land trades and, possibly, through contributions to the Kapiloff Land Bank Fund (Cal. Pub. Res. Code § 8610 *et*

seq.). Negotiations between Alameda, ARRA, and the State Lands Commission for specific land trades are ongoing.

Second, trading land currently within the public trust with land currently outside the public trust, as proposed in the reuse alternatives, would have beneficial impacts that would not be realized under a public trust alternative. The public trust doctrine allows for termination of the trust and exchanges under constitutionally determined conditions, including that land of equal or greater value that is useful for trust purposes is placed in the public trust. NAS Alameda contains some lands not currently in the public trust that are more appropriate as public trust lands than some NAS Alameda land currently in the public trust. Much of this land available to trade into the public trust is more valuable for that purpose than the land that would be traded out of the public trust. For example, waterfront land along the south shore of the Oakland estuary is currently not subject to the public trust and is available for trade into the public trust. This land is considered to have higher public trust value than some of the existing military housing areas in the interior portion of NAS Alameda, which would be traded out of the public trust. If this land on the estuary were exchanged into the trust, it would become subject to land use restraints that apply to public trust property. The exchanges also would avoid possible conflicts between public trust requirements and historic preservation requirements for the NAS Alameda Historic District. Demolition or change in use of these buildings might be required under the public trust alternative, but this action would not be compatible with historic preservation and would be subject to approval by the State Historic Preservation Officer (SHPO).

Third, the public trust alternative was rejected because it would not allow economically feasible use of many parts of NAS Alameda. Some existing land uses, such as existing housing, are not consistent with the public trust. If no trading of land were allowed, these uses would eventually need to be terminated and existing structures would need to be demolished. Redevelopment of large portions of NAS Alameda, including most of the areas proposed for residential use, would be difficult because uses allowed under the public trust would not be adequate to produce enough income to make economic development of the property feasible.

For these reasons, an exclusive public trust alternative was eliminated from detailed consideration.

2.3.3 Northwest Territories Dredge Material Disposal Facility

Dredge material with suitable physical and chemical characteristics might be useful as fill material in support of the Reuse Plan Alternative, Seaport Alternative, Residential Alternative, or Reduced Density Alternative.

However, use of the Northwest Territories planning area as a permanent, on-going dredge material disposal facility would not meet the goals of the Reuse Plan to retain and improve open areas for open space and recreational uses and was therefore rejected. Any future project proposing this type of use would need to be analyzed separately. Site specific environmental documentation, permits, and approvals from various Federal, State, and local agencies would be required prior to placement of any material.

2.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an "environmental superior" alternative be identified. The No Project Alternative is the environmentally superior alternative because no significant impacts would occur under this alternative. However, the No Project Alternative would not allow the City of Alameda to generate jobs, tax revenues, or other benefits allowed as part of the reuse alternatives. Consistent with CEQA requirements, one of the alternatives that proposes specific reuse must further be identified as an environmentally superior alternative. The Reduced Density Alternative is the environmentally superior reuse alternative because when compared to the other reuse alternatives, most environmental impacts would occur at reduced levels.

2.5 COMPARISON OF ALTERNATIVES

CEQA requires that the EIR include a presentation of the impacts of each alternative in comparative form to define the issues and to provide a clear basis for choice among options by the decision-makers and the public. Table ES-3 provides a comparison of the impacts under each alternative, and Table 2-1 provides a comparison of the features of each reuse alternative. Table 2-7, at the end of this chapter, summarizes the significant impacts and corresponding mitigation measures for implementation of reuse under each alternative. These tables can be used to compare the features, potential impacts, and mitigation measures of one alternative to those of another.

Reuse impacts from land that is being transferred from the Navy to the USFWS and the USCG are considered to be cumulative impacts and are therefore discussed in Section 5.1, Cumulative Impacts, and are not identified in Table 2-7.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation[1]

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Land Use				
No impacts.	Impact 1: A significant and mitigable impact would result from inconsistencies on public trust land.	Impact 1: A significant and mitigable impact would result from inconsistencies on public trust land.	Impact 1: A significant and mitigable impact would result from inconsistencies on public trust land.	Impact 1: A significant and mitigable impact would result from inconsistencies on public trust land.
	Mitigation 1: Exchange land currently in the public trust for land outside of the public trust, and/or, possibly contributions to the Kapiloff Land Bank Fund.	Mitigation 1: Same as the Reuse Plan Alternative.	Mitigation 1: Same as the Reuse Plan Alternative.	Mitigation 1: Same as the Reuse Plan Alternative.
	Impact 2: A significant and mitigable impact would result from RV park conflicts with surrounding land uses.	Impact 2: A significant and mitigable impact would result from development of port facilities that would decrease public access to the shoreline and conflict with implementation of the Bay Trail project.		Impact 2: A significant and mitigable impact would result from RV park conflicts with surrounding land uses.
	Mitigation 2: Design site plans to include screening, and careful placement of facilities. Consider designating RV transit routes in the City of Alameda and other RV management restrictions, if needed.	Mitigation 2: Provide any feasible public access within the design of the port facilities development. Provide additional public access to shorelines in adjacent areas and in the general vicinity.		Mitigation 2: Same as the Reuse Plan Alternative.

[1] Mitigation identified would reduce impacts to a nonsignificant level unless otherwise noted.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Land Use (cont'd)		Impact 3: A significant and mitigable impact would result from constructing a new cargo crossing between Alameda and Oakland by requiring demolition or relocation of existing structures in the area. Mitigation 3: Design the crossing to minimize displacing industrial or commercial development. Provide adequate noise attenuation and visual buffers to reduce impacts to surrounding land uses.		
Visual Resources				
No significant impacts.	Impact 1: A significant and mitigable impact would result from a decrease in visual quality from Oakland and Alameda viewing locations that could result from new development in the Northwest Territories.	Impact 1: A significant and not mitigable impact would result from the development of port facilities in the Northwest Territories.	Impact 1: A significant and mitigable impact would result from blocked views due to residential development in the Northwest Territories.	Impact 1: A significant and mitigable impact would result from views of the Northwest Territories from Oakland and Alameda viewing locations being blocked by new development.
	Mitigation 1: Adopt appropriate design elements to minimize the industrial character and provide minimal visual contrast with surrounding uses. Develop and implement a landscape concept plan. Screen parking areas from view.	Mitigation 1: It would not be possible to screen the proposed port facilities from public view. No feasible mitigation exists.	Mitigation 1: Locate residential development so as to create view corridors toward the bay.	Mitigation 1: Same as the Reuse Plan Alternative.
	Impact 2: A significant and mitigable impact would result from blocked views from the shoreline park due to new development in the Northwest Territories.	Impact 2: A significant and not mitigable impact would result from blocked views from the shoreline park due to new development in the Northwest Territories.		Impact 2: A significant and mitigable impact would result from blocked views from the shoreline park due to the eventual development of light industrial facilities in the Northwest Territories.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Visual Resources (cont'd)	Mitigation 2: Locate new buildings to preserve and emphasize views of the bay and visual landmarks. Impact 3: A significant and mitigable impact would result from views of the RV park from existing residential neighborhoods. Mitigation 3: Develop site layout and landscape concept plans to screen the RV park. Develop design guidelines that address building and site characteristics and consider views from off-site locations.	Mitigation 2: It would not be possible to avoid disruption of views from some locations by loading cranes. No feasible mitigation exists.		Mitigation 2: Same as the Reuse Plan Alternative. Impact 3: A significant and mitigable impact would result from views of the RV park from existing residential neighborhoods. Mitigation 3: Same as Reuse Plan Alternative.
Population and Housing				
No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Public Services				
No significant impacts.	Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department. Mitigation 1: Add 8 officers and 4 patrol cars to the department to meet the increased police protection demand. These additional services are project costs that could be funded from a variety of sources.	Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department. Mitigation 1: Add 10 officers and 5 patrol cars to the department to meet the increased police protection demand. These additional services are project costs that could be funded from a variety of sources.	Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department. Mitigation 1: Add 17 officers and 9 patrol cars to the department to meet the increased police protection demand. These additional services are project costs that could be funded from a variety of sources.	Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department. Mitigation 1: Add 6 officers and 3 patrol cars to the department to meet the increased police protection demand. These additional services are project costs that could be funded from a variety of sources.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Public Services (cont'd)	Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department.	Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department.	Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department.	Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department.
	Mitigation 2: Construct a new fire station or staff the existing on-base fire stations to ensure adequate response times to emergency incidents. These additional services are project costs that could be funded from a variety of sources.	Mitigation 2: Same as the Reuse Plan Alternative, although due to the type of development planned, different types of equipment could be needed.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.
	Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 1,103 additional students attending AUSD schools at buildout. This would lead to AUSD schools overall operating at about 111 percent of school year 1997/1998 capacity, assuming construction of an elementary school with a 500-student capacity.	Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 1,483 additional students attending AUSD schools at buildout, compared with 1,103 for the Reuse Plan Alternative. This would lead to AUSD schools overall operating at about 113 percent of capacity, assuming construction of 2 elementary schools with a total capacity of 656 students.	Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 2,593 additional students attending AUSD schools at buildout. This would lead to AUSD schools overall operating at about 111 percent of capacity, assuming construction of two elementary schools with a total capacity of 1,250 students and a high school with a 600-student capacity.	Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 807 additional students attending AUSD schools at buildout. This would lead to AUSD schools overall operating at about 109 percent of capacity, assuming construction of an elementary school with a 420-student capacity.
	Mitigation 3: Adding 8 high school classrooms and 2 new high school labs would reduce the impact to a nonsignificant level.	Mitigation 3: Adding 3 middle school classrooms, 11 high school classrooms, and 3 high school labs would reduce the impact to a nonsignificant level.	Mitigation 3: Adding 13 middle school classrooms would reduce the impact to a nonsignificant level.	Mitigation 3: Adding 8 high school classrooms and 2 high school labs would reduce the impact to a nonsignificant level.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Utilities				
No significant impacts.	Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements. Mitigation 1: Prior to major demolition, prepare and implement a solid waste management plan meeting the requirements of the California Integrated Waste Management Act and Alameda County Measure D.	Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements. Mitigation 1: Same as for the Reuse Plan Alternative.	Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements. Mitigation 1: Same as for the Reuse Plan Alternative.	Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements. Mitigation 1: Same as for the Reuse Plan Alternative.
Cultural Resources				
No significant impacts.	Impact 1: A significant and mitigable impact would be the demolition of other buildings at NAS Alameda, including some in the Historic District not covered by the 1996 MOA. Mitigation 1: The City of Alameda will provide design review to protect the contributing buildings within the Historic District.	Impact 1: A significant and not mitigable impact would result from demolition of some or all of the National Register-eligible Training Wall. Mitigation 1: Record the property to HAER standards to ensure a permanent record of the property. This would reduce adverse impacts, but not to a level that is nonsignificant.	Impact 1: A significant and mitigable impact would be the demolition of other buildings at NAS Alameda, including some in the Historic District not covered by the 1996 MOA. Mitigation 1: Same as the Reuse Plan Alternative.	Impact 1: A significant and mitigable impact would be the demolition of other buildings at NAS Alameda, including some in the Historic District not covered by the 1996 MOA. Mitigation 1: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Cultural Resources (cont'd)	Impact 2: A significant and mitigable impact would result from deterioration of contributing historic properties remaining in layaway for extended periods prior to reuse.	Impact 2: A significant and mitigable impact would result from deterioration of contributing historic properties remaining in layaway for extended periods prior to reuse.	Impact 2: A significant and mitigable impact would result from deterioration of contributing historic properties remaining in layaway for extended periods prior to reuse.	Impact 2: A significant and mitigable impact would result from deterioration of contributing historic properties remaining in layaway for extended periods prior to reuse.
	Mitigation 2: The City of Alameda will use appropriate standards for the care and custody of historic properties. Specifically, those standards are presented in National Park Service Preservation Brief 31, *Mothballing Historic Buildings*.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.
	Impact 3: A significant and mitigable impact would result from reuse and rehabilitation of contributing properties in the NAS Historic District.	Impact 3: A significant and mitigable impact would result from reuse and rehabilitation of contributing properties in the NAS Historic District.	Impact 3: A significant and mitigable impact would result from reuse and rehabilitation of contributing properties in the NAS Historic District.	Impact 3: A significant and mitigable impact would result from reuse and rehabilitation of contributing properties in the NAS Historic District.
	Mitigation 3: The City of Alameda will use appropriate standards, specifically those standards published in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Properties*.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.
	Impact 4: A significant and mitigable impact would result from new construction of buildings within the Historic District.	Impact 4: A significant and mitigable impact would result from new construction of buildings within the Historic District.	Impact 4: A significant and mitigable impact would result from new construction of buildings within the Historic District.	Impact 4: A significant and mitigable impact would result from new construction of buildings within the Historic District.
	Mitigation 4: The City of Alameda will use appropriate standards specifically those standards published in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Properties*.	Mitigation 4: Same as the Reuse Plan Alternative.	Mitigation 4: Same as the Reuse Plan Alternative.	Mitigation 4: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Biological Resources				
No impacts.	Impact 1: A significant and mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to new development located adjacent to the wildlife refuge. Mitigation 1: Install a barrier between the Northwest Territories planning area and the wildlife refuge. Construct buildings in the light industrial area of the Northwest Territories planning area no higher than two stories (40 feet). Plant trees in the Northwest Territories that are less than 20 feet at maturity and light-limbed. Plant shrubs that are less than 15 feet at maturity and do not have dense foliage. Reduce night lighting as much as possible in the light industrial area. Feeding stations or colonies for feral cats and any native or non-native wildlife species that are potential predators of least terns will be prohibited.	Impact 1: A significant and not mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to port development located adjacent to the USFWS wildlife refuge. Mitigation 1: Mitigating the impact from cranes is not proposed because antiperching devices are not feasible. Antiperching devices would impede the moving parts of the cranes. Mitigation for other impacts associated with predation are the same as presented under Mitigation 1 for the Reuse Plan Alternative. Containers should be stacked no higher than the equivalent of 2 stories. This impact, however, would remain significant and not mitigable.	Impact 1: A significant and not mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to residential development located adjacent to the USFWS wildlife refuge. Mitigation 1: The following mitigation actions would minimize this impact, but this impact would remain significant and not mitigable. Construct residential structures no higher than two stories (30 feet). Develop CC&Rs on residential development that limit landscaping to trees less than 20 feet at maturity with light limbs, and plant shrubs that are less than 15 feet at maturity and do not have dense foliage.	Impact 1: A significant and mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to new development located adjacent to the USFWS wildlife refuge after the build-out period. Mitigation 1: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Biological Resources (cont'd)			A total prohibition of cats and dogs in the Northwest Territories planning area is considered unfeasible and unenforceable and is therefore not proposed as a mitigation measure. Feeding stations or colonies for feral cats and any native or non-native wildlife species that are potential predators of least terns will be prohibited.	
	Impact 2: A significant and mitigable impact to the California least tern (loss of individuals and disruption of breeding) would result from increased presence of people and domestic animals in the Northwest Territories.	Impact 2: A significant and mitigable impact to the California least tern (loss of individuals and disruption of breeding) would result from increased presence of people and domestic animals in the Northwest Territories.	Impact 2: A significant and not mitigable impact to the California least tern (loss of individuals and disruption of breeding) would result from increased presence of people and domestic animals in the Northwest Territories.	Impact 2: A significant and mitigable impact to the California least tern (loss of individuals and disruption of breeding) would result from increased presence of people and domestic animals in the Northwest Territories.
	Mitigation 2: As discussed in Mitigation 1, it is assumed that upon transfer of the property proposed for use as a wildlife refuge, the USFWS would install a barrier between the Northwest Territories planning area and the wildlife refuge.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as for the Reuse Plan Alternative. However, this impact would remain significant because of the substantial increase in people and domestic animals under this alternative.	Mitigation 2: Same as the Reuse Plan Alternative.
	Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals.	Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals.	Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals.	Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Biological Resources (cont'd)	Mitigation 3: Marine operators should educate boat owners and others who use the marina about access restrictions to Breakwater Island and its immediate vicinity. Install signs that warn boaters about the sensitivity of the wildlife at the site and about prohibitions for disturbing protected bird and mammal species. Retain and enforce existing access restrictions to Breakwater Island.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.
	Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging and in-water construction activities in the Marina planning area.	Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging and in-water construction activities in the Marina planning area. In addition, the Seaport Alternative would require substantial dredging and dredge material disposal for the development of five container ship berths along the Oakland Inner Harbor Channel.	Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging in the Marina planning area. In addition, there may be increased dredging and marine vessel release of contaminants resulting from development of the marina in the North Waterfront planning area.	Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging in the Marina planning area. In addition, there may be increased dredging and marine vessel release of contaminants resulting from development of the marina in the North Waterfront planning area.
	Mitigation 4: Do not dredge in heavily used least tern foraging areas during the period from March 15 to September 30.	Mitigation 4: If dredging and in-water construction activity cannot be avoided completely in the Oakland Inner Harbor during the least tern breeding season, minimize the turbidity associated with these activities. Implement best management practices to control turbidity and to increase dredging efficiency. Increase cycle times, limit the number of dredging operations during least tern nesting season, or implement engineering measures to reduce turbidity, such as silt curtains.	Mitigation 4: Same as the Reuse Plan Alternative.	Mitigation 4: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Biological Resources (cont'd)	Impact 5: A significant and mitigable impact would result from stormwater runoff from the golf course and paved areas in the Northwest Territories planning area. In addition, marina-related discharges of pollutants to surface water bodies could affect marine and aquatic species, as well as birds, that forage in the waters.	Impact 5: A significant and mitigable impact would result from stormwater runoff from the development of port industrial facilities in the Northwest Territories planning area. Port development would have the potential for accidental spills of petrochemicals and other substances. In addition, marina-related discharges of pollutants to surface water bodies could affect marine and aquatic species, such as the harbor seals and fish, as well as birds, such as the least tern, that forage in the waters.	Impact 5: A significant and mitigable impact would result from stormwater runoff from the golf course and paved areas in the Northwest Territories planning area. The impact would be similar to the impact under the Reuse Plan Alternative. The specific pollutants would be slightly different with residential uses. In addition, marina-related discharges of pollutants to surface water bodies could affect marine and aquatic species, as well as birds, that forage in the waters.	Impact 5: A significant and mitigable impact would result from stormwater runoff from the golf course and paved areas in the Northwest Territories planning area. In addition, marina-related discharges of pollutants to surface water bodies could affect marine and aquatic species, as well as birds, that forage in the waters.
	Mitigation 5: Develop and implement stormwater management and monitoring plans. In addition, 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. Developments would be required to meet California Regional Water Quality Control Board (RWQCB) storm water management programs and requirements. To the extent possible, all drainage should be directed away from the wildlife refuge. A plan should be developed for managing the discharge of pollutants from boats using the marina.	Mitigation 5: Develop and implement stormwater management and monitoring plans. Develop and implement a spill control and a counter-measure plan under storm water management conditions of approval for developments over 5 acres to mitigate the potential impacts of spills on water quality. To the extent possible, direct all drainage away from the wildlife refuge. A plan should be developed for managing the discharge of pollutants from boats using the marina.	Mitigation 5: Same as the Reuse Plan Alternative.	Mitigation 5: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Geology and Soils				
No significant impacts.	Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking. Mitigation 1: Perform seismic upgrades to existing structures designated for reuse. Inspect and retrofit or replace existing utilities that are essential for maintaining emergency services or that could increase hazards if ruptured. Demolish structures that cannot feasibly be retrofitted. Replace utilities that cannot be retrofitted or supplement them with backup systems. Comply with the requirements of the current CBC for new residential units. Identify and accommodate site-specific seismic forces in the design of industrial and commercial buildings, and other buildings.	Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking. Mitigation 1: Same as the Reuse Plan Alternative. In addition, business plans, including spill prevention, containment, and countermeasures plans to address spills of hazardous substances, would be required for industries storing or handling hazardous materials.	Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking. Mitigation 1: Same as the Reuse Plan Alternative.	Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking. Mitigation 1: Same as the Reuse Plan Alternative.
	Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities.	Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities.	Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities.	Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Geology and Soils (cont'd)	Mitigation 2: Reevaluate past reports and the condition of foundations to determine if retrofitting is necessary or appropriate to strengthen existing structures proposed for reuse. Perform soil studies and geologic reports for each new building site and incorporate the recommendations in future building design. Consider replacing existing heterogeneous fill and vibrocompacting new or existing fill materials. See Chapter IV of more detail.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.
	Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill.	Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill.	Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill.	Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill.
	Mitigation 3: Mitigation measures for settlement would be the same as those for liquefaction. In addition, consider placing excess fill in anticipation of settlement to raise the ground surface elevation above the predicted final elevation. Install a capillary barrier beneath low-lying slab-on-grade foundations to prevent capillary rise into the slab.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.
	Impact 4: A significant and mitigable impact would result from differential settlement, which can damage buildings, utilities and roads. High shrink-swell potential soils can damage roads and foundations similar to damage caused by differential settlement.	Impact 4: A significant and mitigable impact would result from differential settlement, which can damage buildings, utilities and roads.	Impact 4: A significant and mitigable impact would result from differential settlement, which can damage buildings, utilities and roads.	Impact 4: A significant and mitigable impact would result from differential settlement, which can damage buildings, utilities and roads.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

No Project Alternative	COMMUNITY REUSE ALTERNATIVES			
	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
	Mitigation 4: A geotechnical engineer should review design plans and details and inspect site grading and document placement of engineered fills, stability of cut and fill slopes, and placement of subdrains. Mitigation measures for differential settlement would be the same as for liquefaction.	Mitigation 4: Same as the Reuse Plan Alternative.	Mitigation 4: Same as the Reuse Plan Alternative.	Mitigation 4: Same as the Reuse Plan Alternative.
	Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached.	Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached.	Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached.	Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached.
	Mitigation 5: Require owners of shoreline properties to inspect, maintain, and repair the perimeter dikes as needed to comply with applicable standards.	Mitigation 5: Same as the Reuse Plan Alternative.	Mitigation 5: Same as the Reuse Plan Alternative.	Mitigation 5: Same as the Reuse Plan Alternative.
	Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure.	Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure.	Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure.	Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure.
	Mitigation 6: Conduct studies to determine the seismic stability of perimeter dikes in developed shoreline areas before shoreline construction designs are completed. Strengthen unstable dikes according to the recommendations of a qualified geotechnical engineer. Design structures in areas near unstable dikes to withstand lateral spreading. Potential mitigation measures could include those identified for impacts from liquefaction.	Mitigation 6: Same as the Reuse Plan Alternative.	Mitigation 6: Same as the Reuse Plan Alternative.	Mitigation 6: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

No Project Alternative	COMMUNITY REUSE ALTERNATIVES			
	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Water Resources				
No significant impacts.	Impact 1: A significant and mitigable impact would result from surface grading and new building that construction could disturb soil and increase erosion/sedimentation. Construction equipment and operations may result in spills and other accidental emissions of pollutants which could enter and contaminate the surrounding water bodies. New development could introduce oil and grease, herbicides, pesticides, and fertilizers into the runoff stream. Mitigation 1a: Implement the City's best management practices (BMPs) for both construction and post-construction stormwater runoff. This includes applying the City's standard stormwater conditions of approval as applicable to all proposed redevelopment at the site. Mitigation 1b: Develop and implement planting and herbicide, pesticide, and fertilizer application plans for the golf course, parks, and public open space areas.	Impact 1: A significant and mitigable impact would result from surface grading and new building that construction could disturb soil and increase erosion/sedimentation. Construction equipment and operations may result in spills which could enter and contaminate the surrounding water bodies. New development could introduce oil and grease, herbicides, pesticides, and fertilizers into the runoff stream. Mitigation 1a-1d: Same as presented under the Reuse Plan Alternative except that golf course mitigation measures are not required. Mitigation Measure 1e is replaced (as shown below) and Mitigation Measures 1f and 1 g are added	Impact 1: A significant and mitigable impact would result from surface grading and new building that construction could disturb soil and increase erosion/sedimentation. Construction equipment and operations may result in spills which could enter and contaminate the surrounding water bodies. New development could introduce oil and grease, herbicides, pesticides, and fertilizers into the runoff stream. Mitigation 1: Same as presented for the Reuse Plan Alternative except no golf course or RV park mitigation is required.	Impact 1: A significant and mitigable impact would result from surface grading and new building that construction could disturb soil and increase erosion/sedimentation. Construction equipment and operations may result in spills, which could enter and contaminate the surrounding water bodies. New development could introduce oil and grease, herbicides, pesticides, and fertilizers into the runoff stream. Mitigation 1: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Water Resources (cont'd)	Mitigation 1c: The RV park and all parking lots should drain to oil and grease traps, or alternately, other approaches such as biological filters should be used as specified in the City's standard conditions of approval. Permeable pavement should be used to the maximum extent practicable, and impervious surfaces should be minimized. In addition, BMPs should include specific restrictions on vehicle maintenance. If vehicle washing is proposed in the RV park, the park should include a specified area for washing of vehicles that is contained, uses recycled water, and connects to the sanitary sewer system. Mitigation 1d: Include requirements for a spill control and countermeasure plan to mitigate the potential impacts of construction-related and industrial and commercial spills on water quality. The plan should address vehicle fueling, storage, and handling of quantities of fuels, lubricants, solvents, paints, and other materials as appropriate.			

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Water Resources (cont'd)	Mitigation 1e: Maritime light industrial runoff should be directed to structural (e.g., oil and grease traps and sand filters) and nonstructural (e.g., grassy swales) stormwater contaminant control facilities. Runoff that may generate substantial pollutant loads should be directed to contained areas where spills can be controlled prior to entering receiving waters. BMPs and structural controls should include adequate budget and conditions to assure development and implementation of specific monitoring, maintenance, and inspection programs.	Mitigation 1e: Direct runoff from the proposed maritime use areas to structural (e.g., oil and grease traps and sand filters) and nonstructural (e.g., grassy swales) stormwater contaminant control facilities. Direct runoff from maritime and equipment maintenance operations to contained areas where spills can be controlled prior to entering the channel. Include adequate budget and conditions in BMPs and structural controls to assure specific monitoring, maintenance, and inspection programs.		
	Mitigation 1f: All marina usage should include structural controls and BMPs. In addition, signs, pamphlets, and other with public education and outreach activities advising users to eliminate any discharges of pollutants to receiving waters should be provided to all private/recreation boat owners/users at the marina.	Mitigation 1f: Prohibit any vessel using the site's proposed marine terminal and marina from discharging bilge materials into San Francisco Bay. Provide adequate facilities for wastewater materials pump-out from berthed ships and docked boats to a treatment system. Place floating booms around all ships docked at the marine terminal. Mitigation 1g: Include structural controls and BMPs with public education for private recreation boat owners.		

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Water Resources (cont'd)	Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas which would subject residents, workers, and other occupants to flood hazards in the event of the 100-year high tide, backed up stormwater runoff, or the unlikely combination of these events with a major tsunami.	Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas which would subject residents, workers, and other occupants to flood hazards.	Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas which would subject residents, workers, and other occupants to flood hazards.	Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas which would subject residents, workers, and other occupants to flood hazards.
	Mitigation 2a: Map all 100-year floodplains on the site by FEMA as part of the FIRM process. Any development at sites below 10 feet mean sea level should be protected by raising base level of the site to a minimum of 100 feet MSL. Include provisions for ongoing regular maintenance of new and existing levees. Mitigation 2b: Regularly inspect and maintain all seawalls surrounding the property. Any development along the site's waterfront areas should include an adequate setback to allow for future enlargement of the seawall. Rights-of-way for levees should be sufficiently wide on the upland side to allow for future levee widening. Mitigation 2c: Comply with the City's General Plan policy 8.3b, which stipulates that all new development within flood plains should be provided adequate protection from floods.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Water Resources (cont'd)	Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon, particularly maintenance dredging. Mitigation 3a: Limit the depth and areas of dredging to minimize disturbance of contaminated sediments. Test all materials for contaminants of concern to the RWQCB prior to dredging. Mitigation 3b: Use dredging methods that minimize sediment and contaminant disturbance. Impact 4: A significant and mitigable impact would result from disposal of contaminated dredged sediments that could contaminate receiving waters. Mitigation 4: Dispose of all dredge materials at approved sites in compliance with State and Federal regulations. Test all dredge materials prior to disposal. Dispose of any contaminated sediments in approved upland facilities. All sediment disposal programs and methods should comply with applicable LTMS sediment disposal priorities. Uncontaminated sediments suitable for reuse should be used on-site.	Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon, particularly maintenance dredging. Mitigation 3a-3b: Same as the Reuse Plan Alternative. Mitigation 3c: Conduct landside dredging prior to breaching the Training Wall. This would separate most of the dredging activities from open water susceptible to contamination. Impact 4: A significant and mitigable impact would result from disposal of contaminated dredged sediments that could contaminate receiving waters. Mitigation 4: Same as the Reuse Plan Alternative.	Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon, particularly maintenance dredging. Mitigation 3: Same as the Reuse Plan Alternative but extended to apply to the marina in the North Waterfront planning area. Impact 4: A significant and mitigable impact would result from disposal of contaminated dredged sediments that could contaminate receiving waters. Mitigation 4: Same as the Reuse Plan Alternative.	Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon, particularly maintenance dredging. Mitigation 3: Same as the Reuse Plan Alternative. Impact 4: A significant and mitigable impact would result from disposal of contaminated dredged sediments that could contaminate receiving waters. Mitigation 4: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Traffic and Circulation				
No significant impacts.	Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at eight local intersections. The LOS at these intersections would be LOS E and lower.	Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at six local intersections. The level of service at these intersections would be LOS E or lower.	Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at six local intersections. The level of service at these intersections would be LOS E or lower.	Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at five local intersections. The level of service at these intersections would be LOS E or lower.
	Mitigation 1a: Atlantic Avenue at Main Street: Reconstruct the existing free right-turn lane on the westbound approach of Atlantic Avenue to ensure smooth traffic flows and merging for entering and exiting vehicle movements.	Mitigation 1a: Atlantic Avenue at Main Street: Same as under the Reuse Plan Alternative.	Mitigation 1a: Atlantic Avenue at Main Street: Same as the Reuse Plan Alternative.	Mitigation 1a: Atlantic Avenue at Webster Street: Same as the Reuse Plan Alternative.
	Mitigation 1b: Atlantic Avenue at West Campus: Construct a free right turn lane on the westbound approach to Atlantic Avenue and provide two westbound through lanes.	Mitigation 1b: Atlantic Avenue at Webster Street: Same as the Reuse Plan Alternative.	Mitigation 1b: Atlantic Avenue at Webster Street: Same as the Reuse Plan Alternative.	Mitigation 1b: Central Avenue at Webster Street: Same as the Reuse Plan Alternative.
	Mitigation 1c: Atlantic Avenue at Webster Street: Provide a second left-turn lane on the eastbound Atlantic Avenue and a free right-turn lane on the southbound approach of Webster Street.	Mitigation 1c: Central Avenue at Webster Street: Same as the Reuse Plan Alternative.	Mitigation 1c: Central Avenue at Webster Street: Same as the Reuse Plan Alternative.	Mitigation 1c: Tinker Avenue at Webster Street: Same as the Reuse Plan Alternative.
	Mitigation 1d: Central Avenue at Webster Street: Provide a left turn lane on both approaches of Central Avenue and Webster Street to maintain adequate peak-hour levels of service.	Mitigation 1d: Tinker Avenue at Webster Street: Same as the Reuse Plan Alternative.	Mitigation 1d: Harrison at 7th Street and Broadway at 5th Street: Same as the Reuse Plan Alternative.	Mitigation 1d: Harrison at 7th Street and Broadway at 5th Street: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Traffic and Circulation (cont'd)	Mitigation 1e: Tinker Avenue at Webster Street: Provide a separate free right turn lane to the southbound approach of Webster Street. Tinker Avenue on base would be extended and routed to connect with both Webster Street and Constitution Way at the existing "T" intersection of Constitution Way and Mariner Village Parkway. Mitigation 1f: Harrison Street at 7th Street and Broadway at 5th Street: The cities of Oakland and Alameda, as part of the proposed Oakland Estuary Plan, have jointly developed a plan called the "I-880 Corridor – Broadway/Jackson Interchange." The plan provides mitigation for both intersections. Mitigation 1g: Webster Street at 8th Street: Convert one of the westbound through lanes to a left turn lane.	Mitigation 1e: Harrison at 7th Street and Broadway at 5th Street: Same as the Reuse Plan Alternative.	Mitigation 1e: Tinker Avenue at Webster Street: Same as the Reuse Plan Alternative.	
	Impact 2: Significant and mitigable impacts would result from traffic being added to freeway segments and local arterial streets serving the site. Project traffic would result in significant and mitigable impacts on 6 of the 18 segments evaluated.	Impact 2: Significant and mitigable impacts would result from traffic being added to freeway segments and local arterial streets. Project traffic would result in significant and mitigable impacts on 6 of the 18 segments evaluated.	Impact 2: Significant and mitigable impacts would result from traffic being added to freeway segments and local arterial streets. Project traffic would result in significant and mitigable impacts on 5 of the 18 segments evaluated.	Impact 2: Significant and mitigable impacts would result from traffic being added to freeway segments and local arterial streets. Project traffic would result in significant and mitigable impacts on 5 of the 18 segments evaluated.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Traffic and Circulation (cont'd)	Mitigation 2a: Implement a comprehensive set of TSM programs, such as: • Create a position of Transportation System Manager; • Develop parking management strategies for the site; • Work with BART to expand parking opportunities at BART stations; • Implement a shuttle bus system and/or contribute to the expansion of AC transit service; • Require implementing one or more peak hour trip reduction and/or trip elimination programs; and • Require contributions to fund the various trip reduction programs developed by the Transportation System Manager.	Mitigation 2a: Same as the Reuse Plan Alternative. Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.	Mitigation 2a: Same as the Reuse Plan Alternative. Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.	Mitigation 2a: Same as the Reuse Plan Alternative.
	Mitigation 2b: Participate in all of the areawide or regional transportation planning studies that relate to the access routes leading to the site.	Mitigation 2b: Participate in the corridor/areawide transportation planning process for impacted segments of the Metropolitan Transportation System. Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.	Mitigation 2b: Participate in the corridor/areawide transportation planning process for impacted segments of the Metropolitan Transportation System. Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.	Mitigation 2b: Participate in the corridor/areawide transportation planning process for impacted segments of the Metropolitan Transportation System.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Traffic and Circulation (cont'd)	Impact 3: A significant and mitigable impact would result from traffic creating traffic congestion on SR 260 (Webster/Posey Tubes). The level of service would deteriorate from LOS C to LOS F in the AM peak hour and from LOS D to LOS F in the PM peak hour.	Impact 3: A significant and mitigable impact would result from traffic creating traffic congestion on SR 260 (Webster/Posey Tubes). The level of service would deteriorate from LOS C to LOS D in the AM peak hour and from LOS D to LOS F in the PM peak hour.	Impact 3: A significant and mitigable impact would result from traffic creating traffic congestion on SR 260 (Webster/Posey Tubes). The level of service would deteriorate from LOS C to LOS E in the AM peak hour and from LOS D to LOS F in the PM peak hour.	Impact 3: A significant and mitigable impact would result from increased traffic congestion. The Reduced Density Alternative would generate less traffic than the Reuse Plan Alternative, but would need similar improvements to the existing roadway system to accommodate full buildout of this alternative.
	Mitigation 3a: While construction of a new crossing between Alameda and Oakland as mitigation for regional traffic impacts would mitigate this impact to a nonsignificant level, a new crossing is not considered feasible because it is not planned at this time and would require the approval of other agencies. The City of Alameda should work with these agencies to approve and fund the new crossing. Construction of a new crossing would mitigate this impact to a nonsignificant level.	Mitigation 3a: Construction of a new crossing between Alameda and the City of Oakland as mitigation for regional traffic impacts would mitigate this impact, and the Seaport Alternative includes a transportation link for cargo that may or may not include vehicle access. Because an actual alignment for this crossing has not been determined, it is difficult to determine how a new linkage might affect the analysis intersections. This impact would be significant and not mitigable.	Mitigation 3a: Same as the Reuse Plan Alternative.	Mitigation 3: Same as Mitigation 4 for the Reuse Plan Alternative.
	Mitigation 3b: The impact may also be mitigated to a nonsignificant level by limiting traffic to levels such that traffic, together with cumulative traffic growth, would not cause traffic in the Webster/Posey Tubes to exceed LOS E. Limiting traffic generated until such time as a new crossing is constructed, would mitigate this impact to a nonsignificant level.	Mitigation 3b: Same as the Reuse Plan Alternative.	Mitigation 3b: Same as the Reuse Plan Alternative.	

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Traffic and Circulation (cont'd)	Impact 4: A significant and mitigable impact would result from increased traffic congestion on NAS Alameda/FISC Alameda. Mitigation 4: Implementing the following traffic improvements would reduce the impact to a nonsignificant level: traffic circles at Central/Lincoln/ Avenue M and Atlantic/9th; the extension of Mitchell and Mosley Avenues; extension of Tinker Avenue to Webster and Constitution Way; and upgrading of all local streets to meet City capacity and roadway design criteria. Although these improvements are contemplated in the NAS Alameda Street Improvement Plan, the designs could change to respond to specific development proposals.	Impact 4: A significant and mitigable impact would result from increased traffic congestion on NAS Alameda/FISC Alameda. Mitigation 4: Same as the Reuse Plan Alternative with expanded roadway improvements in the Northwest Territories, including additional access roads suitable for transport trucks and maritime operations.	Impact 4: A significant and mitigable impact would result from increased traffic congestion on NAS Alameda/FISC Alameda. Mitigation 4: Same as the Reuse Plan Alternative.	Impact 4: A significant and mitigable impact would result under this alternative from projected parking demand exceeding existing supply. Mitigation 4: Same as Mitigation 5 for the Reuse Plan Alternative.
	Impact 5: A significant and mitigable impact would result from projected parking demand exceeding existing supply. Mitigation 5: The City will require development projects to provide adequate off-street and curbside parking for proposed reuse development consistent with City ordinances and requirements.	Impact 5: A significant and mitigable impact would result under this alternative from projected parking demand exceeding existing supply. Mitigation 5: Same as the Reuse Plan Alternative.	Impact 5: A significant and mitigable impact would result under this alternative from projected parking demand exceeding existing supply. Mitigation 5: Same as the Reuse Plan Alternative.	Impact 5: A significant and mitigable impact to safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes, increasing the potential for accidents from conflicts with motor vehicles, bicycles, and pedestrians. Mitigation 5: Same as Mitigation 6 for the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Traffic and Circulation (cont'd)	Impact 6: A significant and mitigable impact to public safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes, increasing the potential for accidents from conflicts with motor vehicles, bicycles, and pedestrians.	Impact 6: A significant and mitigable impact to safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes, increasing the potential for accidents from conflicts with motor vehicles, bicycles, and pedestrians.	Impact 6: A significant and mitigable impact to safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes, increasing the potential for accidents from conflicts with motor vehicles, bicycles, and pedestrians.	
	Mitigation 6: Existing City ordinances and plans specify standards for all city roadways. These standards address bicycle, pedestrian, and vehicular safety and would be used to design the roadway system. Adherence to City ordinances and plans would provide adequate safety features in roadway design.	Mitigation 6: Same as the Reuse Plan Alternative.	Mitigation 6: Same as the Reuse Plan Alternative.	

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

No Project Alternative	COMMUNITY REUSE ALTERNATIVES			
	Reuse Plan Alternative	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Air Quality				
No significant impacts.	Impact 1: A significant and mitigable impact would result from temporary sources of fugitive dust and vehicle emissions due to demolition, construction, and remodeling activities.	Impact 1: A significant and mitigable impact would result from temporary sources of fugitive dust and vehicle emissions due to demolition, construction, utility extension and improvements, and remodeling activities.	Impact 1: A significant and mitigable impact would result from temporary sources of fugitive dust and vehicle emissions due to demolition, construction, utility extension and improvements, and remodeling activities.	Impact 1: A significant and mitigable impact would result from temporary sources of fugitive dust and vehicle emissions due to demolition, construction, utility extension and improvements, and remodeling activities.
	Mitigation 1: Minimize the area disturbed at all times; water all excavated or graded areas; halt all clearing, grading, earth-moving, and excavating activities during periods of sustained strong winds; seed and water all unpaved inactive portions of the construction site; water or treat with dust control solutions all unpaved active portions of the construction site; comply with BAAQMD regulations when applying any petroleum-based dust control products on the site; sweep paved portions of the construction site; limit on-site vehicle speeds to 15 mph or less; and sweep streets adjacent to the construction site.	Mitigation 1: Same as the Reuse Plan Alternative.	Mitigation 1: Same as the Reuse Plan Alternative.	Mitigation 1: Same as the Reuse Plan Alternative.
	Impact 2: A significant and mitigable impact would result from carbon monoxide concentrations at two intersections exceeding Federal and State air quality standards.	Impact 2: A significant and mitigable impact would result from carbon monoxide concentrations that are localized near two congested intersections.	Impact 2: A significant and mitigable impact would result from carbon monoxide concentrations that are localized near two congested intersections.	Impact 2: A significant and mitigable impact would result from production of emissions of ozone precursors from vehicle traffic above the BAAQMD threshold.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Air Quality (cont'd)	Mitigation 2a: The magnitude of potential carbon monoxide problems can be reduced by roadway and intersection improvements The mitigation measures would eliminate the potential for violation of the State 1-hour standard, but the Federal and State 8-hour standard still may be violated for both intersections. Mitigation 2b: Implementing the Traffic and Circulation Mitigation Measure 3b, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic-related carbon monoxide emissions. If a new crossing of the Oakland/ Alameda Estuary is constructed in the future, potential adverse air quality impacts would be taken into consideration in the planning and environmental review process.	Mitigation 2: Same as the Reuse Plan Alternative, except that these measures would eliminate the potential for violations of the State and Federal 8-hour standards for both intersections.	Mitigation 2: Same as the Reuse Plan Alternative, except that these measures would eliminate the potential for violations of the State and Federal 8-hour standards for both intersections.	Mitigation 2a: Same as Mitigation 3a for the Reuse Plan Alternative. Mitigation 2b: Same as Mitigation 3b for the Reuse Plan Alternative
	Impact 3: A significant and mitigable impact would result from production of emissions of ozone precursors from vehicle traffic above the BAAQMD threshold. Mitigation 3a: Ridesharing programs would not be able to reduce vehicle traffic and associated emissions to less than 15 tons per year.	Impact 3: A significant and mitigable impact would result from production of emissions of ozone precursors from vehicle traffic above the BAAQMD threshold. Mitigation 3a: Same as the Reuse Plan Alternative.	Impact 3: A significant and mitigable impact would result from production of emissions of ozone precursors from vehicle traffic above the BAAQMD threshold. Mitigation 3a: Same as the Reuse Plan Alternative.	

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Air Quality (cont'd)	Mitigation 3b: Implementing the Traffic and Circulation Mitigation Measure 3b, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic-related ozone precursor emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process.	Mitigation 3b: Same as the Reuse Plan Alternative.	Mitigation 3b: Same as the Reuse Plan Alternative.	
	Impact 4: A significant and mitigable impact would result from production of emissions of PM_{10} from vehicle traffic above the BAAQMD impact significance threshold.	Impact 4: A significant and mitigable impact would result from production of emissions of PM_{10} from vehicle traffic above the BAAQMD impact significance threshold.	Impact 4: A significant and mitigable impact would result from production of emissions of PM_{10} from vehicle traffic above the BAAQMD impact significance threshold.	
	Mitigation 4a: Transportation system management (TSM) programs would not be able to reduce the net increase in vehicle emissions to less than 15 tons per year.	Mitigation 4a: Same as the Reuse Plan Alternative.	Mitigation 4a: Same as the Reuse Plan Alternative.	

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Air Quality (cont'd)	Mitigation 4b: Implementing the Traffic and Circulation Mitigation Measure 3b, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related PM_{10} emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process.	Mitigation 4b: Same as the Reuse Plan Alternative.	Mitigation 4b: Same as the Reuse Plan Alternative.	
Noise				
No significant impacts.	Impact 1: A significant and mitigable impact would result from activities which would cause temporary noise and vibration disturbance to adjacent land uses.	Impact 1: A significant and mitigable impact would result from activities which would cause temporary noise and vibration disturbance.	Impact 1: A temporary significant and mitigable impact would result from activities which would cause temporary noise and vibration disturbance.	Impact 1: A significant and mitigable impact would result from activities which would cause temporary noise and vibration disturbance.
	Mitigation 1: Restrict most construction activity to daytime periods. Use temporary construction site noise shielding to minimize noise impacts on adjacent areas. Phase demolition, construction, and remodeling activities to minimize exposure.	Mitigation 1: Same as for the Reuse Plan Alternative.	Mitigation 1: Same as for the Reuse Plan Alternative.	Mitigation 1: Same as for the Reuse Plan Alternative.
	Impact 2: A significant and mitigable traffic noise impact would occur along Main Street and Atlantic Avenue.	Impact 2: A significant and mitigable traffic noise impact would occur along Main Street and Atlantic Avenue.	Impact 2: A significant and mitigable traffic noise impact would occur along Main Street and Atlantic Avenue.	Impact 2: A significant and mitigable traffic noise impact would occur along Main Street and Atlantic Avenue.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Noise (cont'd)	Mitigation 2: Setting buildings back from roadways, using acoustical insulation and limiting the number of windows and glass doors that face major roadways. Replace windows and doors to improve acoustical insulation for existing structures. Construct sound walls to reduce traffic noise levels.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.
Hazardous Materials and Waste				
Impact 1: A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted.	Impact 1: A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted.	Impact 1: A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted.	Impact 1: A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted.	Impact 1: A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted.
Mitigation 1: Same as the Reuse Plan Alternative.	Mitigation 1: The primary restrictions in the current FOSLs should include the following: • Prohibit lessees from digging, excavating, or otherwise disturbing flooring, soil, sediment, or pavement, without prior approval from the Navy and coordination with regulatory agencies. General precautionary measures would be implemented by lessees during construction activities. These measures include:	Mitigation 1: Same as the Reuse Plan Alternative.	Mitigation 1: Same as the Reuse Plan Alternative.	Mitigation 1: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Hazardous Materials and Waste (cont'd)	– Obtain site-specific information about soil or ground water that would be disturbed. – Obtain Navy approval and coordinate with regulatory agencies before conducting activities. This coordination would result in identification of precautionary measures which would be incorporated into a site-specific Health and Safety Plan (HASP). – Implement dust suppression and odor control measures. Cleanup or cover accessible portions of the site prior to final remediation to lessen exposures. Perform perimeter air monitoring. – Handle and dispose of soil in accordance with Federal, State, and local laws and regulations. – Implement access controls on the site and adjoining areas. – Prevent potentially hazardous materials and waste from migrating off of the construction site.			

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Hazardous Materials and Waste (cont'd)	– Implement asbestos and lead-based paint (LBP) measures. – Prohibit new use of ground water for any purpose. – Notify lessees that investigations and remediation are ongoing at IRP sites. – Prohibit lessees from entering areas where environmental field investigations are in progress. Restrict access until remediation activities have been completed. – Notify lessees that petroleum hydrocarbons and CERCLA-defined hazardous substances have been detected in the soil and ground water.			
	Impact 2: A significant and mitigable impact could result from human and ecological exposure to residual contamination during construction activities.	Impact 2: Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative.	Impact 2: Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative.	Impact 2: Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative.
	Mitigation 2: Implement the following measures: • Prior to undertaking proposed construction activities, obtain soil and ground water information to identify the location and extent of contamination. • Develop a site-specific site management plan (SMP).	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.	Mitigation 2: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Hazardous Materials and Waste (cont'd)	• Implement the following site access controls during construction: secure the site to prevent unauthorized entry; post "no trespassing" signs; and provide on-site meetings with construction workers to inform them about security measures and reporting/contingency measures. • For surface water impacts, follow all conditions of the State of California storm water construction permit, including implementing best management practices (BMPs) to reduce storm water runoff from the site. • For ground water discharge impacts, follow applicable City or RWQCB permit requirements for discharge into the storm water system or sanitary sewer system. Treat water as appropriate to comply with discharge levels as required by the permit. Any contaminated ground water not treatable for discharge at NAS Alameda/FISC Alameda would be disposed of in an appropriately permitted off-site facility. • Prior to dredging, and in compliance with Section 404 of the Clean Water Act, 33 U.S.C. §1344, if applicable, test all materials for contaminants of concern to the RWQCB.			

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Hazardous Materials and Waste (cont'd)	• For boring and pile driving activities, piles should be driven directly into the sediments without boring where practical.			
	Impact 3: A significant and mitigable impact could result from the potential for long-term exposure of workers, tenants, residents, and visitors to residual contamination in soil or ground water.	Impact 3: Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative.	Impact 3: Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative.	Impact 3: Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative.
	Mitigation 3: Restrictive measures may be required. Such restrictive measures could include the following: • The Navy may establish deed restrictions or other institutional controls that restrict uses that are inconsistent with land use exposure assumptions. • For land subject to use restrictions, the City would implement a permitting program to review all development proposals constituting changes in land use. • The City would determine if remediation would be required prior to construction or occupancy of the proposed use. • The City would create a land use and construction permitting program that requires consideration of residual contamination.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.	Mitigation 3: Same as the Reuse Plan Alternative.

Table 2-7
Summary of Significant Environmental Impacts and Mitigation *(continued)*

	COMMUNITY REUSE ALTERNATIVES			
No Project Alternative	**Reuse Plan Alternative**	**Seaport Alternative**	**Residential Alternative**	**Reduced Density Alternative**
Hazardous Materials and Waste (cont'd)	Impact 4: A significant and mitigable impact could result from routine use of, and development in, areas where surface emissions of hazardous soil gas could expose site users to risks associated with such gases.	Impact 4: Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative.	Impact 4: Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative.	Impact 4: Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative.
	Mitigation 4: The City 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..	Mitigation 4: Same as the Reuse Plan Alternative.	Mitigation 4: Same as the Reuse Plan Alternative.	Mitigation 4: Same as the Reuse Plan Alternative.

3. AFFECTED ENVIRONMENT

3. AFFECTED ENVIRONMENT

This chapter describes existing environmental and socioeconomic conditions at NAS Alameda/FISC Alameda and the area surrounding the Navy property. The information contained in this chapter serves as background to identify and evaluate environmental impacts resulting from the community reuse of property at NAS Alameda/FISC Alameda.

The environmental baseline presented in this chapter is representative of full Navy operations at NAS Alameda/FISC Alameda. This is generally represented by 1990 conditions, although in some cases data prior to 1990 was used when it was the only available information. Where an appropriate impact assessment requires more current data and that data was available, more recent information is provided.

The setting discussion for each resource area identifies the region of influence (ROI) applicable to the specific resource area. An ROI is a geographic area in which impacts for a particular resource likely would occur. The ROI for a resource having regional impacts will be different from the ROI for a resource having localized impacts. Existing conditions are described for the following resources: land use, visual resources, population and housing, public services, utilities, cultural resources, biological resources, geology and soils, water resources, traffic and circulation, air quality, noise, and hazardous materials and waste.

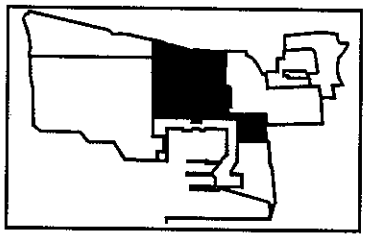
3.1 LAND USE

This section describes land use patterns at NAS Alameda and FISC Alameda and on surrounding lands within approximately half a mile (0.8 km) of the project site. This area is the ROI for the land use section. The discussion of land use also includes relevant land use plans and regulations. Baseline land use patterns are described for more recent conditions (e.g., 1996-1997), which are essentially unchanged from 1990 conditions, except for 1991 construction of the Marina Village housing area.

The general pattern of land use at the project site reflects the historic military use of the land. The western portion of the project site reflects the former Navy airfield use and includes runways, taxiways, and aircraft hangars. The central portion of the site is intensely developed, with an extensive road system serving the many administrative and industrial buildings, warehouses, barracks and family housing units, community support buildings, and a large vessel marine port. The eastern portion of the site primarily consists of family housing areas and FISC Alameda warehouses.

3.1.1 On-site Land Use

The following general descriptions of land use patterns follow the planning areas identified in the Reuse Plan and shown in Chapter 2. Figure 3-1 shows land use designations from the 1987 Navy Master Plan for NAS Alameda to illustrate these patterns.

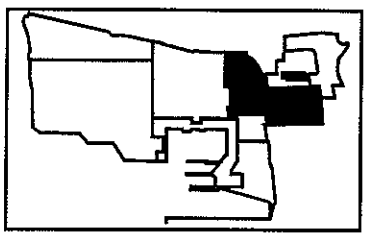


Planning Area 1. Civic Core

This approximately 334-acre (135 ha) planning area, located in the central portion of NAS Alameda, is surrounded by the runway complex to the west, the Oakland Inner Harbor to the north, residential and community support uses to the east, and the Marina planning area to the south. It contains a wide range of use patterns including the central open space mall, the shoreline along Oakland Inner Harbor, and the East Gate entrance station. Residential, recreational, administrative, warehouse, and industrial structures also are located in this planning area.

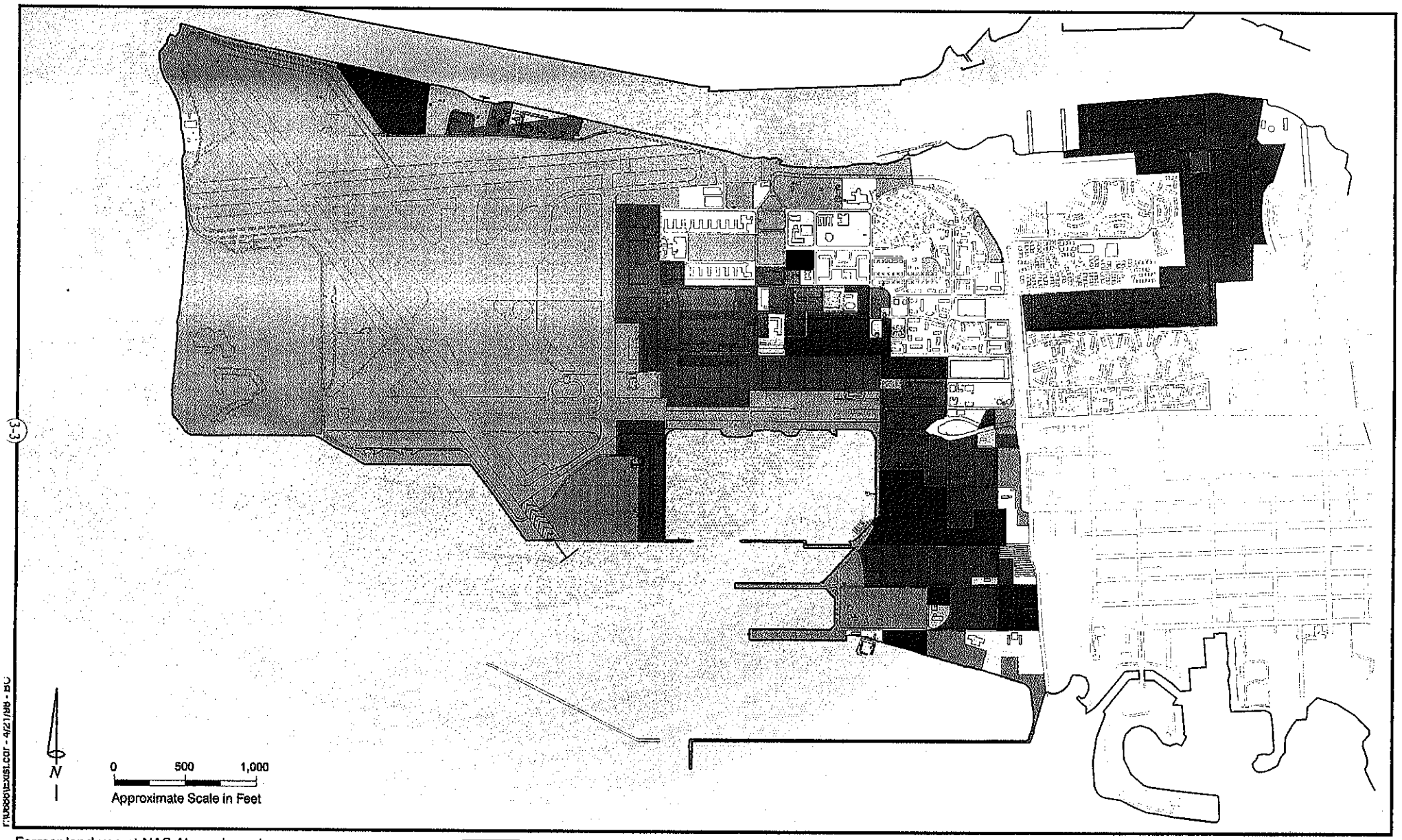
Recreational and open space areas are near the northern shoreline and include the central open space mall, swimming pool area, gymnasium, and a small golf practice area. Residential structures in the planning area include the two, two-story dormitory-style barracks. Community facilities are interspersed throughout the planning area and include a medical/dental clinic, chapel, bowling alley, theater, post office, a craft shop, restaurants, and bars.

Administration buildings are located centrally in the planning area, while warehouse and industrial buildings are located along the western and southern regions of the planning area. The industrial buildings include a number of large aircraft hangars. The shoreline along the northern portion of the planning area is mostly riprap with one small dock facility. The East Gate entrance station, located at the west end of Atlantic Avenue, contains a small landscaped monument area dividing the road leading onto NAS Alameda.



Planning Area 2. Main Street Neighborhoods

This planning area of approximately 265 acres (107 ha) is in the northeastern portion of NAS Alameda and also includes most of the FISC Alameda Annex. The NAS Alameda portion is comprised primarily of residential buildings including 864 family housing units, a day care facility, and Miller Elementary School. A portion of the FISC Alameda property containing warehouses is in this planning area. Adjacent areas include the Civic Core planning area to the west, non-Navy shoreline development to the north, the College of Alameda to the east, and private residential areas to the south.



Former land use at NAS Alameda and FISC Alameda reflects a typical mixture of land use at a military installation.

LEGEND:

- Utilities
- Housing
- Administration
- Hospital/Medical
- Supply
- Operation and Training
- Maintenance and Production
- Community Support
- Recreation and Open Space

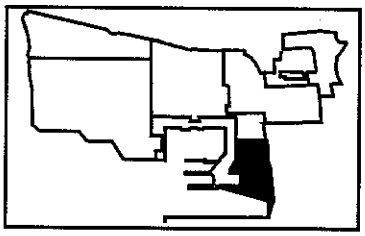
Source: US Navy 1987f

Land Use

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-1

The publicly accessible Main Street, running north to south, divides the planning area and includes some private land uses (described under Surrounding Land Use). Land uses on the west side of the road include single-family housing in the north along curving streets bordered by mature trees. Some nonresidential structures are south of this area, including the commissary store and Navy exchange retail store buildings. The nonresidential buildings are organized in a grid, with a large parking lot adjacent to the commissary store building. Other uses south of the residential area include a warehouse, Navy Lodge (motel), office building, gas station, and auto repair area. East of Main Street land uses include duplex and multifamily residential areas, and warehouses.

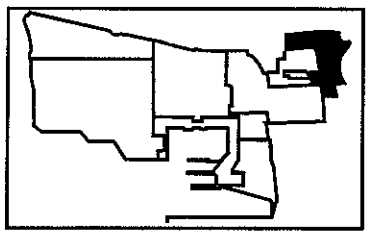


Planning Area 3. Inner Harbor

This approximately 120-acre (49 ha) planning area is in the southeastern corner of NAS Alameda between Main Street and the Marina planning area. Land use in this planning area can be characterized as a combination of industrial, open space, and community support uses. The most prominent land use features are the large-scale industrial buildings and the shoreline recreational areas.

Industrial uses include warehouse and industrial buildings in the northwest portion of the planning area. These 80,000 square-foot (7,432 square m) to 117,000 square-foot (10,869 square m) buildings were used for storing and maintaining Navy equipment.

Recreational facilities and open space areas are located along the eastern and southern edges of the planning area and include the shoreline and small marina within the breakwater, a multipurpose building used for recreational activities, an RV park for military personnel, and a landscaped area for picnicking. Public access to the Navy southern waterfront and breakwater is provided via a driveway and parking area off Central Avenue. Approximately 159 acres (64 ha), about 5 acres (2 ha) of which is dry land, along the southern shoreline was leased by the Navy from the City of Alameda. A self-storage warehouse for Navy personnel and an open field are along Main Street.



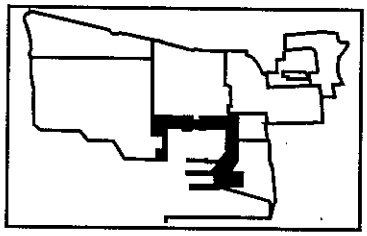
Planning Area 4. North Waterfront

Consisting of development along the shoreline with warehouses set back from the shore, this planning area includes approximately 88 acres (36 ha), which comprises the entire FISC Alameda Facility and a portion of FISC Alameda Annex.

Wharf developments include 2,600 linear feet (792 m) of space. Warehouses, ranging in size from 150,000 square feet (13,935 square m) to 325,000 square

feet (30,193 square m), were primarily used for storing military equipment. A portion of an asphalt storage lot along the waterfront was used for vehicle storage. The Defense Reutilization and Marketing Office (DRMO), part of the Defense Logistics Agency and a tenant of the Navy, occupied some warehouse space and former parking lots that were used for the marketing of general surplus goods from the military. A former administration building was in the central portion of the planning area.

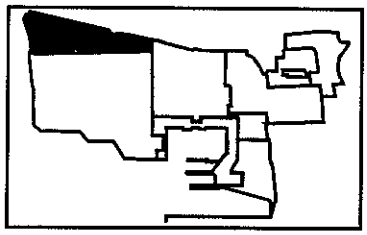
This planning area is surrounded by residential areas in the Main Street Neighborhoods planning area and non-Navy commercial shoreline developments to the west and east.



Planning Area 5. Marina

The Navy used this planning area primarily for deepwater ship and seaplane berthing, and equipment storage and repair. Pier 1 provides 1,200 feet (366 m) of berthing area, Pier 2 provides 2,420 feet (738 m) of berthing area, and Pier 3 contains 2,500 feet (762 m) of berthing area. Pier 3 is partially on land leased by the Navy from the City of Alameda (Figure 1-4). Two general purpose wharves contain an additional 1,182 feet (360 m) of berthing area. The primary land uses near the piers are offices, shops, and equipment storage facilities that support the ship berthing activities. Two large industrial buildings are on the western side of the seaplane lagoon.

Uses bordering this approximately 125-acre (51 ha) planning area include the airfield to the west, hangars and warehouses to the north, and industrial, community support, and open space uses to the east. The marina opens toward San Francisco Bay to the south.

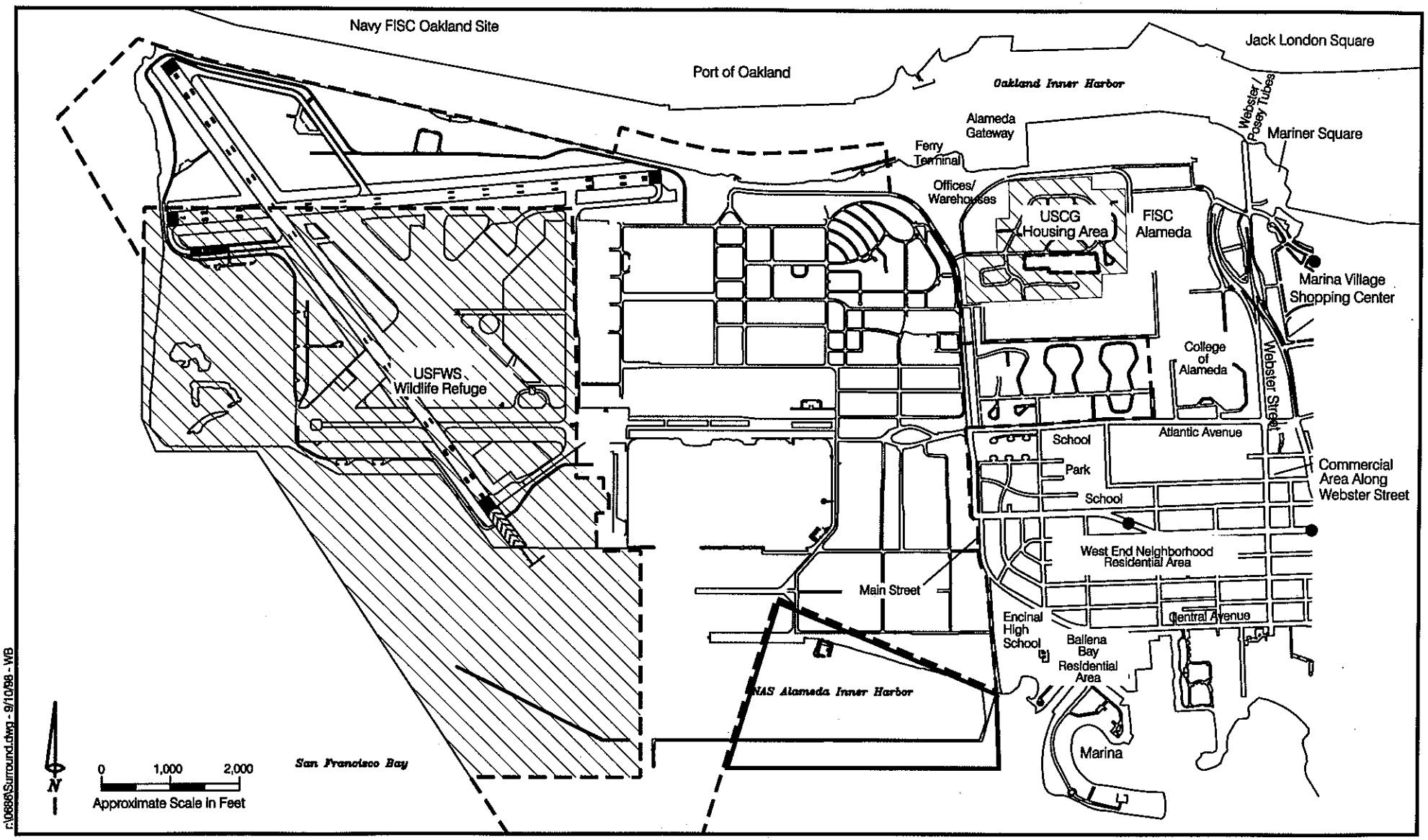


Planning Area 6. Northwest Territories

Located in the northwest portion of NAS Alameda, this planning area is bordered by the Oakland Inner Harbor on the north and San Francisco Bay to the west. It consists primarily of open grass areas and a portion of the airfield runways and totals approximately 272 acres (110 ha). It is bordered on the south by the airfield. The Northwest Territories planning area was used for runways and an associated taxiway system. Other developments on the periphery of the planning area include roads that provide access to the shoreline, a picnic area, a guard tower, and several small support buildings.

3.1.2 Surrounding Land Use

The project area, shown in Figure 3-2, comprises the western third of Alameda, with the remainder of the City of Alameda to the southeast, the



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Land uses surrounding NAS Alameda and FISC Alameda within a half-mile include land within the City of Alameda, Port of Oakland property, and US Navy property.

LEGEND:

- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary
- City of Alameda land leased by NAS Alameda
- Federal Transfer Land
- Transit Node Location

Source: Tetra Tech

Surrounding Land Use

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-2

Port of Oakland across the Oakland Inner Harbor to the north, the Navy airfield to the west and south, and San Francisco Bay to the west and south. The description of surrounding land uses includes those within half a mile of NAS Alameda/FISC Alameda.

USFWS Wildlife Refuge

Most of the area at NAS Alameda formerly used as runways is being transferred to the USFWS for use as a wildlife refuge. The area consists of approximately 525 land acres (213 ha) and 375 submerged acres (152 ha). This area was historically used as an active airfield for NAS Alameda flight operations. The area also contains two wetland areas and numerous small bunkers formerly used for ammunition storage. The area provides habitat for the endangered California least tern, located in this former airfield. A small portion of this area lies within the boundary of the City and County of San Francisco, as shown in Figure 1-2.

US Coast Guard Housing Area

The Navy's North Housing/Marina Village Area, which consists of 582 residential units on approximately 69 acres (28 ha), is being transferred to the Coast Guard for use as housing.

Port of Oakland

The Port of Oakland occupies 19 miles (30 km) of waterfront that includes approximately 680 acres (276 ha) of marine terminal facilities and active support areas. Port property extends along the Oakland Inner and Outer Harbors and includes marine facilities, Jack London Square, and various parks. The port also operates the Metropolitan Oakland International Airport. The Fleet and Industrial Supply Center (FISC) Oakland is a former Navy warehouse and port facility located on the north side of the Oakland Inner Harbor north of NAS Alameda. FISC Oakland will be conveyed to the Port of Oakland for redevelopment as part of a major port expansion with uses that support the containerized shipping industry. The Navy published a NEPA Record of Decision for the FISC Oakland disposal on August 28, 1997.

City of Alameda

The City of Alameda area within the ROI generally contains a mixture of residential areas, business parks, commercial areas, and community uses such as open space, parks, schools, and churches. South of Atlantic Avenue adjacent uses are mainly residential. Educational and commercial areas, including business parks, are located primarily north of Atlantic Avenue. Following are descriptions of uses south and north of Atlantic Avenue.

South of Atlantic Avenue. Land uses south of Atlantic Avenue are mainly residential and community, such as churches, parks, schools, and shoreline access to San Francisco Bay.

Bordering NAS Alameda south of Atlantic Avenue and east of Main Street 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. Many of the homes are Victorian in style and are on tree-lined streets. An unused 100-foot (30 m) 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, commercial storage facilities, two schools, and a park. Commercial development is concentrated primarily along Webster Street, approximately half a mile (0.8 km) from NAS Alameda housing units and three-fourths of a mile (1 km) from the NAS Alameda entrance gate and includes offices, gas stations, retail stores, restaurants, bars, and motels. Adjacent to NAS Alameda and south of Central Avenue is Encinal High School. This school is bounded by residential housing units to the east, San Francisco Bay to the south, and NAS Alameda to the west.

North of Atlantic Avenue. In contrast to land uses south of Atlantic Avenue, land uses north of Atlantic Avenue are primarily educational facilities, commercial (retail stores and offices), and industrial. The College of Alameda occupies approximately 62 acres (25 ha) at the intersection of Webster Street and Atlantic Avenue adjacent to the eastern boundary of NAS Alameda housing.

The Marina Village shopping center, southeast of the Posey Street Tube (as shown in Figure 3-2), is the commercial shopping center closest to NAS Alameda/FISC Alameda. The shopping center contains a supermarket, drug store, restaurants, and specialty retail establishments. South of the Marina Village shopping center is 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. Roadway alignments required for the Webster and Posey Street Tubes (vehicle tunnels providing access to Oakland) create a separation between land uses west of Webster Avenue and east of Posey Street. A 100-foot (30 m) wide right-of-way exists adjacent to Main Street along the west border of the USCG housing area.

Alameda Gateway. The Alameda Gateway is a 35-acre (14 ha) former shipyard site adjacent to the Oakland Inner Harbor and flanked by NAS Alameda and the FISC Alameda Facility. This site includes the Alameda Gateway ferry

terminal and parking lot, winemaking and storage facilities, warehouses, a commercial self-storage facility, offices, and ship repair facilities.

Off-site Transit Centers. The Reuse Plan identifies three off-site intersections within the City of Alameda as future "transit nodes." These intersections would serve as established connection points for various modes of transportation where residents and employees could easily make connections between private and public transportation modes. These centers would include bus shelters and bicycle lockers and reflect a transit-oriented street design. Land uses at these intersections are described below.

Transit Node 1: Marina Village. The Marina Village transit node would be located near the Marina Village shopping center. Land uses in the vicinity of the proposed transit node consist primarily of commercial, retail, residential, and office space. Offices and residential areas extend away from the shopping center to the east.

Transit Node 2: Webster Street. The Webster Street transit node would be located on Webster Street at its intersection with Lincoln Avenue. Land uses in the area of the proposed transit node are primarily commercial and residential with some mixed-use commercial/residential and retail. Existing uses along Webster Street are dominated by commercial, retail, and mixed-use. These businesses include gas stations, restaurants, bars, retail establishments, and pharmacies. Some of the buildings at the intersection of Webster and Lincoln are two stories high and have residential uses above the ground-level commercial uses. Uses extending away from Webster Street along Lincoln Avenue are primarily residential.

Transit Node 3: Pacific Avenue. This transit node would be located at the intersection of Pacific Avenue and Marshall Way. Land uses near this intersection consist of the Chipman Middle School and single-family, duplex, and apartment residential uses.

Port of Oakland and Jack London Square

The Port of Oakland waterfront area is located along the north side of the Oakland Inner Harbor across from NAS Alameda/FISC Alameda and includes railroad facilities, a container ship loading and unloading area, a small park, and tugboat berthing. The visitor-serving commercial developments in Jack London Square and Jack London Village are located along the shore in this area and include uses such as restaurants, retail stores, a movie theater, a ferry terminal, yacht moorage, and public access to the estuary.

Inland from the estuary within the Port of Oakland jurisdiction are warehouse facilities, trucking yards and scales, and the Union Pacific railroad facilities.

These uses support the container shipping activities of the rail lines and dock facilities.

Oakland Inner Harbor and San Francisco Bay

Two bodies of water, the Oakland Inner Harbor to the north and San Francisco Bay to the west and south, border NAS Alameda/FISC Alameda. The 7-mile (11-km) long Oakland Inner Harbor separates the cities of Alameda and Oakland with a width of approximately 1,000 feet (305 m) along the length of the former air station, increasing to approximately 1,500 feet (457 m) near FISC Alameda Facility. The configuration of the estuary reflects a long history of dredging and bank stabilization projects that began in the mid-1800s. The estuary receives heavy use by both commercial and recreational boaters. Commercial use includes transocean ships, tugboats, and passenger ferries. Recreational use includes sailboats, motorboats, sculls, kayaks, and motorized personal watercraft.

San Francisco Bay, south and west of NAS Alameda, historically has been used by Navy craft docking at the southern piers of the air station and by recreational craft such as sailboats, motorboats, and windsurfing craft.

3.1.3 Regulatory Considerations

The following section identifies land use plans and regulations that would affect reuse of former Navy property at NAS Alameda/FISC Alameda following property disposal to non-Federal entities, including the City of Alameda.

City of Alameda General Plan

The current General Plan land use designation for most of NAS Alameda is Federal Government Facility. Portions of NAS Alameda and FISC Alameda east of Main Street are designated for Federal facilities and medium-density residential uses, with the school site on the south side of Singleton Avenue designated as Public/Institutional. Portions of the Main Street and Atlantic Avenue frontages and the area of the proposed Mitchell/Mosley Street Extension are designated as Parks and Public Open Space (City of Alameda 1991). These designations are shown in Figure 3-3.

The Reuse Plan policies and land use designations will be incorporated into the Alameda General Plan. The City of Alameda will use this EIR (and a supplemental EIR, if required) as the environmental documentation for the Alameda General Plan Amendment. As parcels at NAS Alameda and FISC Alameda are conveyed to non-Federal entities, land use decisions regarding these parcels would be subject to the City of Alameda's General Plan policies.

City of Alameda Zoning Ordinance

The City of Alameda Zoning Ordinance provides development regulations for all properties within the City. NAS Alameda is currently zoned M-2-G, a general industrial (manufacturing) district with a special government combining overlay (G). Permitted uses consist of a wide range of commercial and industrial uses, including heavy manufacturing. Conditionally permitted uses include airports and related facilities, shipping terminals, unenclosed uses, and commercial marinas.

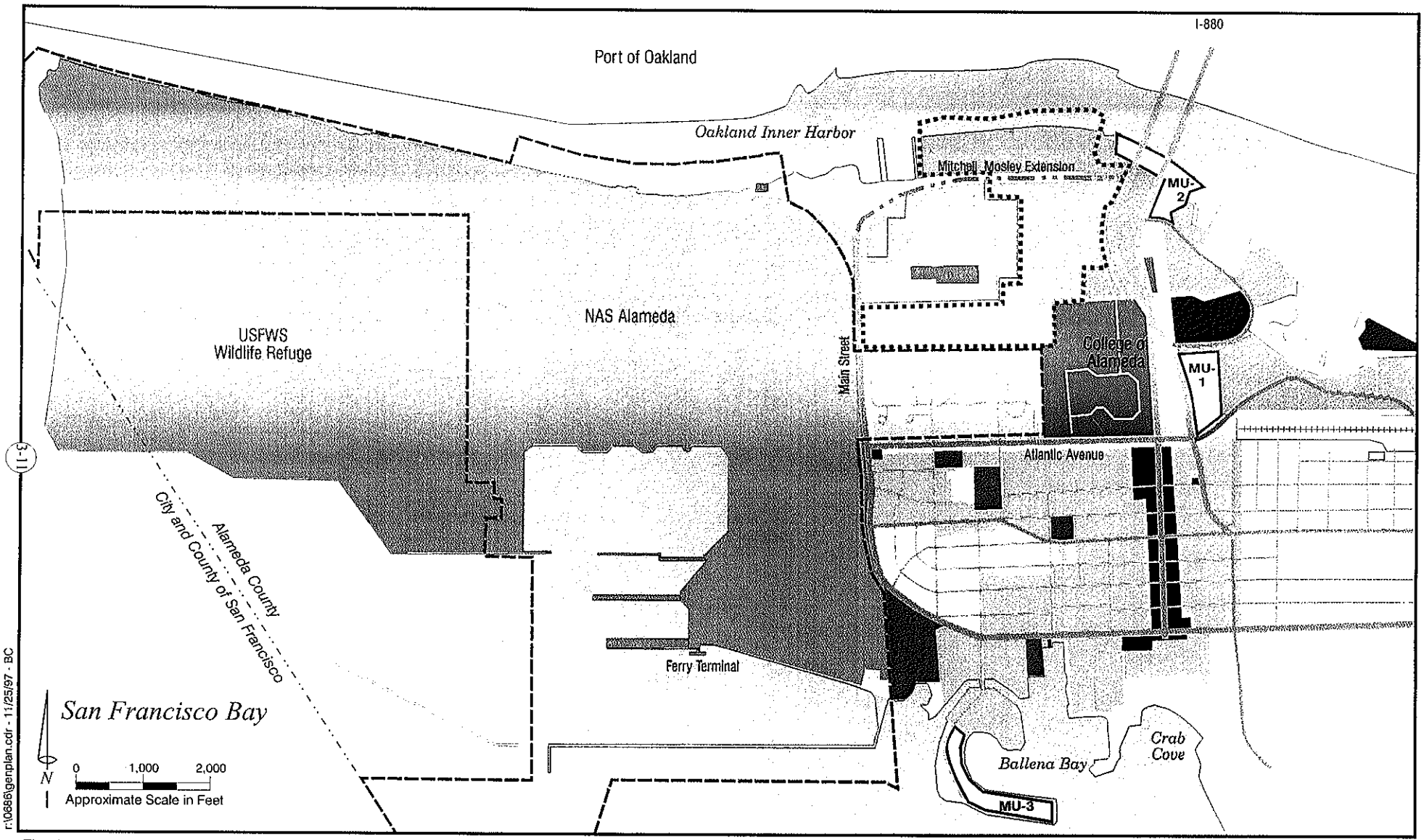
The G combining district is intended to be combined with other zoning districts and to be applied to lands under government ownership. The zoning ordinance states that prior to the use of such lands by nongovernment entities, rezoning procedures will be completed to remove the G classifications (City of Alameda 1993). A portion of NAS Alameda (the east housing area) is designated R-4-G, which is a neighborhood residential district with a G combining overlay.

As parcels are conveyed out of Federal ownership, changes to the site zoning of individual sites will reflect the future land uses designated in the Reuse Plan. The City has traditionally used a planned development (PD) designation for large-scale developments. This approach is intended to allow flexibility of development standards and is an overlay district that can be placed over the underlying zoning district. Alameda also has a Mixed-use Planned Development (MX) district that permits mixtures of land uses.

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) are charged by law to protect existing and former tidal and submerged lands for particular uses of Statewide public benefit. These lands commonly are referred to as tidelands trust or public trust lands. This 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 trust is to assure that land that adjoins the State's waterways or land that is covered by those waters remains committed to water-oriented use benefiting 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



The Alameda General Plan designates a variety of uses near FISC Alameda and mostly residential uses near NAS Alameda. This figure is a generalized representation of the General Plan map.

LEGEND:

- Low Density Residential
- Medium Density Residential
- Neighborhood Business
- Office
- Community Commercial
- Business Park
- MU-# Specified Mixed Use
- General Industry
- Commercial Recreation
- Parks & Public Open Space
- Public/Institutional/School (grades)
- Federal Facilities
- Proposed Roadway
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

Source: City of Alameda 1991

Existing General Plan Designations for NAS Alameda/FISC Alameda and Surrounding Area

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-3

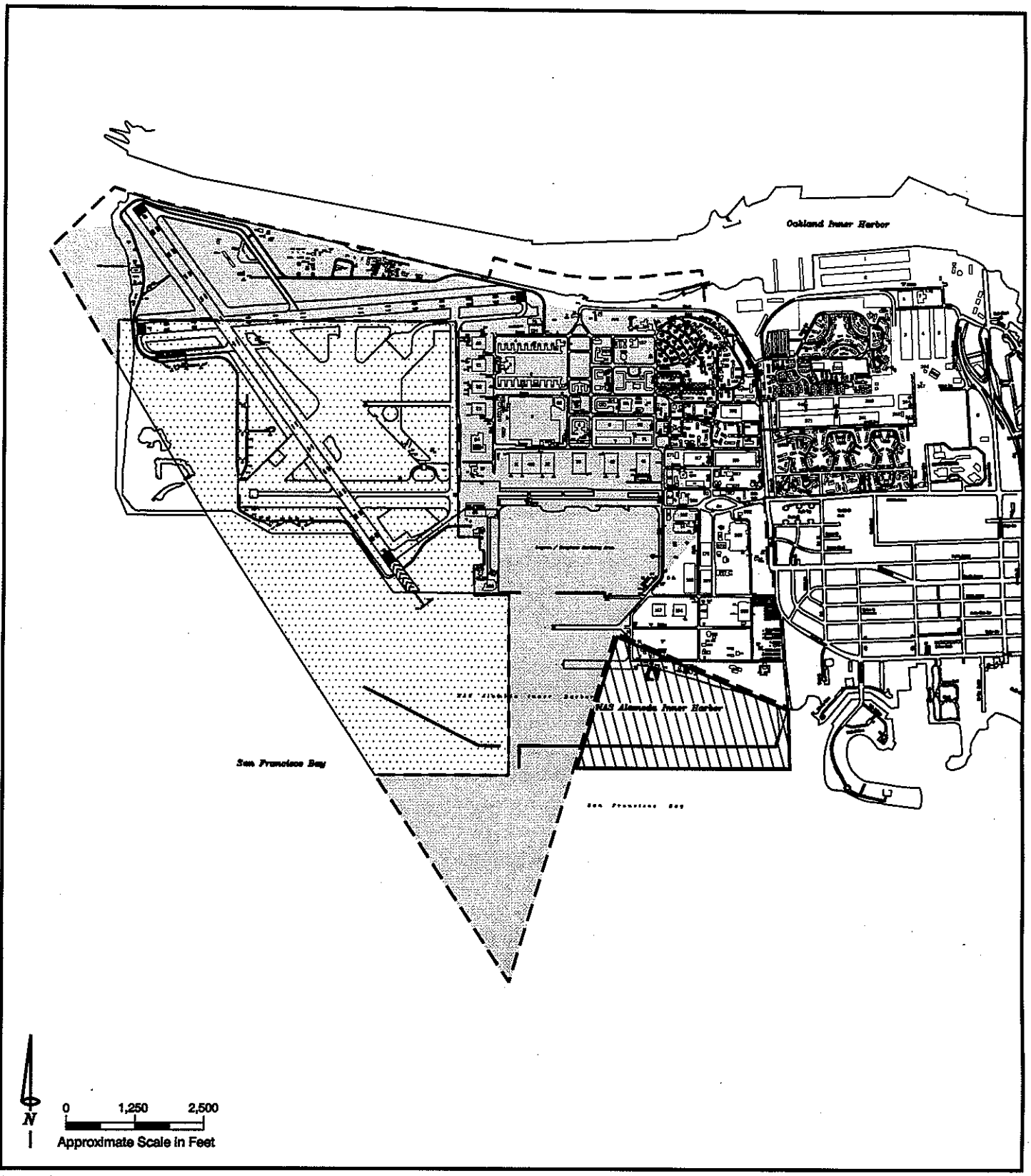
water-oriented commerce; hospitality uses, such as hotels, restaurants, and other visitor-serving facilities; and ecologically related uses, such as wetlands, wildlife preserves, fishing areas, habitat and open space preservation, parks, greenways, and water-related recreation. Public trust law allows property subject to the public trust to be leased for the above uses. 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.

As discussed in Section 1.2.2, the City of Alameda was granted ownership and management of public trust lands at what eventually became NAS Alameda 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 lease extension provisions 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 cities such as Alameda meet the terms of their legislative grants and of public trust law generally (Cal. Pub. Res. Code § 6301).

Court cases and California statutes permit the public trust to be terminated in land where finite requirements are met, chief of which are that the land in which the trust is to be terminated must be filled, must be removed from today's waters, and must be no longer useful for public trust purposes. In such cases, the trust may be terminated if land of equal value and useful for the defined purposes is brought into the public trust. These lands into 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.

About half of NAS Alameda is subject to public trust land use restrictions. Land at NAS Alameda subject to the public trust is shown in Figure 3-4 and is detailed in Table 3-1. Note that the narrow strip of land along the northern shore of NAS Alameda would not be subject to the public trust and none of the FISC Alameda property is subject to the public trust.



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Most of the land under consideration for disposal and reuse at NAS Alameda is subject to public trust restrictions. FISC Alameda is free of the public trust.

LEGEND:

- Surplus Property Subject to Public Trust
- City Land Leased by Navy Subject to Public Trust
- Federal Agency Transfer Property Subject to Public Trust
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

Property Subject to Public Trust Restrictions

NAS Alameda/FISC Alameda
Alameda, California

Source: US Navy 1994d

Figure 3-4

Table 3-1
Dry Land Subject to Public Trust Restrictions

Planning Area	Total Acres (approx.)	Land Subject to Public Trust (approx.)	Land Not Subject to Public Trust (approx.)
Civic Core	334	284	50
Main Street Neighborhoods	265	23	242
Inner Harbor	120	15	105
Northern Waterfront	88	0	88
Marina	125	86	39
Northwest Territories	272	240	32
Total	1,204	648	556

Source: NAS Alameda Community Reuse Plan, ARRA; 1996

The City of Alameda and ARRA are actively pursuing the resolution of public trust issues with the State Lands Commission and have entered into negotiations to identify specific non-trust land that can be traded for equivalent value land that is currently within the public trust. The intent of this effort is to maximize the public trust value at NAS Alameda 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 into the trust land that is useful for trust purposes, such as the strip of waterfront land along the Oakland Estuary. The City, ARRA, and the State Lands Commission have identified a sufficient quantity of land, on site or in the vicinity, with adequate public trust value that is available to feasibly bring all of the reuse alternatives into compliance with the public trust through land trades, and, possibly, through contributions to the Kapiloff Land Bank Fund (Cal. Pub. Res. Code § 8610 *et seq.*).

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 § 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 bay jurisdiction over all submerged lands and lands subject to tidal action. This includes land up to the mean high tide line and marshlands up to five feet (1 m) above mean sea level (MSL). Its shoreline band jurisdiction includes a 100-foot (30 m) 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 (BCDC 1995).

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. These policies guide permit decisions by BCDC and serve as the regionwide land use designations for the San Francisco Bay shoreline. BCDC priority designated 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 designations were removed from NAS Alameda (BCDC 1996b; BCDC 1997).

Areas without priority designations in the Bay Plan are subject to the Bay Plan policies contained in Part IV: Other Uses of the Bay and Shoreline. These policies call for shore areas not proposed for priority use 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 NAS Alameda/FISC Alameda include the following:

- For nonpriority 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 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 ten 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.

Association of Bay Area Governments (ABAG)

ABAG, a regional planning agency, is planning and implementing the creation of a continuous public access corridor 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, which would place the trail along the NAS Alameda/FISC Alameda shoreline.

3.2 VISUAL RESOURCES

This section describes the appearance of the landscape and the factors that influence how the viewing public perceives the landscape, including viewing distance and viewer sensitivity. The landscape is composed of natural and engineered features. In the visual context of NAS Alameda/FISC Alameda, urban design issues also are addressed in this section. Baseline visual resources are described for more recent conditions (e.g., 1996-1997), which are essentially unchanged from 1990 conditions.

The ROI for visual resources includes NAS Alameda/FISC Alameda and a generalized viewshed extending out from the site up to approximately five miles (8 km) but limited within that radius by terrain and structures. Existing visual resources of the project site as of 1996, including its visual character, views within and from the site, and views to the site from within the ROI, were examined in the field and recorded with photographs. Project alternatives then were reviewed in terms of their visual characteristics. Modifications to existing visual conditions that would result from each of the project alternatives then were evaluated with a focus on modifications that would cause visual contrast with the surrounding setting, that would affect views, or that would conflict with policies and regulations governing aesthetics.

3.2.1 Landscape Character of the Region of Influence

The following sections provide a discussion of visual resource conditions within the ROI. Photographs referred to in this section can be found in Appendix A.

Regional Landscape Character

NAS Alameda/FISC Alameda is at the western tip of the island of Alameda on the eastern shore of San Francisco Bay (Figure 1-1). It is bordered by the Oakland Inner Harbor and the Port of Oakland to the north, San Francisco Bay to the west and south, and the City of Alameda to the east. The island of Alameda is separated from the East Bay mainland by the narrow Oakland Inner Harbor, Tidal Canal, and San Leandro Bay. Vehicular access to the island is via bridges or submerged tubes on the island's east side at Webster Street (the Webster/Posey Tubes), Park Street, Fruitvale Avenue, and High Street and on the south side at Doolittle Drive.

The region surrounding NAS Alameda/FISC Alameda has a dense urban and industrial character set at the edge of San Francisco Bay. Topography is essentially flat. San Francisco is 3 miles (5 km) to the west, across San Francisco Bay. The dense, high-rise, downtown section of Oakland is

approximately one mile (1.6 km) to the northeast. The City of Alameda, with its narrow residential lots and compact shopping districts, is immediately east and southeast. The Port of Oakland and the former FISC Oakland have a distinctly industrial character and are across the Oakland Inner Harbor north of NAS Alameda. Multilane highways built at-grade and in elevated configurations carry large traffic volumes through the region. These include I-80 and the San Francisco-Oakland Bay Bridge, I-580, I-980, I-880, and Highway 24. There is no direct access to the island of Alameda from any of the major highways.

Landscape Character of NAS Alameda/FISC Alameda

The land use of NAS Alameda/FISC Alameda is characterized by various military support facilities, including aircraft hangars, military housing, and aircraft runways. Major facilities included shore facilities for homeporting aircraft carriers and support vessels. FISC Alameda features large warehouses with large ships often docked at the waterfront.

NAS Alameda has approximately 6 miles (10 km) of primarily rock-reinforced shoreline. Excluding family housing, the air station is composed of approximately 428 buildings and structures classified as commercial, industrial/hangars, office/administrative, warehouse, public/institutional, recreational, special use (such as laboratories and specialized aircraft maintenance facilities), and residential dormitories. There is an internal network of streets providing access to all buildings and land uses. To maintain security and to limit the number of entry points onto the naval base, the street system was not integrated with the street network of the City of Alameda.

Areas that have readily identifiable visual characteristics include the following:

- *The Administrative and Community Support Area (within the Civic Core planning area).* This area, near the central portion of the former air station, is bounded by Avenue A and Avenue F between 1st and 4th Streets. It includes 2nd and 3rd Streets from the Main Gate to Avenue F and features various light-colored, painted concrete or stucco buildings of one to three stories arranged around open lawns with sidewalks and tree and shrub borders. It includes an area that has been determined eligible for listing in the National Register of Historic Places as a historic district. The historic district includes 87 buildings and structures, 38 in this central core and 49 in an adjacent family housing area. The lawn areas provide a sharp contrast to the expanses of pavement found in most other areas of the station. The open lawns and related landscape

material, in combination with the buildings, create a distinct campus-like, pedestrian-oriented character (Appendix A, photo 1).

- *The Hangars and Nearby Related Buildings (west and south sides of the Civic Core planning area).* This area, located at the east edge of the runways and extending eastward near the north side of the seaplane lagoon, is characterized by a series of individual buildings arranged in a row and surrounded by paved surfaces and other smaller buildings. Most of the hangar buildings are about 215 feet (65 m) long, 250 feet (76 m) wide, and 40 feet (12 m) high with steel frame wall systems and stucco finish painted in light earth tones. Although the buildings are actually large, their size is difficult to discern because there is space between the structures that causes them to stand in relative isolation (Appendix A, photo 2).

- *Barracks Housing Area (within the Civic Core planning area).* Barracks are in the area between 1st Street and 2nd Street from Avenue A to Avenue C. These 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 usually surround the dormitories (Appendix A, photo 3).

- *Family Housing Area, Detached Units (part of the Main Street Neighborhoods planning area).* There are approximately 60 single-family wood frame homes with white or earth-tone stucco finishes west of Main Street. They are arranged in neighborhoods with well-groomed mature landscaping and trees between 5th Street and Norfolk Road and Barbers Point and Avenue C. Although many are older structures (most built during the 1940s), the homes appear well-maintained and in good condition (Appendix A, photo 4). The older units and the landscaping are included in the National Register-eligible Historic District.

- *Family Housing Area, Multiunit Apartments and Townhouses (part of the Main Street Neighborhoods planning area).* Wood frame two-story apartment buildings with light-colored stucco exteriors are located both west and east of Main Street. The units have second floor balconies with ground floor parking either beneath the unit or in adjacent parking lots and are arranged to provide common lawn areas on the side away from the street. Most were constructed between 1964 and 1969. Multifamily, three- to four-bedroom townhouses also were built in the 1960s. Landscaping is minimal, although there are a number of mature trees distributed

throughout. Many of the units appear to be in need of maintenance (Appendix A, photo 5).

- *The Piers and Adjacent Supply and Maintenance Area (including the Inner Harbor and part of the Marina planning areas).* This portion of the property extends from the seaplane lagoon and piers eastward and from Atlantic Avenue southward. The area is characterized by an expanse of pavement and buildings with many outdoor storage or work areas enclosed by chain-link fences (Appendix A, photo 6). Most of the buildings are, by comparison with others on the property, of moderate size and are one to two stories high.

- *FISC Alameda (including the North Waterfront and part of the Main Street Neighborhood planning area).* FISC Alameda occupies the area along the Oakland Inner Harbor, west of Mariner Square and across the channel from Jack London Square. It extends southward along the west side of Webster Street to the College of Alameda and includes the FISC Alameda Annex, which extends west from the College of Alameda to Main Street. The visual character of FISC Alameda is dominated by a number of large-scale warehouses and extensive areas of pavement bounded in several cases by housing (Appendix A, photos 7 and 8).

- *The Seaplane Lagoon (within the Marina planning area).* The seaplane lagoon is an engineered rectangular body of water more than half a mile long and nearly a quarter-mile wide. It lies off the south side of the property 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 (Appendix A, photo 9).

- *The Runways and Tarmac Area (includes the Northwest Territories planning area).* This is a flat area with mostly paved surfaces. Its size and flatness are its main characteristics (Appendix A, photos 10, 11 and 12). Although it is intensely developed with runways and taxiways, its location near the bay and the relative absence of tall elements allows outstanding, long-range views of the surrounding San Francisco Bay Area.

Landscape Character of Adjoining Off-site Areas

The landscape character of off-site areas adjoining NAS Alameda is described in the following sections.

Port of Oakland/FISC Oakland. The Port of Oakland and the former FISC Oakland occupy an area along the north shore of the Oakland Inner Harbor directly opposite NAS Alameda. They give the area 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 host of rail lines into this area.

Jack London Square. Jack London Square is a specialized commercial district featuring restaurants, entertainment, specialty shops, boat sales, and a marina. It is on the Oakland waterfront, east of the Port's container shipping facilities, at the end of Broadway, and directly across the Oakland Inner Harbor from the FISC Alameda Facility. Most of the development at Jack London Square has a waterfront/marina theme or character. Layout of the area is designed to promote pedestrian traffic among the shops and restaurants. Boardwalks along the shore and waterfront restaurants and a hotel provide opportunities for views of the Oakland Inner Harbor, the FISC Alameda Facility, the San Francisco-Oakland Bay Bridge, and the San Francisco skyline. The Oakland Ferry terminal and Roosevelt Pier are at the western edge of Jack London Square.

Mariner Square. On the Alameda side, Mariner Square is on the Oakland Inner Harbor 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. Its western edge borders the FISC Alameda Facility.

The College of Alameda. The College of Alameda is at the northwest corner of the intersection of Webster Street and Atlantic Avenue. The collection of buildings that make up the campus are set back several hundred feet from major roads, with lawns and walkways leading to the campus core. The grounds of the college border FISC Alameda on the north side and northwest corner. Navy multifamily housing borders the college's west side.

Atlantic Avenue, Main Street, and Central Avenue. Apartment complexes and office developments occupy the south side of Atlantic Avenue across from the Navy housing. The City of Alameda's West End neighborhood borders NAS Alameda along the east side of Main Street and Central Avenue south from Atlantic Avenue. The grounds and facilities of Encinal High School border the base in the area southwest of the intersection of Central Avenue and 3rd Street. Ballena Isle Park, which provides public shoreline access, lies off the southeast corner of NAS Alameda.

USCG Housing Area. The proposed Coast Guard duplex and multifamily housing occupies approximately 69 acres (28 ha) 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.

USFWS Wildlife Refuge. The proposed USFWS wildlife refuge area contains only a few structures and consists mostly of the runway area previously used by the Navy. Long-range views from this site include San Francisco and the Oakland hills.

3.2.2 Sensitive Views of NAS Alameda/FISC Alameda

The following section discusses the locations from which sensitive views of NAS Alameda and FISC Alameda occur and the areas of the property that are seen. Some of these views are shown in the Appendix A photos. Views are considered sensitive when foreground or middle ground views of areas inside the boundaries of NAS Alameda or FISC Alameda are experienced by relatively large numbers of people from publicly accessible locations including commercial centers, recreation areas, and transportation routes or when experienced from private residences. Foreground views extend from the viewer to distances up to 0.5 mile (0.8 km); middle ground views extend from 0.5 mile (0.8 km) up to 3 miles (5 km). Views at distances greater than 3 miles (5 km) are considered background.

Views from Residential Areas

Apartment complexes along the south side of Atlantic Avenue have foreground views across the street of the Navy's East Housing Area (multifamily apartments), which include buildings, landscaping (lawns, shrubs, trees), and decorative entry gates. There also are views from the USCG Housing Area including the North Waterfront and Main Street Neighborhoods planning areas.

Single-family residences in the West End neighborhood along the east side of Main Street and Central Avenue (south of Atlantic Avenue) have foreground views of Navy maintenance and supply facilities.

Views From Commercial and Institutional Areas

Visitors and patrons at Jack London Square and passengers at the Oakland Ferry Terminal have foreground and middle ground views of the FISC Alameda Annex as they look out at the Inner Harbor and across to NAS Alameda. There also are views of the FISC Alameda Facility from the west end of Mariner Square and along the Webster Street corridor. As motorists exit the Webster Street Tube, there is a brief view of the FISC Alameda Facility down Tinker Avenue.

The parking area at the College of Alameda provides foreground and middle ground views of the East Housing area. There are views of FISC Alameda from the college's tennis courts, track, and athletic fields.

The Alameda Ferry Terminal provides foreground views of the West Housing area of the base and include single-family homes set among mature trees and landscaping.

Looking to the west from the west side of Encinal High School, the track, and athletic fields, there are foreground and middle ground views of Navy maintenance and supply facilities.

Views From Parks and Public Use Areas

Ballena Isle Park is on an island southeast of NAS Alameda. The west side of the park provides middle ground views of Navy maintenance and supply facilities, piers, a recreation area, a beach, and a small boat marina. Similar views are available from the breakwater jetty leading from the south end of Encinal High School.

The Main Street corridor from Pacific Avenue north to the Ferry Terminal and west to the former Main Gate of NAS Alameda provides foreground views of maintenance and supply facilities, the former Navy exchange retail store, FISC Alameda warehouses, family housing, and the Main Gate facilities.

Views From Water

The Oakland Ferry and Alameda Ferry provide foreground, middle ground, and background views of the base from San Francisco Bay and the Oakland Inner Harbor. Pleasure boats experience views of the base from San Francisco Bay, the Oakland Inner Harbor, and Ballena Bay.

Views From Major Highways

Except for the San Francisco-Oakland Bay Bridge (I-80), no views of NAS Alameda occur from major highways. Visibility of the base from I-980 is blocked by foreground buildings. The site is visible to eastbound traffic on the bridge from at least 2 miles (3 km). The southern guardrail is sufficiently high to block the view from most passenger cars, especially those in the right-hand lanes. From taller vehicles, such as vans or trucks, the site is visible although difficult to recognize within its visual context of the Port of Oakland and the central core of the City of Oakland.

3.2.3 On-site Views, View Corridors, and Entryways

The most impressive views from NAS Alameda are those of San Francisco Bay and the surrounding region. The best long distance views are experienced from the shoreline areas of the Northwest Territories planning

area, particularly the northwest point of the planning area. Because this is a flat area mostly free of buildings or other structures, views are unobstructed and extend for many miles in all directions, depending on weather and air quality conditions. Significant regional features viewed from the area include San Francisco Bay, the City of San Francisco, the San Francisco-Oakland Bay Bridge, Yerba Buena Island, Mt. Tamalpais, the City of Oakland, and the Berkeley Hills. Unobstructed views of off-site areas also are available from most shoreline locations along the perimeter of NAS Alameda, including the seaplane lagoon and the Inner Harbor planning area. A strong visual corridor along the Oakland Inner Harbor is seen from boats and the shoreline, including the FISC Alameda Facility, with middle ground views of the Port of Oakland and Jack London Square and background views of the San Francisco skyline.

On-base view corridors tend to be along streets where buildings line the roadway and frame the view down some of the longer streets, such as along Avenue F west of 5th Street and along 1st Street between Avenue F and Avenue A and at the FISC Alameda Annex along Fox Avenue.

The most direct and centralized entrance to the base is through the East Gate at the intersection of Atlantic Avenue and Main Street. At the East Gate, there is a weakly defined view corridor toward the interior of the base formed by the roadway, some low buildings at various setbacks, and a few trees.

3.2.4 Regulatory Considerations

The following is a brief summary of all relevant plans, policies, and regulations governing visual and scenic resources.

CEQA

CEQA, Cal. Pub. Res. Code, § 21001(b), asserts that it is California's policy to "take all action necessary to provide the people of this State enjoyment of aesthetic, natural, scenic, and historical environmental qualities. . . ."

City of Alameda General Plan

The City design, parks and recreation, shoreline access, schools, and cultural facilities elements of the City of Alameda General Plan specifically address visual resource issues. Policies include the following:

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;

3.2.i Ensure that sections of the Estuary (Oakland Inner Harbor) waterfront remain visually unobstructed;

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

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

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.

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 14: Views of the bay from vista points and from roads should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water. In this regard, particular attention should be given to all waterfront locations, areas below vista points, and areas along roads that provide good views of the bay for travelers, particularly areas below roads coming over ridges and providing a "first view" of the bay (shown in Bay Plan Map No. 2, Proposed Major Uses of the Bay and Shoreline).

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.

3.3 POPULATION AND HOUSING

This section describes the existing population and housing conditions within the ROI. The overall ROI for these issues consists of the Oakland Primary Metropolitan Statistical Area (PMSA), comprised of Alameda and Contra Costa Counties, Alameda County alone, the City of Alameda, and NAS Alameda/FISC Alameda.

The baseline year for population and housing conditions is 1990. Information also is provided for 1980, 1995 and 2020 to illustrate historic trends and projections. Year 2020 projections are provided for population and housing. The 2020 projections are based substantially on the Association of Bay Area Governments' projections to 2015 (ABAG Projections '96) developed prior to completion of the Reuse Plan. These 2020 projections represent a picture of future expectations without implementation of reuse at NAS Alameda/FISC Alameda.

Population and housing impacts would be felt most intensely at the local level, but because of the regional nature of the Bay Area's employment and housing markets, impacts on population and housing also will be felt at the PMSA and county level. As an example, Table 3-2 shows that, in 1993, about 73 percent of the civilian workforce at the Naval Aviation Depot (NADEP), the largest tenant at NAS Alameda, resided within Alameda and Contra Costa Counties (the Oakland PMSA), while about 14 percent resided within the City of Alameda (US Navy 1995h). This suggests that a large part of the Bay Area has a stake in reuse at NAS Alameda/FISC Alameda.

3.3.1 Population

Alameda and Contra Costa Counties (Oakland PMSA)

The Oakland PMSA grew at a slightly faster rate over the past 15 years than did the Bay Area as a whole, largely because of new development in the suburban eastern half of the PMSA. As of 1990, the PMSA was home to more than two million residents. This figure is expected to climb by 38 percent over the next 30 years, with an expected 2020 population of nearly 3 million people.

Table 3-2
Navy Civilian Workers by Place of Residence[1]

Place of Residence	Percent of Total Employees
San Francisco Bay Area	95.1
Oakland PMSA	73.3
Alameda County	57.1
City of Alameda	14.1
Contra Costa County	16.2
Solano County	14.4
San Francisco County	3.5
Santa Clara County	1.3
San Mateo County	1.4
Marin/Sonoma/Napa and North	1.2
Other Parts of California	4.3
Central Valley	3.4
Sacramento and Northeast	0.8
Southern California	0.1
Out of State	0.6

[1]Data are for civilian workers at Alameda NADEP which employed 70 percent of all civilians working at NAS Alameda in 1990.

Source: US Navy 1995h

Alameda County was among the fastest-growing areas in the Bay Region in the 1980s, lagging only the boom areas of Solano, Sonoma, and Contra Costa counties. However, ABAG estimates that Alameda County's growth rate has slowed relative to the rest of the Bay Area in the first half of the 1990s. Alameda County growth has been fueled primarily by new development in the eastern half of the county, rather than in the established population centers along the shore of the bay. The county is expected to continue moderate levels of population growth over the next quarter-century, with an expected 1.6 million residents by 2020. This 28 percent increase is somewhat less than the 32 percent increase projected for the entire Bay Area.

City of Alameda

ABAG expects very little change in total population between now and 2020 in the City of Alameda, as shown in Table 3-3. The reasons for this are the City is nearly built-out and loss in population from the closure of NAS Alameda/FISC Alameda would offset to some extent the anticipated growth

Table 3-3
Population in the Region of Influence (1980-2020)

Area[1]	1980	1990	1995[2]	2020[3]	Annual Average Growth Historic 1980-1995	Annual Average Growth Projected 1995-2020
Oakland PMSA[4]	1,761,710	2,080,434	2,247,300	2,866,000	1.6%	1.0%
Alameda County	1,105,379	1,276,702	1,364,600	1,631,000	1.4%	0.7%
City of Alameda	63,852	73,979	79,700	82,000	1.5%	0.1%
NAS Alameda/FISC Alameda[3]	5,598	5,736	6,644	N/A	1.1%	N/A

[1]Each area includes the data from the smaller area shown below it; (e.g., the City of Alameda includes NAS Alameda).
[2]1995 population based on 1990 figures plus estimated occupants of the 300 Navy housing units built in 1991.
[3]2020 projections depend on reuse implementation.
[4]Alameda and Contra Costa counties.

Sources: ABAG 1995a; US Census 1980 and 1990; ERA 1990

in the household population. ABAG expects 4,900 new household residents by 2020, but after subtracting the Navy's resident population, the net result is that ABAG predicts a total population increase of only 2,300 by 2020 for the City of Alameda. These numbers do not reflect future residents associated with reuse of NAS Alameda/FISC Alameda.

To the extent that new housing is built on the NAS Alameda/FISC Alameda property, total Alameda population could grow more quickly. Potential housing construction associated with reuse of the property was not taken into account during the development of ABAG's "Projections '96" because ARRA's community reuse plan was not available until after "Projections '96" was published (Perry 1996). ABAG is constrained to follow the existing planning documents of local governments and because NAS Alameda/FISC Alameda was primarily an industrial site, large additions to the housing stock were not anticipated.

NAS Alameda/FISC Alameda

According to 1990 census data, there were 5,736 residents of the two census tracts (4274 and 4275) that comprise NAS Alameda/FISC Alameda.

3.3.2 Household Characteristics

Regional Household Characteristics

The San Francisco Bay Area and the Oakland PMSA, like most of the country, experienced a baby boomlet in the 1980s and early 1990s as the Baby Boomer generation had children of its own. As shown in Table 3-4, household sizes in the region increased an average of five percent between

1980 and 1995. As a result, total population (as described in the preceding section) increased somewhat faster than did the total number of households. Table 3-4 expresses this increase in terms of the total change over the period, rather than as an annual average growth rate, to provide a slightly different perspective.

Table 3-4
Households Characteristics (1980-2020)

Location[1]	1980	1990	1995[2]	2020[3]	Percent Change 1980-1995	Percent Change 1995-2020
Persons per Household						
Oakland PMSA[3]	2.59	2.61	2.71	2.68	5%	-1%
Alameda County	2.53	2.59	2.71	2.67	7%	-1%
City of Alameda	2.28	2.36	2.46	2.46	8%	0%
NAS Alameda/FISC Alameda[2]	3.18	3.29	3.29	N/A	3%	N/A
Number of Households						
Oakland PMSA[3]	667,627	779,806	813,270	1,065,000	22%	31%
Alameda County	426,093	479,518	491,350	604,000	15%	23%
City of Alameda	26,517	29,078	30,080	32,000	13%	6%
NAS Alameda/FISC Alameda[4]	1,237	1,213	1,511	N/A	22%	N/A

[1]Each area includes the data from the smaller area shown below it; (e.g., the City of Alameda includes NAS Alameda).
[2]1995 population based on 1990 figures plus estimated occupants of the 300 Navy housing units built in 1991.
[3]Alameda and Contra Costa counties. 2020 projections depend on reuse implementation.
[4]US Census 1990. 2020 projections depend on reuse implementation.

Sources: ABAG 1995a; US Census 1990; ARRA 1995a; ERA 1990

Alameda County and the City of Alameda saw household sizes increase even more dramatically than the region as a whole. While total population in the City of Alameda grew at about the same rate as the rest of the region, population declines in military group quarters (dormitory-style housing) have been offset by increases in household population, which would raise the average household size in the City. This increase in household size also carries the implication that more and bigger families in the City could create serious impacts on the school district (which is discussed later in Section 4.4, Public Services).

NAS Alameda/FISC Alameda

Household sizes in 1990 at NAS Alameda/FISC Alameda can be calculated using data from the US Census; the resulting figure is substantially higher than the City or regional averages due to the large proportion of young families living in military housing.

3.3.3 Housing

Regional Housing

In 1990, the Bay Area had over 2.4 million homes to support its more than 6 million residents. Overall vacancy rates hovered around five percent, sufficient to provide for normal turnover of the housing stock; however, moderately-priced ownership and rental housing have been and continue to be in short supply (ABAG 1995a). Vacancy rates were slightly lower in the Oakland PMSA and Alameda County (around 4.9 percent).

The City of Alameda had about 31,000 housing units in 1990 (California Department of Finance 1995). Vacancy rates in the City of Alameda have ranged from 4.1 percent to 4.9 percent since 1990, somewhat higher than the 3.8 percent vacancy rate of the mid-1980s. The California Department of Finance reports a vacancy rate of 4.7 percent in 1995 in Alameda. It is generally accepted that a minimum vacancy rate of 4.5 percent is needed to provide for normal turnover in housing units. As discussed in the Reuse Plan and the *Inventory of Existing Conditions, Alameda Area-Wide Strategy* (Keyser Marston Associates, Inc. 1992), the City of Alameda has very little lower-priced entry-level housing. Housing prices tend to be above average for the county due to the relatively high quality of the housing stock.

Table 3-5 shows the distribution of the type of housing found in the PMSA and in Alameda. As is characteristic of the more urban parts of the region, the City of Alameda has a larger proportion of multifamily dwellings than does the PMSA overall.

Table 3-5
Housing Units by Type, 1995

	Oakland PMSA[1]		Alameda County		City of Alameda		NAS Alameda	
Type of Housing	Number	Percent	Number	Percent	Number	Percent	Number	Percent
One Unit Detached	486,908	57%	270,745	53%	11,941	38%	60	2%
One Unit Attached	61,915	7%	33,940	7%	3,338	11%	-	0%
Two to Four Units	83,399	10%	60,012	12%	5,787	18%	300	9%
Five or More Units	204,738	24%	143,314	28%	10,300	33%	1,151[2]	36%
Dormitory Barracks	-	-	-	-	-	-	1,667	53%
Mobile Home	14,433	2%	6,944	1%	19	0%	-	0%
TOTAL UNITS	851,393	100%	514,955	100%	31,385	100%	3,178	100%

[1] Alameda and Contra Costa counties
[2] Includes 582 units of proposed USCG housing

Sources: California Department of Finance 1995; ARRA 1995a

Housing at NAS Alameda/FISC Alameda

NAS Alameda/FISC Alameda contains 1,511 units of family housing and space for 1,667 persons in dormitory-style barracks (Potente 1996). There is no housing at FISC Alameda. Of the family housing, 300 townhomes were constructed in 1991 in the area designated for transfer to the Coast Guard; these 1- to 3-story duplexes are in excellent condition. There are also 1,151 units in 2-story townhouses, built in the late 1960s, in two neighborhoods. Two hundred and eighty-two of these units are located in the proposed Coast Guard Housing area, and the remaining 869 units are in the Main Street Neighborhoods planning area, northeast of the intersection of Atlantic Avenue and Main Street. These units are in fair to good condition.

There are also 60 one- and two-story single-family homes in the Main Street Neighborhoods planning area, northwest of Tinker Avenue and Main Street. These former officer family quarters were built in the early 1940s and are also in fair to good condition (ARRA 1995a).

Community Improvement Plans (APIP and BWIP)

Two community improvement plans cover the project site: the Alameda Point Improvement Project (APIP) and the Business and Waterfront Improvement Project (BWIP). In response to concerns from housing advocates, in 1976 the legislature began requiring that redevelopment agencies protect and increase housing supply for very low, low- and moderate-income persons in redevelopment areas. Unless a specified finding is made, 20 percent of the tax increment allocated to the agency annually from the project area must be used to increase, improve and preserve the supply of affordable housing for persons and families of very low, low or moderate income (Section 33334.2). The tax increment must be placed in a very low, low- and moderate-income Housing Fund until used. The law prevents agencies from accumulating large amounts of funds, known as "excess surplus," by requiring funds to be spent in a timely fashion and imposing penalties if they are not.

3.4 PUBLIC SERVICES

This section presents information on public services at NAS Alameda, FISC Alameda, and the City of Alameda. These services include fire protection, emergency medical services, police protection, schools and recreation. The baseline year for public services represents the most recent year for which quantitative information was available. At NAS Alameda/FISC Alameda, the baseline represents the most recent year of full operation where quantitative information was available. At NAS Alameda, fire protection and emergency medical services are described for 1993 and police protection services are described for 1994. Emergency call data is for the year 1995. At FISC Alameda, fire protection, emergency medical service, and police protection services are described for 1993. For the City of Alameda, fire protection, emergency medical service and police protection services are described for 1996. The baseline year for school and recreation facilities is 1997-1998.

In 1993, public services at NAS Alameda/FISC Alameda were provided exclusively by Navy personnel. Following closure in April 1997, NAS Alameda was placed into caretaker status. Under caretaker status, the Navy continues to be responsible for law enforcement, fire protection, and emergency medical services; however, these services are being provided by the City of Alameda through a cooperative agreement with the Navy. Under this agreement, there is a caretaker staff of 13 firefighters, 5 police officers, and 1 animal control officer. A staff of three security personnel was added in July 1997. Prior to closure, NAS Alameda was under exclusive Federal jurisdiction, which limited law enforcement to Federal authorities enforcing Federal laws. Following closure, the 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. FISC Alameda also is under concurrent jurisdiction, and public services are being provided through the cooperative agreement between the Navy and the City of Alameda.

The ROI for public services is the City of Alameda, including NAS Alameda/FISC Alameda. This ROI was chosen because Alameda public service agencies will assume municipal jurisdiction over the property following disposal.

3.4.1 Fire Protection and Emergency Medical Service

NAS Alameda

In 1993, the NAS Alameda Fire Department had a staff of 78 firefighters, 50 of whom were trained as emergency medical technicians (EMTs) and 2 of whom were trained as paramedics (Delgado 1997). There are two fire stations—the main station on Avenue D and another near the airfield to handle aircraft emergencies. The services provided by the department included fire fighting, emergency medical services, confined space rescue, and hazardous materials cleanup. Most of the buildings on base are connected to an alarm system; the high priority/high risk buildings also are connected to a fire sprinkler system. All buildings have telephone connection to the City of Alameda 911 emergency system, which routes emergency calls back to the NAS Alameda dispatch center. In 1993, the department received between 1,800 and 2,000 calls, of which approximately 500 were for emergency medical service. NAS Alameda had mutual aid agreements with Alameda, Oakland, Berkeley, Richmond, El Cerrito, and Albany and was a partner to the State of California Office of Emergency Services agreement. NAS Alameda provided approximately two mutual aid responses per month to the City of Alameda.

In 1993, the base medical clinic had 95 personnel who fulfilled dual EMT/ administrative staff roles. The fire department personnel assisted on emergency medical responses, but the clinic EMTs transported injured persons to the emergency room at Alameda General Hospital. In 1993, clinic personnel made 665 ambulance runs.

FISC Alameda

Under a mutual aid agreement, the fire department at NAS Alameda provided fire-fighting and emergency medical services to FISC Alameda. The department responded to approximately one call per month at the site.

City of Alameda

The City of Alameda Fire Department employs 101 personnel that staff four fire stations (Lagrone 1996). The department maintains four engine companies, two aerial ladder companies, and three ambulance companies. All fire personnel have undergone EMT training. The ambulance personnel also are trained for fire fighting and, when needed, provide support using the department's reserve engines. The department responded to approximately 5,000 calls in 1995, approximately 4,000 of which were emergency medical calls. Of the remaining 1,000, between 300 and 400 were low-level, hazardous materials-related calls, 200 were service calls, and 500 were fire-fighting calls

(150 structure fires). The department is currently meeting its goal of responding to 98 percent of calls within 3.5 minutes. The department has mutual aid agreements with NAS Alameda and Alameda County. Under the cooperative agreement with the Navy, the Alameda Fire Department is providing fire protection and emergency medical services to NAS Alameda/FISC Alameda.

The station closest to NAS Alameda/FISC Alameda is the West End Station at 635 Pacific Avenue. The staff includes 30 personnel who rotate through three 10-person shifts. The minimum daily staff is eight persons (three per engine company, three per aerial ladder company, and two per ambulance company). The station received approximately 1,800 calls in 1995, an increase of approximately 8 percent from 1994. Of those calls, approximately 1,500 (83 percent) were emergency medical. The West End Station is currently meeting its response time goal.

3.4.2 Police Protection

In 1993, NAS Alameda/FISC Alameda was under exclusive Federal jurisdiction, which allows enforcement only of Federal laws. In April 1997, jurisdiction was transferred to concurrent jurisdiction, which allows State and local laws to be enforced on the property.

NAS Alameda

Prior to July 1997, the Security Department, located in Building 30 adjacent to the Main Gate, was responsible for the primary security needs of NAS Alameda. This included providing internal security, crime prevention, and investigation services, enforcing laws and ordinances, and assisting the US Marines with perimeter security. In 1994, the department had a staff of 126, 62 of whom were patrol officers (Neal 1996). The remaining staff members were divided among the investigations, administration, pass and decal, training, military working dogs, and operations units. Mutual aid agreements were in place with the City of Alameda and Alameda County. In 1994, the department responded to 8,930 calls for service and filed reports on 1,786 of those calls.

FISC Alameda

In 1993, security services were provided to FISC Alameda through a contract with a private security firm. Eight security personnel monitored the site continuously and restricted access to the site. Emergency situations at the site were handled by NAS Alameda security personnel under a mutual aid agreement.

City of Alameda

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 103 officers and 66 other personnel. The department is meeting its staffing goal of 1.3 officers per 1,000 residents (Schmitz 1996). In 1995, 65,000 calls were responded to and 14,825 reports were filed, increases of 3.5 percent and 3.0 percent, respectively, from 1994. Under the cooperative agreement with the Navy, the Alameda Police Department is providing police protection services to NAS Alameda/FISC Alameda.

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. A mutual aid agreement exists between the department and the Alameda County Sheriff.

3.4.3 Schools

Students who would live in housing on the NAS Alameda/FISC Alameda site would attend Alameda Unified School District (AUSD) schools; therefore, AUSD boundaries serve as the ROI for school impacts. AUSD boundaries are the same as those of the City of Alameda.

AUSD currently has capacity for 9,909 students in its 12 elementary schools, 3 middle schools, and 3 high schools. School capacity has decreased by well over 1,500 students due, at least partially, to State mandated class size reduction in K-3. As shown in Table 3-6, enrollment in the 1997-98 school year was 10,481, for an overall utilization rate of 106 percent. Several schools, particularly those on Bay Farm Island, are already operating well over capacity. AUSD is considering redrawing school boundaries to manage this overcrowding (Dailey 1996).

Student enrollment in the school district increased between 1988 and 1993, then leveled off. Between 1988 and 1993, enrollment increased an average of 3.0 percent per year (AUSD 1994). These increases occurred despite some reductions in employment and population at NAS Alameda/FISC Alameda in the early 1990s because, on average, families in Alameda were getting larger.

The only school on the NAS Alameda/FISC Alameda site is George Miller Elementary, located in the midst of the housing area that is being transferred to the USCG. Woodstock Elementary, Chipman Middle School, and Encinal High School are all in the West End Neighborhoods, east of NAS Alameda, and historically served significant populations of children of Navy personnel.

It should be noted that AUSD school capacity is less than the ceiling required by State guidelines.

Table 3-6
Alameda Unified School District Enrollment and Capacity

School	1998 School Capacity	Actual 1997-98 Enrollment	Current Enrollment/ Capacity	1998 State Capacity
Elementary Schools	**4,711**	**5,102**	**108%**	**6,228**
Bay Farm	377	454	120%	493
Earhart	486	652	134%	651
Edison	368	360	98%	489
Franklin	227	259	114%	299
Haight	537	546	102%	722
Longfellow	437	430	98%	580
Lum	417	507	122%	554
Miller	219	195	89%	285
Otis	388	441	114%	518
Paden	377	398	106%	496
Washington	548	562	103%	686
Woodstock	330	298	90%	455
Middle Schools	**2,126**	**1,995**	**94%**	**2,243**
Chipman Middle	757	399	53%	833
Lincoln Middle	798	799	100%	822
Wood Middle	571	797	140%	588
High Schools	**3,072**	**3,053**	**110%**	**2,994**
Alameda High	1,684	1,663	99%	1,640
Encinal High	1,298	1,212	93%	1,264
Island High	90	178	198%	90
Other[1]	**NA**	**319**	**NA**	**NA**
Total[2]	**9,909**	**10,481**	**106%**	**11,465**

NA – not applicable

[1] Includes students enrolled in special education and resource specialist programs

[2] Total is based on California Basic Educational Data (CBED) enrollment reporting and does not exactly match district self-reporting by individual schools.

Source: AUSD 1998

Shilts Consultants (City of Alameda 1998) estimated the number of students generated by each single family household in Alameda to average 0.436. However, as noted in the NAS Alameda Community Reuse Plan, the number of students per household at the redeveloped base is expected to more closely mimic the yield factor for single-family homes constructed on Bay Farm Island, which is somewhat higher at 0.484 students per household.

Student generation rates are shown in Table 3-7; these rates will be applied in estimating the student enrollment associated with residential housing under the reuse alternatives in Chapter 4, Environmental Consequences.

Table 3-7
Student Generation Standards

Grade Range	No. of Students/Household Single-family Homes
K-5	0.250
6-8	0.113
9-12	0.121
Total	0.484

Source: Shilts Consultants, Inc. 1998

Potential impacts from the establishment of the Alameda Point Improvement Project (APIP) on schools are addressed by Section 33607.5 of the California Redevelopment Law. Health and Safety Code Section 33607.5 establishes specific formulas for payments to affected taxing entities (such as AUSD). Payments made under Section 33607.5 are allocated among the affected taxing entities in proportion to the percentage share of property taxes each affected taxing entity receives during the fiscal year that the funds are allocated. Section 33607.5 also requires school districts receiving tax increment to spend the increment at schools within the project area and attended by students from the project area.

3.4.4 Recreation

Alameda and Contra Costa Counties

Alameda and Contra Costa Counties abound in outdoor recreational amenities, from hillside parks and bayfront trails to boating, fishing, and other water recreation. Large regional parks, such as those provided by the East Bay Regional Park District, draw visitors from all over the Bay Area. However, most park use comes from people residing in the park's neighborhood or City. Because the recreational impacts of the proposed

Reuse Plan alternatives would be most clearly felt at the local level, the City of Alameda is used as the ROI for this discussion.

City of Alameda

The City of Alameda currently owns and maintains 482.3 acres (195.3 ha) of developed parks and recreation areas, beaches, and open space (City of Alameda 1991, as updated by Framsted 1996). The bulk of the City's developed parkland and recreational areas are in two regional facilities—the 300-acre (121 ha) municipal golf course on Bay Farm Island and the 80-acre (32 ha) Crown Memorial Beach. Other City facilities include 11 neighborhood parks, 4 community parks, 6 areas of community open space, including boat launches, a soccer field, a model airplane field, and shoreline trails. Approximately 140 acres (57 ha) of the City's facilities are community and neighborhood facilities. Open space and playgrounds at AUSD and College of Alameda provide an additional 71 acres (29 ha).

The City of Alameda has plans to acquire and develop 3 more community parks, greenways in the west end, and a small community open space over the next 15 years. These acquisitions would bring neighborhood and community park acreage to 176.2 (71.4 ha), or approximately 2.3 acres (0.9 ha) per 1,000 household residents (City of Alameda 1991).

NAS Alameda/FISC Alameda

The Civic Core planning area contains tennis courts, a pool, a gymnasium, and outdoor recreation areas and sports fields. There are also two clubs with dining facilities, a bowling alley, and a movie theater. All of these recreational facilities were provided for NAS Alameda personnel and were not available to the general public. An RV park is located in the Inner Harbor planning area. In addition, there is substantial shoreline open space with bay views throughout the site. Historically, access by the general public to the NAS Alameda/FISC Alameda property has been limited due to military security needs.

3.4.5 Regulatory Considerations

City of Alameda General Plan

The City of Alameda General Plan outlines a number of fire hazard policies, including the following:

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

8.2.b Maintain current level of emergency medical service;

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

8.2.d Assure new structures comply with the City's fire, seismic, and sprinkler codes; existing structures shall be required to comply with the intent of the codes in a cost-effective manner; and

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

3.5 UTILITIES

This section presents an overview of the utility systems at NAS Alameda/FISC Alameda, including those for water distribution, sanitary wastewater, industrial wastewater, storm drainage, solid waste management, telephone, electricity, natural gas, steam, and cable television. The baseline for utilities is 1993, which represents the most recent year of operation for which use rate data are available. The estimated capacities of the water distribution and sanitary wastewater systems are based on 1989 operations, which is the year closest to 1990 for which utility data were available. The capacities of the system did not subsequently change between 1989 and base closure. The physical condition and layout of the NAS Alameda/FISC Alameda utility systems are described based on 1996 information or on the most recent available information.

The ROI for utilities is the City of Alameda, including NAS Alameda/FISC Alameda, and the service areas of local utility providers.

For this section, NAS Alameda/FISC Alameda is subdivided into NAS Alameda, FISC Alameda Facility, FISC Alameda Annex, and East Housing. The discussion for each utility category includes subsections discussing conditions at each of these four sites, which are illustrated in Figure 1-4.

The FISC Alameda property referred to in other areas of this document is composed of two sites, the FISC Alameda Annex and the FISC Alameda Facility. The utility systems serving these two sites are physically independent.

Utilities at the East Housing site, south of the FISC Alameda Annex, historically were connected to the NAS Alameda utility systems. However, in recent years, a number of these systems have been separated, and new service providers have been contracted. For this reason, it is important to describe the utility systems unique to this site.

Utility systems at each of the sites were managed by a number of different entities, including government agencies and private companies. Most of the systems were Navy-owned and operated. Most of the utility systems are still Navy-owned while some are owned by private companies, including Pacific Gas & Electric Company (PG&E) and Pacific Bell. Most of the utility service providers are private companies. Table 3-8 presents a current (1998) breakdown of the utility infrastructure owners and utility providers for each of the sites.

Table 3-8
Utility Infrastructure Owner and Service Provider

Utility System	Infrastructure Owner	Service Provider
NAS Alameda		
Water Distribution	Navy	EBMUD
Sanitary Wastewater	Navy	EBMUD[1]
Industrial Wastewater	Navy	NA
Storm Drainage	Navy	NA
Solid Waste	NA	U.S. Eagle
Telephone	Navy/Pacific Bell	Pacific Bell
Electricity	Navy	Alameda Bureau of Electricity
Natural Gas	Navy/PG&E	PG&E
Steam	Navy	NA
Cable Television	TCI Cablevision	TCI Cablevision
FISC Alameda Facility and FISC Alameda Annex		
Water Distribution	Navy	EBMUD
Sanitary Wastewater	Navy	EBMUD[1]
Industrial Wastewater	NA	NA
Storm Drainage	Navy	NA
Solid Waste	NA	Bay Cities Refuse Co.
Telephone	Pacific Bell	Pacific Bell
Electricity	Navy	Alameda Bureau of Electricity
Natural Gas	Navy	PG&E
Steam	NA	NA
Cable Television	NA	NA
East Housing		
Water Distribution	Navy	EBMUD
Sanitary Wastewater	Navy	EBMUD[1]
Industrial Wastewater	NA	NA
Storm Drainage	Navy	NA
Solid Waste	NA	U.S. Eagle
Telephone	Pacific Bell	Pacific Bell
Electricity	Navy	Alameda Bureau of Electricity
Natural Gas	PG&E	PG&E
Steam	NA	NA
Cable Television	TCI Cablevision	TCI Cablevision

[1]EBMUD provides treatment while Alameda and Oakland pipelines convey the wastewater.
EBMUD - East Bay Municipal Utilities District
NA - Not Applicable

Following operational closure of NAS Alameda in April 1997, the property was placed into caretaker status and the Navy entered into a cooperative agreement with the City of Alameda. Under the terms of this agreement, the City of Alameda manages the operation and maintenance of all Navy-owned utility systems at NAS Alameda. The Navy-owned utility systems at FISC Alameda and East Housing also are managed by the City of Alameda under the cooperative agreement.

3.5.1 Water Distribution

The primary source of water for the project sites is the Pardee Reservoir on the Mokelumne River in the Sierra Nevada mountains. The water is treated and stored at the Orinda filter plant and is conveyed to Alameda via a pipeline beneath the Oakland Inner Harbor. Under the cooperative agreement, the water distribution systems at all four sites are operated and maintained by the East Bay Municipal Utilities District (EBMUD) through an agreement with the City of Alameda. During the caretaker period, unused segments of the water distribution system likely will be drained and capped.

NAS Alameda

Two distinct water distribution systems serve NAS Alameda; one provides potable water and fire protection service, while the other is dedicated solely to serving the fire protection sprinkler systems within the industrial area buildings. There are 4 water storage tanks and 454 fire hydrants at the site. One 200,000-gallon (757,082-liter [l]) tank supplies the potable water system, while another 200,000-gallon (757,082 l) tank supplies water for the fire protection sprinklers. Two 500,000-gallon (1,892,706 l) storage tanks near the East Gate provide backup water for fire protection. EBMUD supplies water to the distribution systems through three metered points of connection. The combined maximum rated flow for these supply lines is 4,200 gallons per minute (gpm) (15,899 liters per minute) (US Navy 1985e). The water pressure at the main base is boosted to meet industrial and fire protection requirements. The distribution systems consist primarily of cast iron and transite (asbestos cement) pipe with some steel, copper, and polyvinyl chloride (PVC) pipe. The pipes are over 50 years old, with the exception of the PVC pipe, which was installed in the mid-1980s in the southern portion of the station. The 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 (ARRA 1995a).

The potable water system on Wharf 1 and Piers 2 and 3 consists of carbon steel lines supported by hangers underneath the piers. Berthed ships are served by potable water stations along the piers; there are 5 stations at Wharf 1, 13 at Pier 2, and 8 at Pier 3. A chlorinator system near Building 340 was used to disinfect water for berthed ships, and a saltwater pumping station provided fire protection water for Pier 3. Both of these systems have not been used for many years and are in poor condition. A 1985 report noted that the piping and hangers underneath the piers were corroded (US Navy 1985e). No repairs to this system were made as a result of this study and no repairs have been made since.

In 1989, average water usage at NAS Alameda was 1.94 million gallons per day (MGD) (7.34 million liters per day) (US Navy 1993f). By 1993, average water usage had decreased to approximately 1.26 MGD (4.77 million liters per day) (Pollastrini 1997).

FISC Alameda Facility

The water distribution system at the FISC Alameda Facility is a combined potable and fire protection water service. There are 2 metered connections to the EBMUD water mains—a 12-inch (30-centimeter [cm]) transit line from the west at B Avenue and a 12-inch (30 cm) carbon steel line from the east at D Avenue. The combined maximum rated flow from these two lines is 2,600 gpm (9,842 liters per minute) (US Navy 1985d). Water is distributed on-site through main pipes composed of cast iron and transite. The pipelines are beneath the major streets and at the north marginal wharf. The underground metal pipes do not have cathodic protection and are subject to corrosion. The system has sectional valves that allow isolation of the segments during maintenance, repairs, and emergencies. Although the water distribution system was installed nearly 50 years ago, a study conducted in 1985 found it to be in good condition (US Navy 1985d). This study estimated the maximum water consumption for FY 1983 to be 62.5 gpm (237 liters per minute).

Ships berthed at the north marginal wharf obtain potable water from a 10-inch (25 cm) cast-iron main pipe on hangers underneath the wharf; potable water is supplied to ships at 15 riser stations. The system is over 50 years old. A 1985 study found that water pressure for wharf fire protection did not meet Navy requirements, that piping and hangers underneath the wharf were corroded, and that the wharf stations did not have backflow prevention devices or permanent meters (US Navy 1985d). No repairs to this system were made as a result of this study and no repairs have been made since.

FISC Alameda Annex

The FISC Alameda Annex is served by two EBMUD metered connections located east and west of the annex. The supply infrastructure is a looped system of 10-inch (25 cm) and 12-inch (30 cm) water mains. The older pipes remain in service but experience periodic failures requiring repair (ARRA 1995a).

East Housing

The East Housing is served by a single EBMUD metered connection at Atlantic Avenue. The EBMUD supply line has a maximum rated flow of

1,000 gpm (3,785 liters per minute) (US Navy 1985e). Water is distributed throughout the site by 8-inch (20 cm) and 6-inch (15 cm) mains and 2-inch (5 cm) laterals.

3.5.2 Sanitary Wastewater

Under the cooperative agreement, the sanitary wastewater collection and treatment systems at all four sites are operated and maintained by the City of Alameda. During the caretaker period, unused segments of the system likely will be drained and capped.

NAS Alameda

Sanitary wastewater is a combination of the wastewater generated by use of sinks and restrooms. This wastewater does not require pretreatment before being discharged to the EBMUD wastewater treatment plant. The sanitary wastewater collection system consists of laterals and branches and is augmented by 18 lift stations. This system also serves the FISC Alameda Annex and East Housing. Discharges from the ship wastewater collection ashore system at Piers 2 and 3 and Wharf 1 and treated effluent from the industrial wastewater treatment plants also are discharged into this system (see Section 3.5.3).

Wastewater from the subsystem is pumped through a force main across Oakland Inner Harbor into the FISC Oakland system and into the EBMUD interceptor system; the former 16-inch (41 cm) force main was replaced with a 24-inch (61 cm) pipeline in May 1998. The interceptor system transports the wastewater to the main treatment plant near the San Francisco-Oakland Bay Bridge. The sanitary wastewater system was installed over 52 years ago and portions of the collection system were repaired and replaced in 1989. The system is suspected of having wet weather inflow and infiltration but the extent of this problem is not known. In addition, high levels of chlorinated hydrocarbons had been detected periodically in sanitary wastewater samples. These materials likely were associated with past industrial activity that was discontinued, and there is no continuing contamination problem. In 1989, NAS Alameda discharged an average of 1.55 MGD (5.87 million liters per day) of wastewater (US Navy 1993f). Based on an average potable water demand of 1.26 MGD (4.77 million liters per day) in 1993, the amount of wastewater discharged would have averaged 1.01 MGD (3.82 million liters per day).

The main EBMUD wastewater treatment plant at the foot of the San Francisco-Oakland Bay Bridge has a dry weather treatment capacity of 120 MGD (454 million liters per day) and a wet weather treatment capacity of 320 MGD (1,211 million liters per day); however, the plant can receive a

maximum of 415 MGD (1,571 million liters per day) by using a wet weather storage basin (Harvey 1996). The wet weather capacity is greater than the dry weather capacity due to the presence of stormwater in the sewer lines (inflow/infiltration) that dilutes the wastewater, thus requiring less treatment. There are an average of 10 wet weather events each year. The average dry weather flow into the main plant is 80 MGD (303 million liters per day), or 67 percent of capacity (Harvey 1996).

FISC Alameda Facility

Sewage from shore facilities is collected by gravity sewers that drain into laterals terminating at a gravity main paralleling Avenue B. This gravity main is owned by the City of Alameda. The laterals and mains are composed of vitrified clay and cast-iron piping. A 1985 study noted that a segment of pipe between Buildings 3 and 4 was sagging and required replacement (US Navy 1985d).

Wastewater is collected from ships berthed at the north marginal wharf via four collection manifolds suspended from the wharf. There are 17 ship-hose couplings attached to the manifolds. The manifolds connect to gravity collectors that carry wastewater to the north end of 4th Street, where it merges with the shore facilities system. The ship wastewater collection system was constructed in 1983 and is composed of ductile iron and vitrified clay piping.

FISC Alameda Annex

Wastewater generated at the FISC Alameda Annex is collected by vitrified clay pipe branches connected to a main collection line routed to NAS Alameda. The wastewater in that line is pumped through the force main across Oakland Inner Harbor into the FISC Oakland system.

East Housing

Most of the East Housing wastewater collection system connects with a City of Alameda main along Atlantic Avenue. The wastewater from a few housing units in the northwest of the site empties into the FISC Alameda Annex system at Fox Avenue, then is routed to NAS Alameda via a lift station. The collection system is composed of vitrified clay piping. In 1989, portions of the collection system were repaired and replaced.

3.5.3 Industrial Wastewater

NAS Alameda

Industrial wastewater consists of wastewater generated by industrial activities and usually contains hazardous or toxic chemicals. This wastewater requires pretreatment before it can be discharged to the EBMUD wastewater treatment plant. Industrial wastewater treatment plants (IWTPs) are located within Buildings 24, 25, and 32 and treat wastewater generated by industrial operations, aircraft maintenance, and maintenance shops. The plants in Buildings 24 and 25 have been closed in place and the Building 32 treatment plant is scheduled for closure in 1999. Table 3-9 presents the treatment capacities and compounds removed by these three IWTPs. Building 360 houses a pH adjustment unit that treats wastewater prior to release into the sanitary sewer. The discharges from these plants flows into the sanitary sewer and are regulated as components of point source discharges from plating and metal finishing operations. For the treatment plant in Building 32, the Navy maintains an industrial wastewater discharge permit issued by EBMUD.

The bilge oily wastewater treatment system on Wharf 2 between Pier 2 and Pier 3 treated wastewater pumped from berthed ships. It was installed in March 1995 and is in good condition (Cate 1996). The compounds removed by this system and its treatment capacity are presented in Table 3-9.

Table 3-9
Industrial Wastewater Treatment Plants

IWTP Location	Maximum Treatment Capacity (gpm)	Compounds Removed
Building 24	30	Heavy metals (primarily hexavalent and trivalent chromium)
Building 25	50	Heavy metals (primarily hexavalent and trivalent chromium), toxic organics (primarily phenols and methylene chloride), and oil
Building 32	50	Heavy metals (primarily hexavalent and trivalent chromium, cadmium, and nickel) and cyanide
Bilge oily wastewater treatment system	150	Heavy metals and oil

Source: Cate 1996

FISC Alameda and East Housing

There are no industrial wastewater treatment facilities at the FISC Alameda Facility, the FISC Alameda Annex, or at East Housing.

3.5.4 Storm Drainage

Under the cooperative agreement, the storm drainage collection systems at all four sites are operated and maintained by the City of Alameda. During the caretaker period, unused segments of the system likely will be drained and capped.

NAS Alameda

The storm drainage collection system at NAS Alameda consists of drains, catch basins, and 43 discharge outfalls to the Oakland Inner Harbor and San Francisco Bay (Szymanski 1996). Stormwater collected from the drains and catch basins is sampled twice annually and is within the requirements of the National Pollutant Discharge Elimination System (NPDES) permit. Most of the existing piping is corrugated metal.

Seasonal flooding problems are common due to cracked storm drains, flat topography, and subsidence. Some locations within the Main Street Neighborhoods, Civic Core, and Northwest Territories planning areas are subject to flooding during heavy rainstorms because they are below the high tide elevation (see Figure 3-14 in Section 3.9). In addition, some tidal flap gates are not functioning properly, which causes the low elevation areas along Main Street to flood regularly. The City has developed and funded an improvements program to address flooding problems along Main Street. The program is scheduled for completion in Fall 1999 (Timothy 1998). It will raise the level of the roadway to above the flood level. The program also will install a pump station to pump runoff into the harbor when the tide gate is closed.

FISC Alameda Facility

At the FISC Alameda Facility, two stormwater pipelines convey runoff during storm events. Each of these pipelines terminates in an outfall to the Oakland Inner Harbor. The main conveyance pipeline is a 48-inch (122 cm) pipe that serves most of the FISC Alameda Annex and Facility (Wong 1996). The other pipeline is a 12-inch (30 cm) pipe that conveys stormwater from the parking lot in the northeast corner of the FISC Alameda Facility. Surface runoff is collected in catch basins connected to the conveyance pipelines, and the stormwater system adequately handles the runoff flows. However, the pipelines experience backflow problems when water levels in

the Oakland Inner Harbor are high and the tidal flap gates do not function properly.

There is a problem with sediment accumulation in the catch basins from stormwater flows washing soil from the nongraded soil surface at the scrap yard into the basins. Due to hazardous materials in the sediment and stormwater, the system has been designated an Installation Restoration (IR) site. Removal of contaminated sediment from the catch basins and repair of equipment were completed in February 1996 under the authority of the California Department of Toxic Substances Control and the Regional Water Quality Control Board. There are tentative plans to pave the scrap yard to prevent further sedimentation. Further discussion of the IR program and this site can be found in Section 3.13, Hazardous Materials and Waste.

FISC Alameda Annex

Stormwater catch basins and storm drains at the FISC Alameda Annex are connected to the main stormwater collection line that serves the FISC Alameda Facility and discharges to Oakland Inner Harbor.

East Housing

Stormwater at East Housing is collected by reinforced concrete catch basins and storm drains. This collection system is connected to the NAS Alameda system via a 36-inch (91 cm) reinforced concrete pipeline.

3.5.5 Solid Waste Management

Under the cooperative agreement, solid waste is collected and disposed of by Waste Management of Alameda County, which serves the City of Alameda.

NAS Alameda

In 1993, general refuse and garbage were collected from trash receptacles and other collection bins and hauled off-site daily by a commercial trash hauler under contract to the Navy. All nonhazardous solid waste is disposed of at the Davis Street Transfer Station in San Leandro, then transported to the Altamont Landfill. The landfill receives an average of 6,000 tons (5,444 metric tons) per day from all customers and can accept a maximum of 11,150 tons (10,117 metric tons) per day. The current capacity of the landfill will be reached in approximately 30 years.

Solid waste was dumped in a landfill area at the southwest corner of NAS Alameda, but use of this site was discontinued in 1978. Additional information on this landfill can be found in Section 3.13. In 1995, NAS

Alameda disposed of 8,683 tons (7,879 metric tons) of solid waste and recycled 756 tons (686 metric tons) of material. The recycled materials included aluminum, aluminum cans, cardboard, glass, newspaper, mixed paper, plastic, mixed metals, and steel.

FISC Alameda

Solid waste from FISC Alameda is not recorded separately, but is reported with the solid waste from FISC Oakland. In 1994, FISC Oakland disposed of approximately 30,000 tons (27,222 metric tons) of solid waste and recycled 3,204 tons (2,907 metric tons) of material. Solid waste is collected by a private contractor and transported to the Davis Street Transfer Station then to the Altamont Landfill.

East Housing

East Housing solid waste was collected by the same contractor serving NAS Alameda; thus, the amount of waste generated and material recycled at East Housing is included in the totals for NAS Alameda.

3.5.6 Telephone

Under the cooperative agreement, the telephone system is operated and maintained by the City of Alameda. The exchange switch at NAS Alameda was shut down at the time of base closure and all telephone service is now routed through the Pacific Bell Central Office in Alameda.

NAS Alameda

A new telephone system at NAS Alameda was installed in 1990, consisting of a private branch exchange switch with a remote switch and cables. The exchange switch was a digital AT&T Systems 85 R2V3, located in Building 2 with a remote switch in Building 14. The exchange switch served approximately 5,226 lines and had a total line capacity of 20,000 (Parsons 1996). The switch was trunked to the Pacific Bell Central Office in Alameda for access to the public switched telephone network (PSTN). Most of the outside cable, conduit, and manholes were replaced in 1990, but the telephone wiring within the buildings was not replaced when the new system was installed. The housing units at NAS Alameda are served directly by Pacific Bell.

FISC Alameda Facility

The telephone system at the FISC Alameda Facility is owned and operated by Pacific Bell, which brought the system up to its standards when it

acquired the system from the Navy (US Navy 1988c). A telephone switch at Building 6 serves most of the FISC Alameda Facility and some of NAS Alameda.

FISC Alameda Annex

Telephone service to the FISC Alameda Annex is provided by Pacific Bell through a main cable located just off the site. From there, a cable connects to the telephone distribution center in Building 364, then lines branch out to individual buildings. The distribution center, which serves 13 lines, is near capacity. The telephone system underwent major renovation in 1994.

East Housing

The telephone system serving East Housing is owned and operated by Pacific Bell.

3.5.7 Electricity

Under the cooperative agreement, the electrical system is operated and maintained by the City of Alameda Bureau of Electricity (BOE).

NAS Alameda

In 1987, NAS Alameda was the largest customer in the City, using about a third of the total energy supplied (US Navy 1987f). Power is delivered to the main substation at the East Gate by two 115-kilovolt transmission lines. The City of Alameda installed a second line in the same location as the primary line. The primary power distribution system for NAS Alameda is divided into two unconnected systems separated by Main Street. The distribution voltage at NAS Alameda is a combination of 12 kilovolts and 4,160 volts.

West of Main Street, the main substation feeds electricity to 11 of the 14 substations around NAS Alameda. The other three substations are fed by interconnections to the 11 stations. All feeders are underground in duct banks. Pad-mounted switches are used to segment and interconnect the underground feeders. These switches in the distribution feeders allow small segments of the system to be isolated or repaired as needed.

FISC Alameda Facility

The FISC Alameda Facility receives electrical power from a BOE 12.5-kilovolt feeder that enters at the southwest corner of the site. The Navy extended a short 12.5-kilovolt feeder from the metering pole to a main

substation and metering pole. From the substation, three 4,160-volt feeders distribute power to facilities at the site. A 1985 study noted that the system has limited capacity to serve additional demand (US Navy 1985d). No repairs or upgrades have been conducted on this system.

FISC Alameda Annex

Electricity is delivered to the FISC Alameda Annex by the same 12.5-kilovolt BOE line that supplies East Housing. The electrical service was upgraded in 1987 to replace the 40-year-old electrical system. The electrical system is mostly an overhead system, although some segments within the FISC Alameda Annex are underground. The annex feeder is in an open loop, located on the perimeter of the site. Pole-mounted and pad-mounted transformers distribute power to the secondary system. The voltage is stepped down to 4,160 volts prior to distribution to individual buildings. The distribution system is repaired and upgraded periodically.

East Housing

Power is delivered by a 12.5-kilovolt line owned by the City of Alameda. The voltage is stepped down to 4,160 volts prior to distribution to individual buildings (ARRA 1995a). The distribution system is mostly an overhead system. Pole-mounted and pad-mounted transformers distribute power to the secondary system.

3.5.8 Natural Gas

Under the cooperative agreement, the natural gas distribution system is operated and maintained by Pacific Gas & Electric (PG&E).

NAS Alameda

Natural gas is supplied to NAS Alameda by PG&E. The primary uses of natural gas are steam generation, foundry operation, space heating, cooking, water heating, and other industrial operations. Most of the industrial and administrative facilities were heated by steam provided by the station steam plant, which consumed much of the natural gas supplied to the base. Gas connection to the boiler plant could be interrupted on PG&E's request; however, the administration area and housing units had guaranteed continuous service.

The gas distribution system consists of PG&E supply mains and Navy sub-mains and laterals. The distribution systems consist of steel and polyethylene piping and most of the steel pipes are 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 (US Navy 1985e). The NAS Alameda housing units are served directly by PG&E pipelines.

FISC Alameda Facility

Natural gas is provided to the facility via a PG&E meter near C Avenue, and the distribution system is connected to a pressure reducing station. The maximum capacity of the system is 18,132 standard cubic feet per hour (scfh) (513 cubic m per hour), but the system is constrained by the capacity of the PG&E meter, which is only 12,000 scfh (340 cubic m per hour). A 1985 study noted that the system was in good condition with only minimal corrosion (US Navy 1985d).

FISC Alameda Annex

Natural gas is supplied to the site from a PG&E gas main through a metering station near the Main Gate. Natural gas is used primarily for space heating. In 1976, polyethylene pipes were placed inside the steel pipes in all underground portions of the system, except to the east of Building 7 and at the west end of Building 1. A 1985 study found the natural gas distribution system to be in good condition (US Navy 1985e). Due to the age of the system, minor leaks in pipes occur occasionally and require repair.

East Housing

The natural gas distribution system is owned and operated by PG&E. The housing units use gas for space heating, domestic water heating, clothes drying, and cooking.

3.5.9 Steam

During the caretaker period, a portable boiler supplies steam heat to the recreation facilities. No other facilities are served by the steam system.

NAS Alameda

The steam system consisted of two central steam plants, each with its own distribution system. In November 1995, the main plant in Building 10 was removed from operation (Parsons 1996). At that time, the steam plant in Building 584 was connected to the underground distribution system formerly connected to Building 10. This steam plant has since been removed from operation. This system served approximately 70 buildings. The steam provided to these buildings was used primarily for space heating, domestic water heating, and industrial processes. The steam plant at

Building 584 houses two operational boilers that formerly provided clean steam to ships berthed at Piers 2 and 3 and at Wharves 1 and 2. The boilers burn primarily natural gas with fuel oil as a backup. Since 1983, projects have been implemented to improve the system; however, a 1985 study noted that the 40-year-old distribution system was in deteriorated condition (US Navy 1985e).

FISC Alameda

As noted in the 1988 Master Plan for Naval Supply Center Oakland (US Navy 1988c), which covered FISC Alameda, the steam distribution system was reported to be in poor condition in 1980 and had not been upgraded. The system was abandoned in place in the late 1980s. Building 6 at the FISC Alameda Facility was heated by a single boiler.

East Housing

Steam was not provided to East Housing.

3.5.10 Cable Television

NAS Alameda

The cable television system at NAS Alameda is owned, operated, and maintained by TCI Cablevision of Alameda. The system was installed in 1984/1985 and was upgraded in 1988/1989. It served 515 subscribers at NAS Alameda and is in good condition. A portion of the system extending to the piers and wharves supplies service to the berthed ships.

FISC Alameda

No cable television service is currently provided to FISC Alameda.

East Housing

The cable television system at East Housing is owned, operated, and maintained by TCI Cablevision of Alameda.

3.5.11 Regulatory Considerations

Water Distribution

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 U.S.C. § 300f, *et seq.*, 40 C.F.R. Parts 141-43, and California Safe Drinking Water Act of 1989, Cal. Health & Safety Code § 116300 *et seq.* and 22 C.C.R. § 64400 *et seq.* Recent testing indicated concentrations below the maximum contamination levels. Additional water quality regulatory considerations are discussed in Section 3.9.4.

Wastewater

Wastewater discharged from NAS Alameda/FISC Alameda is regulated by a permit from EBMUD. This permit outlines water quality criteria for wastewater entering the EBMUD collection system. Industrial wastewater at NAS Alameda required pretreatment to meet these criteria.

Storm Drainage

The main laws that govern storm drain discharges at NAS Alameda are the Clean Water Act, 33 U.S.C. § 1251, *et seq.*, at the Federal level and the Porter-Cologne Act, Cal. Water Code § 13000, *et seq.*, at the State level. The Porter-Cologne Act regulates the discharge of wastewater to surface water and ground water. The San Francisco Bay Regional Water Quality Control Board oversees the NAS Alameda storm drainage system. Storm drain outfalls at NAS Alameda/FISC Alameda operate under NPDES permits, which specify monitoring and sampling activities to maintain the integrity of the outfalls.

City of Alameda stormwater discharges are regulated by an NPDES permit granted to the Alameda Countywide Clean Water Program. The program implements the Alameda Countywide Clean Water Stormwater Management Plan, which includes countywide goals and separate goals for cities and jurisdictions within the program. The plan contains monitoring and special studies on a countywide level and performance standards for inspecting the storm drain infrastructure for individual jurisdictions.

Solid Waste Management

The Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901, *et seq.*, requires that Federal facilities comply with all Federal, State, interstate, and local requirements regarding the disposal and management of solid waste. RCRA establishes public safety and health standards for disposing solid waste, including requirements for landfill liners and leachate collection and treatment. RCRA and the Military Construction Codification Act of 1982, 10 U.S.C. § 2577, *et seq.*, also provide for various means of recovering value

from solid waste. Wastes may be recycled, reclaimed, used as a fuel supplement, or sold for profit.

The California Integrated Waste Management Act, Cal. Pub. Res. Code § 40000, *et seq.*, requires cities to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. Cal. Pub. Res. Code §§ 42000-42023 established 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 the cities to meet the State 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.

The City of Alameda General Plan outlines a number of solid waste policies including:

8.4.j Implement the recently approved residential area curbside recycling program and

8.4.k Design and implement a recycling program for commercial and industrial businesses, including paper product recycling strategies for business parks.

Electrical

The electrical distribution systems are regulated by State of California P.U.C. General Orders 95 and 128.

3.6 CULTURAL RESOURCES

This section discusses the archaeological and historical background data pertinent to NAS Alameda/FISC Alameda. Separate portions of this section present brief summaries of the archival research undertaken and the status of archaeological, ethnographic, and historical knowledge as understood for NAS Alameda/FISC Alameda. The results of both field and archival research also will be presented for both prehistoric and historic cultural resources. Baseline cultural resource conditions are described using 1996-1997 data, which represent the last year when the base was operational, as updated by recent cultural resources surveys.

Cultural resources include any object, site, area, building, structure, or place 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 an 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. An archaeological resource may be an historical resource. Alternatively, even if not an historical resource, an archaeological resource may be "unique," meaning that there is a high probability that it (1) contains information needed to answer important scientific research questions and that there is demonstrable public interest in that information; (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.

The ROI for cultural resources is the area defined by the boundaries of the NAS Alameda/FISC Alameda.

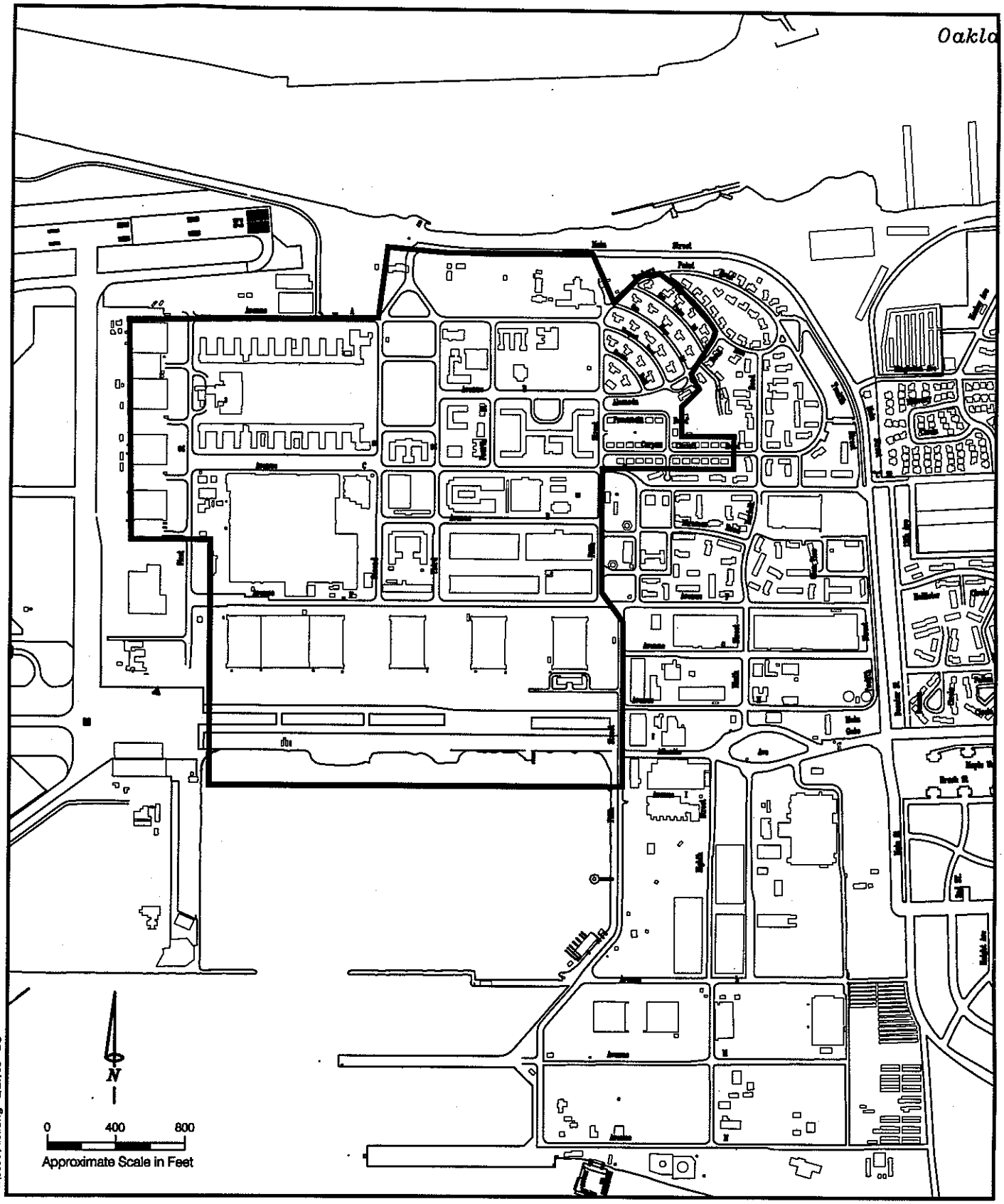
3.6.1 Cultural Resources Studies

History/Historical Architecture

The historical context for evaluating buildings and structures at NAS Alameda/FISC Alameda was completed by JRP Historical Consulting Services (JRP) in February 1996. JRP's work included extensive research at DOD archives, State agencies, National Archives, local historical societies, and local libraries. JRP's research revealed that, while a comprehensive inventory of pre-1946 buildings and structures at NAS Alameda previously was undertaken for the Navy by S. B. Woodbridge (1992), no such study had been performed for the FISC Alameda Facility and Annex.

Woodbridge's work was designed to determine whether any buildings at NAS Alameda 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. The report concluded that, while no individual building would qualify for listing in the NRHP, an area in the eastern portion of NAS Alameda appeared to qualify for listing in the NRHP as a historic district. The identified area includes 87 buildings and structures that contribute to the significance of the Historic District ("contributing buildings"), 35 noncontributing major buildings and many temporary or minor buildings, which do not contribute to the significance of the Historic District. The Woodbridge report further determined that no pre-1946 buildings and structures outside the boundaries of the Historic District meet the criteria for listing in the NRHP. The Historic District identified by Woodbridge (1992) was called the Naval Air Station Alameda Historic District. The boundaries for the district are shown in Figure 3-5. On September 23, 1992, the California State Historic Preservation Officer (SHPO) concurred with the Navy's findings of eligibility.

In March of 1996, JRP prepared the historic context for the FISC Alameda Facility and Annex (US Navy 1996b). JRP's report concluded that of the 23 buildings within the project area, only 2 were constructed prior to World War II. These two buildings (Buildings 364 and 365 at the FISC Alameda Annex) were constructed as part of the Airdrome operation. Nine buildings were constructed late in the World War II era, primarily in 1944 and 1945, and four were constructed just after the end of the war, between 1946 to 1947. The remainder of the buildings were constructed during the 1950s and 1960s.



The Naval Air Station Alameda Historic District was determined eligible for the National Register of Historic Places (NHRP) in 1992.

NAS Alameda Historic District

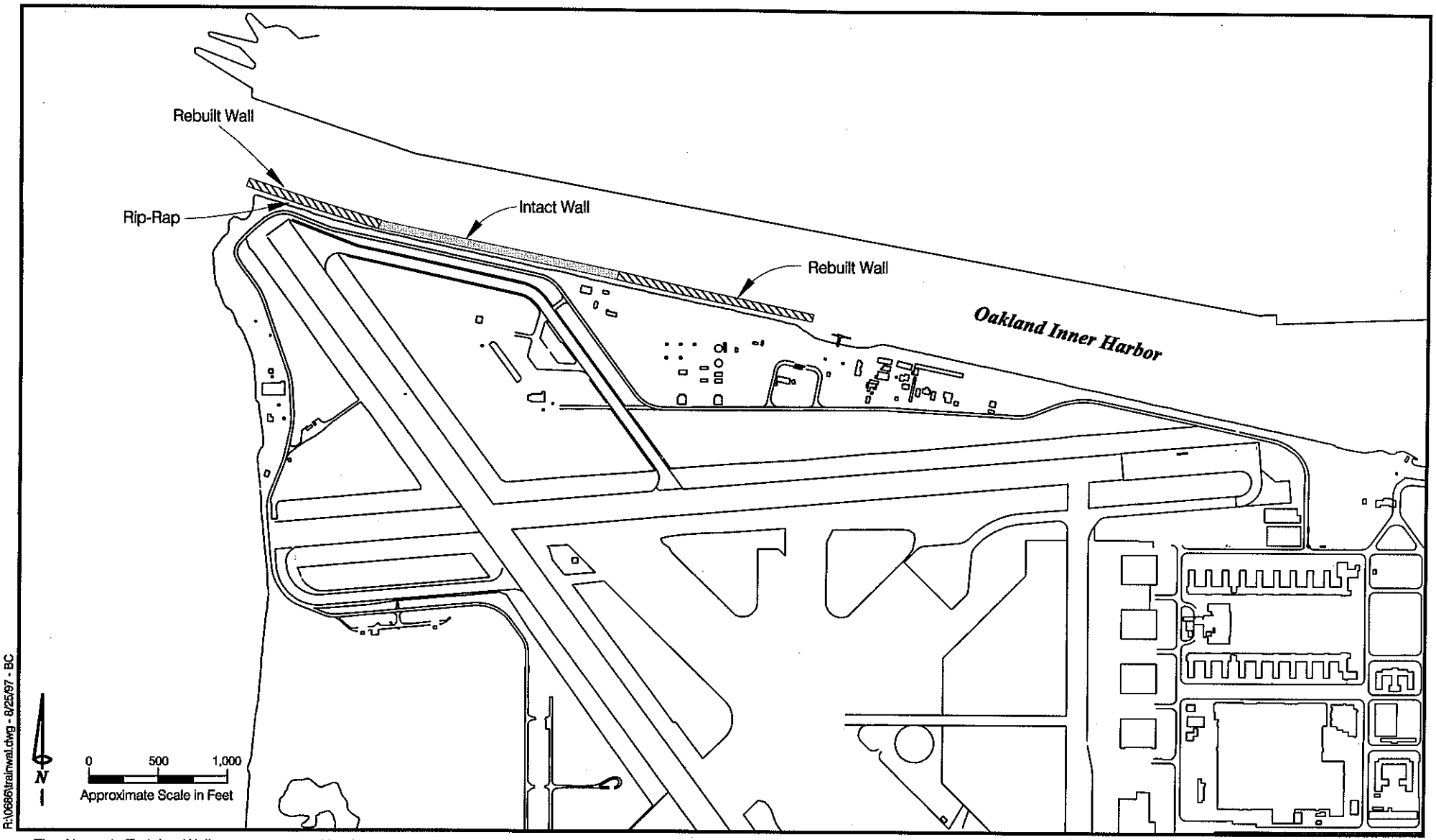
LEGEND:

Boundary of NAS Alameda Historic District

NAS Alameda/FISC Alameda
Alameda, California

Source: US Navy 1996b

Figure 3-5



The Alameda Training Wall was constructed by the Army Corps of Engineers between 1874 and 1896. Portions of the original and rebuilt wall still exist in the area shown above. The Navy found that the intact portion of the Training Wall meets the critia for listing in the National Register of Historic Places.

Location of Historic Training Wall

NAS Alameda/FISC Alameda
Alameda, California

Source: JRP 1997

Figure 3-6

Building 6 at the FISC Alameda Facility was evaluated in 1995 to determine if it qualified for listing in the NRHP (Bloomfield 1995). It was initially determined that this building, which was originally the administrative center for the area, appeared to qualify for listing in the NRHP as a unique example of a US Corps of Engineers building type (Bloomfield 1995). However, the study was submitted to the SHPO with additional research, at which time the Navy requested the concurrence of the SHPO that Building 6 did not qualify for listing in the NRHP (Wall 1996). The SHPO in July 1996 concurred with the Navy's determination that no property within the FISC Alameda Facility and Annex, including Building 6, meets the criteria for listing in the NRHP (California Office of Historic Preservation 1997).

In 1997, the Navy hired JRP to conduct an evaluation of a "Training Wall," located at the edge of the Oakland Inner Harbor within the boundaries of NAS Alameda and shown in Figure 3-6. The Training Wall is a rubble masonry jetty, built by the Corps of Engineers between 1874 and 1896, to "train" the tides to scour a navigational channel (JRP 1997). On the basis of this evaluation, the Navy concluded that 1,750 feet (533 m) of the Training Wall are significant, retain integrity, and meet the criteria for listing in the NRHP.

In September 1997, the Samuel Knight Chapter of the Society for Industrial Archaeology alerted the 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 the NAS Alameda property. Concern has also been expressed that the remains of other historic uses might exist under the fill placed to create the land on which NAS Alameda was built. These remains include those of the former Alameda Airport, Pan American Airlines facilities, Alameda Yacht Basin and the ship hulks that were used to create it, Benton Field, as well as the remains of the 1864 San Francisco and Alameda Railroad wharf and other nineteenth 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 have survived submerged off the northwest corner of NAS Alameda, there is no evidence that remains of any other historic uses that predate the Navy still exist. To the contrary, the records of the Twelfth Naval District, which was responsible for the acquisition, dredging, filling, and construction of NAS Alameda, indicate that those from whom the property was obtained were provided an opportunity to remove all material, buildings, and 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 for construction.

Memorandum of Agreement

As required by Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470f, and its implementing regulations, 36 C.F.R. Part 800, the Navy has initiated consultation with the SHPO, the ACHP, and the City of Alameda to identify ways to avoid or mitigate any adverse effects to Federally-recognized historic properties resulting from the disposal and reuse of surplus Federal property at NAS Alameda and land available for disposal at FISC Alameda. Implementation of an MOA would conclude the Section 106 review for the Navy's disposal action, and provide evidence that the Navy has afforded the ACHP an opportunity to comment on the Navy's action and its effects on historic properties. The reuse actions would be implemented according to the terms of the MOA. An MOA would be signed by the agency official (the Navy in this case), the SHPO, and the ACHP. In some cases other parties, such as the City of Alameda, may be asked to sign as participating or concurring parties.

The agreement would cover the Navy's layaway program, interim leases of historic buildings while the Navy retains ownership, and review of proposed undertakings within the Historic District after Navy disposal.

In 1992, prior to selection of NAS Alameda for closure, the Navy developed a draft MOA for "*Routine Maintenance on Historic Properties within the NAS Alameda Historic District.*" This draft MOA, designed for management of the NAS Alameda Historic District as a naval facility, was never executed because it was put aside when closure of NAS Alameda was announced in 1993. The purpose of the document was to exempt certain routine maintenance activities from review under Section 106 when those activities were conducted in a manner consistent with accepted historic preservation practices.

In 1996, the Navy executed an MOA for the proposed demolition of six contributing buildings within the NAS Alameda Historic District: Buildings 75A, 115, 116, 130, 135, and 137. The Navy, SHPO, and ACHP signed this MOA which, among other provisions, stipulated that the buildings be recorded to the general standards of the Historic American Buildings Survey (HABS) prior to their demolition. Although this MOA has been signed and the terms carried out, the buildings have not been demolished.

Pursuant to the Section 106 review procedure, the Navy has also consulted with the SHPO and the ACHP on its interim leasing program at NAS Alameda. The SHPO has concurred in the Navy's determination that this program may proceed without further review by the SHPO, as long as the exteriors of the historic properties will not be altered or otherwise modified, without the Navy taking into account any proposed modifications, and

where they might cause an effect, the Navy will comply with Section 106 of the NHPA prior to authorizing the requested alterations.

The Navy, SHPO, ACHP and the City of Alameda are involved in ongoing discussions concerning a third MOA that would deal specifically with disposal and reuse. This MOA would deal with short-term impacts to the NAS Alameda historic properties between the signing of the MOA and conveyance of the property, as well as long-term impacts as the property is reused by the City. While the terms of the MOA have not yet been agreed to, it is anticipated that the MOA would address unresolved issues pertaining to the treatment of historic properties to the satisfaction of the SHPO and the ACHP. The MOA is expected to include the following provisions:

- Formal nomination of historic properties for listing in the National Register by the Navy;
- A program for collection, inventory, and preservation of historic artifacts and records, including plans of historic buildings;
- Agreement for handling routine maintenance issues. This would reconstruct the terms of the unexecuted 1992 MOA, exempting from review by the SHPO and ACHP certain routine maintenance functions;
- Guidelines for layaway and minimum levels of caretaker maintenance necessary to preserve the integrity of historic buildings pending reuse. The caretaker maintenance required for each building would depend on the length of time that the building is expected to remain in layaway;
- Guidelines for interim leasing of historic properties by the Navy prior to disposal, including standards for inspection, maintenance, and adaptive reuse of contributing historic properties;
- Agreement that the City of Alameda will designate the NAS Alameda Historic District as a historical monument under the City's historic preservation ordinance;
- Development by the Navy of a handbook outlining character-defining elements of the NAS Historic District to assist the Historic Advisory Board (HAB) of the City of Alameda in its design review responsibilities and to ensure that the HAB is prepared to assume those responsibilities when the property has been conveyed to the City of Alameda; and
- Some short-term reporting requirements by the Navy, to ensure that the provisions of the MOA are being implemented.

The MOA would accomplish two objectives. First, it would demonstrate that the Navy has "taken into account" the effect of its action (disposal of NAS Alameda) on historic properties and would provide evidence that the

Navy has complied with Section 106. Second, it would provide a monitoring program to ensure that the mitigation measures are implemented, particularly the mitigation measures for all four types of potential impacts—demolition, layaway, rehabilitation, and new construction.

The agreement would establish a long-term post-conveyance role for the HAB as a design review agency for projects that affect buildings within the NAS Alameda Historic District, as it does today for existing designated landmarks within the City of Alameda. With respect to the interim leasing program, review of proposed alterations might be monitored by the HAB to ensure that the character of the Historic District is maintained. With respect to rehabilitation, the HAB could be given review authority for rehabilitation projects, as it has review authority for rehabilitation projects in the City of Alameda. The MOA also may include provisions to develop specific guidelines for the buildings within the NAS Alameda Historic District, which are quite different from privately owned or local government buildings currently under the jurisdiction of the board. Finally, the HAB could be given review authority for new construction within the Historic District to ensure compatibility with the character of contributing buildings and structures.

3.6.2 Archaeological Resources Studies

Although archaeological resources studies for the surrounding area have been ongoing since the early 1900s, relatively little work has been undertaken on the Navy properties at Alameda. This lack of archaeological study is the result of the fact that most of the facilities at NAS Alameda/FISC Alameda were constructed on filled bay lands and saltwater marshlands beginning in 1918. Prior to this time, except for minor berm construction associated with the Southern Pacific Coast Railroad in the 1890s, these marshes and sloughs were considered to be basically uninhabitable by Euroamericans and earlier peoples.

Recent archaeological work within FISC Alameda occurred in 1996 and was conducted by PAR Environmental Services (PAR). A prehistoric and historical site record and literature search was completed by personnel of the Northwest Information Center of the Historical Resources File System, Sonoma State University, Rohnert Park (NWIC File No. 96-34). Materials on file at local repositories also were examined. The results of these searches revealed that while no previous archaeological studies or cultural resources have been identified within the project area, there are several known prehistoric archaeological sites on the mainland and to the east within the City of Alameda (PAR 1996).

PAR conducted an archaeological survey of FISC Alameda property during the winter of 1996. No archaeological resources were identified within the FISC Alameda property. Although numerous railroad spurs and sidings were noted, none of these correspond to historical railroad alignments once present on the island (PAR 1996). Based on the fact that the project area consisted of sea water and undeveloped natural marshland until 1918 when filling began, the potential for buried cultural resources, either prehistoric or historic, is considered to be extremely low. The potential for paleontological resources also is considered to be low, based on the soil composition and geological formation of the project area lands.

In accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. § 3001, *et seq.*, a focused effort was made by PAR to locate any skeletal remains or artifact collections that might have been removed from sites within NAS Alameda/FISC Alameda. 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 NAS Alameda or FISC Alameda, PAR contacted local museums that would be most likely to contain materials from Alameda. No collections were identified.

3.6.3 Archaeological Setting

The naval facilities at Alameda are situated on the northwest portion of an island overlooking San Francisco Bay to the west and south. To the east of the NAS Alameda/FISC Alameda property, this portion of the island was 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 (Moratto et al. 1984). A second, more intensive, occupational phase appears to have occurred between 5000 and 2000 BC. During this period, the bay appears to have been occupied by groups of hunters and gatherers who subsisted on a variety of terrestrial, bayshore, 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 (Breschini and Haversat 1980; Moratto et al. 1984). 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) (Busby et al. 1995).

Ethnographically, the project area 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 (Busby et al. 1995).

While there have been no previously recorded archaeological sites within the NAS Alameda/FISC Alameda property, there are numerous prehistoric sites within the general vicinity of NAS Alameda/FISC Alameda. These sites consist primarily of shell mounds containing flaked stone tools and other cultural artifacts. The closest of these sites is on the high ground or "encinal" of Alameda, approximately 2 miles (3 km) to the southeast of the project area. The main village site on the encinal is known as Sather Mound. This 3-acre (1 ha) site was excavated around the turn of the century by an amateur archaeologist, Captain Clark, who exposed 450 human burials in three distinct layers. In addition to Sather Mound, there are five other known village sites on the encinal.

3.6.4 Historical Setting

NAS Alameda

The San Francisco and Alameda Railroad in 1864 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. For a short period the Central Pacific Railroad used this link to San Francisco as the terminus of the Transcontinental Railroad (approximately the base of NAS Alameda Pier 2). This western end of Alameda was subdivided and platted as Woodstock and became an early center of industry when in 1868 Samuel Orr, taking advantage of the water and rail connection, established the Alameda Oil Works which processed castor, coconut and linseed. In 1880, the Pacific Oil Company was established on adjacent land and began the production of petroleum products. These refineries were located on the land south of Pacific Avenue and west of Main Street. They were acquired five 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 land to revert to agricultural uses until acquired by the Navy.

The property north of Pacific Avenue and west of Main was developed in the 1870s by the Pacific Coast Borax Works, which also took advantage of this rail-water link obtaining borax from Death Valley by rail and shipping 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 Navy. The site of the four-story borax plant is now occupied by 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.

As stated previously, the land occupied by NAS Alameda/FISC Alameda 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, 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 Oakland Harbor (PAR 1996). By the late 1920s, the northern part of what is now NAS Alameda had been filled and partially occupied by the Alameda Airport, a City-owned facility, and Benton Field, a minor Army Air Corps facility. The Navy acquired Benton Field and the City airport in 1936. In 1938, the Navy began constructing the Naval Air Station. Construction activities focused on erecting permanent buildings on the eastern half of the installation and filling the southern and western portions of the facility for the bulk of the runway areas. Many wartime buildings 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.

The buildings and structures within NAS Alameda reflect three distinct periods of development. Except for a few minor exceptions, the earliest buildings, those constructed prior to 1942, were constructed 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 and was called "Moderne" in the Woodbridge report (1992). Woodbridge defines the Moderne style 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. This style unifies the architecture of this Historic District and typifies most of the buildings within the district. The Historic District was found to qualify for the National Register, not because of the architectural merit of any one building, but because of the architectural merit of the many buildings taken as a group. The Historic District was also found to qualify on the basis of

the site plan, which includes landscape design and the arrangement of buildings and streets.

Most of the pre-war buildings were constructed during 1940 and 1941. Buildings and structures constructed between late 1941 and 1945 were, with minor exceptions, temporary or semipermanent 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.

As with most major military facilities, NAS Alameda includes a wide array of functional building types, including barracks, single-family residences, hangars and repair buildings, and a large group of support buildings, such as fire stations and a cafeteria. Most of these buildings are clustered along the eastern half of the facility, while runways and flightline-related structures occupy the western half.

FISC Alameda Facility and Annex

Although the Southern Pacific Railroad and its predecessor built railroad tracks through the area during the nineteenth century, the land for the FISC Alameda was unusable marshlands until filling began in 1918. Filled chiefly with dredged material during the early 1920s from COE improvements associated with the Oakland Harbor and other harbors throughout the East Bay, the land was used only marginally until the early 1940s.

The COE began its improvements to Oakland Harbor in the mid-1870s. One of its first actions was constructing the Training Wall. By 1896, the Training Wall was raised to several feet above high water and was finished in dry-laid stone masonry. The Training Wall is still visible along a 1,750-foot (533 m) length, extending south from a point near lands end within NAS Alameda.

In the early 1930s, a private corporation, the San Francisco Bay Airdrome, Inc., built a small general aviation airport and two hangars here. In 1942, the land was acquired by the Federal government and was divided into two units—the FISC Alameda Facility site, which fronts the Oakland Inner Harbor, and the FISC Alameda Annex site, which faces inland and is south of the facility. The land adjacent to the water (FISC Alameda Facility) was used by the US Army Air Corps as a trans-shipment storage area during World War II. Following the war, the Army used the area for remote storage, first for medical supplies and later by the Sharpe Army Depot. In 1964, the land was transferred to the Navy for Naval Supply Center (later

renamed FISC) Oakland. In 1990, a part of the property was transferred to NAS Alameda for the Marina Village housing development.

The Navy acquired the FISC Alameda Annex site at the same time that the Army Air Corps acquired the FISC Alameda Facility site. The Navy parcel became known as the Naval Supply Center, Alameda, now part of FISC Oakland. The FISC Alameda Annex lands, including the runway and its two hangars, were considered to be the heart of the San Francisco Bay Airdrome operation. Historic photographs and maps indicate that the main runway extended in a line approximating the northern fence of the FISC Alameda Annex. The buildings were at the eastern end of the FISC Alameda Annex property, extending to and beyond what is now Webster Street. Building 364 was moved in 1959 to make room for the western lanes of Webster Street.

During World War II, the Navy did very little with the FISC Alameda Annex land, using it for open storage, much as the Army Air Corps did with the adjacent facility. Research suggests that the Navy also may have used Buildings 364 and 365, the remaining two buildings from the airdrome operation, for incidental storage. The Navy constructed one structure during the war years—Building 361, a warehouse. All of the remaining buildings were constructed by the Navy in 1953 or later. The FISC Alameda Annex has remained in Navy ownership and use since 1941. The complex has been used for various purposes including storing hospital supplies and excess equipment.

3.6.5 Historic Status of Buildings and Structures

NAS Alameda

As a result of Woodbridge's inventory, pre-1946 buildings and structures at NAS Alameda may be divided into two categories—those that contribute to the Historic District's sense of time and place 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—street patterns and landscaping which also contribute to its significance.

The evaluation context included military construction between 1938 to 1945. Thus, the Naval Air Station Alameda 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

semipermanent nature. It is estimated that approximately half the contributing buildings to the Historic District were constructed before American entry into the war, with the remainder being constructed during the war.

In Woodbridge's analysis, with Navy agreement and SHPO concurrence, the Naval Air Station Alameda 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 3-10.

The Naval Air Station Alameda Historic District was found to qualify 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 Naval Air Station Alameda Historic District" (JRP 1997). The purpose of the document was to identify "character-defining elements" of the Historic District to enable the Historic Advisory Board (HAB) 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 JRP document analyzes the Historic District as comprising five functional areas: Administrative Core; two Hangar Areas; Shop Area; and Residential Area. The buildings within each area are distinctive architecturally as well as functionally. Within each area, the report identifies key buildings that are more important than the others in defining the character of the Historic District. The other buildings, while recognized as contributing buildings within the Historic District, are treated as support buildings that contribute to the character of the Historic District but to a lesser degree than the key buildings. The document also recognizes key elements of the site plan.

Table 3-10
Contributing Buildings within the NAS Alameda Historic District

Nonresidential Structures	One-story Officer Housing Units	Two-story Officer Housing Units
Building 1	100 Pensacola Road	100 Seattle Road
Building 2	102 Pensacola Road	102 Seattle Road
Building 3	104 Pensacola Road	100 Newport Road
Building 4	106 Pensacola Road	102 Newport Road
Building 6	108 Pensacola Road	104 Newport Road
Building 8	110 Pensacola Road	106 Newport Road
Building 9	112 Pensacola Road	100 San Diego Road
Building 16	101 Corpus Christi Road	102 San Diego Road
Building 17	102 Corpus Christi Road	106 San Diego Road
Building 18	103 Corpus Christi Road	108 San Diego Road
Building 20	104 Corpus Christi Road	100 San Pedro Road
Building 21	105 Corpus Christi Road	102 San Pedro Road
Building 22	106 Corpus Christi Road	104 San Pedro Road
Building 23	107 Corpus Christi Road	106 San Pedro Road
Building 30	108 Corpus Christi Road	108 San Pedro Road
Building 31	109 Corpus Christi Road	102 Pearl Harbor Road
Building 39	110 Corpus Christi Road	104 Pearl Harbor Road
Building 40	111 Corpus Christi Road	106 Pearl Harbor Road
Building 41	112 Corpus Christi Road	100 Alameda Road
Building 42	113 Corpus Christi Road	
Building 43	114 Corpus Christi Road	
Building 44	115 Corpus Christi Road	
Building 60	116 Corpus Christi Road	
Building 63	117 Corpus Christi Road	
Building 75A	118 Corpus Christi Road	
Building 77	119 Corpus Christi Road	
Building 91	120 Corpus Christi Road	
Building 92	121 Corpus Christi Road	
Building 94	122 Corpus Christi Road	
Building 101	123 Corpus Christi Road	
Building 102		
Building 114		
Building 115		
Building 116		
Building 130		
Building 135		
Building 137		
Building 193		

Source: Woodbridge 1992

In the Administrative Core, the key buildings 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, as well as the large landscaped area between the two barracks.

In the two Hangar Areas, the key buildings 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 First Street and Avenue F, 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 Commanding Officer's Quarters. The key site plan elements in this area are the meandering streets and a small park separating the NCO and officers' quarters.

An isolated property, called the Training Wall, appears to qualify for listing in the NRHP. This resource is a 1,750-foot (533 m) portion of the masonry jetty, built by the COE between 1874 and 1896 as part of its program to create a navigational channel between Oakland and Alameda. The intact portion of this wall exists near lands end at NAS Alameda.

In addition to the buildings and structures described above, the former USS Hornet, a moveable object which is a National Historic Landmark on the NRHP is currently berthed under a lease at NAS Alameda. The former USS Hornet is currently owned by a nonprofit organization and operated as an historical museum.

According to the SHPO, there is only one California Registered Historical Landmark on NAS Alameda/FISC Alameda. Located near the flagpole in front of Building 1 at NAS Alameda, 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 area until it 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 airflight 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.

FISC Alameda Facility and Annex

The report prepared by JRP concludes that no building or structure at the FISC Alameda Facility or Annex qualifies for listing in the NRHP (US Navy 1996b). As stated in Section 3.6.1, the SHPO concurred with this conclusion in July 1996. The two Airdrome buildings (Buildings 354 and 365) are the oldest and only nonmilitary buildings in the complex. However, the two buildings have been so extensively modified they no longer meet the qualification for listing in the NRHP. Building 364 in particular was dismantled, moved, and reassembled in 1959 in connection with a widening of Webster Street.

The remaining buildings—the few World War II-era buildings and the post-1945 buildings—do not qualify for listing in the NRHP because they are not significant examples of their type, period, or methods of construction, nor are they associated with important historic events or persons. The World War II-era buildings were constructed late in the war and made minimal contribution to the war effort. The buildings themselves are standardized wartime temporary buildings, of which hundreds of examples still exist in California. The post-war buildings are less than 50 years old. As noted earlier, a building less than 50 years old must be shown to be "exceptionally significant" under NRHP eligibility criteria. None of these buildings meet that demanding standard.

3.6.6 Summary of Findings

NAS Alameda/FISC Alameda is built on land that, for the most part, was filled between 1918 and 1940. Because of this fact, no prehistoric cultural resources are likely. There are no buildings or structures older than 1920 within the project area. The oldest existing buildings in the area (Buildings 364 and 365 in the FISC Alameda Annex) date to 1931. No other existing building in either area was constructed prior to 1940, except for the Training Wall.

A large area within the central core of NAS Alameda has been evaluated by the Navy and was determined to qualify for listing in the NRHP as a historic district, in consultation with the SHPO. As a result, the district is also included in the CRHR. The NAS Alameda Historic District includes 87 contributing buildings and structures, as well as the street pattern, parade grounds, and landscaping.

In addition, the Training Wall appears to qualify for listing in the NRHP. The privately-owned ex-USS Hornet is listed on the NHRP as a National Historic Landmark. Both are included in the CRHR. No other property at NAS Alameda/FISC Alameda appears to qualify for inclusion in the NRHP.

Landmark #968 in front of Building 1 at NAS Alameda is the only California Registered Historical Landmark on NAS Alameda/FISC Alameda. It is also included in the CRHR.

In summary, it appears that the NAS Alameda Historic District, the Training Wall and the former USS Hornet 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 Alameda Marina plaque constitutes an historical resource by virtue of its listing as California Landmark #968 and, as a result, in the CRHR. There do not appear to be any other resources at either NAS Alameda or FISC Alameda that are included in any local register of historical resources or qualifying historical resource survey or any resources that the City deems to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California.

3.6.7 Regulatory Considerations

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. § 60.4. Prior to conveying NAS Alameda and FISC Alameda to the City of Alameda, the Navy will be responsible for compliance with NHPA Section 106.

Additional responsibilities also are placed on the activity commander or commanding officer, pursuant to cultural resources requirements of DOD and the Department of the Navy (DOD Directive 4710.1 of June 21, 1984, Archaeological and Historic Resources Management; Department of the Navy OPNAVINST 5090.1B, Historic and Archaeological Resources Protection, November 1, 1994, Chapter 23). More specifically, Section

110(a)(2) of the NHPA requires that the Navy establish a program to locate, inventory, and evaluate all historic properties under its jurisdiction that may qualify for listing in the NRHP and to nominate such properties.

State Laws

The principal State regulations relating to preserving historic and archaeological properties are Public Resources Code § 5020 *et seq.*, CEQA Section 21084.1, and CEQA Guidelines Section 15064.5. CEQA mandates that significant effects to cultural resources be determined during the planning stage of a project. Resources that constitute historical resources or archaeological resources for purposes of CEQA are defined in Section 3.6.1.

Historical Resources. For purposes of CEQA, a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment (Cal. Pub. Res. Code §21084.1). 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 (14 C.C.R. §15064.5[b]). A lead agency must identify potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource (14 C.C.R. §15064.5[b][4]). Generally, applying the *Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995) to a project that may create a substantial adverse change in the significance of an historical resource and, thus a significant effect on the environment, will mitigate the effect to a nonsignificant level.

In addition to CEQA, the California Register Act of 1992, codified in § 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.

Archaeological Resources. CEQA also applies to effects on archaeological resources. An archaeological resource may be an historical resource. Alternatively, even if not an historical resource, an archaeological resource may be "unique," meaning that there is a high probability that it (1) contains information needed to answer important scientific research questions and that there is demonstrable public interest in that information; (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. If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to leave

the resources in place or shall require mitigation, subject to certain financial and timing limitations set forth by CEQA (Cal. Pub. Res. Code § 21083.2). Non-unique archaeological resources need not be evaluated under CEQA.

Local Laws

The City of Alameda designates "historical monuments" (defined as sites, buildings, structures and groups of structures of particular historic significance) pursuant to Article VII, Section 13-21 of the Alameda Municipal Code. The local listing process is administered by the City Historic Advisory Board (HAB). Any application for demolition, structural alteration or removal of a historical monument must be submitted to the HAB for approval. The SHPO has requested the City to broaden the protections built into its local ordinance to include standards for design review of exterior modifications to historic structures consistent with the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US Department of the Interior 1996b). In response to the SHPO's requirements, the HAB has drafted amendments to the City's ordinance which will be forwarded to the City Council for consideration. The HAB is also responsible for investigating, inspecting and recommending potential historical monuments to the City Council for listing. The HAB has recommended that the Federally and State recognized NAS Alameda Historic District be designated as a historic monument. No action has yet been taken by the City Council on this recommendation.

3.7 BIOLOGICAL RESOURCES

This section describes biological resources at and near NAS Alameda/FISC Alameda, including vegetation, wildlife, sensitive species, and sensitive habitats. Vegetation and wildlife are described in terms of habitat types, which are identified within particular planning areas (Figure 2-1) as shown in the Reuse Plan. A discussion of applicable laws and regulations governing these resources is provided at the end of this section.

The ROI for biological resources includes the NAS Alameda and FISC Alameda sites and surrounding native habitats within a one-mile (1.6 km) radius. Sensitive species that have been observed in off-site resources within the ROI may use habitat at NAS Alameda/FISC Alameda.

Of particular concern to this analysis is the NAS Alameda land that is being transferred to USFWS for use as a wildlife refuge as part of the Don Edwards San Francisco Bay National Wildlife Refuge. 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 nearly the entire least tern breeding population in the San Francisco Bay Area. The colony was one of the major reasons for the USFWS's request for the property. The Navy land that is being transferred to the USFWS as a wildlife refuge is hereinafter referred to as the USFWS wildlife refuge.

In addition to this section, the reader is referred to the information on biological resources in Appendix D. This appendix includes a list of the plant and animals species that have been observed at or have the potential to occur at NAS Alameda/FISC Alameda, including the USFWS wildlife refuge area.

Methodology

Biological resource conditions are described for the baseline year of 1996, which represent the last year when the base was operational, as updated by recent biological resources surveys. Biological resource data were collected from the California Natural Diversity Data Base (California Department of Fish and Game 1995), a species list from the USFWS (USFWS 1994b), a report of existing conditions at the site (ARRA 1995a), the NAS Alameda Community Reuse Plan (ARRA 1996), the NAS Alameda Master Plan and Natural Resource Management Plan (US Navy 1987f; US Navy 1986a), the 1995 Base Realignment and Closure Cleanup Plan (US Navy 1995a), proceedings from a symposium on natural resources at NAS Alameda (Golden Gate Audubon Society 1994), and a Wetland Evaluation Technique (WET) report of NAS Alameda (US Navy 1993d). USFWS personnel were consulted regarding recent changes in Federal listing categories for candidate species and the likelihood of finding listed species at NAS Alameda/FISC

Alameda (Knight 1996, Pine 1996). The California Department of Fish and Game database was also consulted for California listings.

An extensive review of the literature regarding the California least tern at NAS Alameda included nesting reports from 1983 to 1996 (US Navy 1983e, 1984c, 1985c, 1986e, 1987g, 1989d, 1989e, 1990g, 1991b, 1993b, 1993c, 1995d, 1995e, 1996a), foraging reports from 1984 to 1995 (US Navy 1984b, 1985c, 1986d, 1987g, 1988e, 1990e, 1990f, 1992a, 1993a, 1995c), and nesting site characteristics (US Navy 1995b). The ARRA conceptual management plans for the California least tern at NAS Alameda (ARRA 1996) provided background information and the basis for some of the mitigation measures. It is assumed that the USFWS will also develop a plan for managing the wildlife resources on the wildlife refuge. Letters and background information from two previous Section 7 endangered species consultations with the USFWS were reviewed (USFWS 1988a, 1985b).

3.7.1 Vegetation

Vegetation is described in terms of habitat types rather than natural vegetation communities because NAS Alameda/FISC Alameda is located primarily on bay fill land and most of the site is developed. Habitat types identified at NAS Alameda include grasslands, wetlands, open water, rock breakwaters, asphalt airfield, landscaped/developed areas, and intensively developed areas. FISC Alameda consists only of intensively developed areas, which have little vegetation. The locations of these habitat types are shown in Figure 3-7. The salt marsh and grassland areas are the only areas that resemble natural vegetation communities. Plant species observed at and expected to inhabit NAS Alameda/FISC Alameda, including the USFWS wildlife refuge, are listed in Appendix D.

Grassland

Grassland at NAS Alameda consists of mowed grassy areas on approximately 165 acres (67 ha) in the western portion of the station adjacent to the airfield. This grassland is within both the USFWS wildlife refuge and land within the Northwest Territories planning area. It can be classified as California annual grassland series, consisting primarily of nonnative grasses and other herbaceous vegetation (Sawyer and Keeler-Wolf 1995).

Wetlands

There are two wetland areas at NAS Alameda that can be classified as salt marsh or brackish tidal marsh (US Navy 1994a). The 22.3-acre (9.0 ha) West Beach Landfill Wetland is in the southwestern corner of the site, and the 12.7-acre (5.1 ha) Runway Wetland is southeast of the former airfield (see

Figure 3-7). The West Beach Landfill Wetland is dominated by common pickleweed (*Salicornia virginica*) and, therefore, can be classified in the pickleweed series (Sawyer and Keeler-Wolf 1995). The vegetation at the Runway Wetland is similar to that of the West Beach Landfill Wetland.

A 3-acre (1 ha) portion of the grassland area that holds water after heavy rains was evaluated for wetland potential (US Navy 1994b). This area is in the Northwest Territories planning area, as shown in Figure 2-1. Biologists determined that this area in the southern part of the Northwest Territories planning area did not meet the 1987 COE Wetlands Delineation Manual as a wetland because it did not meet the criteria for wetland hydrology or wetland vegetation, and only minimal portions of the site met the criteria for wetland soils.

Open Water

Eelgrass (*Zostera* sp.) beds are in the shallow waters of San Francisco Bay, off the western shore of NAS Alameda. Eelgrass is a type of seagrass, which are common marine flowering plants that grow in soft sediments. They provide 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 (Williams and Davis 1996).

Rock Breakwaters and Riprap

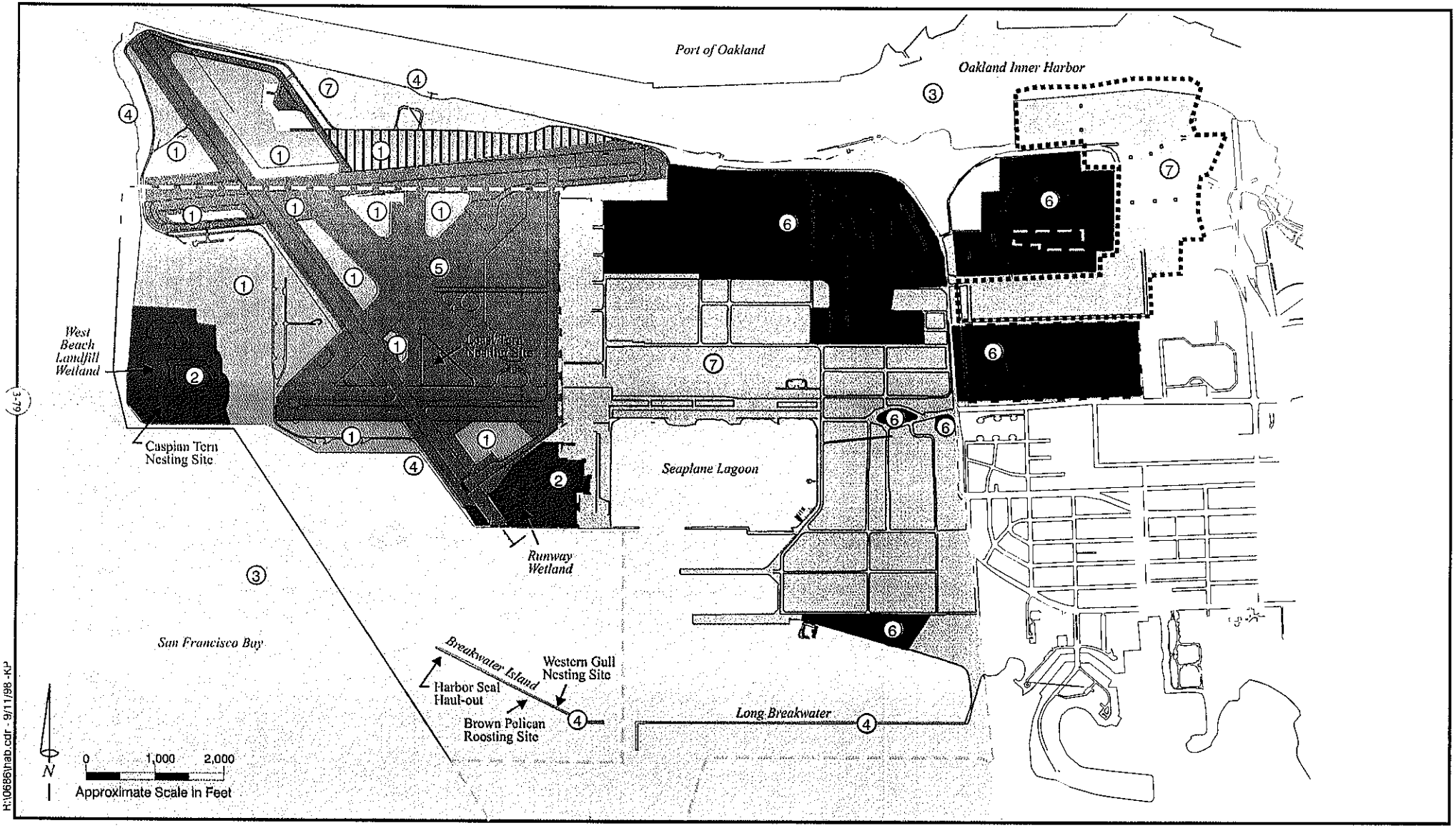
No vegetation is found at the breakwaters and riprap.

Airfield (Paved Area)

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. The airfield refers to the paved area within the USFWS wildlife refuge, Northwest Territories planning area, and the northwest corner of the Civic Core planning area.

Landscaped/Developed Areas

The vegetation in the landscaped/developed areas of NAS Alameda is characterized by ornamental species and other nonnative species in landscaped lawns and parks. These areas are primarily in the Civic Core and Main Street Neighborhoods planning areas and the land that is being transferred to the USCG.



Most of the habitat types at NAS Alameda/FISC Alameda are developed areas. The wetlands, paved airfield, and breakwaters at the proposed USFWS wildlife refuge provide nesting, roosting and haul-out sites for wildlife.

Source: US Navy 1986a

LEGEND:

- (1) Grassland
- (1) Grassland(surveyed and determined to not be jurisdictional wetland)
- (2) Wetlands
- (3) Open Water
- (4) Rock Breakwaters and Riprap
- (5) Airfield (Paved)
- (6) Landscaped/Developed
- (7) Intensively Developed
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary
- Federal Agency Transfer Property Boundary

Habitat Types

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-7

Intensively Developed

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 the site, with a smaller area comprising almost half of the Northwest Territories planning area.

3.7.2 Wildlife

Wildlife use all of the habitat types at NAS Alameda/FISC Alameda. 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 USFWS wildlife refuge. Grasslands within the Northwest Territories planning area also are used by wildlife. These areas provide nesting, roosting, foraging, and haul-out sites for birds and marine mammals. The Bay Area is a crucial nesting and foraging area and wintering ground for thousands of birds in the Pacific Flyway, which extends from South America to the Arctic Circle (US Navy 1986a). Wildlife in the developed areas on NAS Alameda/FISC Alameda is typical of that found in disturbed urban areas of the region and includes invertebrates, amphibians, reptiles, birds, and mammals. Appendix D includes a list of animal species observed at or that have the potential to inhabit NAS Alameda/FISC Alameda. As an intensively developed area, FISC Alameda provides limited wildlife habitat.

Grasslands

Grasslands at NAS Alameda provide nesting sites and foraging areas for a variety of wildlife. Northern harriers (*Circus cyaneus*) nest in the upland areas adjacent to the wetlands. Killdeer (*Charadrius vociferus*), horned larks (*Eremophila alpestirs*), and burrowing owls (*Athene cunicularia*) have been observed nesting in the grasslands at NAS Alameda. Red-tailed hawks (*Buteo jamaicensis*), northern harriers, peregrine falcons (*Falco peregrinus*), black-shouldered kites (*Elanus caeruleus*), American kestrels (*Falco sparverius*), and other avian predators prey on the doves (*Columba livia* and *Zenaida maroura*), black-tailed hares (*Lepus californicus*), and California ground squirrels (*Spermophilus beecheyi*) in the grasslands (Feeney 1994).

Wetlands

The two wetland areas at the USFWS wildlife refuge 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 West Beach Landfill Wetland and the Runway Wetland provide birds with nesting, roosting, and foraging areas in the marsh vegetation, exposed bare ground, and aquatic and mudflat habitats. Caspian terns (*Sterna caspia*) nest at the West Beach Landfill Wetland. The Caspian tern nesting colony, consisting of up to approximately 1,020 pairs from April to July, is of regional importance because this species nests at only a few other locations in California (Bailey 1994). In addition, the West Beach Landfill Wetland at the USFWS wildlife refuge may contain as much as 75 percent of the central California breeding population of Caspian terns (US Navy 1993d; Bailey 1994). This Caspian tern colony in some years appears to be the largest Caspian tern colony on the West Coast of North America.

Due to the high salinity, the salt marsh areas are expected to be used minimally by reptiles and amphibians. The marshes are suitable for salt marsh harvest mouse (*Reithrodontomys raviventris*) and salt marsh wandering shrew (*Sorex vagrans halicoetes*), but these species are unlikely to be present because the marsh areas are relatively small (22.3 acres [9.0 ha] and 12.7 acres [5.1 ha]) and isolated (US Navy 1993d). A survey conducted in 1995 concluded that there were no salt marsh harvest mice in these wetlands. During eight nights of live-trapping in the two salt marsh areas, 785 house mice were captured, including recaptured animals, and one black rat (*Rattus rattus*) (US Navy 1995g), but no salt marsh harvest mice were observed during the survey.

Open Water

The shallow water of San Francisco Bay and the Oakland Inner Harbor provide important foraging habitat for the California least tern and the California brown pelican, as well as herons and shorebirds (US Navy 1986a). 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 NAS Alameda (1 to 5 kilometers southeast along the Alameda and Bay Farm Island shorelines), 18 fish species and 35 epibenthic invertebrate taxa were observed within and near the eelgrass beds. In this survey it was documented that higher densities of fish and invertebrates occur in areas with clearer water (Kitting 1994). The productive eelgrass beds provide nutrients that disperse to other areas (Granholm 1994).

Central San Francisco Bay, which includes the open water around NAS Alameda/FISC Alameda, consistently had a higher density of fish than any other area of the bay in a beach seine survey conducted by the CDFG between 1981 and 1986. The high density is largely due to the dominance of northern anchovy at the open water sites. During the spawning migration, several chinook salmon runs, including the Federally endangered winter-run chinook salmon (*Oncorhynchus tshawytscha*), enter San Francisco Bay from the Pacific Ocean, then head north to the Sacramento River.

Pacific herring (*Clupea pallasii*) spawn periodically in the Oakland Inner Harbor. Typically, herring spawn between December and February, but spawning activity has been documented as late as mid-March (CDFG 1996a). When herring spawn in the Oakland/San Francisco portion of the bay, their locations can vary. During the 1987-1988 and the 1991-1992 spawning seasons, herring number in the Oakland Inner Harbor were high, as indicated by estimated egg production at 11,750 tons (10,662 metric tons) and 16,500 tons (14,972 metric tons), respectively (CDFG 1996a). Pacific herring spawn in shallow and intertidal areas on rocks, seaweed, and seagrass (Frey 1971 and SFEP 1992) and on other hard surfaces, such as pilings, nets, and boat bottoms. Although area herring numbers appear to have dropped off since 1993, herring remain the principal fish species of concern in the Oakland Inner Harbor.

Zooplankton (floating or drifting animals in a body of water) found in San Francisco Bay are the preferred food for northern anchovy (*Engraulis mordax*) and topsmelt (*Atherinops affinis*), which are an important part of the California least tern diet (US Navy 1988a). Based on a survey of fish dropped by California least terns at NAS Alameda, approximately 25 percent were northern anchovy and 60 percent were either topsmelt or jacksmelt (Hieb 1994). Dropped fish are 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 in the bay than the native species (US Navy 1988d). Changes in water quality are the result of human use and development, salinity fluctuations, and sediment movement (US Navy 1988d). A recent report prepared for the USFWS characterized the bay and the delta as "the most invaded aquatic ecosystem in North America." According to the report, there are no shallow water habitats in the area that have not been invaded by nonnative species (Perlman 1996).

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 waterbirds and provide a haul-out site for harbor seals. The area of the USFWS wildlife refuge includes all of the Breakwater Island and the boundary abuts the Long Breakwater. The majority of the Long Breakwater is on City of Alameda property leased to the Navy. Breakwater Island is the largest and only known night roost for California brown pelican (*Pelecanus occidentalis*) in San Francisco Bay. It has all of the characteristics of a quality roost because it is a relatively undisturbed island with easy access to prey (Jaques-Strong 1994). Breakwater Island is the nesting site for the second largest colony of

western gulls (*Larus occidentalis*) in central and northern California (Feeney 1994). 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. Breakwater Island provides a relatively safe habitat for birds and harbor seals because it is protected from human disturbance, terrestrial predators, and boats (Feeney 1994). Long Breakwater provides limited wildlife habitat because it is attached to the mainland and is therefore accessible to terrestrial predators, such as feral cats, rats, and foxes, as well as being subject to human disturbance (Bailey 1994).

At least 25 species of waterbirds are known to forage around the gap between the breakwaters, particularly in its tidal eddies. These species include Forster's terns (*Sterna forsteri*) and Caspian terns, five species of grebes, at least seven duck species, at least two loon species, three cormorant species, mew and western gulls, and the American coot (*Fulica americana*) (Bailey 1994).

Harbor seals use the tip of Breakwater Island as a haul-out site, and their pups are born and nursed at these sites. The haul-out site at the USFWS wildlife refuge is the only one in the central bay that is accessible to seals within the full tidal range (Kopec 1994).

Airfield (Paved Area)

The paved airfield includes one of the most significant biological resources within the ROI, the nesting habitat for a colony of California least terns (US Navy 1986a). Although the paved airfield is within the USFWS wildlife refuge, and the Northwest Territories and Civic Core planning areas, California least terns have nested only within the USFWS wildlife refuge. The airfield tarmac offers an alternative to the natural nesting habitat of the California least tern, which is areas that are open expanses of light colored sand, dirt, or dried mud near a lagoon or estuary where the terns can forage. As their natural habitat of sandy, unvegetated beaches without human presence has decreased, California least terns have begun to use other areas with features similar to their natural habitat (USFWS 1980).

California least terns have been nesting at the airfield since 1967, and the site was recognized officially by the California Department of Fish and Game as a breeding site in 1976. Although the terns have nested in several locations on the airfield in the past, they have consistently nested in one particular area within each year. The Navy built an electric fence around this 4-acre (2 ha) area to protect the nesting terns from ground predators (Collins 1994). The substrate of the enclosure consists of asphalt, decomposing asphalt, sand, oyster shells, cinder blocks, and drain tiles. Oyster shells were added several times to create disruptions in the substrate that may make the terns less visible to predators. Cinder blocks and drain tiles establish a monitoring grid

and provide the tern chicks with protection from predators and the sun (Pomeroy 1994). 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 (Collins 1994).

Landscaped/Developed Areas

Landscaped areas around buildings, residences, and parks are used primarily by typical urban wildlife, such as scrub jays (*Aphelocoma coerulescens*), red-winged blackbirds, sparrows, house finches (*Carpodacus mexicanus*), American robins (*Turdus migratorius*), and California ground squirrels. Raptors and other predators may use these areas for foraging. Bats use buildings at NAS Alameda/FISC Alameda for shelter, resting, and foraging (Constantine 1996).

In the landscaped/developed and intensively developed areas, more than 330 buildings within the Civic Core, Main Street Neighborhoods, North Waterfront, Marina, and Inner Harbor planning areas of NAS Alameda/FISC Alameda were surveyed for bats between December 6, 1995, and January 2, 1996. Evidence, such as fecal pellets and squeaking, of the common Mexican free-tailed bat (*Tadarida brasiliensis*) were observed in warehouses 2, 3, and 4, in an intensively developed area of the North Waterfront planning area. The study concluded that there was no evidence of any sensitive bat species in the area (Constantine 1996).

Intensively Developed

Typical urban wildlife, such as feral cats (*Felis catus*), California ground squirrels, scrub jays, and American robins, 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. The three buildings (Warehouses 2, 3, and 4) in which bats were observed during the 1995-1996 survey are all located in an intensively developed area within the FISC Alameda boundary (North Waterfront planning area) (Constantine 1996).

3.7.3 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 and State endangered species acts, 16 U.S.C. § 1531, *et seq.*; Cal. Fish and Game Code § 2050, *et seq.*, depending on their classification. Table 3-11 lists sensitive plant and animal species that have been or may be found within the ROI for NAS Alameda/FISC Alameda.

Table 3-11
Sensitive Species Known to Inhabit or Potentially Inhabiting the Region of Influence

Common Name *Scientific Name*	Status Federal/State /CNPS	Habitat	Occurrence at NAS Alameda
Plants			
Adobe sanicle *Sanicula maritima*	FSC/–/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*	FC/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*	–/SCSC/1B	Playas, valley and foothill grasslands (adobe clay), vernal pools (alkaline)	U
Kellogg's wedge-leaved horkelia *Horkelia cuneata* ssp. *sericea*	FSC/–/1B	Closed-cone coniferous forest, coastal scrub, chaparral (maritime); sandy or gravelly openings	U
Point Reyes (Northcoast) bird's beak *Cordylanthus maritimus* ssp. *palustris*	FSC/–/1B	Coastal salt marshes, coastal dunes	U
Robust spineflower* *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	P
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	FSC/–/1B	Coastal bluff scrub, coastal dunes, and coastal prairie; occurs in sandy soils on terraces and slopes; generally blooms April-June	P
* Historical occurrences only, thought to be extirpated from the area			
Fish			
Green sturgeon *Acipenser medirostris*	FSCR/–/–	Brackish water; bottom grubbing	P
Steelhead *Oncorhynchus mykiss*	FC/CSC/–	Spawns in coastal streams in fall and winter and can migrate extensively at sea	P
Winter-run chinook salmon *Oncorhynchus tshawytscha*	FT/–/–	Anadromous (ascends rivers in cooler months to spawn) in sea and coastal streams	P
Longfin smelt *Spirinchus thaleichthys*	FSC/–/–	Anadromous	P
Tidewater goby *Eucyclogobius newberryi*	FE/–/–	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*	–/SCSC/–	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
Western snowy plover, coastal population *Charadrius alexandrinus nivosus*	FT/SCSC/–	Sandflats and alkali ponds	CO
Western gull *Larus occidentalis*	–/S*/–	California coast; casual inland	C

Table 3-11
Sensitive Species Known to Inhabit or Potentially Inhabiting the Region of Influence *(continued)*

Common Name *Scientific Name*	Status Federal/State /CNPS	Habitat	Occurrence at NAS Alameda
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*	–/S*/–	Coasts and inland lakes, rivers, and marshes	C
Northern harrier *Circus cyaneus*	–/SCSC/–	Marshes, meadows, and grasslands	C
Merlin *Falco columbarius*	–/SCSC/–	Open woods, wooded prairie, marshes, and grasslands	CO
American peregrine falcon *Calco peregrinus anatum*	FE/SE/–	Open wetlands near cliffs	CO
Burrowing owl *Speotyto cunicularia*	–/SCSC/–	Grasslands where ground squirrels are present, open country of golf courses, road cuts, and airports	C
California horned lark *Eremophilia alpestris actia*	FSC/SCSC/–	Dirt fields, gravel ridges, and shorelines	C
Loggerhead shrike *Lanius ludovicianus*	FSC/SCSC/–	Scrub and open woodland	C
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	FSC/SCSC/–	Grassy fields and shrubs	P
Alameda song sparrow *Melospiza melodia pusillula*	FSC/SCSC/–	Brushy areas, especially streamside thickets	C
California black rail *Laterallus jamaicensts coturniculus*	FSC/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, although mostly near tidal sloughs	P
Mammals			
Salt marsh wandering shrew *Sorex vagrans halicoetes*	FC/SCSC/–	Bogs, wet meadows, along streams in forests	U
Pacific western big-eared bat *Plecotus townsendii townsendii*	FSC/–/–	Caves, mine tunnels, and buildings for roosts	U
Greater western mastiff bat *Eumops perotis californicus*	FSC/–/–	Roosts on or in buildings, crevices in cliffs, in trees, and in tunnels	U
Steller sea lion *Eumetopias jubatus*	FE/–/–	Chiefly marine but sometimes rivers	CO
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*	FSC/–/–	Heavy chaparral, streamside thickets, deciduous or mixed woods	U
Reptiles			
Western pond turtle *Clemmys marmorata*	FSC/–/–	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation	P

Table 3-11
Sensitive Species Known to Inhabit or Potentially Inhabiting the Region of Influence *(continued)*

Common Name *Scientific Name*	Status Federal/State /CNPS	Habitat	Occurrence at NAS Alameda
Insects			
Monarch butterfly *Danaus plexippus*	–/–/–	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

Sources: 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

Notes:

Federal Status

FE = Endangered
FT = Threatened
FC = Candidate (formerly C1)
FPE = Proposed endangered
FPT = Proposed threatened
FSC = Species of Concern (formerly C2)
FSCR = Species of Concern–recommended listing

State Status

SE = Endangered
ST = Threatened
SR = Rare
SCSC = California species of special concern
S* = Protected under CEQA

CNPS (California Native Plant Society) Status

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

None of these sensitive species have been or are likely to be found at FISC Alameda. Most of the potential habitat for sensitive species is on the USFWS wildlife refuge.

Sensitive Plants

No sensitive plants are known to occur at NAS Alameda/FISC Alameda, and none have been found in previous surveys of the site. NAS Alameda/FISC Alameda is highly urbanized, and there is only a minimal amount of natural vegetation on the site. Seven sensitive plants have the potential to be found at NAS Alameda/FISC Alameda because they have been observed within the ROI. Of these seven species, five are unlikely to grow there because there are no suitable habitats, such as chaparral, coastal prairies, vernal pools, or coniferous forests. The two remaining species, Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *palustris)*, a USFWS species of concern, and marsh gumplant (*Grindelia stricta* var. *angustifolia)*, a CNPS List 4 species, may grow in the salt marshes at the USFWS wildlife refuge but are unlikely due to its developed nature (US Navy 1993d).

Sensitive Animals

Fourteen sensitive animal species have been observed at NAS Alameda/FISC Alameda. Most of the habitat for these species is within the USFWS wildlife refuge. The California least tern, California brown pelican, and American peregrine falcon are Federally and State-listed endangered species that have been observed at NAS Alameda/FISC Alameda. A Steller sea lion (*Eumetopias jubatus*), a Federally listed endangered species, was seen once at NAS Alameda but has not been seen since (Feeny and Collins 1993).

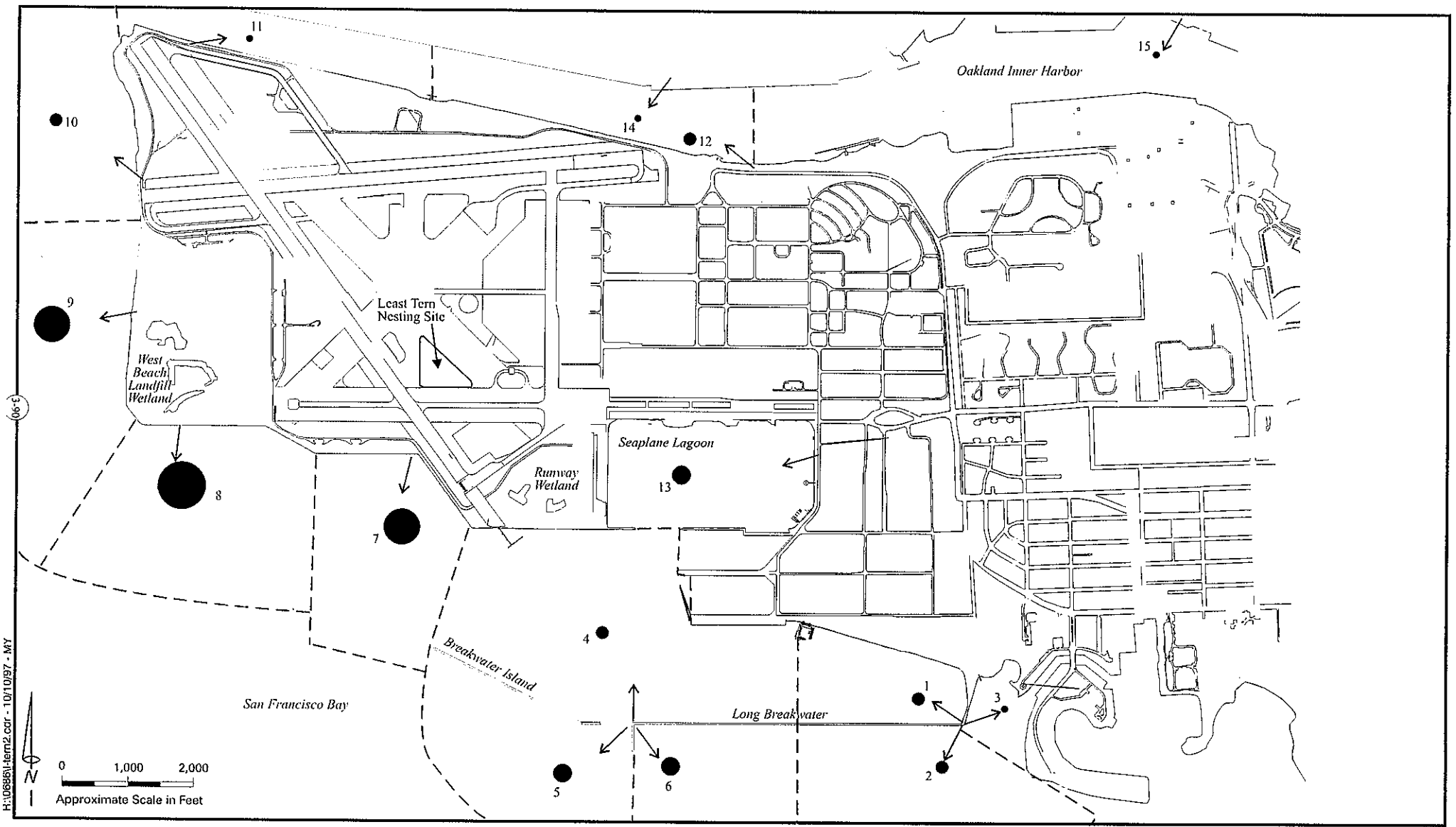
Thirteen additional sensitive animal species have the potential to inhabit the ROI. Of these, five sensitive mammals and one fish species are unlikely to be found at the site because of geographic or habitat limitations or because these species have not been observed during extensive surveys. Although the marsh areas are suitable for the salt marsh harvest mouse and the salt marsh wandering shrew, these species are unlikely to be present because the marsh is relatively small and isolated (US Navy 1993d). An eight-day trapping survey conducted in 1995 concluded that there were no salt marsh harvest mice in these wetlands (US Navy 1995g). There is no suitable habitat for the Pacific western big-eared bat (*Plecotus townsendii townsendii*), greater western mastiff bat (*Eumops perotis californicus*), or the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Delta smelt (*Hypomesus transpacificus*) are generally seen in the delta but have never been observed in the bay as far south as Alameda. Delta smelt were reported to have been dropped by terns at the site, but these probably were identified incorrectly (Pine 1996).

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 within the ROI. The tern colony, which is at the USFWS wildlife refuge, is the northernmost breeding colony along the California coast and currently the only substantial colony in San Francisco Bay (US Navy 1995a). The colony was one of the major reasons for the USFWS's request for transfer of a portion of NAS Alameda/FISC Alameda to become part of the Don Edwards San Francisco Bay National Wildlife Refuge.

California least terns use the airfield for nesting and the open water for foraging. The terns nest mainly within a 4-acre (2 ha) enclosure on the airfield. They have been observed foraging most often in San Francisco Bay, along the southwestern boundaries of the site. Figure 3-8 shows the areas where the terns have been observed foraging between 1984 and 1993 (excluding 1987). More than 20 percent of foraging occurred south of the West Beach Landfill Wetlands. Most of this area is outside the land boundaries of NAS Alameda.

Each year, particularly recently, pairs of terns at NAS Alameda have produced high numbers of fledglings and have thus added a large number of potential new breeders to the Statewide population. The property is one of the most consistently successful breeding sites for California least terns in the State; from 1987 though 1994, NAS Alameda/FISC Alameda supported five to six percent of the Statewide breeding population each year while producing an average of 10.6 percent of the fledglings in the State in each of those years. The colony of California least terns at NAS Alameda 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 the State. 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, there are less small fish available for terns to feed chicks at the southern nesting sites. NAS Alameda is far enough north to be less affected during El Niño years (US Navy 1995e).

The primary problems that result in breeding failure of California least terns 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



California least terns forage primarily in areas 7,8, and 9. Each numbered area represents an observation station and the area of water scanned for foraging terns. Each arrow (⟶) indicates an observation point and the direction of view towards the bay, estuary or lagoon. All observation points were not used in all years. Thin dashed lines on the bay show general boundary of each foraging area.

Source: US Navy 1984a, 1985b, 1986b, 1987b, 1988b, 1990a, 1990b, 1991b, 1992a, 1993a

LEGEND:

Percent of time terns spend foraging at location

- • = 0-1%
- ● = 1-5%
- ● = 5-10%
- ● = 10-20%
- ● = >20%
- — — — Foraging Area Boundary

California Least Tern Foraging Areas 1984-1993

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-8

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structures, relatively close residential areas, and adjacent frequently used recreation areas. Currently, none of the areas at NAS Alameda that surround the California least tern colony are of these land use types (US Navy 1995b).

The Navy's management practices that have contributed to the breeding success of the least tern included regular monitoring of the nesting site during the breeding season (1980 to the present), erecting protective fencing in 1983 and replacing fencing in 1984 and 1990, and implementing predator control measures since the early 1980s, with increasing effectiveness in the late 1980s (US Navy 1995e). In addition, the Navy installed a fence along the eastern boundary of the USFWS wildlife refuge in April 1997 to prevent disturbances to the nesting site (Pomeroy 1997).

California Brown Pelican. A large colony of California brown pelicans, a Federally and State-listed endangered species, roost at Breakwater Island, which is part of the USFWS wildlife refuge. Breakwater Island and the adjacent bay provide both food and a roost site, the limiting resources for brown pelicans during the nonbreeding season. Pelicans eat small surface-schooling fish, primarily anchovy. Shallow water foraging may be particularly important to young pelicans that have not yet perfected the aerial plunge dive used by most adult pelicans on the outer coast. The colony is the largest roost and the only known night roost in the San Francisco Bay Area. Brown pelicans roost 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 and the efforts of the Navy to keep boats at a distance (Jaques-Strong 1994).

American Peregrine Falcon. The American peregrine falcon, a Federally and State-listed endangered species, uses NAS Alameda to forage in the grasslands and ruderal areas between the runways but nests off-site at the Bay Bridge (ARRA 1994a). The falcon occasionally visits NAS Alameda (US Navy 1993d).

Winter-run Chinook Salmon. The population decline of the Federally threatened winter-run chinook salmon is due to modifications and loss of spawning and rearing habitats in the upper Sacramento River system (COE 1992). A 1996 letter from the National Marine Fisheries Service (NMFS) noted that the Sacramento River winter-run chinook salmon may occur at the project site (NMFS 1996); however, no critical habitat for the species exists in the vicinity.

Winter-run chinook salmon spawn in the upper reaches of the Sacramento River. During the spawning migration, the salmon enter San Francisco Bay from the Pacific Ocean, then head north to the Sacramento River. Salmon

return through central San Francisco Bay to the ocean as year-old juveniles (COE 1992). Both migrations occur from November to May, but the peak numbers of adults pass through in December and January, while juveniles migrate January through April (COE 1992). Juveniles' transit through the bay into the ocean is rapid (approximately one week), so they are expected to take the most direct route to the ocean (COE 1994). Since the adults spawn in the Sacramento River system, the most direct migration route for both the adults and juveniles is mainly north of Alcatraz Island (COE 1994). Adults typically concentrate in waters around Angel Island and Tiburon (COE 1992). The winter-run chinook salmon may occasionally stray from its migration route into the vicinity of the project site. Although the NMFS reports that the winter-run chinook may occur at the project site (NMFS 1996), the Oakland harbor area is an unlikely location and type of aquatic environment to be frequented by salmon (COE 1992).

Other Sensitive Species Observed at NAS Alameda/FISC Alameda. Three sensitive bird species besides the California least tern nest at the USFWS wildlife refuge. The western snowy plover (*Charadrius alexandrinus nirvosus*), a Federally threatened species and a California species of special concern (CSC), will often share habitat with least terns and individual snowy plovers have nested within the least tern nesting site during at least two years in the early 1980s (Collins 1996, US Navy 1983a, Feeney 1994). However, the USFWS wildlife refuge is not within proposed or designated critical habitat for the snowy plover. Burrowing owls, also a CSC species, nest in the grasslands adjacent to the West Beach Landfill Wetland. This species nests in abandoned ground squirrel burrows and forages in the grasslands. 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 within the ROI. The nesting colonies of Caspian terns and Western gulls in the West Beach Landfill Wetland are the largest such colonies in the Bay Area.

CSCs that have been observed foraging within the ROI of NAS Alameda/FISC Alameda include double-crested cormorant (*Phalacrocorax auritus*), merlin, California horned lark, and loggerhead shrike (*Lanius ludovicianus*) (Feeney and Collins 1993).

Monarch Butterfly. The monarch butterfly is not a Federally- or State-listed endangered or threatened species, nor is it considered a Species of Special Concern by the California Department of Fish and Game. The monarch butterfly migrates every fall to overwintering sites in California and Central Mexico. In California, these sites are primarily eucalyptus or Monterey pine

groves and are occupied by monarch butterflies 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 butterflies. Two other types of migration sites are also important to monarch butterflies: autumnal roost sites and nectaring bivouacs. Autumnal roost sites generally host smaller populations of monarchs and may be used for only a few weeks or a couple of months in the fall and early winter as butterflies pass through an area. Nectaring bivouacs often support a consistent flow of monarchs as the butterflies move to and from cluster sites located elsewhere.

The overwintering habitat is of most concern in California because of the increase in removal or degradation of suitable areas. Every fall, monarchs fly to the same overwintering sites and frequently to the same trees. In California, the butterflies cluster in these sites from about October through February. Removal of the trees or alterations to the grove where the butterflies overwinter could disrupt the lifecycle of those particular butterflies that annually use the area.

There is a grove of trees in the Officers' Quarters area of the West Housing where monarch butterflies have been observed in fairly dense concentrations in the fall (Swienton 1999). The grove of trees is a mixture of Monterey pine, stone pine and eucalyptus. The grove is in a park-like area between the area kept trimmed up to the canopy and the understory consists of manicured lawn. The butterflies could be using these trees as autumnal roost sites because they have not been observed in large densities during the winter months.

3.7.4 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 (US Army Corps of Engineers Regulatory Program Regulations, 33 CFR § 320.4). 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" (33 CFR § 328.3(b) [1984]).

There are two wetland areas, which are classified as salt marshes on NAS Alameda. The West Beach Landfill Wetland and the Runway Wetland are in the southern portion of the land that is being transferred to the USFWS. The vegetation and wildlife at these wetlands 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 (91 cm) culvert, and ground water. A jurisdictional wetlands delineation conducted in accordance with the COE 1987 Wetlands Delineation Manual determined that there were 16.9 acres (6.8 ha) of brackish marsh plant community and 5.4 acres (2.2 ha) of open water less than 6.6 feet (2.0 m) deep at West Beach Landfill Wetland in March 1993 (Environmental Laboratory 1987). A Wetland Evaluation Technique (WET) analysis of this wetland concluded that its most significant function is seasonal wildlife use by wintering and migrating waterfowl (US Navy 1993d).

The Runway Wetland 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 9.9 acres (4.0 ha) of brackish marsh and 2.8 acres (1.1 ha) of open water that are jurisdictional wetlands. The WET analysis concluded that the Runway Wetland's most significant function was for migrating and wintering birds. This function is reduced because of the proximity of the runways (US Navy 1993d).

3.7.5 Regulatory Considerations

Federal Endangered Species Act

The Federal Endangered Species Act requires that the USFWS issue a permit prior to actions that would result in killing, harming, or harassing a Federally listed endangered or threatened species. The process under Section 7 of the Endangered Species Act, 16 U.S.C. § 1536, is for actions in which a Federal agency is involved and is a permit process under Section 10a, 16 U.S.C. § 1539(a), for State and local agencies and individuals.

Due to the presence of Federally-listed endangered species and the potential for the reuse alternatives to affect the endangered species, particularly the California least tern, a Biological Assessment for the disposal of NAS Alameda was prepared for purposes of a formal consultation with the USFWS pursuant to Section 7 of the Federal Endangered Species Act. The requirements that result from this formal consultation will be applied, where necessary, to any lands that the Navy conveys to the City or any private party to comply with the Federal Endangered Species Act.

In December 1998, the USFWS issued a Draft Comprehensive Conservation Plan and Environmental Assessment for the establishment of the Alameda National Wildlife Refuge. The purpose of the Comprehensive Conservation Plan is to establish an approved boundary for the Wildlife Refuge and provide

a guide for the management of the Alameda National Wildlife Refuge. The purpose of the refuge is to protect and enhance migratory birds and other wildlife, particularly threatened and endangered specie, and to provide opportunities for environmental education. Land acquired by the Service would be managed as part of the National Wildlife Refuge System. The Draft Environmental assessment evaluates the alternatives and environmental effect of establishing an approved Alameda National Wildlife Refuge boundary and implementing a Comprehensive Conservation Plan.

On March 22, 1999, the USFWS issued its "biological opinion" (Endangered Species formal Consultation on the Proposed Naval Air Station Alameda/Fleet and Industrial Supply Center Alameda Disposal and Reuse, Alameda County, California). In the opinion the USFWS concludes that the effects of the proposed conveyance and reuse of NAS Alameda/FISC Alameda would not likely jeopardize the continued existence of the endangered least tern or brown pelican, nor would it adversely modify or destroy critical habitat for these species. The opinion also sets forth a series of measures that must be undertaken by either the Navy or the City of Alameda (some of which are described in the impact analysis in Chapter 4). The biological opinion is included in Appendix D of this EIR.

Clean Water Act

The COE regulates discharges of dredged or fill material into wetlands under Section 404 of the Clean Water Act, 33 U.S.C. § 1344. Projects that include potential dredge or fill impacts to wetlands must be reviewed by the COE and Environmental Protection Agency under the Clean Water Act. Any fill in the West Beach Landfill Wetland or the Runway Wetland would require a permit from the COE.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC 703) prohibits the taking, hunting, killing, selling, purchasing, etc., of migratory birds, parts of migratory birds, and their eggs and nests. The act also contains a clause that prohibits baiting or poisoning of these birds. The term "take" as used in the act is defined as meaning "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." The act calls for the protection of birds identified in treaties with Great Britain, Japan, Mexico and Russia. Many of the native birds found on NAS Alameda, particularly in the West Beach Landfill Area, on the open grasslands of the airfield and in the bay waters are considered migratory, and are covered by this act (e.g., Caspian terns, American avocet, horned lark, white crowned sparrow, yellow-rumped warbler).

Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972, 16 U.S.C. § 1431, *et seq.*, protects marine mammals and establishes a commission. Under this act a moratorium was imposed on the taking and importing of marine mammals, except for scientific research and display, taking incidental to commercial fishing operations, and taking covered by international agreement. The Act would apply to activities that affect marine mammals at NAS Alameda/FISC Alameda, such as increased boat traffic or increased human presence.

California Fish and Game Code

The California Fish and Game Commission (CFGC) and the Department of Fish and Game (CDFG) derive their authority from the Fish and Game Code of California. Wildlife species listed by CFGC under the California Endangered Species Act (CESA) (Fish and Game Code Section 2050 *et seq.*) cannot be "taken" without adequate mitigation and compensation. In the case of plants, species listed cannot be taken unless advanced notice and request to salvage are given to the CDFG. Currently, "take" means to hunt, pursue, catch, capture, or kill, or to attempt to do so; habitat modification is not proscribed by CESA. Typically, CDFG implements endangered species protection by entering management agreements (provided for by Section 2081) with project proponents. Like Section 7 of the Federal Endangered Species Act, CESA did contain provisions for State agency consultation under Fish and Game Code Section 2090 *et seq.* However, as of December 31, 1998, those provisions are no longer contained in the CESA and all applicants are to apply for permits through Section 2081. Upon conveyance of NAS Alameda/FISC Alameda property out of Federal ownership, the property would be subject to these State regulations.

Fish and Game Code Section 3511 describes bird species, primarily raptors, which are "fully protected." Fully protected birds may not be taken or possessed except under specific permit. Section 3503.5 of the code protects all birds-of-prey and their eggs and active nests from destruction. Typical birds-of-prey found at NAS Alameda/FISC Alameda include red-tailed hawk, northern harrier, and burrowing owl.

CDFG Wetlands Policies

The CDFG has the authority to reach an agreement with an individual proposing to affect intermittent or permanent streams and other wetlands, pursuant to Section 1603 of the California Fish and Game Code. The CDFG generally evaluates the information gathered during preparation of an environmental assessment document and attempts to satisfy its concerns during the CEQA process. In accordance with its policy of no net loss of

wetland habitat, the CDFG encourages completion of a streambed alteration agreement, which includes a mitigation program for impacts to all wetlands, regardless of acreage.

3.8 GEOLOGY AND SOILS

This section describes the local and regional geologic conditions that could influence the magnitude of the geologic hazards at NAS Alameda/FISC Alameda. 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 NAS Alameda/FISC Alameda. The baseline for geology and soils conditions is 1996-1997. Current geology and soils conditions are the same as 1990 conditions.

The ROI for soils and geologic resources includes lands within the boundaries of NAS Alameda/FISC Alameda and adjacent land.

3.8.1 Regional and Site Geology

Physiography

NAS Alameda/FISC Alameda 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 (5 m) above mean sea level (msl).

The dominant geological processes that have shaped the landscape in the vicinity of NAS Alameda/FISC Alameda 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.

Regional Geology

San Francisco Bay Area geology is dominated by the San Andreas Fault system, which includes the San Andreas Fault, the San Gregorio Fault, the Hayward Fault, the Calaveras Fault, and other faults that have been active during approximately the last 30 million years (Wallace 1990). Figure 3-9 shows the locations of principal active faults in the region of NAS Alameda/FISC Alameda.

Figure 3-10 shows the geology of the region surrounding NAS Alameda/FISC Alameda. 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 one million years ago when a combination of subsidence of the basin and rising sea levels due to melting of continental ice caps led to 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 within the historic shoreline of the bay north of the Oakland Inner Harbor are underlain by Merritt Sand, a loose, fine-grained, well-sorted beach dune sand formation deposited late in the Pleistocene (Helley et al. 1972).

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 (305 m) thick in the vicinity of NAS Alameda/FISC Alameda (Radbruch 1957). 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. 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 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 (Radbruch 1957). 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.

Figure 3-11 shows a geologic cross section illustrating the stratigraphy beneath NAS Alameda/FISC Alameda.

Site Geology

Borehole logs from NAS Alameda indicate that the soil profile is relatively horizontal and uniform (Carlisle and Rollins 1994). A boring near Building 23 (an aircraft maintenance hangar north of the Seaplane Lagoon) showed

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The Hayward Fault, the closest active fault, is located approximately five miles east of NAS Alameda/FISC Alameda.

LEGEND:

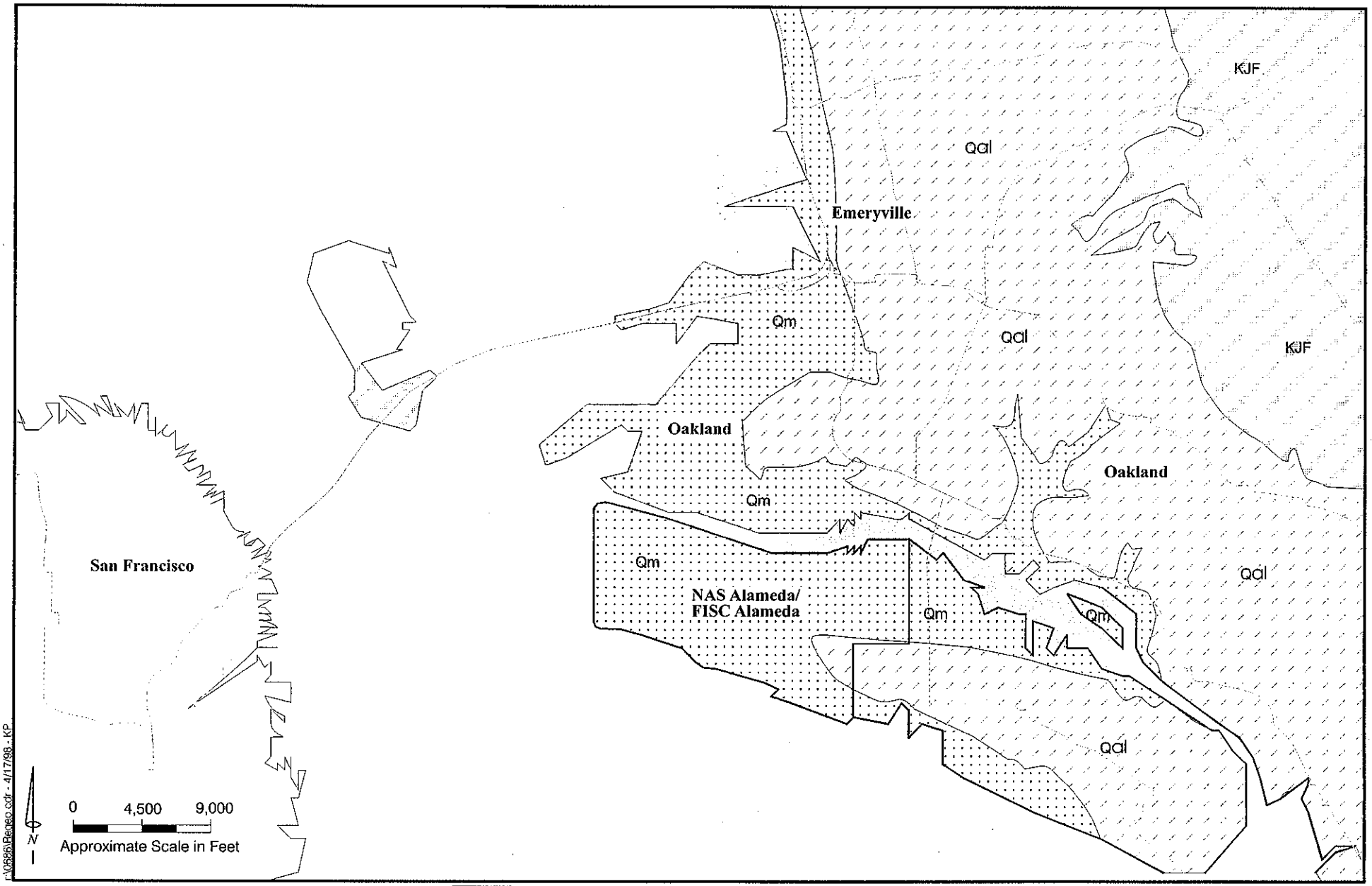
- Active Fault. Fault has evidence of surface displacement within the last 11,000 years.
- Active Fault concealed.
- Potentially Active Fault. Fault has evidence of surface displacement within the last 2 million years.
- Potentially Active Fault concealed.

Source: Sydnor 1989

Principal Regional Active Faults

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-9



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NAS Alameda/FISC Alameda is underlain by fill placed on young mud deposits (Bay Mud).

LEGEND:

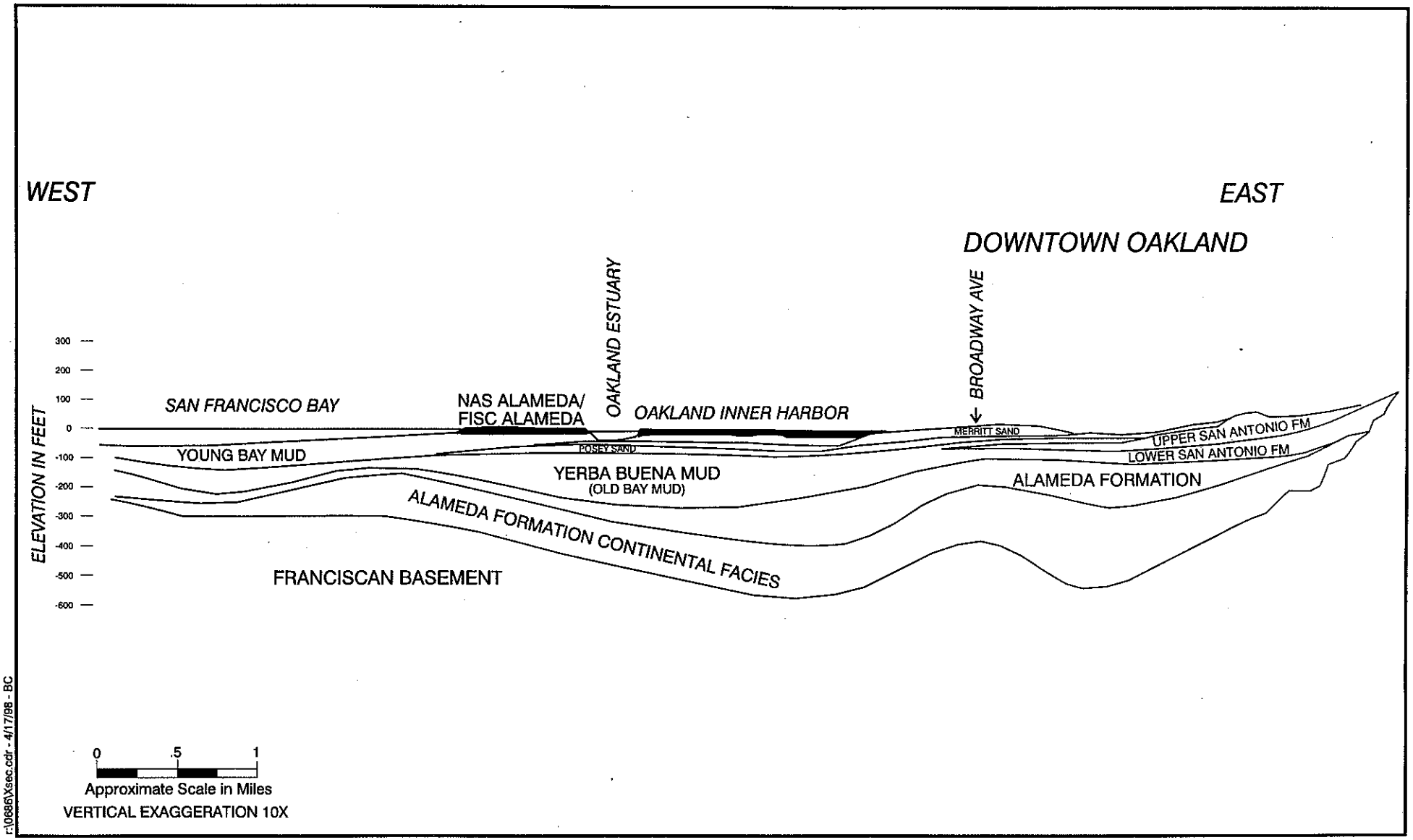
Qm	Holocene Estuarine Mud, 0-130 ft Thick
QAl	Quarternary Alluvium, 0-160 ft Thick
KJF	Franciscan Formation Sandstone and Shale with Greenstone, Chert, Limestone, Conglomerate, and Metamorphic Rocks

Source: Rogers and Figuers 1991.

Regional Geology

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-10



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NAS Alameda and FISC Alameda are underlain by Bay Mud sediments deposited on a west-thinning layer of Merritt-Posey sand.

Source: Carlisle and Rollins 1994;
modified from Rogers and Figuers 1991.

Geologic Cross-Section of NAS Alameda/FISC Alameda

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-11

16 feet (5 m) of loose sandy fill underlain by 30 feet (9 m) of Bay Mud. Below that, 45 feet (14 m) of Merritt Sand is underlain by 331 feet (101 m) of stiff clay and another 44 feet (13 m) 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 (78 m); Franciscan bedrock was encountered at a depth of 466 feet (142 m); ground water was encountered at a depth of 8 feet (2 m).

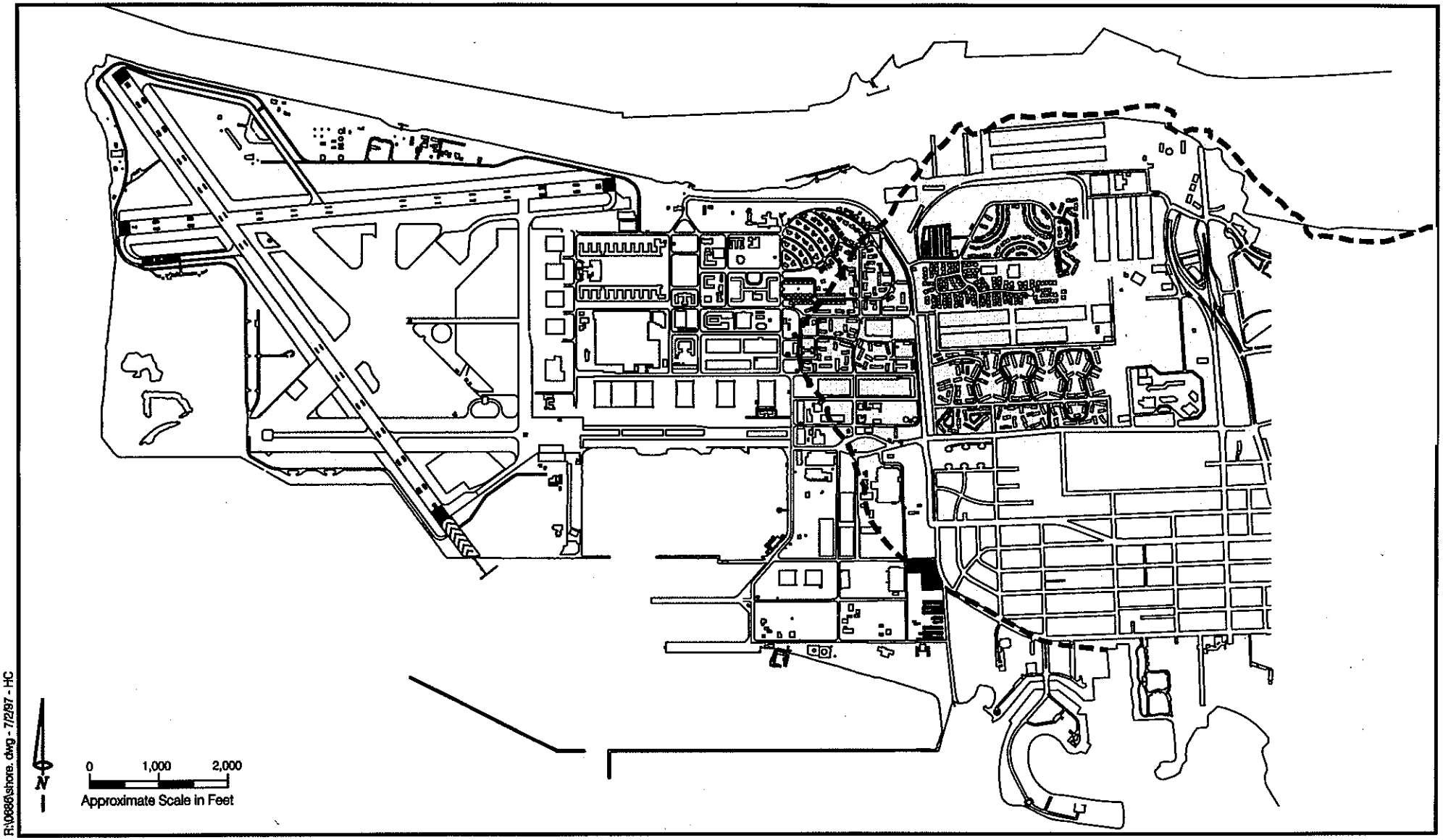
Almost all of NAS Alameda/FISC Alameda was constructed on engineered fill materials placed over submerged lands or tidal flats (Nichols and Wright 1971; Radbruch 1959). Most of the artificial fill along the east shore of San Francisco Bay consists of Merritt Sand mixed with Bay Mud that has been dredged or pumped from offshore underwater borrow areas. In some places it consists of other materials, including Temescal Formation, broken rock, or miscellaneous refuse (Radbruch 1957). Reclamation of the tidal lands at NAS Alameda began in the mid-1800s, and most of NAS Alameda was filled during 1939 and 1940 (Rogers and Figuers 1991).

All NAS Alameda/FISC Alameda property east of Main Street and a small portion of the installation located west of Main Street and south of Atlantic Avenue lies within the historic shoreline of Alameda Island. Native geology in this location consists of Merritt Sand. The boundaries of these areas are shown on Figure 3-12.

3.8.2 Soils

Soils at NAS Alameda/FISC Alameda consist mainly of nonnative soils developed on fill materials. These soils include Urban Land (map units 146 and 147), Xerorthents (map unit 155), and Xeropsamments (map unit 156) (Welch 1981). These are all disturbed, mixed soils with variable properties. Figure 3-13 shows the distribution of these soils. Xerorthents, which are found in a small area north of Atlantic Avenue, have the most severe limitations for development, due to their high shrink-swell potential, low strength, and poor drainage. 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 planning 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 that was dredged from old beach areas. These soils are very permeable. The shallow water table is the primary limiting factor for development on these soils.

A small portion of the southeast corner of the installation (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 - Baywood



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Most of NAS Alameda, except a portion of the Inner Harbor area, lies outside the historic shoreline. All of FISC Alameda lies within the historic shoreline.

LEGEND:

Historic Shoreline

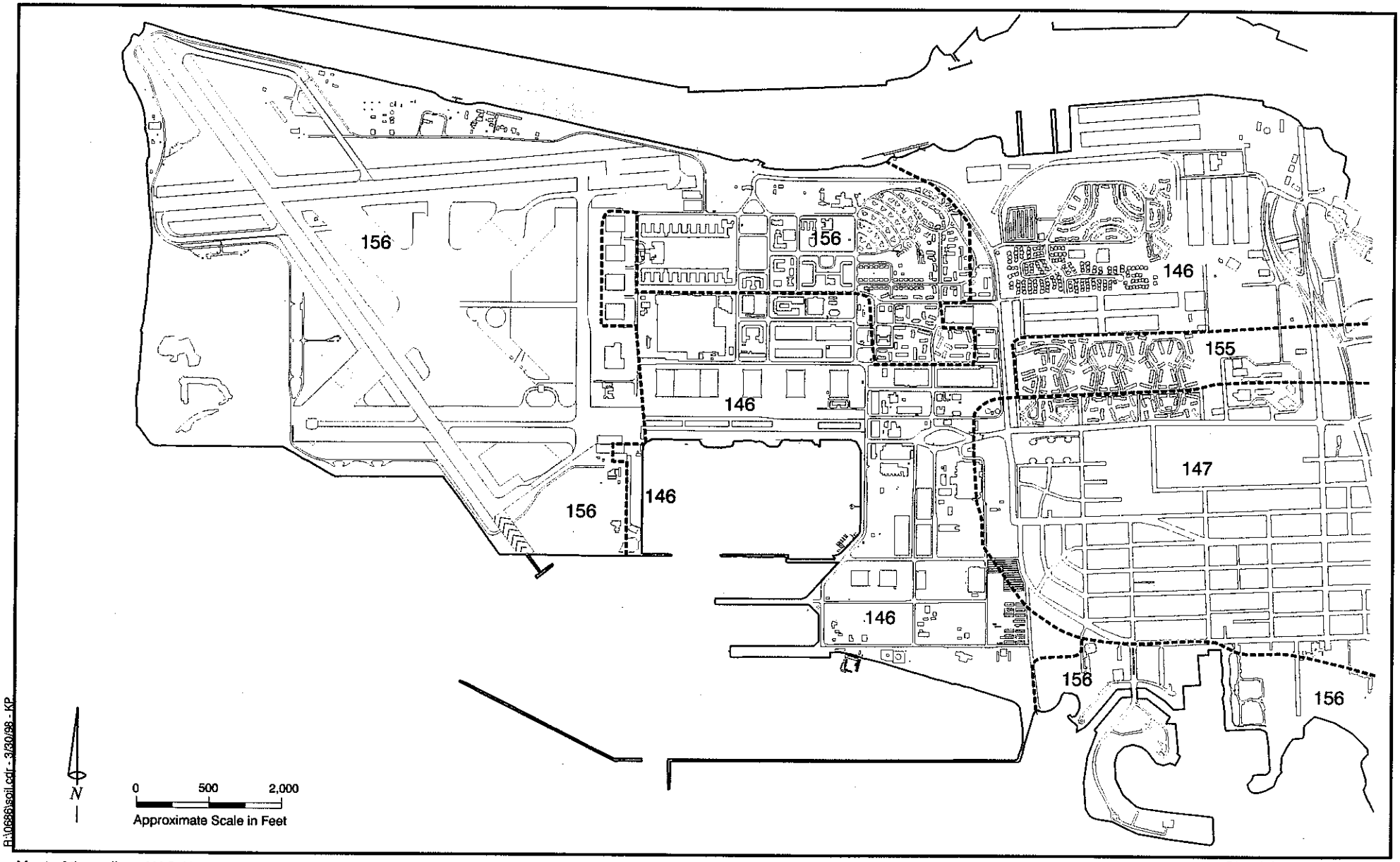
Tidal Flats

Historic Shoreline and Tidal Flats

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-12

Source: Radburch 1959.



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Most of the soils at NAS Alameda/FISC Alameda are derived from hydraulic fill. Xerorthents (soil unit 155) located along Atlantic Avenue, are clayey and have severe limitations for development.

LEGEND:

---------	Soil Unit Boundary
146	Urban Land (Fill)
147	Urban Land - Bay Wood Complex
155	Xerorthents, Clayey
156	Xeropsamments (Fill)

Source: Welch 1981

Soil Units at NAS Alameda/FISC Alameda

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-13

complex is actually Baywood loamy sand, while 60 percent is Urban Land and about five percent contains other soils. However, all of the soils strongly resemble Baywood soil. This is a very deep permeable soil. It has few limitations for development in level areas such as Alameda.

3.8.3 Faults

NAS Alameda/FISC Alameda lies within the San Andreas Fault system (Figure 3-9). In the San Francisco Bay Area, the San Andreas Fault system stretches across a zone approximately 44 miles (71 km) wide, consisting of mostly right-lateral strike-slip faults (Wallace 1990). 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. 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 (Jennings 1994; Bortugno 1982).

An active fault is defined by the California Division of Mines and Geology (Hart 1992) as a fault that has "had surface displacement within Holocene time (about 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.

In California, special restrictions apply to construction within "fault-rupture hazard zones," as defined by the Division of Mines and Geology under the Alquist-Priolo Special Studies Zones Act (Cal. Pub. Res. Code § 2621, *et seq.*), to prevent developments and structures for human occupancy across the trace of an active fault. No active faults have been identified on the NAS Alameda/FISC Alameda property.

The air station is less than 12 miles (19 km) from the San Andreas Fault (Wagner et al. 1990). The nearest active fault to NAS Alameda/FISC Alameda is the Hayward Fault, approximately 5 miles (8 km) east of NAS Alameda/FISC Alameda. The last major earthquake along the Hayward Fault occurred in 1868 (129 years ago). It is estimated that the recurrence interval for a large earthquake similar to the 1868 earthquake is about 130 ± 60 years (Lienkaemper and Borchardt 1992).

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.

The probability of one or more large earthquakes (Richter magnitude 7.0 or greater) on the San Andreas, Hayward, or Rogers Creek Faults during the next 30 years is estimated at 67 percent (Working Group on California Earthquake Probabilities 1990). Since the probability of earthquakes on other active faults was not included in this estimate, the 67 percent probability is considered to be a minimum probability for damaging earthquakes in the Bay Area. The estimated probability of a magnitude 7.0 or greater earthquake on the northern segment of the Hayward Fault is 28 percent in the next 30 years (Working Group on California Earthquake Probabilities 1990).

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 Appendix E 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.

3.8.4 Geologic Hazards

One of the earliest studies of the seismic hazards at NAS Alameda was conducted for the Navy in 1973 (Seed et al. 1974). 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 NAS Alameda/FISC Alameda from flooding.

Ground Shaking

ABAG predicts that the amplification of seismic waves in the engineered fill materials at NAS Alameda/FISC Alameda would be at the extreme high end of the response spectrum of geological materials found in the Bay Area. Based on the model used by ABAG, the most damaging earthquake at NAS Alameda/FISC Alameda would be one originating on the northern portion of

the Hayward Fault. The intensity of ground shaking at NAS Alameda/FISC Alameda, in response to an earthquake of magnitude 7.1 on the northern portion of the Hayward Fault, is expected to be "heavy," with an intensity of IX on the Mercalli intensity scale (Association of Bay Area Governments 1995b; Perkins and Boatwright 1995).

During the Loma Prieta earthquake of October 17, 1989, (the epicenter of which was 57 miles (92 km) south of NAS Alameda/FISC Alameda), the peak ground acceleration at NAS Alameda/FISC Alameda averaged about 2.7 times greater than peak accelerations at nearby instrumented bedrock locations, such as Yerba Buena Island (Carlisle and Rollins 1994). Based on measurements made during the Loma Prieta earthquake, magnitude 8.25 and 7.25 earthquakes on the San Andreas and Hayward Faults, respectively, were predicted to produce peak ground accelerations on NAS Alameda/FISC Alameda (at Building 23) of 0.65 times and 0.41 times the acceleration of gravity, respectively.

In addition, strong motion recording instruments had been installed on the support columns of Building 23. The columns supporting the structure are on pilings that extend to the Merritt Sand. Building 23 did not sustain any structural damage, perhaps as a result of being anchored to the Merritt Sand. However, the floor slab settled one to two inches due to liquefaction of the underlying sandy fill.

Seismic Analysis of Structures

An earthquake safety investigation of structures was performed (PMB Systems Engineering, Inc. 1980) 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 projected cost of damage for 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, in areas where the building site was not densified, could be up to two to three inches and that differential settlement of up to three-quarters of the total settlement could be expected.

Liquefaction Potential

A major cause of damage to structures during earthquakes is liquefaction. Liquefaction results from ground shaking and is defined as "the transformation of a loose, water-saturated granular material such as sand from a solid state to a liquefied state as a consequence of increased pore-water pressure" (Helley and Lajoie 1979; Youd et al. 1973). During earthquakes, the pore-water pressure is raised repeatedly 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.

In areas underlain by Bay Mud, including NAS Alameda/FISC Alameda, liquefaction potential generally is moderate but locally is high where clean granular layers are present in the Bay Mud (Youd et al. 1975). Since the engineered fill covering most of NAS Alameda/FISC Alameda contains a wide range of materials, including locally-quarried Merritt Sand, the liquefaction potential at NAS Alameda/FISC Alameda is likely to be high in many locations of the installation.

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 NAS Alameda/FISC Alameda 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 won't 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.

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 (Helley and Lajoie 1979). 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 (Goldman 1969).

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. For an underlying Bay Mud thickness of greater than 60 feet (18 m), it is estimated that about 35 percent of the ultimate settlement would take place during the first 10 years (Lee and Praszker 1969). Due to the relatively old age of the fill across much of NAS Alameda/FISC Alameda, most of the settlement for the current loadings has already occurred. However, new fill or significant modification of the current loading would cause the underlying sediments to begin a new cycle of settlement.

An example of the magnitudes of settlement that have occurred and may occur in the future is provided in a geotechnical report prepared by Lee and Praszker (1979) for construction of a new Defense Property Disposal Office (Building 152 in FISC Alameda). They reported that the ground surface outside an existing pile-supported warehouse (Building 365) had settled about 2.5 feet (0.76 m) relative to that building since its construction in 1930. This settlement occurred due to consolidation of the Bay Mud under the weight of the imported fill material. In addition, between 1930 and 1965 the concrete floor of the building had settled 3.8 feet (1.2 m) relative to the building's walls, under the load of materials stored inside the warehouse. The fill was estimated to be about 5 to 6 feet (1 to 2 m) thick. Test borings in this area indicated that the shallow Bay Mud is underconsolidated and could still settle appreciably. Lee and Praszker recommended constructing new building foundations on piles extended into the Merritt Sand at a depth of about 100 feet (30 m) and noted that differential settlement across a mat foundation could be significant. They estimated that, under a load of 1,000 pounds per square foot (4,883 kilograms [kg] per square m), total settlement of a mat foundation would be about 15 inches (38 cm), with about 8 inches (20 cm) of differential settlement. They estimated potential future subsidence of the existing fill would be about 10 inches (25 cm) over the next 30 years, with an additional 4 to 5 inches (10 to 13 cm) of settlement occurring over the same period in paved areas, due to the weight of the pavement.

Dike Stability

Seawall maintenance projects for NAS Alameda/FISC Alameda and the adjacent USFWS wildlife refuge land are performed as needed. No systematic study of seismic stability of seawalls at NAS Alameda was performed following the Loma Prieta earthquake (Faris 1996). Information about the construction and stability of seawalls is available from two recent geotechnical studies conducted for dike repair projects. The first project (phase I) included 2,000 feet (610 m) of seawall east of Pier No. 3 and 3,500 feet (1,067 m) of seawall west of Taxiway No. 6 (Geomatrix Consultants, Inc. 1986). The

phase II project included 2,735 feet (834 m) of seawall near the entrance to the Oakland Inner Harbor (Geomatrix Consultants, Inc. 1991). 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 (1986) 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, and they found no evidence of slope failure or significant lateral spreading attributable to the 1989 Loma Prieta earthquake.

3.8.5 Regulatory Considerations

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 Department of Public Works is responsible for enforcing these standards within the City. The CBC (§ 1629A.2) 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 maximum level of motion that may ever be expected at the building site within the known geological framework.

Under Cal. Pub. Res. Code § 2622, the California Division of Mines and Geology 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. No active faults have been identified within the property boundaries of NAS Alameda/FISC Alameda. The nearest delineated active fault zone is the Hayward Fault, located approximately 5 miles (8 km) east of NAS Alameda/FISC Alameda.

City of Alameda

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 (4 cubic m) of soil are to 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. The grading plan must include mitigation measures to prevent structural damage that may be caused by expansive soils.

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 noncompressible 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.

3.9 WATER RESOURCES

This section describes water resources issues at NAS Alameda/FISC Alameda, including flood hazards, surface water and ground water quality, drainage, and dredging issues. Water resource conditions are described for the baseline of 1996-1997, which represents recent data. Flood hazards include those associated with high tides, inadequate drainage, tsunami runup, and rising sea levels. Water quality issues can result from ground water contamination (see Section 3.13, Hazardous Materials and Waste), construction, and cumulative discharge of pollutants into surrounding water bodies. Dredging can affect water quality in dredged areas and areas receiving water from dredged materials. Drainage is addressed in this section as it affects flood hazards; storm drain systems are addressed in Section 3.5, Utilities.

The ROI is limited to land at NAS Alameda/FISC Alameda, immediately adjacent land areas, underlying ground water basins, and surrounding water bodies (Oakland Inner Harbor, NAS Alameda Inner Harbor, Seaplane Lagoon, and eastern San Francisco Bay).

3.9.1 Surface Water

NAS Alameda is bordered on three sides by water, with San Francisco Bay to the south and west and Oakland Inner Harbor to the north. The FISC Alameda Facility fronts on the Oakland Inner Harbor Channel. The site topography for both properties is flat, and the shoreline areas are protected in most areas by breakwaters or other shoreline protection, such as dikes or seawalls. The site is bounded by level land to the east. Drainage from the sites are via a stormwater drainage system and direct overland flow to the receiving waters on the south, north, and west. Localized ponding of runoff occurs in the northwestern and west-central portions of the NAS Alameda site. Minor ponding also has occurred when catch basins have become clogged (Szymanski 1996). Average annual precipitation in the project area is about 18 inches (46 cm), most of which falls from October through April. There are no natural channels within the site boundaries.

Occasional flooding occurs on (and on both sides of) Main Street between NAS Alameda and FISC Alameda when high stormwater runoff coincides with high tides. The affected area, including Main Street, the adjacent railroad tracks, and, possibly, a portion of NAS Alameda and FISC Alameda (flood area delineation in Federal Emergency Management Agency [FEMA] maps stop at the NAS Alameda property line) (FEMA 1991; Adams 1997), is drained by a ditch that directs flows northward and discharges to Oakland Inner Harbor near the ferry terminal. The ditch outfall drains through a flap-type tide gate that closes at high tides and prevents tidal flows from

inundating the low-lying area north of Singleton Avenue and east of Main Street. However, when the gate is closed during a high tide and heavy rainfall period, this area can experience flooding from backed up runoff flowing toward the harbor. In addition, the gate can become clogged and not close properly, allowing flooding to occur at high tides. This flooding can inundate and close the northern portion of Main Street several times in a rainy season. Closing the roadway prevents access to the Main Gate of NAS Alameda and the family housing area east of Main Street.

The City has developed and funded an improvements program to address the flooding problem in this area. This program will include roadway and storm drain improvements, development of a greenway to act as a storm water retention area, and development of a pump station to pump runoff into the harbor when the tide gate is closed. The program is scheduled for completion in early 2000 (Timothy 1999).

The FISC Alameda site generally drains adequately, but ponding can occur due to tide gate problems when high runoff coincides with high tides. The FEMA 100-year floodplain maps show a narrow strip of flooding along Webster Street and extending to (and possibly into) the eastern portion of FISC Alameda (FEMA 1991). This problem is discussed in greater detail in Section 3.5.4, Storm Drainage.

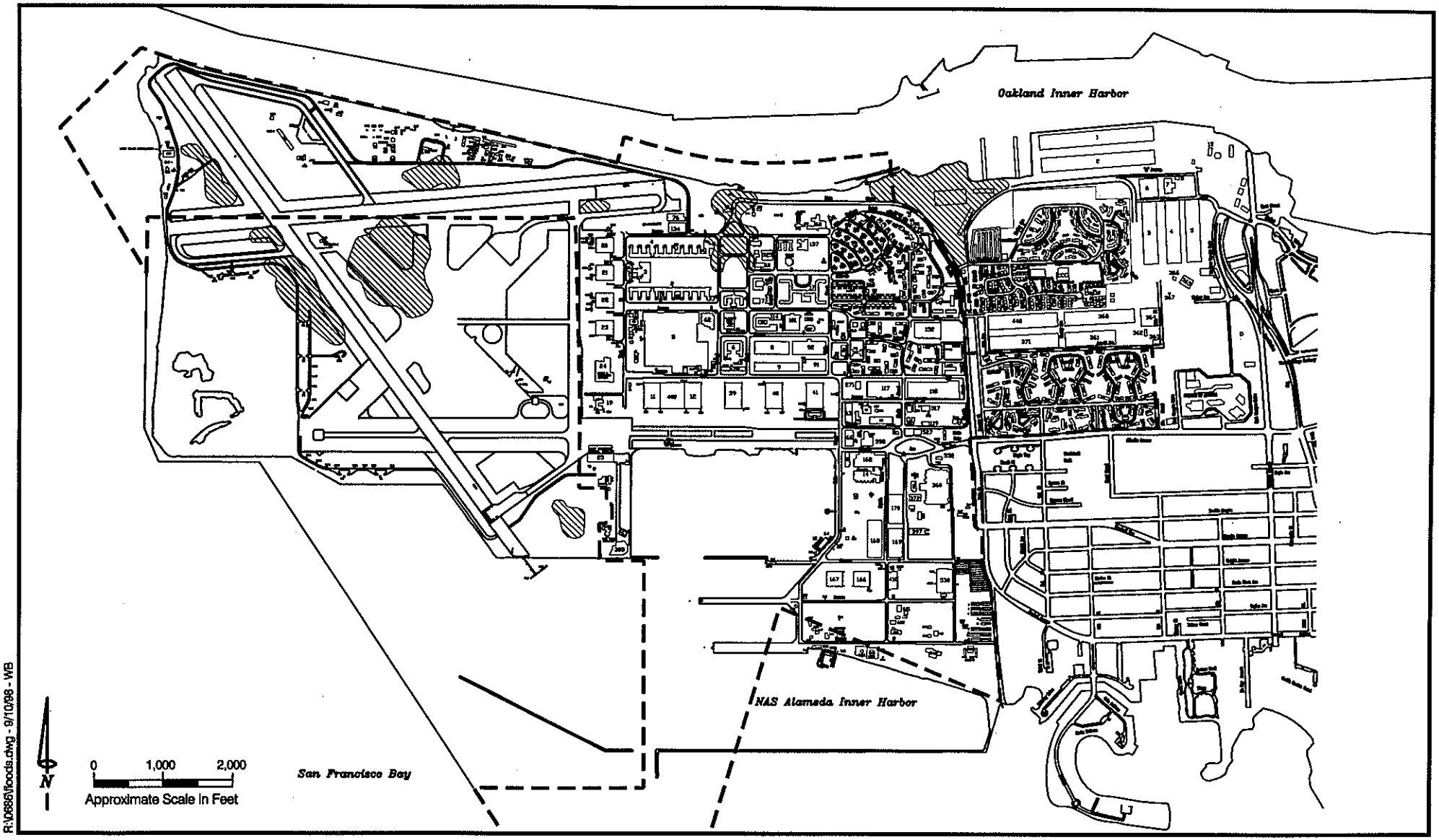
The site has not been mapped for flood hazards by FEMA, nor are any flood hazard areas (other than the ponding described above) indicated in the Navy's master plan (US Navy 1987f). However, portions of the site may be below the coastal base flood elevations identified for the Oakland Inner Harbor and could be subject to flooding by storm waves and high tidal runup. Areas contiguous to NAS Alameda/FISC Alameda that are subject to inundation during a 100-year flood event include Main Street from its terminus at the Oakland Inner Harbor to approximately 0.3 miles (0.5 km) upstream (southward). The stillwater elevation during the 100-year flood in this area is estimated at 6.6 feet (2.0 m) above mean sea level (also referred to as National Geodetic Vertical datum, or NGVD) (FEMA 1991). The highest observed water level was 6.68 feet (2.04 m) NGVD in December 1993. The FEMA base 100-year flood elevation at NAS Alameda/FISC Alameda is 7 feet (2 m) NGVD. Maximum wave heights in major storms with winds of 60 knots have been calculated at 4 to 6 feet (1 to 2 m) (US Navy 1986f). Although protected by seawalls constructed to heights of about 15 feet (5 m) NGVD, portions of the site are below the stillwater elevation and could be subject to inundation by water seepage through the walls or overtopping of low areas of the walls. In addition, wave runup of one to two feet (0.3 to 0.6 m) would aggravate this hazard.

Tsunamis (also known as seismic sea waves or tidal waves) can be generated by offshore or distant seismic activity or submarine landslides. Tsunamis are of concern because they can cause flooding and wave damage in coastal areas. Estimated tsunami run-up heights for the probable 100-year tsunami ranges from elevation 4.7 to 5.5 feet (1.4 to 1.7 m) NGVD around the perimeter of NAS Alameda; the 500-year tsunami run-up ranges from 7.5 to 9.5 feet (2.3 to 2.9 m) NGVD (Garcia and Houston 1975). Tsunami run-up at these elevations would not flood the sites. However, another analysis of the 100-year tsunami run-up indicates that the northern, western, and southern margins of the NAS Alameda site may be inundated by such an event (Ritter 1972) (see Figure 3-14).

Seiches are waves in an enclosed body of water caused by seismic shaking, climatic forces, or landslides into the water body. Large seiches also can result in flooding. Although seiches are possible in San Francisco Bay, the largest ever measured in the bay was four inches in the 1906 earthquake (ARRA 1996). Seiches of that magnitude would not pose a hazard to the site.

Potential flooding effects of waves, tides, and tsunami run-up would be exacerbated by rising sea levels. Predictions of future accelerated sea level rise due to global warming vary widely. Historic tide gauge data from 1885 to 1986 indicate that sea levels in San Francisco Bay at Alameda rose at an average rate of 0.0033 feet per year (0.0010 m per year) (EPA 1995) during that period. The impact of sea level rise can be increased if the affected land mass is concurrently subsiding. The estimates of local relative sea level change account for the local land level change and global sea level change. At Alameda, the estimated relative sea level change is 0.0053 feet per year (0.0016 m per year). A projection of sea level rise indicates that sea level will rise approximately 0.36 feet (0.11 m) to 0.53 feet (0.16 m) by 2006, and 0.79 feet (0.24 m) by 2036. When the highest estimated tide (6.7 feet [2.0 m] NGVD) is superimposed on the projected rise in sea level, the estimated future extreme storm tide at Alameda would increase from the current 6.7 feet (2.0 m) to 7.1 feet (2.2 m) NGVD. United Nations studies predict a rise of about 2.3 inches (5.8 cm) per decade, resulting in a 2.1 foot (0.6 m) rise by 2100 (United Nations Environmental Program 1992). Sea level rise would compound possible problems resulting from high waves, tides, or tsunamis.

There is no available data regarding the water quality of the ponds on the site. Surface runoff from the site is expected to contain typical urban pollutants, such as oil and grease, and small amounts of heavy metals, rubber, fertilizers, and pesticides. There were no major industrial or



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Alameda Island is relatively level and does not have well-established drainage channels.

LEGEND:

Flood Prone or low-lying areas

NAS Alameda Surplus Property Boundary

FISC Alameda Property Available for Disposal Boundary

Hydrologic Features

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-14

Source: US Navy 1987f

municipal dischargers at NAS Alameda or FISC Alameda (City of Alameda 1989b). In the past, sewage disposal from military vessels at Alameda was a major concern. However, since 1981 almost all military vessels were equipped with holding tanks for both sewage and gray water, and there were adequate pump-out facilities at NAS Alameda docks.

3.9.2 Ground Water

Ground water occurs at shallow depths throughout NAS Alameda/FISC Alameda substrate. In general, all subsurface materials (including fill, young Bay Mud, Merritt/Posey Formation, and the deeper Alameda Formation) that underlie the site are saturated at depths greater than 10 feet (3 m) below the surface. Of these materials, only the Merritt/Posey and Alameda Formations function as aquifers. The Bay Muds, although saturated, are relatively impermeable units and do not function as aquifers. The overlying fills also may be saturated and transmit ground water but similarly are not used as aquifers.

The shallow ground water in fills and bay muds, particularly in highly permeable zones near the edges of the island, is hydrologically connected with the saline waters of San Francisco Bay. This intermixing of saltwater and fresh water in the shallow aquifer generally results in brackish ground water quality. The Merritt/Posey ground water levels fluctuate seasonally with precipitation and may be tidally influenced. There has been saltwater intrusion into the Merritt/Posey aquifer, much of which has been exposed under the Oakland Inner Harbor.

NAS Alameda and FISC Alameda sites are identified in the Basin Plan for the San Francisco Bay Region (San Francisco Bay Regional Water Quality Control Board 1995) as being within the East Bay Plain "significant ground water basin." This basin's ground water is used for municipal, industrial, process, and service, and agricultural uses. The plan does not specify the Merritt/Posey Formation as the significant aquifer in the basin, but that aquifer has been acknowledged as important, and concern has been raised previously regarding the effects of dredging on it (Harding Lawson Associates 1988d). The primary aquifer is the East Bay Plain of the Alameda Formation (Alameda Aquifer). Amendments to the plan identify municipal and domestic water supply as beneficial uses of ground water resources within the aquifers underlying the East Bay Plain.

The Merritt Sand (i.e., the formation of the Merritt/Posey aquifer that underlies the site) contains some ground water but is not considered a primary water supply aquifer because of its limited distribution and thickness. However, ground water within the Merritt Sand may be

considered for temporary use in the event of an emergency disruption of EBMUD water supplies, such as in the event of a major earthquake.

There are numerous water supply wells on the island of Alameda, including at NAS Alameda. These wells generally supply water for irrigation and, to a lesser extent, for industrial uses. While most of these wells draw water from the permeable zones within the deeper San Antonio and Alameda Formations, some also may draw water from the Merritt/Posey Formation (ARRA 1996). Two wells in these lower units were shut down years ago because of water quality problems caused by high background levels of naturally occurring mercury (US Navy 1983a).

Concern previously has been raised regarding the effects of dredging on saltwater intrusion into the Alameda Aquifer when the overlying younger bay muds are removed by dredging (Harding Lawson Associates 1988d). Studies for deeper berthfront dredging at NAS Alameda and across the channel at FISC Oakland noted that the dredging project would not significantly increase saltwater intrusion into this aquifer but that ground water withdrawals should be managed to prevent saltwater from intruding into the aquifer (US Navy 1990d).

3.9.3 Dredging

Existing waterfront facilities at NAS Alameda include Piers 1, 2, and 3 on the south side of the site. The entrance to the pier area and the turning basin have been dredged to 42 feet (13 m) below mean lower low waterline (mllw) plus 2 feet (0.6 m) overdredge every 2 years. Piers 1, 2, and 3 were dredged to 50 feet (15 m) below mllw (plus 2 feet [0.6 m] of overdredge). Dredging results in short-term increases in turbidity and suspension of various contaminants from the sediments disturbed during the dredging process. A study of the potential effects of the deeper (50-foot [15 m]) dredging on the water quality of underlying aquifers at NAS Alameda was conducted by Harding Lawson Associates in 1988. That study determined that deepening the dredging from 42 to 50 feet (13 to 15 m) below mllw would not significantly affect water quality in the Merritt Sand/Posey Formation aquifer or the deeper Alameda Formation.

The Navy does not plan to undertake additional dredging. It is expected that future tenants would take soundings in the berth area, the turning area, and in the channel to determine if dredging is needed to support proposed uses.

The seaplane lagoon was dredged to 15 feet (5 m) below NGVD in the 1940s (US Navy 1983d). There has been no dredging of the seaplane lagoon in the recent past.

The Oakland Inner Harbor channel is dredged to 42 feet (13 m) and is proposed for deepening to 50 feet (15 m) by the Port of Oakland. Channel maintenance dredging is conducted by the US Army Corps of Engineers (COE). Channel deepening dredging would be conducted by the Port of Oakland. The impacts of this dredging generally are assessed in Section 5.1 Cumulative Impacts.

3.9.4 Regulatory Considerations

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) (San Francisco Bay Regional Water Quality Control Board 1995). 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 (San Francisco Bay Regional Water Quality Control Board 1995).

The State Water Resources Control Board has adopted two permits to control pollution in runoff from construction and industrial sites. To meet permit requirements, 17 local municipalities and agencies, including the City of Alameda, are participating in the Alameda County Urban Runoff Clean Water Program. Program participants are responsible for 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's 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 (City of Alameda 1991).

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 (Szymanski 1996). The permit also covers stormwater discharges associated with construction activities that disturb soil.

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 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. The City's General Plan, policy 5.1.g, supports BCDC's efforts to establish a regional dredging plan.

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.

In addition to the jurisdictions mentioned above, the RWQCB regulates disposal of dredge material on land or in water under the Clean Water Act. The RWQCB has developed sediment screening criteria and testing requirements to determine the suitability of material for disposal or reuse. The CDFG reviews projects to identify potential impacts to State-listed endangered species or critical habitat. The California Board of Reclamation reviews and approves changes to levees. Finally, the City of Alameda requires a permit for all dredging and filling.

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). NAS Alameda and FISC Alameda 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 (FEMA 1991). 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.

3.10 TRAFFIC AND CIRCULATION

This section describes existing traffic and circulation conditions on roadways accessing NAS Alameda/FISC Alameda including other roadways and intersections affected by traffic accessing the properties. Traffic volumes, levels of service (LOS) and transit services are described, along with a discussion of the NAS Alameda/FISC Alameda circulation system. Traffic and circulation conditions are described for the baseline year of 1990, at which time NAS Alameda/FISC Alameda was in full operation. These data also represent the most complete traffic count for the City of Alameda. Traffic data for 1990 are used for the City of Alameda and adjusted 1994 traffic data are used for the City of Oakland to achieve consistency.

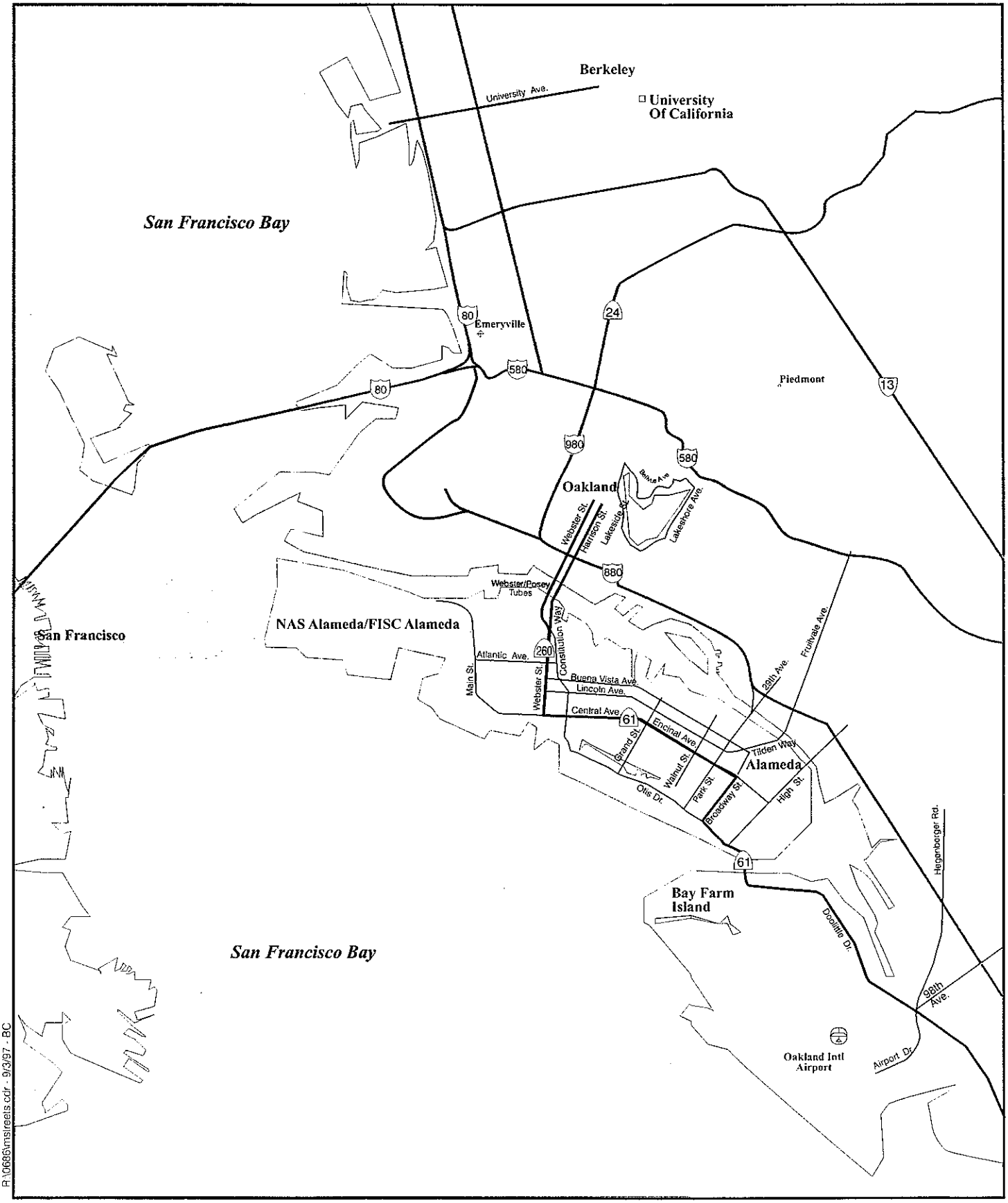
The ROI includes freeways near Alameda from I-80 near Berkeley, along I-880 to just south of 98th Avenue in San Leandro, and I-980 between I-880 and I-580 (Figure 3-15). Roadway segments in the Alameda County Congestion Management Agency (CMA) and Metropolitan Transportation Commission (MTC) circulation systems are in the ROI, including six freeway segments along portions of I-80, I-880, I-980, and I-580 and twelve arterial segments along state routes and roadways in Alameda. Access routes in Oakland and Alameda near the installation and the road network on NAS Alameda/FISC Alameda are also included in the ROI.

The transit service ROI includes all Alameda-Contra Costa (AC) Transit routes directly serving NAS Alameda or passing near the facility along Atlantic Avenue, Webster Street and other local streets; ferry services to the existing terminal near Main Gate Road on the Alameda Estuary; and Bay Area Rapid Transit (BART) service in Oakland including access and transit services from the 12th and 19th Street and West Oakland BART Transfer Center.

3.10.1 Regional Transportation System

Regional Access Routes

NAS Alameda/FISC Alameda is in the northwest portion of the City of Alameda and accessed by several regional highways (Figure 3-15). Interstate 880/980 and the Webster Street/Posey Tubes are primary regional access routes. The Cypress Freeway section of I-880, linking Oakland to San Francisco, was rebuilt after being heavily damaged in the 1989 Loma Prieta earthquake. Reopening was completed in fall of 1998. Several freeway to local street on- and off-ramps are also used to access the facility. These include the ramps at: southbound I-880 at Jackson Street northbound I-880 at Broadway, northbound I-880 at Oak Street and along the I-980 frontage roads leading to 5th Street. Primary and secondary access routes serving NAS



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The Region of Influence for traffic and circulation includes Berkeley to the north and San Leandro to the south.

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Not to Scale

Regional Transportation System

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-15

Source: Tetra Tech and Dowling Associates 1997

Alameda/FISC Alameda are listed in Table 3-12. Several transit services provide access to or near NAS Alameda/FISC Alameda. These include: BART, AC Transit buses, and ferries operated from the terminal on Main Street near the Main Gate to NAS Alameda.

Table 3-12
Transportation Access Routes

Primary Access Routes	Secondary Access Routes	Transit
• Interstate 880/980	• Fruitvale Avenue Bridge	• BART
• Webster Street/Posey Tubes	• Bay Farm Island Bridge	• AC Transit Bus
• Atlantic Avenue	• Park Street Bridge	• Alameda/Oakland Ferry
• Webster Street	• High Street Bridge	

Source: Dowling Associates

Regional Traffic Volumes

Existing traffic volumes along the regional roadways serving NAS Alameda/FISC Alameda assume an operational condition. These volumes are developed from 1990 traffic data for Alameda and adjusted 1994 traffic volumes for Oakland. The 1994 volumes were adjusted to represent 1990 conditions consistent with Alameda traffic data (see Appendix F for a description of these adjustments).

California Department of Transportation (Caltrans) 1990 traffic data show daily traffic volumes along the I-880 section between Jackson Street and Broadway in Oakland at about 175,000 trips, while I-980 daily volumes were about 135,000 trips. The 1990 daily volumes along I-980 increased over historic levels because the destruction of the Cypress Freeway during the 1989 Loma Prieta earthquake altered traffic distribution patterns. Caltrans has reconstructed the Cypress Freeway in a new location, west of its prior alignment and reconfigured the I-980 interchanges with I-580/I-80. Southbound lanes on I-880 were reopened in 1998 and northbound lanes, as well as several additional on- and off-ramps, are expected to open in 1999. The full reopening of I-880 north of I-980 in 1999 is expected to further reduce I-980 traffic volumes.

The Webster Street/Posey Tubes (SR 260) provide access from Oakland to Alameda. The Webster Street Tube serves southbound traffic into Alameda, while the Posey Tube operates in the northbound direction. Based upon Caltrans 1990 traffic volumes (Caltrans 1990), the tubes carry about 70,000 daily trips.

There are existing operational problems associated with the tubes. On I-880 near the Webster Street/Posey Tubes, traffic destined for northbound I-880 using the 7th and Jackson Street on-ramp must weave across freeway traffic exiting via the Broadway off-ramp. Furthermore, the 5th Street southbound I-880 on-ramp is one of the highest volume ramps along I-880 in Oakland carrying much of the Port of Oakland traffic destined for southbound I-880. This ramp also is used by NAS Alameda/FISC Alameda traffic proceeding south on I-880.

3.10.2 Local Transportation System

Local Access Routes

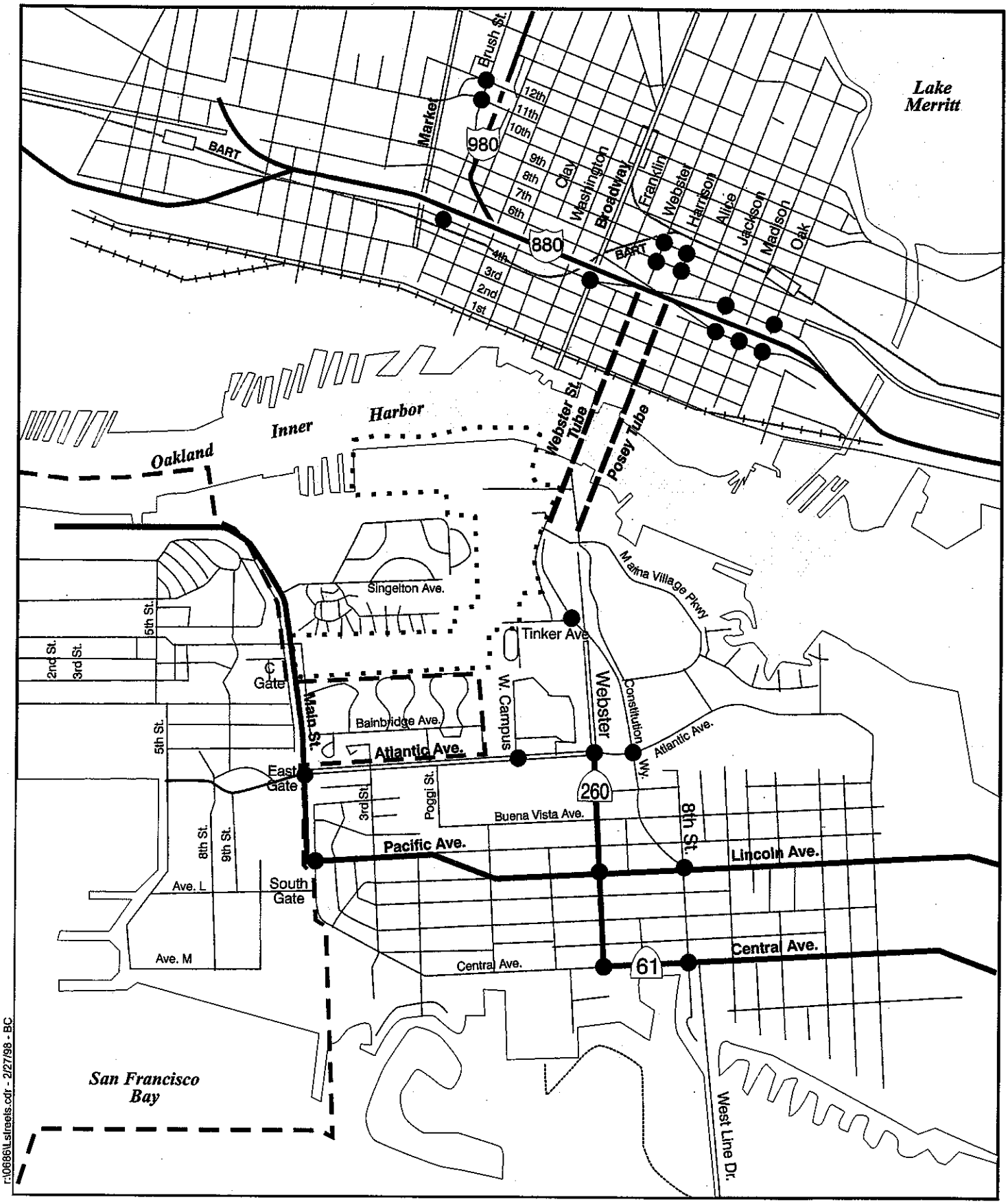
City of Alameda. Atlantic Avenue, Pacific Avenue, Central Avenue, Webster Street, and Constitution Way are the major arterial streets serving NAS Alameda (Figure 3-16). The FISC Alameda site is accessed from Webster Street at Marina Square Loop and by Tinker Avenue (Figure 3-16). Atlantic Avenue is a four-lane arterial with signals at Constitution Way, Webster Street, Poggi Street, 3rd Street, Main Street, and West Campus.

Main Street intersects with Atlantic Avenue at the East Gate of NAS Alameda, which served as the primary access to the facility. Main Street has four travel lanes north of Pacific Avenue and two lanes between Pacific and Central Avenues. Signals are provided at Main Street/Atlantic Avenue, Main Street/ C Avenue, Main Street/Pacific Avenue and Main Street/Central Avenue. Stop sign controlled intersections that serve NAS Alameda/FISC Alameda include: Webster Street (SR 260) at Tinker Avenue, Mitchell at Marina Square Loop, and Singleton Avenue at Main Street.

City of Oakland. Webster, Harrison, 7th, 8th, and 5th streets, and Broadway are the major arterial streets carrying traffic to and from NAS Alameda/FISC Alameda and the City of Oakland (Figure 3-16). The Webster Street and Posey Tubes connect the City of Oakland with the City of Alameda. The Webster Tube is served at two access points: southbound Webster Street at 7th Street and southbound Broadway at 5th Street. The Posey Tube exits the City of Alameda at 7th and Harrison Streets.

Local Intersections

Nine intersections in Alameda and 13 intersections in Oakland accessing NAS Alameda/FISC Alameda have been identified for analysis (Figure 3-16). The Oakland intersections are the major intersections between the freeway ramps and the Webster Street/Posey Tubes. The Alameda intersections are the



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Traffic connections to NAS Alameda/FISC Alameda are concentrated on several major arterials in Alameda and the City of Oakland.

0 1/2 1
Approximate Scale in Miles

N

Legend:

- Study Intersections
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

Local Roadways/Analysis Intersections

NAS Alameda/FISC Alameda
Alameda, California

Source: Tetra Tech and Dowling Associates 1997

Figure 3-16

major intersections between the Constitution Way-Webster Street corridors and NAS Alameda/FISC Alameda. A complete list of these intersections can be found in Appendix F.

Local Access Volumes

Existing traffic volumes along local roadways serving NAS Alameda/FISC Alameda are presented under operational conditions. Traffic data for 1990 are used for Alameda and adjusted 1994 traffic data are used for Oakland to achieve consistency. These adjustments are described in Appendix F.

Historic daily traffic data along the local access roadways show about 24,000 daily trips on Atlantic Avenue and about 4,500 daily trips on Pacific Avenue. Central Avenue near Avenue M carried about 9,000 daily trips. Webster Street carried nearly 40,000 daily trips north of Atlantic Avenue and about 30,000 trips south of Atlantic Avenue.

3.10.3 NAS Alameda/FISC Alameda Circulation System

NAS Alameda/FISC Alameda Access

NAS Alameda. The main base at NAS Alameda has four access gates, Main Gate, East Gate, Gate C, and South Gate. Main Gate and Gate C provide one inbound lane and one outbound lane at the control points. East Gate is constructed with two inbound lanes, two outbound lanes, and one reversible travel lane.

The Main Gate is located close to 1st, 2nd, and 3rd Avenues employment centers and historically received approximately 24 percent of total traffic volume. The East Gate is located on Atlantic Avenue approximately 300 feet (91 m) west of Main Street and historically received approximately 47 percent of the total traffic volume. The Avenue C Gate, located next to the former commissary store, historically handled approximately 20 percent of total traffic volume. The South Gate, located on Avenue L, was open only during peak commuter hours and carried one-way traffic (inbound traffic during the AM peak and outbound traffic during the PM peak period). Four traffic lanes were provided on the military side of the gate, while two lanes served the community side. Figure 3-17 shows the circulation system at NAS Alameda.

FISC Alameda. FISC Alameda is accessed from Webster Street at Marina Square Loop and by Tinker Avenue. Historic access to FISC Alameda was primarily Tinker Avenue and Fox Avenue Gate 1. Fleet Hospital personnel and materials accessed FISC Alameda from Tinker Avenue and Aviation Supply employees entered the facility from Fox Avenue Gate 1. The Tinker Avenue gate was continually monitored by security personnel, while the Fox

Avenue gate was monitored only during periods of heavy usage and locked at all other times. Figure 3-17 shows the circulation system at FISC Alameda.

NAS Alameda/FISC Alameda Volumes

Peak hour traffic volumes for NAS Alameda/FISC Alameda were extracted from the 1990 CMA travel demand model. Based on this model, about 2,500 AM and 2,900 PM peak-hour trips were generated by the facility. Total daily traffic from NAS Alameda/FISC Alameda was estimated to be about 29,000 vehicles. The peak hours of travel did not occur during the usual peak hour times because military and civilian workshifts were staggered.

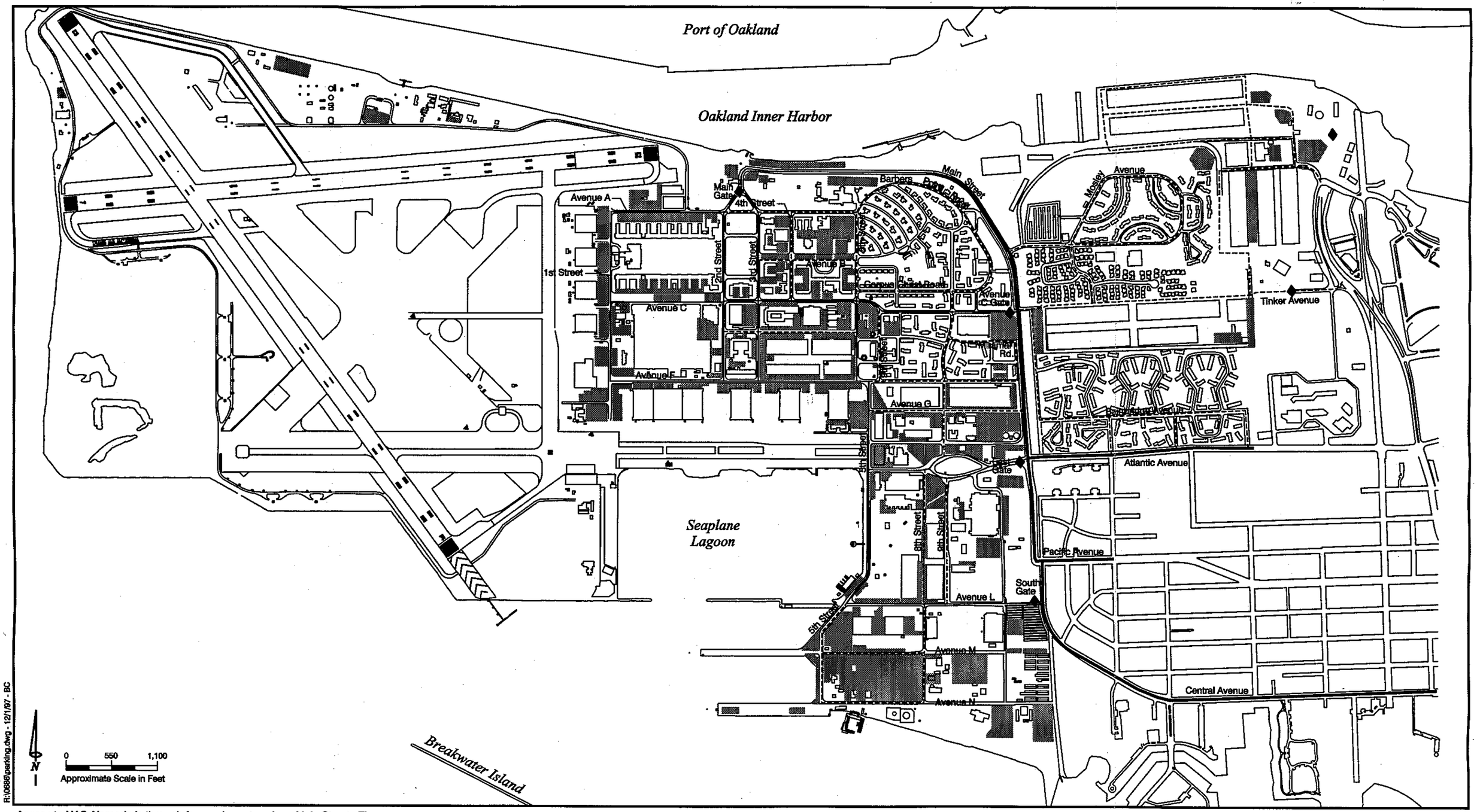
NAS Alameda/FISC Alameda Roadways

The NAS Alameda/FISC Alameda internal roadway system includes major and minor arterial streets, as well as minor collector and residential streets. As shown in Figure 3-17, the major street network consists of both north-south and east-west roadways that link the different land uses at NAS Alameda/FISC Alameda.

At NAS Alameda Avenues A, C and F, and Atlantic Avenue provide east-west access from the airfield and light industrial areas to the central core and residential areas. North-south access from the pier facilities to the light industrial area are provided at 2nd Street, 3rd Street, 5th Street, and 9th Street. The highest traffic volumes were found on portions of Atlantic Avenue, Avenue H, 5th Street, and Avenue F, which carry traffic from the East Gate. Secondary major traffic volumes began at the Avenue C Gate and continued along Avenue C to 1st Street. At the Main Gate, traffic was dispersed to Avenue A, 2nd Street, and 3rd Street.

The FISC Alameda property is laid out around an open storage area and parking area with warehouse buildings adjacent to the open area fanning out to the west and south into "dead-end" corners. Most internal vehicular activity occurs in front of the warehouses and around the edge of the open storage area. Tinker Avenue is the primary east/west roadway on FISC Alameda. Other informal roadways link the open storage area to the warehouse unloading areas.

There are no signalized intersections at NAS Alameda/FISC Alameda; most of the intersections are stop-sign controlled on the minor street approaches. The only signalized intersections are located outside the base along the perimeter on Main Street with Avenue C, Atlantic Avenue, and Pacific Avenue. Atlantic Avenue provides the primary east-west access link with the City of Alameda and the regional roadway network.



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Access to NAS Alameda is through four major gates along Main Street. The roadway system is primarily a grid pattern with east-west roads identified as "avenues" and north-south roads as "streets". A total of 71 lots at NAS Alameda provide 11,543 parking spaces. Access to FISC Alameda is through two main gates. Much of the on-site circulation reflects truck traffic routes. There are nine main parking areas at FISC Alameda.

Source: US Navy 1988c; US Navy 1993f

LEGEND:

- Primary Routes
- Off-Station
- On-Station
- Secondary Routes On-Station
- Station Gate
- Major Parking Areas

NAS Alameda/FISC Alameda Circulation System and Parking

NAS Alameda /FISC Alameda
Alameda, California

Figure 3-17

NAS Alameda/FISC Alameda Parking Facilities

NAS Alameda. Parking on NAS Alameda consists of on-street parking, formal surface lots (marked), and informal parking (unmarked dirt lots) (Figure 3-17). Approximately 11,543 parking spaces are provided at NAS Alameda and are located adjacent to existing buildings throughout the facility. Most of the lots are small (50 to 100 spaces), while other parking areas near the pier facilities have parking lots ranging from 200 spaces to the largest lot, with a capacity of 1,750 vehicles, located in the block surrounded by 5th and 8th Streets and M and N Avenues. The parking lot located next to the former Navy exchange retail store has a capacity of 437 vehicles, while the lot bordered by Avenues A and B and 4th and 5th Streets has a capacity of 389 spaces.

FISC Alameda. Parking on FISC Alameda consists primarily of informal parking areas adjacent to the main employment centers. Parking areas are indicated along the northern portion of the property and between warehouses. These lots have been primarily used by personnel working at FISC Alameda.

NAS Alameda/FISC Alameda Railway Facilities

Three rail lines historically served NAS Alameda/FISC Alameda: South Pacific Coast line; San Francisco and Alameda Line; and the Alameda Belt Line. The South Pacific Coast line that formerly ran along Main Street to the old Todd Shipyard was demolished and the right-of-way is now under Union Pacific Railroad ownership. The San Francisco and Alameda line that formerly serviced the piers has been dismantled (some tracks have been removed). There are no railroad crossing protection devices or rail equipment at NAS Alameda.

The Alameda Belt Line Railroad, operated by the Union Pacific Railroad, connects Alameda to the mainland via a lift bridge located adjacent to the Fruitvale Avenue Bridge. The Belt Line served industrial customers along the Inner Harbor, running on-street along Clement Street and extending to the Belt Line Yards near Constitution Way and Atlantic Avenue. Historically, the tracks continued along Atlantic Avenue and onto NAS Alameda, serving the docks, heating plant, power plant, and other industrial and commercial areas. The railroad line was rerouted to avoid crossing Constitution Way and Webster Street via a loop through the FISC Alameda Facility, along Main Street and onto NAS Alameda through the East Gate.

3.10.4 Roadway Operational Conditions

The directional capacity of roadways is based on several factors, including parking, lane widths, speeds, grade, signal spacing, sidewalks, and driveways. Roadway LOS can be determined by the ratio of traffic volumes to the

roadway capacity, which is the method applied in this analysis to determine roadway LOS. The CMA uses average speed to determine LOS on roadway segments. LOS designations range from "A," indicating free flow, to "F," indicating forced flow or over-saturated. The roadway LOS standard in the cities of Oakland and Alameda is LOS D. Roadways that operate at LOS E or F are considered inadequate and subject to mitigation.

Roadway Capacities and Operational Characteristics

Table 3-13 describes the roadway capacities of the major roadways serving NAS Alameda/FISC Alameda. Table 3-14 details the 1990 AM and PM peak-hour traffic volumes, volume-to-volume capacity (V/C) ratios, and resultant LOS for the major roadways serving NAS Alameda/FISC Alameda.

Through discussions with City of Alameda Traffic Engineering Department staff, it was determined that 90 percent of the observed traffic volumes would be used as the threshold capacity for LOS E/F. Applying this threshold to the Webster/Posey Tubes resulted in a capacity threshold of 1,720 vehicles for the Webster Street Tube, and 1,700 vehicles for the Posey Tube. Historic traffic counts were evaluated to determine appropriate values for the LOS E/F capacity of the tubes. In August 1998, the CMA notified the cities of Oakland and Alameda that the eastbound to northbound ramp movement for SR 260/I-880 was operating at LOS F during the PM peak hour (CMA 1998). The cities will address this declaration of "deficiency" through implementation of planned improvements for the I-880 corridor – Broadway/Jackson ramps under the Oakland Estuary Master Plan. These planned improvements are described in Section 3.10.7.

Table 3-14 shows LOS levels on area roadways during the AM and PM peak periods. Levels of service below LOS F indicate that peak hour and peak period traffic may be stopped and subject to delays. The Atlantic Avenue corridor operated at LOS F during the AM peak and LOS E during the PM peak. The Webster Street/Posey Tubes operated at LOS D during the PM peak period. Atlantic Avenue operated between LOS E and F during the peak hours. Within Oakland, the 5th and Harrison Street Corridors operated at LOS F and LOS E, respectively, during the AM period.

3.10.5 Intersection Operational Characteristics

Intersection LOS is based on methodologies found in the 1994 Highway Capacity Manual (HCM). LOS is a qualitative measure of the ability of the intersection to accommodate traffic, based on the amount of average stopped vehicle delay during the peak hours of operation. The average delay and resulting LOS depends on the peak hour traffic, intersection geometry, signal

Table 3-13
Roadway Characteristics and Capacity

Roadway Segment	Facility Type	Number of Lanes (both directions, except as noted)	Directional Capacity (vehicles per lane)
Access Roadways - City of Alameda			
Atlantic Avenue	Arterial	4 lanes	800
Webster Street	Arterial	4 lanes	800
Pacific Avenue (Main to 4th)	Arterial	4 lanes with center left turn lane	800
Lincoln Avenue (east of 5th)	Arterial	4 lanes with center left turn lane	800
Central Avenue	Arterial	4 lanes (2 lanes between Pacific/Old Main and Encinal High School)	800
Webster Street/Posey Tubes	Arterial	4 lanes total	1,720/1,700
Webster Street	Arterial	4 lanes (Commercial Street)[1]	800
Constitution Way	Arterial	4 lanes	800
Main Street	Arterial	4 lanes between NAS Alameda Main Gate and Pacific, 2 lanes between Pacific and Central	800
Mariner Square Loop	Collector	2 lanes	800
Mariner Square Drive	Collector	2 lanes	800
Access Roadways - City of Oakland			
Harrison Street	Arterial	3 lanes (one-way)[2]	800
Webster Street	Arterial	3 lanes (two-way north of 7th)[2]	800
7th Street	Arterial	3 lanes (one-way)[2]	800
6th Street	Arterial	2 lanes (one-way)[2]	800
5th Street	Arterial	3 lanes (one-way)[2]	800
Jackson Street	Arterial	2 lanes	800
Broadway	Arterial	4 lanes	800
Brush Street	Collector	3 lanes	800

[1]Commercial arterial streets with high turnover parking tend to have less capacity than those without parking.
[2]The capacity values shown represent average roadway conditions. Because one-way streets tend to have higher capacities than two-way streets, using a lane capacity of 800 for one-way streets will result in a conservative estimate of impacts.

Source: ARRA 1996

Table 3-14
1990 Peak Hour Roadway Levels of Service

Roadway Segment	AM Peak-hour Traffic Volume	PM Peak-hour Traffic Volume	Capacity	AM Peak-hour LOS and V/C Ratio	PM Peak-hour LOS and V/C Ratio
City of Alameda					
Westbound Atlantic Avenue	2,215	598	1,600	1.38 (F)	0.37 (A)
Eastbound Atlantic Avenue	482	1,520	1,600	0.30 (A)	0.95 (E)
Southbound Webster Street Tube	2,410	2,980	3,440	0.70 (C)	0.87 (D)
Northbound Posey Tube	2,650	2,270	3,440	0.77 (C)	0.67 (B)
City of Oakland					
Westbound 7th Street (Oak to Jackson)	1,582	1,982	3,200	0.49 (A)	0.62 (B)
Westbound 6th (I-80 off-ramp)	1,288	776	3,200	0.40 (A)	0.24 (A)
Eastbound 5th Street (Harrison to Jackson)	1,141	622	800	1.43 (F)	0.78 (C)
Northbound Harrison (6th to 7th)	2,214	1,756	2,400	0.92 (E)	0.73 (C)
Southbound Webster (8th to 7th)	1,217	1,354	2,400	0.51 (A)	0.56 (A)

Source: ARRA 1996

phasing, intersection controls, and traffic mix. LOS designations range from "A," indicating free flow, to "F," indicating forced flow or over saturated conditions. The intersection LOS standard in the cities of Oakland and Alameda is LOS D. Intersections that operate at LOS E or F are considered inadequate and subject to mitigation.

Post-earthquake traffic counts were used to identify most current traffic volumes at local intersections serving NAS Alameda. Traffic counts prior to the 1989 Loma Prieta earthquake were not considered since these counts would not represent existing traffic conditions, because of the change in traffic distribution following the earthquake. This approach produces a conservative estimate for the existing conditions. For the City of Alameda, 1990 traffic counts, representing operational conditions, were used to determine LOS at Alameda intersections. Because there were no 1990 counts for the City of Oakland, 1994 traffic counts conducted for the City's signal system studies were used to determine LOS at Oakland intersections.

Intersection Levels of Service

Figure 3-16 shows the intersections within the cities of Alameda and Oakland evaluated in this analysis. Table 3-15 shows the AM and PM peak-hour LOS at the analysis intersections. Most of the analyzed intersections operate at acceptable levels of service (LOS D or above) during the AM and PM peak hours. Exceptions are the Atlantic Avenue/Webster Street intersection, which operates at LOS F during the AM peak, and the Harrison/7th Street intersection, which operates at LOS E during the PM peak hour.

High Accident Locations

The City of Alameda has identified locations in the City having the highest number of accidents. Six of the high accident locations are among the intersections evaluated in this EIR and include:

- Webster Street at Central Avenue
- Webster Street at Atlantic Avenue
- Central Avenue at 8th Street
- Main Street at Atlantic Avenue
- Atlantic Avenue at Constitution Way
- Marina Village Parkway at Constitution Way

As shown in Figure 3-18, accident rates are expressed in terms of the number of accidents per 1,000,000 vehicles entering an intersection. The highest rate of accidents occurs at 3rd Street and Atlantic Avenue, while the lowest rate occurs at Bridgeway and Island. The average rate for the entire list of locations is about 0.40 accidents per 1,000,000 vehicles. Caltrans has found that the average rate for accidents at suburban intersections on State Highways is 0.70 accidents per 1,000,000 vehicles. One of the analysis intersections, Webster Street at Central, exceeds the Caltrans average. Three intersections (Main Street at Atlantic Avenue, Atlantic Avenue at Constitution Way, and Marina Village Parkway at Constitution Way) have rates below the citywide average.

3.10.6 Transit Services Near NAS Alameda/FISC Alameda

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 metropolitan Contra Costa County and Alameda County. While Alameda is

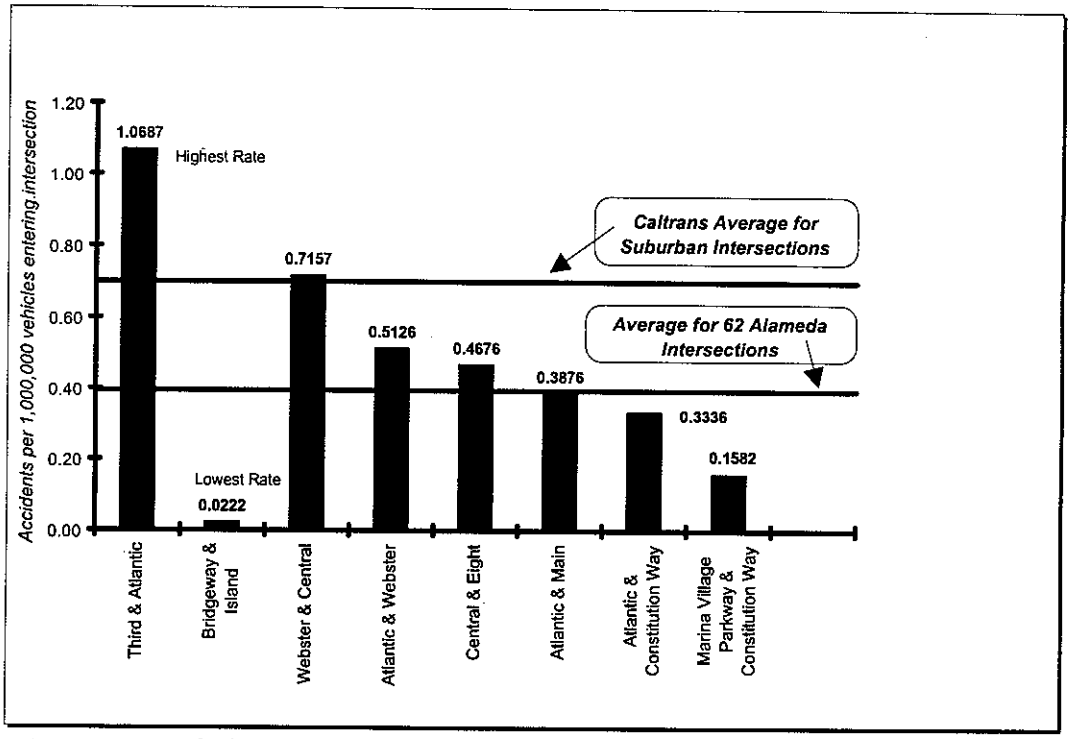
Table 3-15
Intersection Levels of Service

Analysis Intersection	AM Peak Hour		PM Peak Hour	
City of Alameda (1990 Data)	LOS	Delay (seconds/vehicle)[1]	LOS	Delay (seconds/vehicle)[1]
Atlantic Avenue/Main Street[2]	C	25	C	17
Atlantic Avenue/West Campus[2]	A	2	A	2
Atlantic Avenue/Webster Street[2]	F	(excessive delays)	C	19
Atlantic Avenue/Constitution	B	14	C	16
Pacific Avenue/Main Street	Not Available		A	4
Lincoln Avenue/Webster Street	B	9	B	14
Lincoln Avenue/8th Avenue	C	17	C	18
Central Avenue/Webster Street	B	12	C	15
Central Avenue/8th Avenue	C	17	C	23
City of Oakland (1994 Data)	LOS	Delay (seconds/vehicle)	LOS	Delay (seconds/vehicle)
Oak Street/5th I-80 on-ramp	B	10	C	16
Oak Street/6th I-80 off-ramp	B	9	B	11
Jackson Street/7th Street	C	16	C	20
Jackson Street/5th Street	B	7	B	13
Jackson Street/5th Street	B	10	B	13
Harrison Street/8th Street	B	9	B	10
Harrison Street/7th Street[2]	B	11	E	56
Webster Street/8th Street	B	12	B	12
Webster Street/7th Street	B	12	B	13
Broadway/5th Street[2]	C	17[3]	C	21
Brush Street/12th Street	A	3	B	10
Brush Street/11th Street	A	4	B	10
Brush Street/5th Street	B	13	B	12

[1] The number of seconds have been rounded to the closest value.
[2] Historical data indicates locations with heavy pedestrian activities.
[3] Requires further study of access ramp to Webster Street Tube.

Source: Dowling Associates; City of Oakland

Figure 3-18
Accident Rates – Selected Locations Within the City of Alameda



Source: City of Alameda

not directly served by BART, residents of western Alameda can access BART via bus transit at one of the three Oakland BART stations (West Oakland, 12th Street, and Lake Merritt).

BART operates between 4:00 AM and 1:30 AM Monday through Friday, 6:00 AM to 1:30 AM on Saturdays, and 8:00 AM to 1:30 AM on Sundays and major holidays. The last trains leave stations at midnight and arrive at the other end of the line at 1:30 AM. 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 along the east shore of San Francisco Bay with an extensive network of local transit lines and into San Francisco via the Bay Bridge. Within the NAS Alameda/FISC Alameda area are several streets that serve as transit routes, including the Webster Street/Posey Tubes that provide access to Oakland and Alameda's major east-west avenues, Atlantic, Buena Vista, Santa Clara, and Central.

Over the past several years, AC Transit has begun a major realignment and reduction of service. This effort, entitled the Comprehensive Service Plan (CSP), has sought to reduce operating costs without unduly sacrificing transit service levels. As a result, night and weekend service has been eliminated on many routes and the only line directly serving NAS Alameda is currently being considered for reduced or eliminated service.

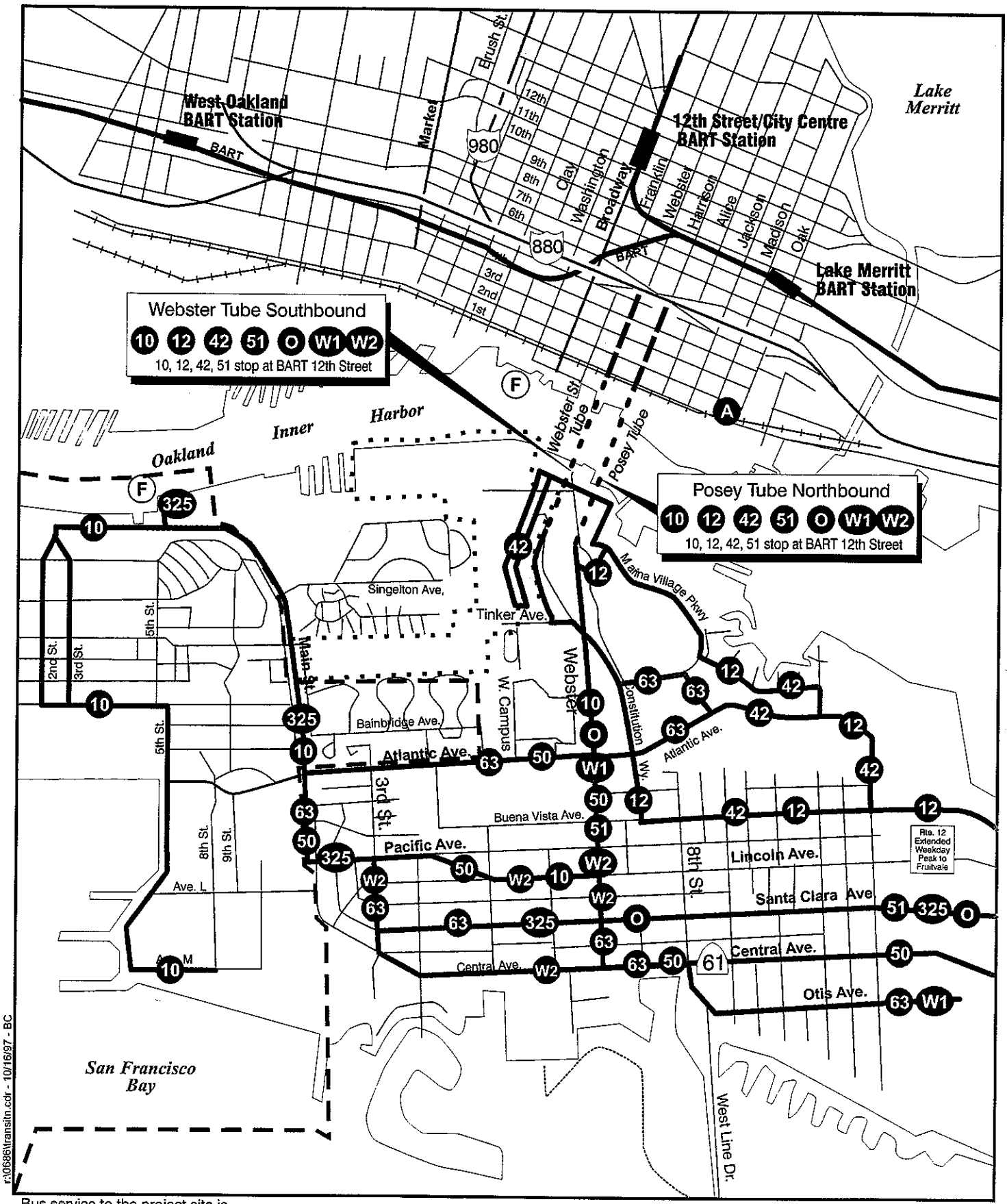
Table 3-16 provides a summary of the AC Transit services near NAS Alameda/FISC Alameda. Figure 3-19 shows the AC Transit routes, BART stations, ferry services, Amtrak, and other transit services near the NAS Alameda/FISC Alameda site.

Table 3-16
AC Transit Service near NAS Alameda/FISC Alameda

		Weekday Peak Service	Weekday Off-Peak Service	Weekday after 7pm Service	Saturday Service	Sunday Service
Line 10 Alameda NAS-Downtown Oakland	Local	30	60	none	none	none
Line 12 Alameda-MacArthur BART via Piedmont	Local	15	none	none	none	none
Line 42 Alameda-BART 12th Street*	Local	15	none	none	none	none
Line 50 Alameda NAS-Fruitvale	Local	30	30	30	30	30
Line 51 Alameda-Berkeley via Rockridge	Local	10	10	20	15	20
Line 63 Bay Farm Island-Marina Village Parkway	Local	30	30	none	none	none
Line 325 Dedicated Alameda Ferry Shuttle	Local	60	none	none	none	none
Line O	Transbay	20	60	60	60	60
Line W-1	Transbay	15	none	none	none	none
Line W-2	Transbay	20	none	none	none	none

* = Route 42 is subsidized in part by the City of Alameda and private developers.

Source: AC Transit Schedules



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Bus service to the project site is provided by AC Transit.

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0 1/2 1
Approximate Scale in Miles

Legend:

- BART Station
- Ferry Terminal
- AC Transit Route
- Amtrak Station
- NAS Alameda Surplus Property Boundary
- FISC Alameda Property Available for Disposal Boundary

Source: Tetra Tech and Dowling Associates 1997

Transit Services

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-19

Amtrak

Amtrak provides intercity rail service in the study area with several regional (short-haul) and nationwide (long-haul) routes. Amtrak, the Port of Oakland, and Caltrans constructed a new Jack London Square station in 1995. Amtrak service near NAS Alameda/FISC Alameda includes:

The Chicago Zephyr. Oakland to Chicago via Sacramento, Reno, Salt Lake City, Denver, and Omaha. The Zephyr recently was reduced to tri-weekly service between Oakland and Salt Lake City.

Capitol Corridor. Four trains operate between the Sacramento/Roseville area and the Bay Area. Three trains per day provide extended service beyond Oakland to San Jose via Fremont and Santa Clara.

Future Capitol Corridor Service Improvements. At present, Amtrak operates the Capitol Corridor service under contract to the California Department of Transportation Division of Rail. There is legislation pending that would transfer the Capitol Corridor operations over to BART. The BART West Oakland Station is ideally situated as a multi-modal transfer facility because of its proximity to the Eastern Portal of BART's Transbay Tube and the Southern Pacific's main line. San Francisco's Financial District and its shopping district are about 15 minutes away from this station via BART.

Alameda/Oakland Ferry Service

Prior to construction of the San Francisco/Oakland Bay Bridge, ferries were the primary means of access between Alameda/Oakland and San Francisco. Automobile ferry service continued up until the early 1950s. Ferry service between Alameda/Oakland and San Francisco was re-introduced in October 1989 after the Loma Prieta earthquake damaged the Bay Bridge. Ferry service continues, funded by the MTC, the City of Alameda, and the Port of Oakland.

On weekdays there are 12 ferry trips between the East Bay and San Francisco. The westbound ferries operate between 6:00 AM and 8:50 PM. The eastbound service runs between 6:30 AM and 8:20 PM.

On the East Bay side, the AM ferry service leaves Oakland's Clay Street Ferry Terminal to cross the estuary to Alameda's Main Street Ferry Terminal, east of NAS Alameda's Main Gate. From Alameda, the ferry traverses the bay to the Ferry Terminal at the foot of San Francisco's Market Street in approximately 20 minutes.

In Alameda, AC Transit provides a dedicated shuttle (Route 325) between central Alameda and the ferry terminal. Three shuttles in the morning and four in the evening connect with departing and arriving ferries. The ticket price of the ferry includes two detachable transfers that allow an AC Transit or San Francisco Municipal Railway trip from the traveler's origin to the ferry terminal and similar transfer from the ferry terminal to the final destination.

Patronage of the ferry operations has grown over the years. In addition to regular commuters, the ferries carry tourists and visitors from the East Bay to downtown San Francisco and Fisherman's Wharf. Table 3-17 shows the ferry service patronage for the Alameda/Oakland service.

Table 3-17
Alameda/Oakland Ferry Service Patronage

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97[1]
Oakland	72,823	106,137	114,982	129,706	152,374	191,211	224,598
Alameda	114,512	134,501	133,799	140,387	166,943	183,975	214,656
Total	187,335	240,638	248,781	270,093	319,317	375,186	439,254
Average Daily Trips	634	772	764	848	951	1,151	1,347

[1] July 1996 to May 1997.

Source: Sanchez 1996 and 1997

3.10.7 Roadway System Improvements

Recently Completed Improvements

7th and Harrison Street Intersection. The City of Oakland has recently improved the intersection of 7th and Harrison Street. The improvement provided two signal-controlled right turn lanes from northbound Harrison Street (Posey Tube) onto 7th Street. Traffic using the curb right-turn lane will access northbound I-880 at Jackson Street. The traffic in the second right-turn lane is directed to Madison for access to southbound I-880 at 5th Street.

Broadway and 5th Street Intersection. A second southbound left-turn lane is planned to be constructed on Broadway at 5th Street during 1998. The improvement requires signing two control left-turn movements southbound on Broadway to I-880 south and the Webster Tube serving Alameda.

Planned Improvements

I-880 Corridor - Broadway/Jackson. As part of the current planning for the Oakland Estuary Master Plan, a plan designed to mitigate the existing and future traffic impacts at 7th and Harrison and 5th and Broadway has been drafted. The proposed projects included in the plan are as follows:

1. I-980 southbound Jackson off-ramp would be split off to include a direct access into the Webster Tube. As part of this improvement, the existing tube entrance at Broadway and 5th will be abandoned.

2. Local access from southbound 5th Street into the Webster Tube would be provided by a new connector on 5th Street between Broadway and the Webster Tube. This connector would merge with the new I-980 off-ramp noted above.

3. Provide an I-880 southbound traffic exit from the Posey Tube at 5th Street. This was part of the Measure B proposal and allows traffic to exit at 5th Street going south. This improvement would require installing retaining walls along 5th Street and the installation of a parallel road signal system similar to I-980/Castro Street intersections. This improvement is expected to remove about 700 vehicles her hour from the 7th and Harrison intersection.

4. Provide depressed right turn from Posey to 7th Street. This would require some modifications within the Portal area to depress the roadway and will also require close to a 10 percent grade to meet the existing grade at Alice Street.

5. Creating additional capacity along the I-880 freeway and on the I-880 northbound ramp at Jackson Street and the southbound ramp at Oak Street.

NAS Alameda Street Improvement Plan. A street improvement plan for NAS Alameda was prepared by the City of Alameda. The NAS Alameda Street Improvement Plan (Rajappan & Meyer Consulting Engineers 1997) proposes several improvements that could be made over a 20- to 30-year period, consistent with the anticipated implementation timeline for the Reuse Plan. Specific projects identified in the plan are identified in Appendix F. The overall concept includes the following types of improvements:

1. Provide an Avenue K/Avenue M/Main Street Central Avenue Connection. Presently there is no direct connection between Avenue M and Main Street/Central Avenue. A proposed new roundabout connection would connect streets, improve traffic conditions, and protect Lincoln Avenue from through movements, eliminating the need for a traffic signal.

2. Maintain and Improve On-Site Roadways. The NAS Alameda Street Improvement Plan includes a phased plan for maintenance and improvement to on-site roadways. A five-year road maintenance plan includes specific improvements to existing roadways to improve safety and operations. The 15-year plan rebuilds or rehabilitates all major streets and provides additional sidewalks, bike paths, planting strips, and street

lighting. The 30-year plan would convert remaining roadways and construct new roadways.

3. Increase Transit Service to NAS Alameda/FISC Alameda. Several transit improvements are recommended including an amphibious transportation vehicle to reduce delay and congestion at the Webster/Posey Tubes; electrical shuttle bus service; improved service of Route 10; extension of Route 50; extension of Route 63 north on Main Street; and extension of Route W1. These improvements are described in more detail in Appendix F.

4. Develop Bicycle and Pedestrian Facilities. The NAS Alameda Street Improvement Plan would include the following pedestrian and bicycle improvements:

   - A separate right-of-way for exclusive use by bicycles and pedestrians (Class I) connecting from Alameda and continuing along the entire perimeter of NAS Alameda/FISC Alameda; along Main Street from the Mitchell/Mosley Extension south to Lincoln Avenue; and from the Atlantic Avenue traffic ellipse, connecting with the coastline bikeway.

   - A striped lane for one-way bike travel on a street (Class II) in the following locations: Tinker Avenue from Constitution Way to Taxiway Echo; Lincoln Avenue/Pacific Avenue/Avenue K beginning from Constitution Way to 5th Avenue; 2nd and 3rd Avenue from the Mitchell/Mosley Extension to Atlantic Avenue; Atlantic Avenue from Main Street through traffic ellipse and 5th Avenue; and Singleton Avenue connecting to existing bikepath from Main Street to the Mitchell/Mosley Extension.

   - Shared facilities used with pedestrian or motor vehicle traffic (Class III) at the following locations: 3rd Street from Central Avenue to Tinker Avenue; 5th Street from Atlantic Avenue to the Mitchell/Mosley Extension; and Mosley Avenue from Tinker to the Mitchell/Mosley Extension.

3.10.8 Transportation System Management (TSM) Programs

The City of Alameda has developed a set of ordinances that provide for the creation of a wide range of trip reduction programs. These programs are discussed below.

The City of Alameda Municipal Trip Reduction Ordinance

In 1990, the City of Alameda adopted a trip reduction ordinance intended to reduce local and regional peak period vehicle trips by employees and residents of the City. In 1994, the City of Alameda revised their ordinance to be

consistent with the regional Transportation Control Measures adopted by the Bay Area Air Quality Management District in 1992.

Alameda's ordinance identifies five measures designed to increase the awareness and use of alternative modes by:

- Establishing a transportation marketing center at large employer and center work sites;
- Establishing a Citywide bicycle and bus incentive program that provides access and facilities for all major traffic generators;
- Establishes a Citywide employee transportation information p+Packet;
- Promotes walking and bicycling as alternatives to single occupancy vehicle (SOV) use; and
- Promotes carpooling and vanpooling as an alternative to SOV use.

Initially, these rules applied to existing and new commercial centers and businesses with 50 or more employees at a particular site. For these sites in the City of Alameda, the "Average Vehicle Ridership" (AVR) target standards were initially established at 1.19 in 1993 and expected to increase to 1.35 by 1999. While employers were not subject to fines if they did not meet these AVR targets, they could be fined (and have been) if they failed to demonstrate good faith efforts to implement an approved plan.

Mandatory versus Voluntary Trip Reductions

In May of 1995, the California Senate passed SB 437, Cal. Health and Safety Code § 40929, which prohibits districts and other public agencies from imposing any requirement on any employer to implement a trip reduction program, unless the program is expressly required by Federal law and the elimination of the program will result in the imposition of Federal sanctions. The passage of this bill has served to make once mandatory employer trip reduction programs now voluntary.

The passage of SB 437 has had an effect upon the goals and objectives of Alameda's trip reduction program. Employee surveys are no longer required and many of the programs and on-site transportation coordinators hired to meet the program's requirements are being phased out. While trip reduction rules can no longer be imposed on existing employers, trip reduction measures can be imposed as mitigation measures on new developments.

Effectiveness of Transportation System Management (TSM) Programs

According to an ITE report (Evaluation of Employee Trip Reduction Programs Based on California's Experience with Regulation XV, ITE Technical Committee 6Y-51) trip reductions on the order of 10 to 15 percent or higher are achievable through aggressively promoted and executed site-specific trip reduction programs. Such programs can significantly reduce spot congestion and lessen delays at intersections, freeway ramps and arterial streets in the immediate vicinity of NAS Alameda/FISC Alameda in question. For the purposes of this analysis, a 10 percent reduction in trips is assumed.

Typical Components of a TSM Program

Table 3-18, which identifies employer trip reduction measures, was compiled from the Alameda Municipal Code. The ordinance suggests several measures that may be incorporated in a TSM program. These measures are not listed in any particular order. Each measure identified has been classified as either a design measure or an implementation measure. The design measures typically involve infrastructure improvements that should be addressed during the early planning and design stages. Implementation measures are those measures that can be accommodated administratively after the completion of a project. Some of these measures may be addressed at both times.

3.10.9 Transportation Plans and Regulations

U.S. Department of Transportation

The Federal Highway Administration is the agency of the Department of Transportation responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary state highway network. Federal Highway Administration funding is provided through the Intermodal Surface Transportation Efficiency Act of 1991. This act's legislation can be used to fund local transportation improvement projects, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

California Department of Transportation

Caltrans is responsible for the planning, design, construction, and maintenance of all state highways. Caltrans jurisdictional interest would extends to improvements along the Cypress Freeway. Any federally funded transportation improvements would be subject to review by Caltrans and the California Transportation Commission.

Table 3-18
Employer Trip Reduction Measures

Measures		Design	Implementation	Comments
Ride Sharing				Short commutes mitigate against ridesharing
	Rider Coordination		X	RIDES
	Preferential Parking	X		
	Financial Rewards		X	Potentially costly
	Employer Sponsored Shuttles		X	Already in place in Oakland
	Shuttle Subsidies		X	AC Transit Route 42 Emeryville's Emery-Go-Round
Transit				
	Work Site Tickets and Inf.		X	Low cost
	Financial Subsidies		X	Potentially costly
	Transit Station/Ferry Shuttle		X	BART and San Francisco Ferry
Trip Elimination				
	Compressed Work Week		X	
	Telecommuting		X	
Parking Management				Ample parking mitigates the effectiveness of these measures
	Financial Disincentives		X	
	Non-parking Subsidy		X	
	Carpool Discount Rate		X	
	Carpool Preferential Parking		X	
Bicycle and Pedestrian				Alameda's existing bicycle network and low traffic volumes are ideal for local bike trips
	Capital Purchases		X	
	Bike Lockers	X		
	Bicycle Access	X		
	Bicycle Inf./Registration		X	
	Showers/Lockers	X		
	Financial Rewards		X	
On-Site Facilities				
	Site Design Modifications	X		
	On-site Services	X		Mixed use development
	Guaranteed Return Trip		X	
	Intra-facility Shuttles	X		
	Day Care		X	
	Alternate Fuels	X		CALSTART/Bureau of Electricity (BOE) participation
Other				
	Promotions, Marketing & Outreach	X		
	Residence Placement Services	X		
	Encourage Housing Close By	X	X	
	Reduce Non-work Related Trips	X	X	

Source: Alameda Municipal Code

Metropolitan Transportation Commission

The Metropolitan Transportation Commission is the regional organization responsible for prioritizing transportation projects in a Regional Transportation Improvement Program for federal and state funding. The process is based on evaluating each project for need, feasibility, and adherence to the Intermodal Surface Transportation Efficiency Act policies and congestion management program. The congestion management program requires that each jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level and provide mitigation where future growth degrades that service level.

Alameda County Congestion Management Agency (CMA)

The Alameda County Congestion Management Agency (CMA) is responsible for ensuring local government conformance with the congestion management plan, a seven-year program aimed at reducing traffic congestion. The CMA has review responsibility for proposed development projects that are expected to generate 100 more PM peak hour trips than otherwise would occur. The CMA reviews the adequacy of CEQA analyses and measures proposed to mitigate impacts. The CMA maintains a county-wide transportation model and has approval authority for the use of any local or subarea transportation models.

The analysis of traffic impacts was based on the Alameda County CMA transportation model. The model incorporates a representation of land use and demographic characteristics of the nine-county Bay Area, which allows it to produce travel demand forecasts that incorporate influences of regional travel demand on transportation facilities in Alameda County. The CMA model has been structured to provide forecasting detail that addresses the evaluation needs of both countywide and corridor-specific transportation strategies.

The CMA model was used as the basis for the study of traffic and circulation impacts because the assumptions in the model have been refined and agreed to on a regional basis. The land use assumptions contained in the year 2015 CMA model were developed by the Association of Bay Area Governments (ABAG) with input from local member jurisdictions on planned development.

3.11 AIR QUALITY

This section describes existing air quality conditions in the vicinity of NAS Alameda/FISC Alameda and in the region. The baseline year for air quality conditions is the most recent year of base operation (before April 1997) where quantitative data was available. Ambient monitoring data also is provided for 1990-1996, and emission estimates for 1990 and 1994 to illustrate historic trends. The most current ambient air quality standards are described to accurately reflect the Bay Area's attainment status. The ROI for air quality issues depends on the type of air pollution discussed. Primary pollutants that are directly emitted, such as carbon monoxide and some particulate matter, have an ROI that is generally restricted to the areas on NAS Alameda/FISC Alameda that are in the immediate vicinity of the emission source. Secondary pollutants produced by chemical reactions in the atmosphere, such as ozone and secondary particulate matter, have an ROI that includes the entire San Francisco Bay Area.

3.11.1 Air Quality Terminology

The term "pollutant emissions" refers to the amount of one or more specific compounds introduced into the atmosphere by a source or group of sources. Most pollutant emissions data are presented as "emission rates," the amount of pollutants emitted during a specified increment of time or during a specified increment of emission source activity. Typical measurement units include pounds per hour, pounds per day, or tons per year.

The term "ambient air quality" refers to the atmospheric concentration of a specific compound (amount of a pollutant in a specified volume of air) experienced at a geographic location some distance from the source of the emissions. Wind patterns, precipitation patterns, and chemical reactions affect pollutants emitted into the atmosphere and thus affect ambient air quality measurements.

Air pollutants are often characterized as being "primary" or "secondary" pollutants. Primary pollutants are those emitted directly into the atmosphere (such as carbon monoxide, sulfur dioxide, lead particulates, and hydrogen sulfide). Secondary pollutants are those (such as ozone, nitrogen dioxide, and sulfate particles) formed through chemical reactions in the atmosphere; these chemical reactions usually involve primary pollutants, normal constituents of the atmosphere, and other secondary pollutants.

3.11.2 Ambient Air Quality Standards

The Federal government and the State of California have established ambient air quality standards for several different pollutants (Table 3-19). Pollutants covered by Federal or State ambient air quality standards often are referred to as "criteria" pollutants. As indicated in the table, ambient standards for some criteria pollutants have been set for both short and long periods. Most ambient air quality standards have been set to protect public health. State ambient air quality standards for some pollutants are based on other considerations (e.g., protecting crops or materials or avoiding nuisance conditions). Air quality standards for particulate matter are based on the inhalable component of suspended particulate matter (PM_{10}).

Areas that meet ambient air quality standards are classified as attainment areas, while areas that violate ambient air quality standards are designated as nonattainment areas. The San Francisco Bay Area's designation for the Federal ozone standard was changed in 1995 from nonattainment to attainment. New ozone violations in 1995 and 1996 led EPA to change the Bay Area's ozone status back to nonattainment. In early 1998 the Bay Area was redesignated as an attainment/maintenance area for the Federal carbon monoxide standards. The Bay Area is currently unclassifiable for the Federal PM_{10} standard. The Bay Area is designated as a nonattainment area for the State ozone and PM_{10} standards, and as an attainment area for the State carbon monoxide standard.

In July 1997, the EPA revised the violation criteria for the existing Federal PM_{10} standards, adopted a new 8-hour ozone standard (an 8-hour average of 0.08 ppm), and adopted new fine particle ($PM_{2.5}$) standards (15 micrograms per cubic meter as an annual average and 65 micrograms per cubic meter as a 24-hour average). These standards became effective in September 1997, but nonattainment designations related to the new standards will not be made for at least three years. The Federal 1-hour ozone standard will be rescinded for an area only after EPA determines that it has been achieved in that area. Because monitoring networks for the new $PM_{2.5}$ standards are not yet in place, nonattainment designations for $PM_{2.5}$ will not be made for at least four years.

3.11.3 Existing Air Quality Conditions

The major pollutants of concern in the San Francisco Bay Area, ozone, carbon monoxide, and particulate matter, are monitored at a number of locations. There are no monitoring stations in Alameda; the monitoring stations closest to the site are on Alice Street near Jack London Square in Oakland and at the county hospital in San Leandro. The Alice Street monitoring station measures

Table 3-19
Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Averaging Time	Standard, as parts per million (ppm) by volume		Standard, as micrograms per cubic meter ($\mu g/m^3$)		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	1 Hour	0.09	0.12	180	235	If exceeded	If exceeded on more than 3 days in 3 years
		8 Hours	—	0.08	—	160	—	If exceeded by the mean of annual 4th highest daily values for a 3-year period
Carbon Monoxide	CO	8 Hours	9.0	9.0	10,000	10,000	If exceeded	If exceeded more than 1 day per year
		1 Hour	20	35	23,000	40,000	If exceeded	If exceeded more than 1 day per year
Inhalable Particulate Matter	PM_{10}	Annual Geometric Mean	—	—	30	—	If exceeded	—
		Annual Arithmetic Mean	—	—	—	50	—	If exceeded as a 3-year single station average
		24 Hours	—	—	50	150	If exceeded	If exceeded by the mean of annual 99th percentile values over 3 years
Fine Particulate Matter	$PM_{2.5}$	Annual Arithmetic Mean	—	—	—	15	—	If exceeded as a 3-year spatial average of data from designated stations
		24 Hours	—	—	—	65	—	If exceeded by the mean of annual 98th percentile values over 3 years
Nitrogen Dioxide	NO_2	Annual Average	—	0.053	—	100	—	If exceeded
		1 Hour	0.25	—	470	—	If exceeded	—
Sulfur Dioxide	SO_2	Annual Average	—	0.03	—	80	—	If exceeded
		24 Hours	0.04	0.14	105	365	If exceeded	If exceeded more than 1 day per year
		3 Hours	—	0.5	—	1,300	—	If exceeded more than 1 day per year
		1 Hour	0.25	—	655	—	If exceeded	—
Lead Particles	Pb	Calendar Quarter	—	—	—	1.5	—	If exceeded more than 1 day per year
		30 Days	—	—	1.5	—	If equaled or exceeded	—
Sulfate Particles	SO_4	24 Hours	—	—	25	—	If equaled or exceeded	—
Hydrogen Sulfide	H_2S	1 Hour	0.03	—	42	—	If equaled or exceeded	—
Vinyl Chloride	C_2H_3Cl	24 Hours	0.010	—	26	—	If equaled or exceeded	—

Notes:
All standards except the national PM_{10} and $PM_{2.5}$ standards are based on measurements corrected to 25 degrees C and 1 atmosphere pressure.
The national PM_{10} and $PM_{2.5}$ standards are based on direct flow volume data without correction to standard temperature and pressure.
Decimal places shown for standards reflect the rounding precision used for evaluating compliance.
Except for the 3-hour sulfur dioxide standard, the national standards shown are the primary (health effects) standards.
The national 3-hour sulfur dioxide standard is a secondary (welfare effects) standards.
EPA adopted new ozone and particulate matter standards on July 18, 1997; the new standards became effective on September 16, 1997.
The national 1-hour ozone standard will be rescinded for an area when EPA determines that the standard has been achieved in that area.
Previous national PM_{10} standards (which had different violation criteria than the September 1997 standards) will remain in effect for existing PM_{10} nonattainment areas until EPA takes actions required by Section 172(e) of the Clean Air Act or approves emission control programs for the relevant PM_{10} State implementation plan.
Violation criteria for all standards except the national annual standard for $PM_{2.5}$ are applied to data from individual monitoring sites.
Violation criteria for the national annual standard for $PM_{2.5}$ are applied to a spatial average of data from one or more community-oriented monitoring sites representative of exposures at neighborhood or larger spatial scales (40 C.F.R. Part 58).
The "10" in PM_{10} and the "2.5" in $PM_{2.5}$ are not particle size limits; these numbers identify the particle size class (aerodynamic equivalent diameters in microns) collected with 50% mass efficiency by certified sampling equipment. The maximum particle size collected by PM_{10} samplers is about 50 microns aerodynamic equivalent diameter; the maximum particle size collected by $PM_{2.5}$ samplers is about 6 microns aerodynamic equivalent diameter (40 C.F.R. Part 53).

Source: California Air Resources Board 1993a. State and National Ambient Air Quality Standards (ARB Fact Sheet 39). 40 C.F.R. Parts 50, 53, and 58.

ozone and carbon monoxide levels; the San Leandro monitoring station measures ozone and PM_{10}. Table 3-20 summarizes recent monitoring data for ozone, carbon monoxide, and PM_{10}.

As indicated in Table 3-20, Federal and State standards for carbon monoxide have not been exceeded in recent years. The Federal air quality standard for PM_{10} has not been exceeded in recent years, though the more stringent State PM_{10} standard has been exceeded at the San Leandro monitoring station a few times each year, except in 1995.

Table 3-20
Summary of Recent Air Quality Monitoring Data for the NAS Alameda/FISC Alameda Area

Monitoring Station	Air Quality Indicator	1990	1991	1992	1993	1994	1995	1996
		OZONE						
Oakland -	Peak 1-hour value (ppm)	0.06	0.06	0.08	0.11	0.06	0.11	0.09
Alice Street	Days above Federal standard	0	0	0	0	0	0	0
	Days above State standard	0	0	0	1	0	1	0
San Leandro -	Peak 1-hour value (ppm)	0.07	0.12	0.11	0.12	0.09	0.15	0.11
Co. Hospital	Days above Federal standard	0	0	0	0	0	3	0
	Days above State standard	0	2	2	3	0	6	2
		CARBON MONOXIDE						
Oakland -	Peak 1-hour value (ppm)	8.0	9.0	7.0	7.0	7.0	5.0	7.0
Alice Street	Peak 8-hour value (ppm)	6.1	6.8	4.6	4.9	4.4	3.9	3.9
	Days above Federal standard	0	0	0	0	0	0	0
	Days above State standard	0	0	0	0	0	0	0
		PM_{10}						
San Leandro -	Peak 24-hour value ($\mu g/m^3$)	123	99	56	51	62	47	59
Co. Hospital	Annual geometric mean ($\mu g/m^3$)	29.3	27.6	22.7	18.1	18.7	16.9	19.1
	Annual arithmetic mean ($\mu g/m^3$)	34.5	32.4	24.9	20.8	21.1	19.5	21.3
	Number of 24-hour samples	26	60	61	61	61	61	61
	% of samples above Federal standard	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% of samples above State standard	15.4	16.7	3.3	1.6	1.6	0.0	1.6

Notes: ppm = parts per million by volume.
($\mu g/m^3$) = micrograms per cubic meter.
Federal 1-hour ozone standard is 0.12 ppm; State 1-hour ozone standard is 0.09 ppm.
Federal 1-hour carbon monoxide standard is 35 ppm; State 1-hour carbon monoxide standard is 20 ppm.
Federal 8-hour carbon monoxide standard is 9 ppm; State 8-hour carbon monoxide standard is 9.0 ppm.
Federal PM_{10} standards: 50 ($\mu g/m^3$), annual arithmetic mean; 150 ($\mu g/m^3$), 24-hour average.
State PM_{10} standards: 30 ($\mu g/m^3$), annual geometric mean; 50 ($\mu g/m^3$), 24-hour average.

Source: California Air Resources Board 1990; 1991a; 1992a; 1993a; 1994; 1995; 1996

There were no violations of the Federal ozone standard at the Alice Street monitoring station during 1995, but the Federal standard was exceeded three times at the San Leandro station. The Federal ozone standard also was violated in other parts of the Bay Area during 1995. While violations of the Federal ozone standard were recorded in the Bay Area during the summer months of 1996, no violations occurred at the Alice Street or San Leandro stations during this time period.

Sensitive Receptors

Sensitive receptors are land uses, such as residences, schools, hospitals and similar uses, that may be considered sensitive to air quality impacts. Sensitive air quality receptors located at NAS Alameda/FISC Alameda include residential areas east and west of Main Street, the Coast Guard day care center, Miller Elementary School located off Singleton Avenue, 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 and in particular 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, and Encinal High School located off Central Avenue.

3.11.4 Air Emission Sources

Air emission sources at NAS Alameda and FISC Alameda included stationary sources, where emissions from a source are generated at a fixed point, and mobile sources, where emissions from a source may be generated at multiple locations.

NAS Alameda

Stationary Sources. 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.

The Bay Area Air Quality Management District (BAAQMD) is the local agency responsible for air quality management programs in the Bay Area, including permitting authority. The emissions reported on the 1990 and 1994 BAAQMD emissions inventories for NAS Alameda are shown in Table 3-21. The decrease in emissions between 1990 and 1994 was due primarily to the decrease in operations at NAS Alameda.

Table 3-21
NAS Alameda Stationary Source Emissions

Year	Emissions in lbs per day/tons per year				
	ROG	CO	NO_x	Particulates	SO_2
1990	779/144.0	NA	1366/250.2	NA	192/35.3
1994	88/17.3	66/12.6	489/89.3	33/6.6	6/1.4

ROG= reactive organic compounds
CO= carbon monoxide
NO_x= nitrogen oxides
SO_2=sulfur dioxide
NA = not available

Source: BAAQMD 1990; BAAQMD 1994

Approximately half the stationary sources at NAS Alameda operated under air quality permits issued by the BAAQMD. Exempt sources are those not requiring permits because the sources are indicated explicitly in relevant BAAQMD rules as exempt from permit requirements. The permit exemption can be based on equipment capacity, material usage, or emissions below certain thresholds. At closure of NAS Alameda, the Navy had 254 permitted stationary sources and 332 exempt sources (Shahani 1997). As shown in Table 3-22, some permitted and exempt sources have been retained by the Navy to meet DOD needs, some have been transferred to the ARRA, and some have been shut down.

Table 3-22
Stationary Emission Source Status at NAS Alameda

Sources and Disposition Status	Number of Sources
Number of stationary sources	
With BAAQMD permits	254
Exempt from permit requirements	332
Total	586
Permitted sources banked by Navy to meet DOD needs	22
Permits/exempt sources transferred to other agencies	
Permitted/exempt sources transferred to leasing authority (ARRA)	289
Permitted/exempt sources demolished with right to bank credit transferred to ARRA	274
Total	563
Permitted sources shut down or transferred to other agencies	1

Source: Shahani 1997

The BAAQMD has an emissions banking program to credit facilities that close or reduce emissions from permitted sources. The emissions reduced may be deposited into the banking program as offsets to meet future permit requirements at DOD facilities. NAS Alameda currently has five banking certificates—Certificate #351 (22.79 tons per year [20.68 metric tons per year] precursor organic compounds, 54.6 tons per year [49.5 metric tons per year] nonprecursor organic compounds), Certificate #205 (6.03 tons per year [5.47 metric tons per year] nonprecursor organic compounds), Certificate #333 (13.49 tons per year [12.24 metric tons per year] precursor organic compounds), Certificate #15056 (3.9 tons per year [3.5 metric tons per year] precursor organic compounds and 2.4 tons per year [2.2 metric tons per year] nitrogen oxides), and Certificate #15592 (4.2 tons per year [3.8 metric tons per year] precursor organic compounds and 1.2 tons per year [1.1 metric tons per year] nitrogen oxides) (ARRA 1995a).

Mobile Sources. Mobile sources at NAS Alameda included private and government vehicles, heavy trucks, lawn maintenance equipment, ships, and aircraft. The mobile source emission inventory for NAS Alameda documented 1992 emission levels from on-road vehicles and off-road mobile sources, such as aircraft, marine vessels, and ground support equipment. These emissions are shown in Table 3-23.

Table 3-23
NAS Alameda Mobile Source Emissions Summary

Activity Type/ Vehicle Class	Emissions in tons per year				
	ROG	CO	NO_x	PM_{10}	SO_x
Privately Owned Vehicles	39.6	336.2	33.5	12.3	0.5
Government-owned Vehicles	2.9	22.3	5.0	0.7	0.1
Commercial Vehicles and Visitors	25.1	186.8	42.4	12.2	0.8
Off-road Equipment	65.3	215.4	19.2	2.4	0.2
Aircraft Operations	20.0[1]	47.2	63.3	NA	3.1
Ship Operations	11.3[1]	22.3	5.5	1.0[2]	5.2
Totals	164.2	830.2	168.9	28.6	9.9

[1] Emissions provided as hydrocarbons
[2] Assumes all particulate emissions are equal to PM_{10}.
ROG = reactive organic gases
CO = carbon monoxide
NO_x = nitrogen oxides
PM_{10} = inhalable particulate matter
SO_x = sulfur oxides

Source: Radian 1996

FISC Alameda

Stationary Sources. FISC Alameda includes warehouse and administration buildings. Use of these facilities did not generate significant air emissions. No emissions inventory for these sources was available. No permitted/exempt sources have been transferred or banked for credit at FISC Alameda (Shahani 1997).

Mobile Sources. Mobile sources at the FISC Alameda included government and private vehicles and heavy trucks. The mobile source emission inventory for FISC Alameda documented 1992 emission levels from on-road vehicles and off-road mobile sources, such as aircraft, marine vessels, and ground support equipment. These emissions are shown in Table 3-24.

Table 3-24
FISC Alameda Mobile Source Emissions Summary

Activity Type/ Vehicle Class	Emissions in tons per year				
	ROG	CO	NO_x	PM_{10}	SO_x
Privately Owned Vehicles	1.7	14.1	1.3	0.4	0.0
Government-owned Vehicles	0.1	0.4	0.1	0.0	0.0
Commercial Vehicles and Visitors	0.3	1.6	1.4	0.3	0.0
Off-road Equipment	1.8	12.5	9.8	1.4	0.1
Ship Operations	0.0	0.1	0.7	0.0	0.3
Totals	3.9	28.7	13.3	2.1	0.4

ROG= reactive organic gases
CO= carbon monoxide
NO_x= nitrogen oxides
PM_{10}=inhalable particulate matter
SO_x= sulfur oxides

Source: Radian 1996

3.11.5 Air Quality Planning

Federal Requirements

The Federal Clean Air Act, 42 U.S.C. § 7401, *et seq.*, requires states to develop, adopt, and implement a State implementation plan (SIP) to achieve, maintain, and enforce Federal air quality standards throughout the State. These plans must be submitted to and approved by the EPA. In California, the SIP consists of separate elements for different regions of the State. SIP elements generally are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated.

Local councils of governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the San Francisco Bay Area, SIP document preparation has been a coordinated effort involving three regional agencies, the BAAQMD, the Association of Bay Area Governments, and the Metropolitan Transportation Commission.

The Federal Clean Air Act also imposes deadlines for achieving the Federal ambient air quality standards. These deadlines vary according to the severity of existing air quality problems. The San Francisco Bay Area achieved the Federal ozone standard and was reclassified in June 1995 from a moderate nonattainment area to a maintenance area for the Federal ozone standard. However, after redesignation, new exceedances of the Federal ozone standard were reported at several Bay Area monitoring stations during the summer and fall of 1995 and again in 1996. In July 1998, EPA changed the Bay Area's ozone designation back to nonattainment and required some revisions to the existing ozone SIP.

In early 1998 the Bay Area was redesignated as an attainment/maintenance area for the Federal carbon monoxide standards. The Bay Area is designated as unclassifiable for the Federal PM_{10} standard (equivalent to an attainment designation). The BAAQMD believes that monitoring data demonstrate the Bay Area has achieved the Federal carbon monoxide standards and has requested redesignation to attainment status.

State Requirements

The California Clean Air Act of 1988, Cal. Health & Safety Code § 39607 note (West 1996), requires air pollution control districts and air quality management districts to develop air quality management plans for meeting State ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The State Air Resources Board is responsible for developing a plan for meeting State PM_{10} standards.

The California Clean Air Act does not set specific deadlines for achieving State air quality standards. Instead, attainment is required "as expeditiously as practicable," with various mandated emission control program requirements based on the nonattainment classification for ozone and carbon monoxide. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the State ozone standard and as a nonattainment area for the State PM_{10} standard. The entire San Francisco Bay Area is classified as an attainment area for State carbon monoxide standards.

3.11.6 Regulatory Considerations

Air pollution control programs were established in California prior to the enactment of Federal requirements. Responsibility for air quality management programs in California is divided between the Air Resources Board as the primary State air quality management agency and air pollution control districts as the primary local air quality management agencies. Federal Clean Air Act legislation in the 1970s resulted in a gradual merger of local and Federal air quality programs, particularly industrial-source air quality permit programs.

The roles and responsibilities of both the Air Resources Board and local air pollution control districts have been expanded by the California Clean Air Act of 1988. Local air pollution control districts also have been given added responsibility and authority to adopt transportation control and emission reduction programs for indirect and area-wide emission sources.

Air Quality Permits

Many types of industrial and commercial facilities require air quality permits for their equipment and operations. The BAAQMD has the primary air quality permit authority for sources within the San Francisco Bay Area. Permit authority is derived from a combination of Federal and State legislation and can be categorized into construction or installation authorizations for individual pieces of equipment and permits for continued operation of equipment and facilities. The process requires two permits, one for authority to construct and another to operate.

When a stationary source is permanently taken out of service, its air quality permits are normally surrendered. BAAQMD regulations establish procedures for obtaining 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.

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. § 7661, *et seq.*), address industrial facilities as a whole, as well as discrete emission sources within the facility. NAS Alameda submitted a Title V permit application to the BAAQMD in May 1996. The

permit application was based on emissions data from an earlier year. Because base closure operations greatly reduced emissions, the 1996 annual emissions will fall to levels below 50 percent of Title V Major Facility Review threshold requirements. NAS Alameda is compiling an emission inventory report of actual 1996 emissions and will then request withdrawal of its submitted Title V permit application from the BAAQMD and removal of NAS Alameda from the Title V permit applicability list.

3.12 NOISE

This section provides a brief introduction to noise terminology, an overview of existing noise conditions, and noise-related regulatory considerations at NAS Alameda/FISC Alameda. Baseline noise conditions are described for 1985 for NAS Alameda/FISC Alameda and for 1991 for the City of Alameda. The 1985 data represent the Navy's most recent Air Installation Compatibility Use Zone Study (AICUZ), while 1991 represents the noise data available from the City of Alameda General Plan.

The decrease in noise levels with increasing distance away from the noise source results in a fairly limited ROI for noise issues. The ROI for fixed site noise sources (such as industrial equipment or construction and demolition sites) is generally less than 0.5 mile (0.8 km) from the site. The ROI for highway traffic noise sources is generally less than 1,000 feet (305 m) from roadways experiencing significant changes in traffic noise.

3.12.1 Noise Terminology

Sound travels through the air as waves of air pressure fluctuations caused by vibration. In general, sound waves travel away from the noise source as 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 the actual air pressure fluctuations caused by sound waves, with separate measurements made 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 generally is 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 some high frequency sounds to appropriately account for human responses to noise.

Varying noise levels often are described in terms of the equivalent constant decibel level. Equivalent noise levels (Leq) 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 Leq 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 are presented as a community noise equivalent level (CNEL). CNEL values are calculated from hourly equivalent noise level values, with a 5 dB annoyance penalty added to the evening (7:00 PM to 10:00 PM) equivalent noise level values and a 10 dB penalty added to the nighttime (10:00 PM to 7:00 AM) equivalent noise level values.

3.12.2 Existing Noise Conditions

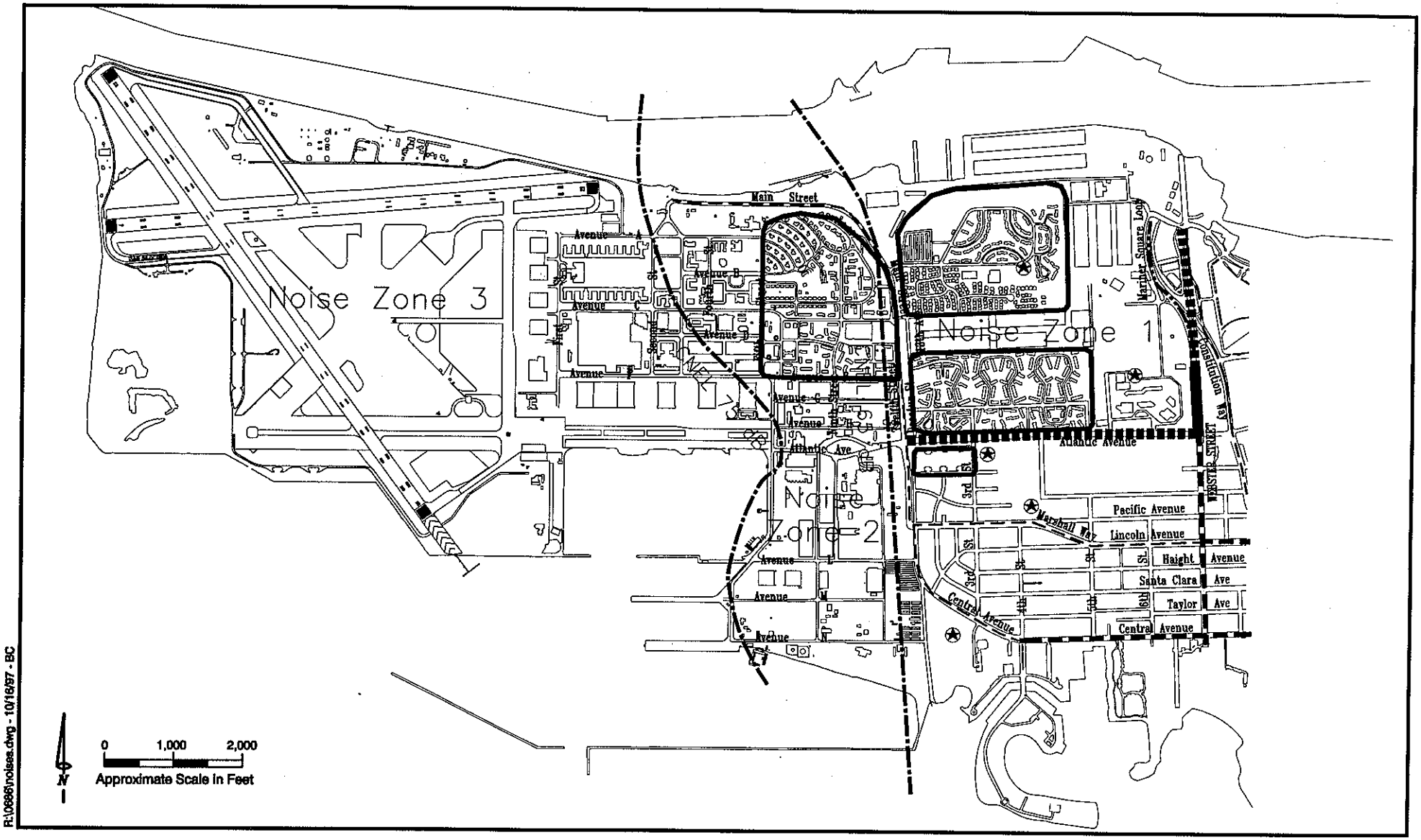
Sensitive Receptors

Sensitive receptors are land uses, such as residences, schools, hospitals, and similar uses, that are considered to be sensitive to noise. Sensitive noise receptors located on NAS Alameda/FISC Alameda include residential areas east and west of Main Street, the 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, and Encinal High School located off Central Avenue.

Noise Conditions

The health and safety element of the City of Alameda General Plan (1991) identifies aircraft and surface traffic as the City's primary noise sources. Aircraft noise in Alameda results from flights from two airports—Metropolitan Oakland International and San Francisco International. Until recently, flights also originated out of NAS Alameda, but aircraft operations have ceased and the runway has been closed. Historic aircraft CNEL noise levels of 65 dB were recorded along the eastern boundary of the facility, while CNEL noise levels of 75 dB were recorded through the civic core of the facility (US Navy 1985a). No traffic or other noise data was available for NAS Alameda or FISC Alameda.

The highest surface street noise levels in the NAS Alameda vicinity occur on Atlantic Avenue (70 to 74 dB at 40 feet [12 m] from road centerline) and Webster Street (75 to 79 dB at 40 feet [12 m] from road centerline) (City of Alameda 1991). Figure 3-20 shows historic noise levels from NAS Alameda aircraft and City of Alameda surface traffic.



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Historic NAS Alameda aircraft noise levels and City of Alameda surface traffic noise levels are depicted here. Noise zones refer to federal agency guidelines as discussed in Section 3.12.3.

LEGEND:

Street Noise:

- Ldn = 75-79 dB
- Ldn = 70-74 dB
- Ldn = 65-69 dB
- Ldn = 60-64 dB

Aircraft Noise:

- 65 dB — NAS Alameda Community Noise Equivalent Level (CNEL)
- Sensitive Receptors-residential areas
- Sensitive Receptors-schools

Source: City of Alameda 1991; City of Alameda 1990c

Aircraft and Traffic Noise

NAS Alameda /FISC Alameda
Alameda, California

Figure 3-20

3.12.3 Regulatory Considerations

Various State, and local agencies have developed guidelines for evaluating land use compatibility under different noise level ranges.

State Agency Guidelines

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes various outdoor CNEL ranges into four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use. The City of Alameda has adopted a variation of these standards as the basis for its noise mitigation policies (Table 3-25).

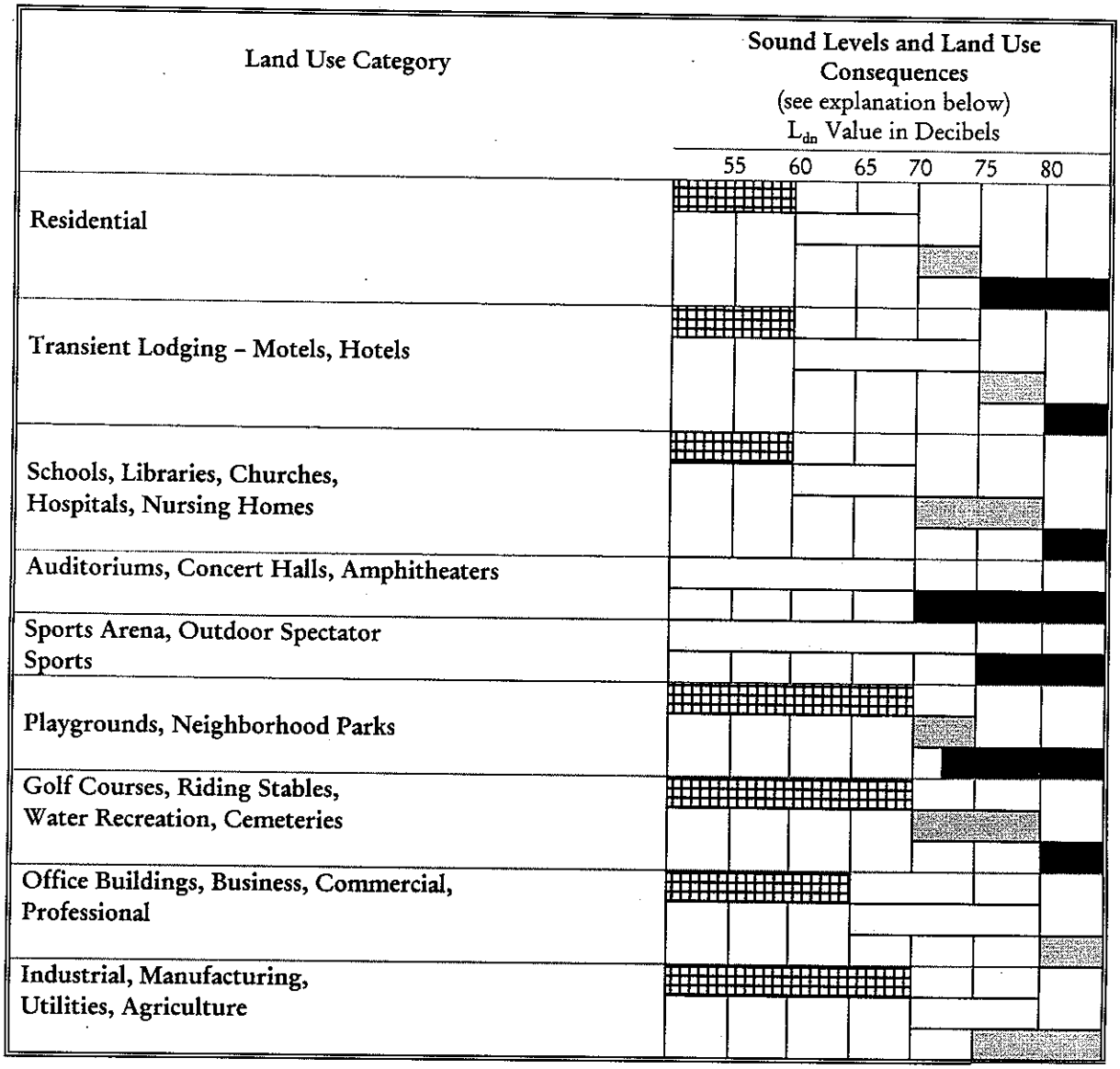
The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures, 24 California Administrative Code T25-28, 25 CCR § 4370. These standards require that hotels, motels, and multiunit dwellings be constructed so that outdoor noise sources will not cause interior noise levels to exceed an annual average CNEL value of 45 dB with the windows closed.

Local Agency Guidelines

Health and Safety Element of the City of Alameda General Plan. Noise is addressed in the health and safety element of the City of Alameda General Plan (1991). Guiding policies include minimizing vehicular and stationary sources and noise from temporary activities, requiring site and building design to achieve noise compatibility to the extent feasible, recognizing that sensitive noise uses in commercial areas will be subject to higher noise levels, and maintaining efforts to mitigate impacts of aircraft noise.

Implementing policies include requiring acoustical analysis for new or replacement sensitive land uses in areas with noise levels of 60 dB or greater; requiring new or replacement uses to meet noise guidelines; enforcing the community noise ordinance, enforcing compliance with Federal and State vehicle noise emission standards; urging AC Transit to use small buses for routes on minor streets; maintaining day and night truck routes that minimize the number of residents exposed to truck noise; enforcing, with the cooperation of the USCG and City of Oakland, engine-driven vessel noise emission standards; and enlisting the cooperation of the Alameda Beltline Railroad operators to reduce railroad noise.

Table 3-25
Alameda Land Use Compatibility Standards for Community Noise Environments



Source: City of Alameda 1991

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 are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Normally Acceptable: Specified land use is satisfactory, based on the assumption that buildings involved are of normal conventional construction, without any special noise insulation requirements.

Clearly Unacceptable: New construction or development generally should not be undertaken.

Airport Environs Element of the City of Alameda General Plan. The Airport Environs Element consolidates policies relating to airports at a single location in the General Plan document. Guiding airport policies relating to noise include not approving development in noise sensitive areas, seeking ways to ensure effective sound mitigation for all housing units, and ensuring that purchasers of property currently or potentially subject to noise levels exceeding 65 dB are aware of such conditions.

The implementing policy relevant to the NAS Alameda/FISC Alameda area is requiring acoustical analysis and noise reduction measures for new or replacement dwellings, hotels, motels, schools, and health-related uses.

Alameda County Airport Land Use Commission and Airport Land Use Policy Plan. California State law establishes Airport Land Use Commissions (ALUCs) in each county to coordinate the compatibility of new development near airports. The ALUC has the power and responsibility to prepare and adopt a comprehensive land use plan that establishes restrictions on land uses within a designated ALUC safety zone or referral area. The Alameda County ALUC Airport Land Use Policy Plan, which was adopted in 1979 and updated in 1986, includes the NAS Alameda AICUZ. It addresses safety hazards, land use incompatibilities, and noise impacts created by aircraft activity and contains policies pertaining to safety zones, height limitations, and hazard prevention. A public agency owning an airport within the boundaries of an ALUC plan area is required, prior to modification of its airport master plan, to refer the proposed change to the ALUC.

3.13 HAZARDOUS MATERIALS AND WASTE

This section describes the past use of hazardous materials and petroleum products and the generation of hazardous wastes during NAS Alameda/FISC Alameda operations. It also discusses the locations and environmental condition of areas that have been affected by releases of hazardous materials or hazardous wastes or by releases of petroleum products. Hazardous materials and hazardous wastes are defined in the Glossary (Chapter 9) and by Federal and State regulations. Baseline hazardous materials and waste conditions are described using recent data (e.g., 1994-1998).

The ROI for hazardous materials and waste is NAS Alameda/FISC Alameda and adjacent areas that may have been affected by hazardous materials or hazardous wastes originating at NAS Alameda/FISC Alameda or from which hazardous materials or wastes could migrate onto NAS Alameda/FISC Alameda.

Prior land uses of NAS Alameda/FISC Alameda property may have involved the handling, storage, or use of hazardous materials. These land uses included rail lines, rail yards, a civil and Army Air Corps airfield, a borax processing plant, and an oil refinery (US Navy 1995a). Much of NAS Alameda/FISC Alameda 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 NAS Alameda/FISC Alameda. Chemical constituents in fill material have a potential to create soil or ground water contamination.

Operations and activities at NAS Alameda 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, and other industrial chemicals, as well as ordnance, have been used throughout much of the history of NAS Alameda (US Navy 1995a). The age of most facility buildings also presents the potential for the presence of lead-based paints and asbestos-containing materials.

FISC Alameda historically has been used for open storage, warehousing, and administrative space. Some hazardous wastes have been stored at FISC Alameda and both underground and aboveground fuel storage tanks have been installed on-site. The age of most FISC Alameda buildings also presents the potential for the presence of lead-based paints and asbestos-containing materials.

Although widely accepted at the time, procedures followed prior to the mid-1970s for managing and disposing of many hazardous materials and wastes often resulted in contamination of the environment. Management of hazardous substances, including hazardous materials and hazardous wastes, is now rigorously regulated by Federal, State, and local laws and regulations. Currently, Engineering Field Activity West at San Bruno and the Navy Transition Office at NAS Alameda are managing the implementation of current compliance programs and are managing site assessments and subsequent site restorations. The following description of hazardous substances at NAS Alameda/FISC Alameda includes information regarding remediation activities that will continue following base closure, as well as the projected condition of hazardous substances at the time of closure.

The hazardous materials and waste information provided in this section reflects the most current data available for each area of concern. The information is derived primarily from the following documents:

- Final Basewide Environmental Baseline Survey/Community Environmental Response Facilitation Act Report for NAS/NADEP Alameda (NAS Alameda EBS) (US Navy 1994c);
- NAS Alameda BRAC Cleanup Plan (US Navy 1995a);
- NAS Alameda BRAC Cleanup Plan, Revision 03 (US Navy 1997);
- Alameda Point Draft BRAC Cleanup Plan, Revision 04 (NAS Alameda Draft BCP) (US Navy 1998a); and
- BRAC Cleanup Plan, Fleet and Industrial Supply Center, Oakland, Alameda Facility/Alameda Annex (FISC Alameda BCP) (US Navy 1996c).

3.13.1 Hazardous Materials Regulations

Following is a brief discussion of the major Federal laws and regulations that apply to hazardous materials and waste at NAS Alameda/FISC Alameda.

Resource Conservation and Recovery Act, 42 U.S.C. § 6901, et seq. In response to the need to more closely regulate the ongoing handling, storage, transportation, and disposal of hazardous wastes, the US Congress passed the Resource Conservation and Recovery Act (RCRA). RCRA is the primary Federal statute governing operating hazardous waste storage, treatment, and disposal sites. Prior to RCRA, the State of California had

passed the Hazardous Waste Control Law of 1972, Cal. Health and Safety Code § 25100, *et seq.* This law authorizes regulations that equal or exceed the Federal standards set by RCRA for hazardous waste management. The State of California was given "interim authorization" to implement RCRA by enforcing the State Hazardous Waste Control Law. Final authorization for the State to implement RCRA was given in 1992. The responsible agency for enforcing RCRA and the Hazardous Waste Control Law is the California Environmental Protection Agency (Cal EPA), Department of Toxic Substances Control (DTSC).

Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601, et seq. Originally passed in 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) created national policies and procedures to identify and remediate sites previously contaminated by the release of hazardous substances. CERCLA formalized the process for identifying sites and prioritizing the site cleanup. 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 that is used in determining whether it should be placed on the National Priorities List (NPL). Facilities placed on the NPL are commonly referred to as Superfund sites. NAS Alameda and FISC Alameda are not on the NPL, although NAS Alameda is currently under review for listing (see page 3-190 for detailed discussion).

Properties that contain or potentially contain contamination may be conveyed or transferred prior to completion of environmental remediation only if the requirements of Section 120(h)(3) of CERCLA are met (§ 334 early transfer). These requirements include the following:

- Agreement by the EPA and the State that the property is suitable for the intended use and that the intended use will protect 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 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.

In all other circumstances, contaminated or potentially contaminated properties cannot be conveyed or transferred until remediation is complete. However, the DOD has established a policy for leasing these properties. The DOD, with regulatory participation, can develop a site-specific or supplemental environmental baseline survey, or in specific cases, use the basewide 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. This process is underway for several parcels at NAS Alameda/FISC Alameda. With the exception noted above, 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).

Community Environmental Response Facilitation Act, 42 U.S.C.A. § 9601 note (West 1995). Congress amended CERCLA in 1992 through the passage of the Community Environmental Response Facilitation Act (CERFA). The purpose of CERFA is to expedite the identification of uncontaminated real property within closing Federal facilities that offers the greatest opportunity for reuse and redevelopment. Uncontaminated, or "CERFA-eligible," property is defined as real property where no storage, release, or disposal of hazardous substances or petroleum products has occurred, and to which these substances have not migrated from adjacent areas. CERFA also clarified when "all remedial action has been taken." 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. After the remedy has been demonstrated to be operating properly, the conveyance or transfer of the property can occur.

The EPA is the regulatory authority for enforcing CERCLA, including the CERFA amendments. However, the EPA has joined with the Cal EPA in implementing CERFA for DOD facilities in California. Cal EPA serves as the "lead agency" for closures of military bases, including NAS Alameda/FISC Alameda, not listed in the NPL. Cal EPA generally follows EPA guidance for CERCLA sites.

The 1994 EBS for NAS Alameda (US Navy 1994c) divided the property into 214 parcels, 208 of which are on NAS Alameda property and 6 of which are on FISC Alameda property. However, the 1996 FISC Alameda BCP (US Navy 1996c) has divided the FISC Alameda property into 37 parcels; they are discussed separately below. CERFA requires a process and

schedule for identifying uncontaminated sites. Parcels have been classified into seven categories, depending on whether they have been used for storing hazardous materials and whether contamination is suspected, known, or undergoing remediation. The classification categories are defined in the 1998 NAS Alameda Draft BCP (US Navy 1998a), Section 2.2, Description of Alternatives.

NAS Alameda CERFA Status

In phase I of the EBS process, the final basewide NAS Alameda EBS, published in October 1994 and developed in cooperation with the regulatory community, identified six of 208 parcels as "CERFA-eligible" or category 1 parcels. These six parcels include the Main Gate sentry house (Parcel 39), a baseball field and a grassy open space near the Main Gate (Parcels 60 and 63), the tennis courts and nearby areas (Parcel 93), the handball court (Parcel 101), and the Main Gate security building (Parcel 194).

Phase II of the EBS process was completed in 1996 and included further assessment and sampling, where necessary, on the 202 parcels that required further investigation. Phase III of the EBS process included an analysis of the information produced by phase II and a reclassification of the remaining parcels as follows:

- Parcels in categories 2 and 3 are eligible for conveyance or transfer because no further action is required, based on the results of the phase II investigation. Parcels in category 4 also will be eligible for conveyance or transfer after remedial actions are completed.

- Parcels in categories 5 and 6 are undergoing remediation or require remedial action. These parcels will be included in an existing environmental restoration or compliance program. Parcels that require additional remediation may be suitable for early conveyance or transfer under 42 U.S.C. § 9620(h)(3) (see discussion below).

- Parcels in category 7 require additional evaluation or investigation.

The parcel classifications and definitions for NAS Alameda are shown in the 1998 Draft BCP (US Navy 1998a), Table 2-1.

FISC Alameda CERFA Status

The FISC Alameda BCP (US Navy 1996c) indicates that 21 of 37 parcels have been classified as CERFA-eligible during the preliminary EBS process.

The parcel classifications and definitions for FISC Alameda are shown in the FISC Alameda BCP (US Navy 1996c), Table 4-1.

Non-CERFA-Eligible Properties

For properties that cannot qualify as "CERFA-eligible," the CERFA law specifies that the deed for the conveyance or transfer of subject property include a covenant warranting that all remediation necessary to protect human health and the environment with respect to any hazardous substance remaining on the property has been taken prior to the date of conveyance or transfer and that any response action or corrective action found to be necessary after the date of conveyance or transfer shall be conducted by the US Navy.

3.13.2 Hazardous Materials Management

The BRAC process requires an EBS and a BCP for each facility scheduled for closure. The EBS is a preliminary evaluation and summary of all known and suspected areas where hazardous materials or petroleum products have been handled, stored, disposed, or released within the boundaries of the site and adjacent areas. It also identifies properties that meet the criteria for conveyance, transfer, or lease set forth in CERFA. The BCP provides a plan and schedule for investigating and remediating property that does not meet CERFA standards. It is revised periodically to provide a status report of environmental restoration and associated compliance programs.

A basewide EBS for NAS Alameda was completed in October 1994 (US Navy 1994c) and a BCP was prepared in March 1995 (US Navy 1995a). The NAS Alameda EBS is now being updated while the NAS Alameda BCP was updated in February 1997 (US Navy 1997) and again, most recently, as a draft revision in June 1998 (US Navy 1998a).

A BCP for FISC Alameda was completed in November 1996 (US Navy 1996c). An EBS for FISC Alameda is in progress. Some information from the EBS process is included in the FISC Alameda BCP.

Use and storage of hazardous materials at NAS Alameda and FISC Alameda were regulated internally by a hazardous materials inventory control program, implemented in 1992, to minimize inventories and to reduce hazardous waste (US Navy 1995a). During the past several years of operations at NAS Alameda, hazardous materials and hazardous wastes were accumulated and stored in two areas, Building 13 and Yard D-13. These areas were cleared of all hazardous substances as the Navy operations ended.

Hazardous materials have been stored at FISC Alameda in two locations, at Building 5 and at Building 361. These areas were cleared of all hazardous substances as Navy operations ceased in 1997.

By the time of closure, hazardous materials that are not required for the environmental restoration process or caretaker maintenance activities were collected from all designated storage areas and transferred to the Defense Reutilization and Marketing Office (DRMO). The DRMO handles materials that the DOD has determined are surplus and may be offered for sale to nonmilitary purchasers. The DRMO is now located at NAS Alameda as a satellite office. Materials that are not redistributed or sold will be disposed of off-site in accordance with RCRA and State requirements.

Small quantities of hazardous materials will continue to be present on NAS Alameda/FISC Alameda during the caretaker period. Hazardous materials such as pesticides, lubricants, degreasers, solvents, cleaners, paints, and fuels associated with ongoing maintenance activities will be necessary for the foreseeable future. Hazardous wastes will be produced due to removal of asbestos and lead paint and cleanup of the Navy properties while other wastes will be generated by activities associated with limited leasing.

3.13.3 Hazardous Waste Management

Hazardous waste management at NAS Alameda/FISC Alameda is regulated under RCRA and the California Hazardous Waste Control Law. Both NAS Alameda and FISC Alameda have RCRA-permitted hazardous waste storage facilities.

Hazardous Waste Facilities at NAS Alameda

NAS Alameda was listed in the May 1992 RCRA database as a large quantity hazardous waste generator, as well as a treatment, storage, and disposal facility. Hazardous waste generated by the Navy at NAS Alameda was handled under guidelines outlined in the NAS Alameda Hazardous Waste Management Plan (US Navy 1987a), which incorporated Federal, State, and local regulations. The manual identified wastes generated by NAS Alameda and specified appropriate procedures and processes to manage the waste, including reduction, recycling, and manifest procedures.

Before base closure in 1997, NAS Alameda operated 22 active hazardous waste generator accumulation points where wastes were stored less than 24 hours (72 hours on weekends) before they were transported to one of three permitted waste storage units. The Naval Aviation Depot operated 60 generator accumulation points and generated wastes at one additional

laboratory site. The storage and treatment of hazardous waste is regulated through Federal and State operating permits.

Hazardous Waste Permits. NAS Alameda formerly operated three hazardous waste storage units under a RCRA Part B permit issued by the California DTSC. The RCRA Part B permit became effective on July 24, 1993 and expires on July 24, 2003. The permit specifies operating requirements for two container storage areas (Building 13 and Yard D-13) and a tank storage area (Structure 598, outdoors in Area 37). The container storage areas at Building 13 and Yard D-13 were closed in 1997, and the closure plans were submitted to DTSC. The tank storage area at Structure 598 was deleted from the Part B permit in 1996 because hazardous wastes were never stored at this unit.

Before 1974, all industrial wastewater generated at NAS Alameda was discharged directly to the storm drains that discharged to the Seaplane Lagoon and Oakland Inner Harbor. From 1974 until base closure, NAS Alameda treated all industrial wastewater at four treatment plants before it was discharged to a publicly owned treatment works (POTW). An industrial wastewater discharge permit from the East Bay Municipal Utility District (EBMUD) established pretreatment standards for effluent concentrations and total flow limits for industrial operations. The discharge permit was held by the Navy Public Works Center (PWC) in Oakland, California. The PWC was responsible for operation and maintenance of the industrial pretreatment processes, including monitoring and record keeping.

The operation of the four industrial wastewater treatment plants (IWTP) at Buildings 5, 24, 25, and 32 were also regulated by a RCRA Part B IWTP permit and conditions issued to the Navy by DTSC. At Building 5, the tanks and equipment were dismantled, and soil sampling was conducted according to closure plans. The cleaning and closure of the IWTP at Building 24 was completed by May 1997 in anticipation of potential reuse. A new permit must be obtained should a future user want to operate this facility. Closure of IWTP at Building 25 has been delayed until all waste waters have been treated. The cleanup and closure of the IWTP at Building 32 will be completed by the end of 1999.

Prior to closure, NAS Alameda operated with a general National Pollutant Discharge Elimination System (NPDES) permit to discharge storm water to the Seaplane Lagoon and Oakland Inner Harbor. According to permit requirements, NAS Alameda prepared a storm water pollution prevention plan, implemented best management practices, and conducted sampling and monitoring activities for storm water discharges. In addition to the NPDES permits described above, NAS Alameda obtained permits from the

EBMUD for waste water discharges from the Main Pump Station, the four industrial waste treatment plants, and from the bilge oily waste water treatment system.

Permit Transfer. On September 6, 1994, the Navy and DTSC met to coordinate the issue of permit transference. While many of these permits have the potential to be transferred, provisions within the permits may limit the ability or scope of the transfer. For example, a common provision requires that the reuse operations be similar to the originally permitted activities. For instance, if the permits at Building 13 are to be transferred, the reuse must be that of a hazardous waste storage area handling similar waste streams. This requirement may or may not suit the Reuse Plan. Therefore, the ability to transfer permits will be evaluated on a lease-by-lease basis. If not transferable, permits will be terminated. Discussion will continue with the ARRA about the potential to transfer Part B permits if applicable to the Reuse Plan.

Hazardous Waste Facilities at FISC Alameda

FISC Alameda has two hazardous waste accumulation areas. They are located at Building 5 and Building 361 and are described in the BCP (US Navy 1997), Table 1-4. Building 5 is a RCRA-permitted facility that collected and stored hazardous materials and hazardous wastes. A closure plan for Building 5 was submitted and approved by DTSC; final closure was completed in February 1999. The other accumulation area, Building 361, was a temporary storage area where hazardous substances were stored for up to 90 days. All hazardous wastes were disposed of off-site in accordance with RCRA and State requirements.

3.13.4 Installation Restoration Program

In 1981, the Navy initiated a program to evaluate health and environmental hazards at all naval facilities where past hazardous material operations and waste disposal activities had taken place. This direction resulted in the Installation Restoration Program (IRP) as currently defined by the Navy Environmental and Natural Resources Program Manual (US Navy 1994e). 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 Navy and Marine Corps facilities.

NAS Alameda's and FISC Alameda's IRPs are ongoing operations. Potential IRP sites were identified at NAS Alameda during an initial assessment study conducted for the Naval Energy and Environmental Support Activity (US Navy 1983d). Subsequent studies and evaluations have brought 25 sites into the NAS Alameda IRP. Each of these sites is

under investigation to define the nature and extent of contamination and to identify appropriate cleanup methods. Each IRP site at NAS Alameda is described briefly in Appendix H-2. Early actions that have been taken to expedite site remediation are listed in the most recent BCP (US Navy 1998a), Table 5-2. Locations of the NAS Alameda IRP sites are shown on Figures 3-21 and H-1. Operable units (OUs) are also shown on Figures 3-21 and H-1.

Potential IRP sites were identified at FISC Alameda during CERCLA and RCRA investigations performed between 1988 and 1994. These studies brought eight sites into the FISC Alameda IRP. One site, Site IR01, was later deleted from the IRP after further investigation (US Navy 1996c). Each IRP site at FISC Alameda is described briefly in Appendix H-3. Locations of the FISC Alameda IRP sites are shown on Figures 3-22 and H-2.

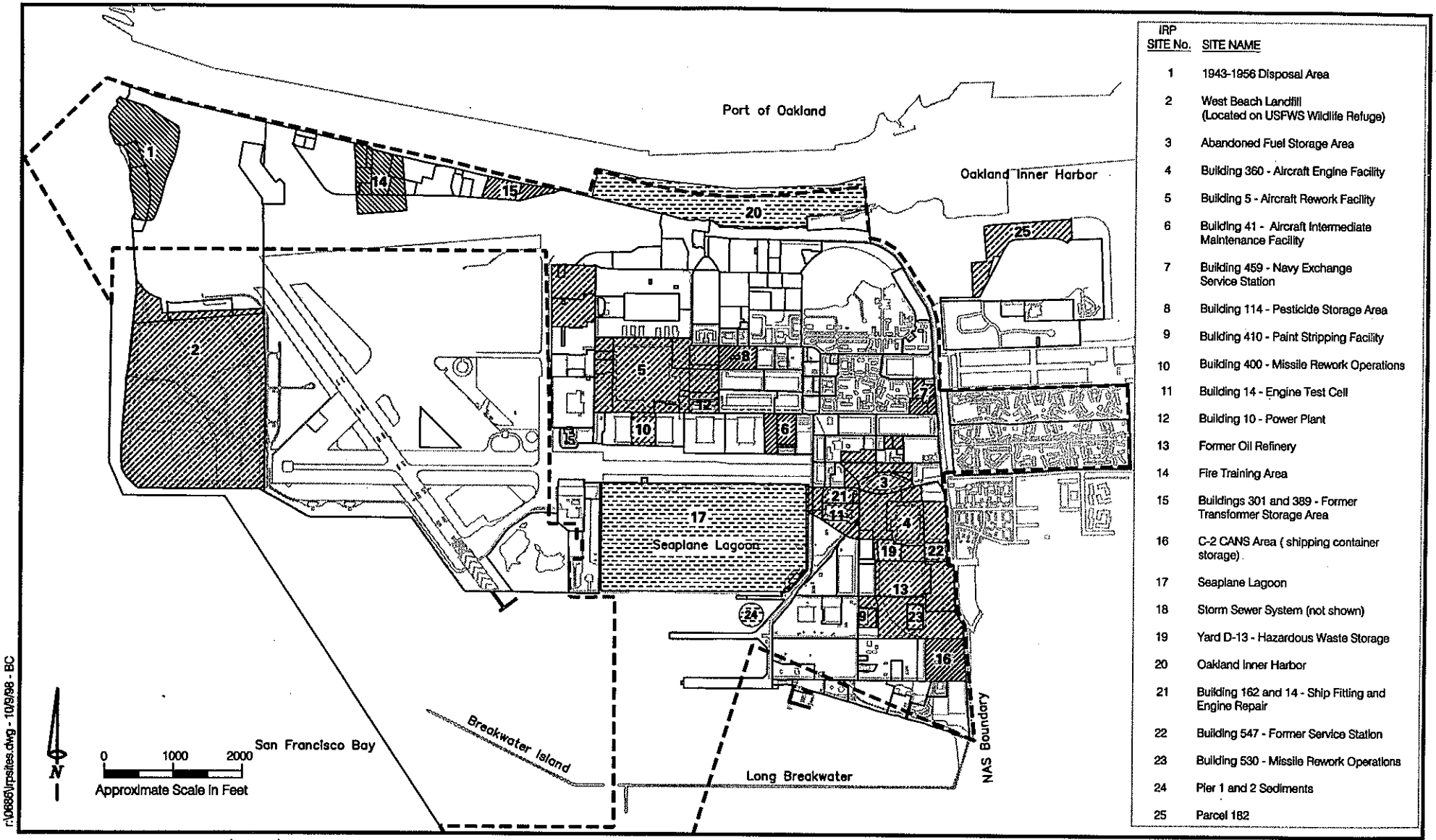
Community Participation

Two community participation groups, the NAS Alameda Restoration Advisory Board (RAB) and the FISC Alameda Annex RAB, provide public input to the Navy's cleanup program.

Federal Facility Site Remediation Agreement and National Priorities List

A Federal Facility Site Remediation Agreement (FFSRA) is a binding agreement between the State and DOD that defines the roles and responsibilities of the parties and includes an annually negotiated, enforceable cleanup schedule. The FFSRA is also intended to expedite the cleanup process while protecting human health and the environment. The FFSRA requires compliance with applicable Federal and State laws and to the maximum extent possible, consistency with the guidance and policy from the National Oil and Hazardous Substances Pollution Contingency Plan and other terms and conditions stated by the FFSRA. The FFSRA provides for State oversight of and participation in the initiation, development, selection, and implementation of response actions. Under the FFSRA, the DOD agrees to undertake various environmental restoration actions. These tasks include site investigation and selection and implementation of response actions.

In September 1992, the State of California and the Navy signed a FFSRA for FISC Alameda. The draft FFSRA for NAS Alameda was prepared and submitted to DTSC in September 1993.



IRP SITE No.	SITE NAME
1	1943-1956 Disposal Area
2	West Beach Landfill (Located on USFWS Wildlife Refuge)
3	Abandoned Fuel Storage Area
4	Building 360 - Aircraft Engine Facility
5	Building 5 - Aircraft Rework Facility
6	Building 41 - Aircraft Intermediate Maintenance Facility
7	Building 459 - Navy Exchange Service Station
8	Building 114 - Pesticide Storage Area
9	Building 410 - Paint Stripping Facility
10	Building 400 - Missile Rework Operations
11	Building 14 - Engine Test Cell
12	Building 10 - Power Plant
13	Former Oil Refinery
14	Fire Training Area
15	Buildings 301 and 389 - Former Transformer Storage Area
16	C-2 CANS Area (shipping container storage)
17	Seaplane Lagoon
18	Storm Sewer System (not shown)
19	Yard D-13 - Hazardous Waste Storage
20	Oakland Inner Harbor
21	Building 162 and 14 - Ship Fitting and Engine Repair
22	Building 547 - Former Service Station
23	Building 530 - Missile Rework Operations
24	Pier 1 and 2 Sediments
25	Parcel 182

The Installation Restoration Program manages investigation and remediation of areas with soil or ground water contamination.

Legend

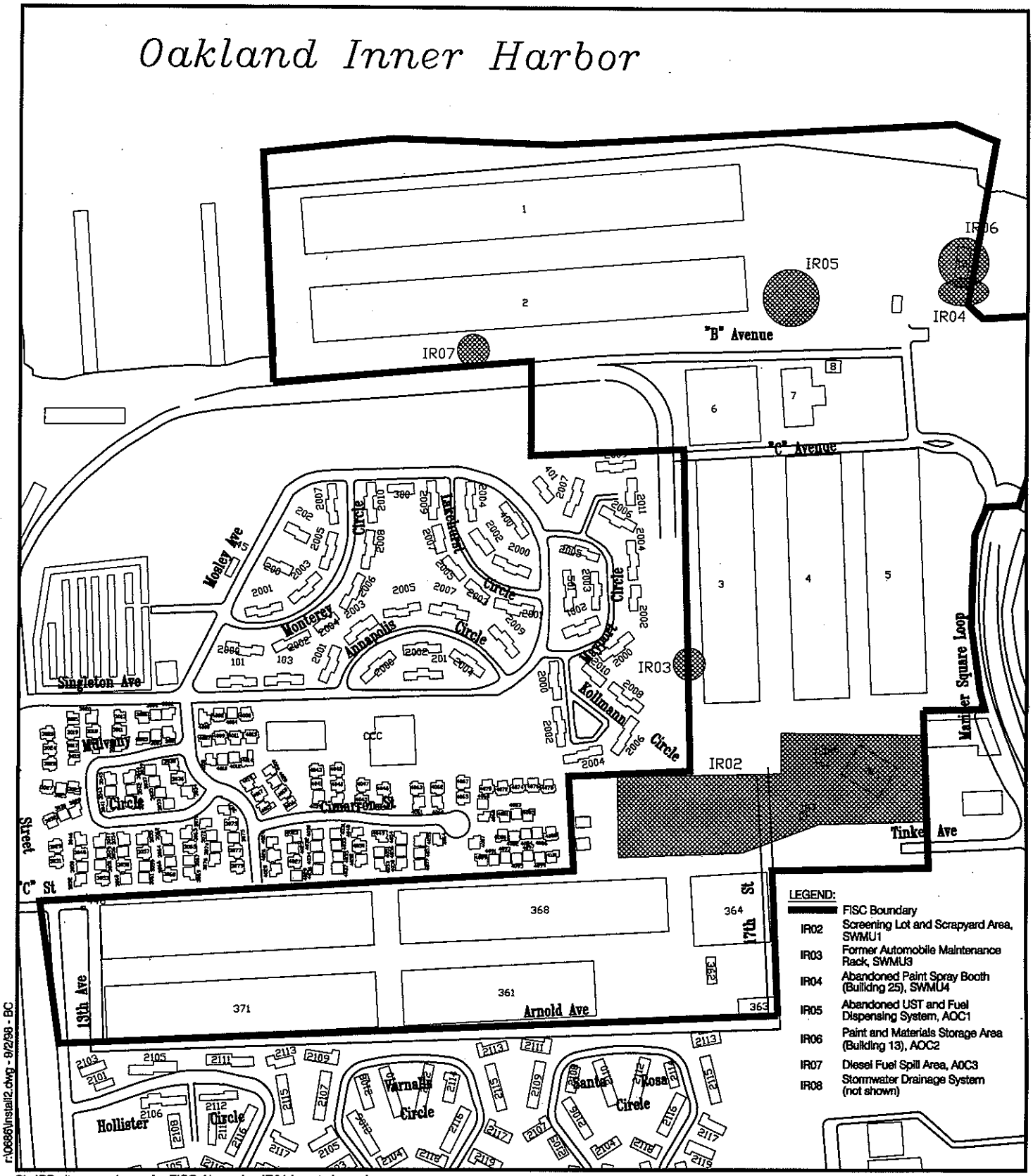
- Operable Unit 1
- Operable Unit 2
- Operable Unit 3
- Operable Unit 4
- NAS Alameda Property Boundary
- 24 NAS Alameda Installation Restoration Program Site Number
- Installation Restoration Site Boundary

NAS Alameda Installation Restoration Program Sites

NAS Alameda/FISC Alameda
Alameda, California

Source: US Navy 1998a

Figure 3-21



r:\06686\install2.dwg - 9/2/98 - BC

Six IRP sites are shown for FISC Alameda. IR01 is not shown because it was deleted as an IRP site based on the Navy's investigation. IR08 is not shown because it consists of the storm water drainage system.

Source: US Navy 1997

FISC Alameda
Installation Restoration Program Sites

NAS Alameda/FISC Alameda
Alameda, California

Figure 3-22

On December 31, 1998, DTSC sent a letter to the Navy giving the Navy one month to enter into a FFSRA for NAS Alameda in lieu of DTSC issuing a corrective action order. On January 15, 1999, the Navy sent a letter to DTSC expressing its willingness to enter into a FFSRA, but that agreement has not yet been finalized. Since that time, on February 26, 1999, US EPA sent a letter to the Governor initiating the process for listing NAS Alameda on the National Priorities List (NPL). The City and State have expressed their official support for the listing if East Housing is excluded. The listing process is expected to take a minimum of three months following publication by US EPA of a proposed listing in the Federal Register.

Site Management Plans and BRAC Cleanup Plans

A site management plan is part of the current FISC Alameda FFSRA. The site management plan sets priorities for remedial tasks, identifies OUs, addresses project acceleration techniques, and sets forth projected dates for submittal of primary documents through completion of all necessary site investigations and remedial actions. The site management plan for FISC Alameda integrates the BCP, IRP, and all other programs that pertain to the environmental condition of the base property at FISC Alameda.

In addition, under the FFSRA, all parties agree to the deadlines set forth in the master schedules for high-priority OUs and remedial actions. The enforceable deadlines include submittal dates for the following draft documents: PA/SI work plans, RI/FS work plans, quality assurance project plans, health and safety plans, public participation plans and community relations plans, implementation reports, RI and FS reports, RA plans and RODs. Because of the influence of BRAC, the site management plan for FISC Alameda contains schedules for milestones or completion dates; as it is updated, it will become part of the legally binding FFSRA when finally approved by both DTSC and Navy.

The BCP process for FISC Alameda is being performed in accordance with the site management plan and takes into consideration the requirements of all of the various investigation, remediation, and compliance programs. Restoration programs are intended to identify, characterize, and remediate pollutants released during past operations at the facility (US Navy 1996c). Restoration programs include the IRP, administered under CERCLA. Compliance programs are conducted in coordination with the restoration programs and include investigations of RCRA solid waste management units, hazardous materials management, fuel storage tanks, asbestos, lead, radon, PCBs, air emissions, and surface water discharges (US Navy 1996c).

For NAS Alameda, the Navy submitted a draft site management plan to the DTSC in September 1993 as part of the draft FFSRA. The site management plan was accepted in 1994; however, there is currently no final FFSRA negotiated for NAS Alameda. The projected completion dates for high-priority OUs and remedial actions at NAS Alameda are now set forth in the master schedules incorporated in the latest draft BCP (US Navy 1998a). Should a FFSRA for NAS Alameda be finalized, the site management plan contained within the FFSRA would reflect those enforceable deadlines and submittal dates currently reflected in the master schedule of the latest BCP for NAS Alameda. Should NAS Alameda be listed on the NPL instead, a three-party Federal Facilities Agreement would be signed by the Navy, State and US EPA that contains enforceable schedules.

Operable Unit Designations

The purpose of the OUs is to accelerate the cleanup of the IRP sites by coordinating response actions. In cases where ground water 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.

The IRP sites at NAS Alameda were organized into four OUs (US Navy 1997). There are no OUs designated at FISC Alameda. The four original OU designations at NAS Alameda were based primarily on geographic location, as well as secondary factors such as contaminant type and remediation planning that were considered indirectly. The OUs were reorganized by the project team 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.

IRP sites 1 through 25 at NAS Alameda were grouped into four OUs as described in the NAS Alameda BCP (US Navy 1998a). Figure H-3 in Appendix H depicts the relationship among IRP sites, OUs, and current EBS parcel zone designations.

Operable Unit 1. OU1 consists of the soil and ground water at IRP Sites 6, 7 (formerly 7A), 8, 15, and 16. The sites in OU1 consist of the "fast-track" sites: relatively small, uncomplicated sites with contamination in soil and ground water from petroleum hydrocarbons and other substances. Because the remedial action anticipated for these sites is likely to be relatively simple, they have a high cleanup priority. This strategy will provide for immediate reduction of risk, reduction of program costs, and will accelerate the schedule for ROD, FOST documentation, and subsequent transfer.

Operable Unit 2. OU2 addresses the soil and ground water of IRP Sites 2, 3, 4, 5, 9, 10 (formerly 10A), 11, 12, 13, 19, 21, 22, 23, and 25. The sites within OU2 contain contaminants such as petroleum hydrocarbons, metals and chlorinated solvents. Removal of metals from soil and ground water treatability studies are currently under evaluation at IRP Site 5.

Operable Unit 3. OU3 consists of the soil and ground water at IRP Site 1 (the 1943-1956 Disposal Area) and IRP Site 14 (the Fire Training Area). The sites are geographically isolated from other IRP sites. A presumptive remedy of capping and containment has been evaluated for the landfill. Innovative treatment technologies are currently being tested to capture, contain, and treat contaminated ground water that may migrate to San Francisco Bay at Site 1.

Operable Unit 4. The aquatic sites, grouped together as OU4, include the Seaplane Lagoon (IRP Site 17), the installation storm sewer system (IRP Site 18), a portion of the Oakland Inner Harbor (IRP Site 20), and the sediments between Piers 1 and 2 (Site 24). IRP Site 18, the installation storm sewer system (previous industrial waste sewer), is included in OU4 because the system discharges to these two water bodies.

NAS Alameda IRP Sites

The following discussion of the 25 IRP sites at NAS Alameda is based on the current NAS Alameda BCP (US Navy 1998a). Since release of the former NAS Alameda BCP in 1997, in which 23 IRP sites were designated (US Navy 1997), sediments between piers 1 and 2 were added to the IR program and were designated as Site 24. In addition, Parcel 182 was designated as Site 25, creating a total of 25 sites. IRP Site 2 is the only IRP site on land being transferred to the USFWS. A more detailed discussion of each site, including associated OUs, can be found in the Site Summaries in Appendix H-2.

IRP Sites 1 and 2 – 1943-1956 Disposal Area and West Beach Landfill/Wetlands. The 1943-1956 Disposal Area (IRP Site 1) and West Beach Landfill/Wetlands (IRP Site 2) are on the western portion of the

property, adjacent to San Francisco Bay. The area was originally deepwater or submerged land that was covered by artificial fill.

IRP Site 1, a 12-acre (5 ha) area at the northwestern corner of the property, is included in OU3. This site is thought to have received all wastes produced on the base except those discharged to the sewer system. These wastes are known to have included aircraft engines, garbage, cable, scrap metal, waste oil, paints, solvents, cleaning compounds, construction debris, ash from the base incinerator, and radioactive and asbestos wastes. The wastes were placed in trenches, compacted, and covered with soil. A part of the area near the end of Runway 13-31 was used as a pit for open burning of wastes from 1950 to 1954. Much of the site is now covered with paved runways.

IRP Site 2 occupies the southwestern corner of the property and is included in OU2. It is within an area that is being transferred to the USFWS.

Soil sampling has found semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), petroleum hydrocarbons, and radium in soils at both IRP Sites 1 and 2. Leachate from the buried waste has reportedly migrated into the shallow ground water. Ground water samples were found to contain volatile organic compounds (VOCs), including chlorinated solvents and aromatic hydrocarbons, along the western edge of IRP Site 1 and the northwestern edge of IRP Site 2. Phenols and PAHs were also observed in ground water at the northwestern edge of IRP Site 2. Moreover, buried waste is in direct contact with the ground water, creating a potential for additional contamination.

Both IRP Sites 1 and 2 are scheduled for further studies to assess methods of controlling and treating contaminated ground water beneath the landfill areas. A treatability study was initiated and a radiological investigation was completed in 1997 at IRP Sites 1 and 2 as part of the 1997 RI. The treatability study is scheduled for completion in March 1999. In addition, a presumptive remedy of capping and containment was recommended for the IRP Site 1 landfill in 1997 as well. The final OU RI reports associated with IRP Sites 1 and 2 are expected to be released in June and August 1999, respectively.

IRP Site 3 - Area 97/Abandoned Fuel Storage Area. IRP Site 3 is in the east-central portion of the property and is included in OU2. This site was used as an inground tank farm and has soil and ground water contamination from aviation fuel. Petroleum hydrocarbons and volatile aromatic hydrocarbons, including benzene, toluene, ethylbenzene, and xylene (BTEX) compounds, were reported in the soil and ground water at this site.

The site is currently landscaped with grass and is used for an aircraft exhibit.

A study conducted by the University of California, Berkeley is currently underway to assess the effectiveness of intrinsic bioremediation of both soil and ground water. In addition, a treatability study was completed in 1997 at IRP Site 3 as part of the 1997 RI. The final OU RI report associated with this site is expected to be released in August 1999.

IRP Sites 4 and 5 – Building 360/Aircraft Engine Facility and Building 5/Aircraft Rework Facility. IRP Site 4 is in the southeastern portion of the property and is included in OU2; IRP Site 5 is near the center of the property and is also included in OU2. These sites contained parts cleaning and plating shops which closed in June 1990.

Both sites have soil and ground water contaminated with hexavalent chromium and other heavy metals (including chromium, copper, and lead), in addition to VOCs associated with petroleum-based products and chlorinated solvents from the cleaning and plating operations. Site 5 also has radioactive contamination in the underground drains resulting from the former painting of radium instruments in buildings on-site.

Studies are currently underway to assess the effectiveness of metals detoxification and removal technologies relevant to both soil and ground water. Hydropunch plume mapping was completed for both sites in 1997 as part of the continuing ground water monitoring at NAS Alameda. A treatability study was initiated at IRP Site 4 in 1997 and a radiological investigation was completed at IRP Site 5 in 1997 as part of the 1997 RI. The Navy is also planning to conduct a second treatability study at IRP Site 5 involving surfactant-enhanced removal of chorinated solvents from the contaminated fill. The final OU RI reports associated with IRP Sites 4 and 5 are expected to be released in August 1999.

IRP Site 6 – Building 41/Aircraft Intermediate Maintenance Facility. IRP Site 6, in the central area of the property and approximately 600 feet north of Seaplane Lagoon, has contamination from discharges of waste solvents, paint strippers, oil, and hydraulic fluids. This site is included in OU1. SVOCs (including PAHs) have been detected in soil samples, and chlorinated solvents have also been detected in ground water samples at this site.

The phase II EBS investigation has found that the contaminant concentrations are below the levels at which they would pose an unacceptable risk to human health or the environment. The OU RI report was completed in February 1999.

IRP Site 7 – Building 459/Navy Exchange Service Station. IRP Site 7 is in the east-central portion of the property and is included in OU1. This site is a service station that has contaminated soil and ground water from releases of petroleum hydrocarbons resulting from leaking underground fuel tanks. PAHs and petroleum hydrocarbons have been detected in soil at the site and aromatic VOCs (including BTEX compounds) have been observed in the ground water.

The RI results indicated that arsenic and benzene in ground water and benzene in soil may pose risk to human health. A feasibility study to determine the appropriate remedial technology was performed for IRP Site 7. The OU RI report was completed in February 1999.

IRP Site 8 – Building 114/Pesticide Storage Area. IRP Site 8, in the north-central portion of the property, is included in OU1. This site was used for storing and mixing pesticides and for rinsing pesticide application equipment from approximately 1942 to 1974. Currently, it is used for pesticide storage and as a paint shop. A separator pit for the paint shop was used to separate scum and sludge from steam-cleaning operations; scum and sludge sometimes were released into the storm drains when the pit failed to operate properly.

PCBs and heavy metals (including lead, chromium, and zinc) were found in surface soils on the northwest corner of the site. In addition, PAHs were reported in the saturated subsurface soils. VOCs, including several BTEX compounds, have been detected in ground water samples at the site; the ground water contamination may be migrating from nearby IRP Site 5. The RI results indicated that benzene in ground water may pose a risk to human health. Since the primary contaminant is petroleum based, the Navy is considering transferring IRP Site 8 out of the CERCLA program and into the UST program. The OU RI report was completed in February 1999.

IRP Site 9 – Building 410/Paint Stripping Facility. IRP Site 9 is in the southeastern portion of the property and is approximately one acre (0.4 ha) in size. The site is included in OU2. PAHs were detected in the saturated subsurface soils; however, no ground water contamination has been detected. The final OU RI report associated with IRP Site 9 is expected to be released in August 1999.

IRP Site 10 – Building 400/Missile Rework Operations. IRP Site 10 is in the central area of the property and is included in OU2. This site was used for industrial operations, involving both paint stripping and parts cleaning. Site soils are contaminated with SVOCs, including PAHs. Chlorinated

solvents have been detected in ground water; this ground water contamination at Site 10 may be a result of migration from off-site sources.

A radioactive element, radium, was also detected in Building 400 and in the drain lines at the site. A radiological investigation was completed in 1997 as part of the RI at this site. The final OU RI report associated with IRP Site 10 is expected to be released in August 1999.

IRP Site 11 – Building 14/Engine Test Cell. IRP Site 11 is near the east central part of the property and is included in OU2. It has soil contamination resulting from releases of aviation fuel, solvents, lubricating oils, and lead from leaking underground storage tanks (USTs), fuel lines, and storm sewers. In addition, PAHs were reported in the saturated subsurface soils and petroleum hydrocarbons have been detected in the ground water on-site.

The phase II EBS investigation has found that the contaminant concentrations are below the levels at which they would pose an unacceptable risk to human health or the environment. The final OU RI report associated with IRP Site 11 is expected to be released in August 1999.

IRP Site 12 – Building 10/Power Plant. IRP Site 12 is in the central area of the property and is included in OU2. Site soils have been found to contain oil contamination from leaking USTs and PAHs were reported in the saturated subsurface soils. Ground water on-site has been found to contain several VOCs and SVOCs; however, the phase II EBS investigation has found that the contaminant concentrations are below the levels at which they would pose an unacceptable risk to human health or the environment. The final OU RI report associated with IRP Site 12 is expected to be released in August 1999.

IRP Site 13 – Former Oil Refinery. IRP Site 13 is in the southeast portion of the property, consists of about 30 acres (12 ha), and is included in OU2. This site is the location of a former oil refinery that operated USTs, ASTs, distilling lines, a barreling facility, a railway spur, and released refinery wastes to the site from 1879 to 1903. The Navy subsequently used the property for a service station (IRP Site 22), a hazardous waste storage area (IRP Site 19), and a missile rework facility (IRP Site 23). A jet fuel spill occurred on-site in 1987. In 1994, soil with low pH (acidic) and high lead concentrations was removed.

Site soil and ground water at the site have been found to contain SVOCs, including PAHs, as well as petroleum hydrocarbons and lead. In addition, free phase petroleum products had been extracted from one monitoring well contained on-site. The site is currently undergoing a study by the

University of California, Berkeley to assess the effectiveness of steam stripping to remove heavy oils from the soil. In addition, a treatability study was completed in 1997 at IRP Site 13 as part of the 1997 RI. The final OU RI report associated with this site is expected to be released in August 1999.

IRP Site 14 – Fire Training Area. IRP Site 14 is along the northern margin of the property, north of runway 7-25, and is included in OU3. The site is contaminated with fuel oil and fire fighting compounds from fire training operations carried out between 1973 and 1987. Petroleum hydrocarbons, PCBs, and both polychlorinated dibenzo dioxins (PCDDs) and furans (PCDFs) have been found in soil samples on-site. Petroleum hydrocarbons have also been detected in ground water samples. An additional investigation of the chlorinated VOC and heavy TPH plume was performed by the Navy in October and November of 1998. A draft data summary report that will include contaminant contour figures is scheduled for submittal in mid-1999. The final OU RI report associated with IRP Site 14 is expected to be released in August 1999.

IRP Site 15 – Buildings 301 and 389/Former Transformer Storage Area. IRP Site 15 is along the northern margin of the property, north of runway 7-25, and is included in OU1. It was used as a transformer storage area from the 1950s until 1974. PCB-containing transformer oils sometimes were drained and the oil was sprayed on nearby areas for weed control during that period. The site had PCB-contaminated soil from past construction and transformer storage uses and lead contamination from deteriorated exterior paint. The extent of contaminated soils was assessed using field screening methods, and an engineering evaluation/cost analysis was prepared.

Although a removal action was performed at Site 15 and the confirmation samples indicated that the elevated PCB and lead-contaminated soils were removed from the site, elevated concentrations of PCBs were detected outside of the Navy fence line, along the shore of the Oakland Inner Harbor. Therefore, a feasibility study will likely be performed at IRP Site 15. The OU RI report was completed in February 1999.

IRP Site 16 – C-2 CANS Area. IRP Site 16 is at the southeastern corner of the property, occupies approximately 6.5 acres (3 ha), and is included in OU1. The site was primarily used for storing large shipping containers known as CANS; however, the site was also used for airplane parking and for storing paints, solvents, corrosives, and PCB-containing transformers. Some of these storage items reportedly leaked and released contaminants to the ground surface. PCB-containing oils were spray-applied for weed control until 1963.

PCBs and lead have been detected in site soils. Moreover, chlorinated solvents have been detected in ground water. A removal of PCB-contaminated soil was reportedly performed some time ago, and a final removal action of the PCB-contaminated soil was completed in October 1997 concurrent with the 1997 RI. During the October 1998 feasibility study scoping meeting, the Navy and the regulatory agencies agreed that no further action is warranted for IRP Site 16. The OU RI report was completed in February 1999.

IRP Site 17 – Seaplane Lagoon. IRP Site 17 is in the south-central portion of the property and is included in OU4. Untreated industrial and nonindustrial wastes were discharged to the Seaplane Lagoon through the base sewer system from 1940 to 1975. Sediments in the lagoon have been found to be contaminated with heavy metals (including lead, chromium, and copper), SVOCs (including PAHs), PCBs, petroleum hydrocarbons, and other industrial effluent.

Studies are scheduled to evaluate the biological, chemical, and physical properties of the lagoon sediments. The remedial methods chosen will be based on assessment of ecological risk because there is no direct route of human exposure to the contaminated sediments. In addition, a treatability study was initiated at IRP Site 17 as part of the 1997 RI. The final OU RI report associated with this site is expected to be released in March 2000.

IRP Site 18 – Storm Sewer System. IRP Site 18 is an extensive storm sewer system of about 40,000 linear feet (12,190 m) that runs throughout the property and is included in OU4. The lines empty to the Seaplane Lagoon, Oakland Inner Harbor, and San Francisco Bay. Before 1974, all industrial waste waters were discharged to the sewer system without treatment. Wastes included petroleum hydrocarbons, VOCs, plating solutions, heavy metals, pesticides and PCBs, herbicides, and solvents. Sediment samples from the storm sewer drains have been found to contain heavy metals (including lead, chromium, and copper), chlorinated solvents, SVOCs (including phenols and PAHs), PCBs, and petroleum hydrocarbons.

An action to remove sediment from the sewer lines was completed in 1997. In addition, the Navy is currently studying available documentation to determine the condition of all storm sewer lines and to prioritize damaged lines for potential repair or replacement. The work plan/cost estimate was submitted by the Navy in February 1999. Repair work is scheduled to begin in spring 1999. The final OU RI report associated with the storm sewer system is expected to be released in 2000.

IRP Site 19 – Yard D-13/Hazardous Waste Storage. IRP Site 19 is in the southeastern portion of the property and is included in OU2. This site has

been used for storing hazardous waste since 1981. Because it is adjacent to IRP Site 13, this site may have been affected by past oil refinery operations and jet fuel spills at IRP Site 13. Petroleum hydrocarbons and SVOCs (including PAHs) have been found in soil samples on-site. Moreover, chlorinated solvents have also been detected in ground water at the site. The final OU RI report associated with IRP Site 19 is expected to be released in August 1999.

IRP Site 20 – Oakland Inner Harbor. IRP Site 20 is along the northern margin of the property and is included in OU4. Untreated industrial and nonindustrial wastes were discharged to the Oakland Inner Harbor through the base storm sewer system from 1940 to 1975. Sediments in the portion of the Inner Harbor that lies within NAS Alameda are contaminated with heavy metals (chromium, lead, mercury, nickel, and zinc), SVOCs (including PAHs), pesticides and PCBs, petroleum hydrocarbons, and other industrial effluent.

The contamination may be a result of past and present industrial uses in the Oakland Inner Harbor area and discharges from NAS Alameda/FISC Alameda. Remedial methods selected for IRP Site 20 will be based on ecological risk assessment because there is no direct route of human exposure to the contaminated sediments. The final OU RI report associated with this site is expected to be released in March 2000.

IRP Site 21 – Buildings 162 and 14/Ship Fitting and Engine Repair. This site is in the east-central portion of the property and is included in OU2. It was reportedly a former service station; however, it also was used for engine maintenance and is close to the aviation fuel leak area at IRP Site 3. Two small gasoline USTs have been removed from the site.

IRP Site 21 has soil contaminated by releases of petroleum hydrocarbons from leaking USTs. In addition, PAHs were reported in the saturated subsurface soils at the site. Petroleum hydrocarbons and chlorinated solvents have also been detected in the ground water. The phase II EBS investigation, however, has found that the contaminant concentrations are below the levels at which they would pose an unacceptable risk to human health or the environment. The final OU RI report associated with this site is expected to be released in August 1999.

IRP Site 22 – Building 547/Former Service Station. IRP Site 22 is in the east-central portion of the property and is included in OU2. This site is a former service station that has soil contaminated by releases of petroleum hydrocarbons from leaking USTs. As such, both PAHs and petroleum-related organic compounds have been observed in the soils on-site. Contaminants detected in the ground water include chlorinated solvents

and petroleum hydrocarbons. The final OU RI report associated with Site 22 is expected to be released in August 1999.

IRP Site 23 – Building 530/Missile Rework Operations. IRP Site 23 is in the southeastern portion of the property on the site of a former oil refinery that operated from 1879 to 1903. This site is included in OU2 and was formerly used for industrial operations. Contamination sources at IRP Site 23 include underground storm sewer lines as well as historical refinery operations and aircraft defueling operations. Soil and ground water at the site are contaminated with both aromatic VOCs, including BTEX compounds, and petroleum hydrocarbons. The final OU RI report associated with Site 23 is expected to be released in August 1999.

IRP Site 24 – Pier 1 and 2 Sediments. Site 24 is the sediment between docks 1 and 2 at the southeast corner of NAS Alameda and is included in OU4. Fuels were spilled at this site. During the 1998 RI, SVOCs (including PAHs), pesticides, petroleum hydrocarbons, and heavy metals were detected in the sediment at Site 24. The final OU RI report associated with this site is expected to be released in March 2000.

IRP Site 25 – Parcel 182. Site 25 or Parcel 182, is located in a residential area in the northeast corner of NAS Alameda and is included in OU2. Petroleum products were spilled at Site 25. During the 1998 EBS, PAHs, petroleum hydrocarbons, and metals were detected in the soil. An RI of the site was performed by the Navy in October and November 1998 to determine the nature and extent of the PAH and heavy TPH contamination. A draft data summary report is scheduled for submittal in early 1999. The OU RI report, including a human health risk assessment, is scheduled for completion in August 1999.

FISC Alameda IRP Sites

The following discussion of the seven current IRP sites at FISC Alameda is based on the FISC Alameda BCP (US Navy 1996c) and information provided in August 1998 (Reisig 1998). Site IR01 was deleted from the IRP in 1996 based on the Navy's investigation. Locations of the FISC Alameda IRP sites are shown on Figures 3-22 and H-2.

IR02 – DRMO Screening Lot and Scrapyard Area. This site is in the northeastern part of the FISC Alameda Annex and was used as a parts lot and scrapyard from before 1946 until 1997. It has soil contamination from petroleum hydrocarbons, VOCs, SVOCs, PCBs, and metals. Soil with high PCB and lead concentrations was removed from two areas in 1995. In 1998, the Navy completed a removal action at the railroad sump located at IR02. A feasibility study is currently in progress for IR02.

IR03 – Former Automobile Maintenance Rack at Building 3. This site is in the southern part of the FISC Alameda Facility and was in operation as a automobile maintenance yard from approximately 1970 until 1984. An investigation for petroleum hydrocarbon and solvent contamination was performed in 1994 and found that contaminants had not significantly affected soil and ground water, and a risk assessment indicated that human health risks were below action levels. The site has been recommended for no further action. Currently, a no-action Remedial Action Plan/Record of Decision (RAP/ROD) is in progress for IR03.

IR04 and IR06 – Former Paint Spray Booth at Building 25 and Former Paint Storage Area at Building 13. These two sites were combined because they have similar contaminant types and are at adjacent buildings. Painting-related operations at both sites were initiated in the late 1940's; however, the date when these operations ended is not known. They are near the northeast corner of the FISC Alameda Facility. An investigation for paint, thinner, and solvent contamination was performed in 1994. No paint-related contaminants were found, and the site was recommended for no further action. Further action may be performed because off-site contamination is suspected from an adjacent former petroleum bulk storage facility. Feasibility studies are currently in progress for IR04 and IR06.

IR05 – Former UST and Fuel Dispensing System. This site is in the north-central portion of the FISC Alameda Facility. It is a former gas station in operation from the mid-1940s to early 1993 and was investigated for petroleum hydrocarbon contamination in 1994. Contaminated soil was removed at the time of tank removal, and a risk assessment indicated that human health risks were below action levels. The site has been recommended for no further action. Currently, a no-action RAP/ROD is in progress for IR05.

IR07 – Diesel Fuel Spill Area at Building 2/Door 234. This site is in the northwest area of the FISC Alameda Facility. A diesel spill reportedly occurred in 1991; it was investigated for petroleum hydrocarbon contamination in 1994. The investigation found that contaminants had not significantly affected soil and ground water, and a risk assessment indicated that human health risks were below action levels. The site has been recommended for no further action. Currently, a no-action RAP/ROD is in progress for IR07.

IR08 – Installation-wide Storm Drainage System. The storm drainage system was constructed in the mid-1940s and extends throughout FISC Alameda. It has multiple contaminants similar to those at IR02. The storm drainage system outfall drains to the Oakland Inner Harbor. The system was recommended for further ecological assessment and for remedial action. A

feasibility study is currently in progress for IR08. Additionally, an ecological assessment was completed in August 1998 at Outfall No. 1 at IR08. The sediments at Outfall No. 1 appear to pose minimal, if any, ecological hazard.

CERCLA Remediation Process

The NAS Alameda and FISC Alameda IRPs are being carried out in coordination with other Federal regulatory programs, including CERCLA. CERCLA provides that Federal and State environmental remediation laws apply to Federal facilities. The NAS Alameda and FISC Alameda IRPs follow the CERCLA process. Phases of the process are described in Appendix H. All IRP sites at NAS Alameda/FISC Alameda are in the remedial investigation/feasibility study phase.

RCRA Site Discovery and Assessment at NAS Alameda

In addition to the 25 IRP sites, other locations at NAS Alameda have been identified in various reports as areas of concern. Further investigation of some of these sites is being conducted through the RCRA facility investigation process.

In 1991, a RCRA facility assessment of NAS Alameda was performed for the EPA as part of NAS Alameda'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. The facility assessment identified 142 SWMUs. The DTSC required the 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.

Each RCRA facility investigation site is described briefly in the NAS Alameda draft BCP (US Navy 1998a), Table 5-4. Locations of the facility investigation sites are shown on Figure H-1 in Appendix H of this document.

RCRA Site Discovery and Assessment at FISC Alameda

A RCRA facility assessment was performed at FISC Alameda in 1992. Sites identified through the assessment were incorporated into the FISC Alameda IRP (US Navy 1996c).

Additional Site Investigation

The EBS process may identify additional IRP sites. Areas of concern that already had been identified are the piers and turning basin and the fuel lines at NAS Alameda.

Piers and Turning Basin. The piers and turning basin areas are on the southern margin of NAS Alameda. Shipboard and industrial wastes were discharged directly to the water in this area from 1943 to 1974. Sediments in this site may be contaminated with heavy metals, PCBs, and other industrial effluent.

Fuel Lines. An extensive system of fuel lines is located throughout NAS Alameda, including approximately 30,000 feet (9,144 m) of inactive lines and 4,500 feet (1,372 m) of active lines. Sampling has been performed along the lines to determine whether fuel leaks have occurred. Programs for removal of the fuel lines are scheduled to be completed in 1999.

A public and agency review board, the Alameda Restoration Advisory Board (RAB), was established to provide agency and public input and oversight for the site cleanup process.

3.13.5 Asbestos

Asbestos is a mineral substance that was commonly used in many building materials beginning in the 19th century. Airborne asbestos fibers are known to cause several diseases, including lung cancer. In the United States, the use of asbestos in building materials was phased out gradually, beginning in 1972. The use of asbestos in some products was allowed until the late 1980s, and some materials in buildings built before 1989 may contain asbestos. Because of their age, most buildings at NAS Alameda/FISC Alameda have the potential to contain asbestos.

Renovating or demolishing buildings with asbestos-containing material (ACM) could release asbestos fibers into the air. Asbestos fibers could be released from disturbed or damaged building materials, such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other materials used for soundproofing or insulation. These materials may be friable; that is, they can be easily crushed or crumbled, causing them to release fibers. Only friable ACM is considered a health risk; nonfriable ACM, such as transite (asbestos cement) piping, shingles, or floor tile, is generally not a health risk unless it is mechanically abraded so as to produce dust.

ACM is regulated by the EPA, 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. § 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. § 2601, *et seq.*, (TSCA) and the Asbestos Hazardous Emergency Response Act, 15 U.S.C.A. § 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.

DOD policy provides that property with ACM 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. A basewide survey for ACM is required by FPMR disclosure law prior to property disposal; the survey results must be disclosed to potential owners.

A comprehensive basewide asbestos survey was completed at NAS Alameda in 1995 by Mare Island Naval Shipyard personnel. A summary of the NAS Alameda asbestos-containing material survey is included in Appendix H-7. The information collected in the asbestos survey was also incorporated into the EBS database and will be addressed in the NAS Alameda EBS currently in-progress. In general, the survey found asbestos in numerous buildings throughout NAS Alameda. The presence of certain ACMs was confirmed by laboratory analysis and sampling; other materials were assumed to contain asbestos, including vinyl floorings, cinder block, transite, fire doors, roofing, and other nonfriable materials. The survey report included recommendations for managing or abating ACMs, as appropriate.

Additional asbestos removal actions were conducted at various buildings at NAS Alameda when asbestos-containing material was encountered during construction, maintenance, and repair activities performed at the base. Abatement of damaged, friable, or exposed asbestos throughout NAS Alameda will be completed in 1999.

Three asbestos surveys have been performed at FISC Alameda, including a comprehensive survey in 1991 and 1992 (US Navy 1996c). All 23 buildings at FISC Alameda were surveyed. Friable ACM was identified in 6 buildings and nonfriable ACM was identified in 12 buildings. A reinspection was performed in 1997 to determine whether there is any damaged friable asbestos. Previous asbestos abatement at FISC Alameda has been performed during repairs or modifications.

3.13.6 Polychlorinated Biphenyls

PCBs are toxic organic chemical compounds that may cause liver damage and other health effects in humans. They are very stable compounds that do not break down easily in the environment, and they bioaccumulate in humans and other organisms. PCBs produce extremely toxic dioxin compounds when they are burned. Dioxins occur in trace amounts in chlorinated hydrocarbon fluids used in electrical equipment, primarily in transformers and capacitors. PCBs are electrically nonconductive and are stable at high temperatures. PCBs often have been found in light fixtures, ballasts, machine shop equipment, and electrical equipment.

PCB contamination at NAS Alameda/FISC Alameda has occurred in areas where PCB transformers and other electrical equipment were stored on the ground, allowing leaking PCB fluids to reach the soil. Spills and leaks of PCB-containing oils have also occurred in machine shops and other areas where electrical equipment was stored. Electrical cables insulated with PCB-containing paper are present in underground conduit.

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 50 ppm or greater but less than 500 ppm. The EPA, 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 PCBs or more is regulated as hazardous. The DTSC regulates PCBs as a non-RCRA hazardous waste.

All Navy shore activities that generate, treat, store, or dispose of PCBs must inventory or validate all PCBs and PCB items annually in accordance with Navy procedures and Federal and State regulations. Navy guidelines (OPNAVINST 5090.1B [1994]) state that all transformers containing 500 ppm or more PCBs must be eliminated by October 1998, and all transformers containing 50 ppm or more PCBs must be eliminated by October 2003. The presence of PCB-contaminated transformers or other known electrical equipment will be disclosed in FOSLs/FOSTs prior to property lease, conveyance, or transfer.

As with most electric utility companies across the nation, the use of PCBs in primary transformers was phased out at NAS Alameda and FISC Alameda. During 1997, all transformers were removed from Parcels 1 through 22 at NAS Alameda. Five transformers are scheduled for removal at the airfield in 1998. Table 5-5 of the NAS Alameda Draft BCP (US Navy 1998a) presents an outdated transformer inventory from the draft EBS database and includes the parcel number, location, transformer number, and general remarks. The database lists all transformers and some additional electrical equipment that are active and contain PCBs at 50 ppm or greater.

Annually, all equipment that contains PCBs is inventoried; however, previously this inventory did not indicate the parcels that contain the PCB equipment. The NAS Alameda Draft BCP (US Navy 1998a) has recommended that the 1998 inventory include the parcel numbers and this new information replace the existing Table 5-5.

The soil at present and former PCB transformer locations at NAS Alameda was investigated through the EBS phase II sampling. As a result, PCBs have been identified in soil and ground water at several IRP sites in the NAS Alameda Draft BCP (US Navy 1998a). Sites with current PCB concerns include IRP Sites 8, 14, 15, and 16; Figure 5-3 of the draft BCP depicts the location of these sites at NAS Alameda.

In addition, all primary electrical equipment at FISC Alameda was surveyed in 1993, and no PCB concentrations greater than one ppm were detected. A PCB survey of secondary equipment at FISC Alameda is planned before closure in mid- to late 1999.

3.13.7 Storage Tanks and Oil/Water Separators

Both USTs and aboveground storage tanks (ASTs) store hazardous substances and petroleum products at locations throughout NAS Alameda/FISC Alameda. 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

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. § 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. The Alameda County Health Care Services Agency (ACHCSA), Environmental

Health Department, administers the State regulations for USTs at NAS Alameda. Work is in progress to evaluate known or suspected leaking UST sites for contamination.

Most inactive USTs at NAS Alameda were decommissioned between 1994 and 1996 (US Navy 1997). As of January 1999, all 101 regulated USTs on-site had been removed or abandoned. However, one additional, small UST associated with an OWS was discovered in late 1998. The status of active, inactive, and suspected USTs at NAS Alameda is summarized in Appendix H-5. An update of this information is expected in the upcoming NAS Alameda EBS currently in progress.

Soil and ground water contamination has been found at some UST removal sites and site investigations are underway at several UST sites. Some UST sites are within IRP sites or OUs, and ground water contamination investigation and remediation at these sites is managed as part of the UST program. 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 (US Navy 1998a).

Plans and specifications were developed for removing approximately 30,000 feet (9,144 m) of abandoned fuel lines; these lines are scheduled for removal prior to property conveyance or transfer. A construction contract was awarded in 1998 to remove the abandoned fuel lines. Additionally, plans and specifications for the remaining 4,500 feet (1,372 m) of active fuel lines will be initiated. During removal of fuel lines, confirmation sampling will be conducted to help identify and assess the extent of any releases from the lines that may have occurred. If contamination is present, further investigation and remediation may occur.

One UST site was identified at FISC Alameda. An abandoned 10,000-gallon (37,854 l) fuel UST and associated piping were removed in 1994, and the site was investigated under the IRP as Site IR05. Contaminated soil was removed when the UST was removed and no further action was required (US Navy 1996c).

Aboveground Storage Tanks

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) for NAS Alameda (US Navy 1990b) provides direction for meeting the regulatory requirements of these laws. The SPCC plan contains recommendations for secondary containment of ASTs. Regulatory control is by the State Water Resources Control Board.

As of the most recent draft update to the NAS Alameda draft BCP (US Navy 1998a), there were 24 active and inactive ASTs in place at NAS Alameda. Appendix H lists the location and status of all ASTs at NAS Alameda; however, an update of this information is expected in the upcoming NAS Alameda EBS currently in progress. Some large ASTs at the NAS Alameda power plant probably will remain in use if the power plant is operated for an interim period. The potential for reusing other ASTs will be assessed prior to decommissioning or conveyance or transfer. The remaining ASTs will be decommissioned.

There are four ASTs at FISC Alameda. All are active; two contain diesel fuel and two contain propane. The ASTs at FISC Alameda are covered by a SPCC plan prepared in 1993. Its provisions and requirements are similar to those of the NAS Alameda SPCC plan.

The ASTs at FISC Alameda are scheduled to remain in service until mid- to late 1999. They then will be decommissioned unless they are to be reused after property conveyance or transfer.

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 NAS Alameda to separate petroleum, oil, and lubricants from wastewater. These OWSs are described in the NAS Alameda draft BCP (US Navy 1998), Table 3-7. There are no OWSs at FISC Alameda.

All OWSs at NAS Alameda 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 rinsewater were treated and landfilled off the site. The cleaned donuts were turned over to DRMO for sale as scrap metal. The Navy closed the bilge oily wastewater treatment system and the ARRA/Lessee obtained a new permit. After closure, there will be no use of existing oil/water separators and all OWSs will be cleaned and left in place or removed.

3.13.8 Pesticides

The registration and use of pesticides are regulated under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, 7 U.S.C. § 136 *et seq*. Pesticide management activities are subject to Federal regulations contained in 40 C.F.R. Parts 162, 165, 166, 170, and 171, and California regulations are contained in 3 C.C.R. Chapter 4.

Pesticides used on-site in the past included chlordane, lindane, and dichlorodiphenyltrichloroethane (DDT), which now are banned. Waste materials containing pesticides also have been deposited in the West Beach Landfill. This site is under investigation as IRP Site 2. The NAS Alameda pest control chemical storage area was located at Building 114 from approximately the early 1940s until 1974. The area is under investigation as IRP Site 8.

Minimal use of pesticides by the Navy is expected at NAS Alameda/FISC Alameda during the caretaker period.

3.13.9 Lead

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, which can lead to irreversible brain damage. Lead was a major ingredient in the paint used throughout the country and at NAS Alameda/FISC Alameda for many years. Lead-based paint (LBP) is a potential health hazard, especially for small children, because it can create 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.

The use of lead in interior and exterior paints is restricted by Federal regulations to reduce its potential to create lead dust. The Federal government now has programs to reduce LBP hazards. 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 by weight. Lead also 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.

NAS Alameda Lead Issues

NAS Alameda's LBP Program. This program was developed in compliance with the Lead-based Paint Poisoning Prevention Act, 42 U.S.C. § 4801 *et seq.*, and Residential Lead-based Paint Hazard Reduction Act of 1992, 42 U.S.C. § 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 (US Navy 1996d). Navy policy has been to include in the LBP program other structures or areas where children under six years old are expected to spend extended periods of time, such as child care facilities, schools, and playgrounds (US Navy 1996d).

All target housing on the site 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 (US Navy 1995a).

There are currently no regulatory requirements to survey or abate lead hazards in nonresidential facilities. In accordance with recent DOD guidance, nonresidential structures generally were not included in the basewide survey. Paint samples from several nonresidential buildings at NAS Alameda were tested for lead content during a separate investigation (US Navy 1995a). Lead concentrations ranging from 127 to 130,000 parts per million were detected in samples from Buildings 4, 8, 14, 39, 40, 41, 78, 101, 112, 114, and 153 and from hangars 20, 21, 23, 39, 40, 41, and 78. These results indicate that there is LBP in these buildings. Lead abatement was performed in Building 101, a classroom building, during renovation (US Navy 1995a). The current BCP notes areas where exterior paint is peeling in industrial buildings (US Navy 1998a).

The Navy Public Works Center, Norfolk, Virginia, performed a survey for lead-based paint at NAS Alameda family housing in 1995 and 1996. All family housing areas were surveyed for lead in paint, dust, and soil. The survey results indicated that there is lead-based paint in all residential areas except the Marina Village Housing, which was built in 1991. Playground

equipment also was tested; no lead was found in any playground equipment on-site.

LBP abatement will be required for those units in the West Housing area (known as the Big Whites and CPO Quarters) built in 1941. The Capehart, apartment, and townhouse housing units, also located in the West Housing area, were built between 1960 and 1978. All of the family housing areas included in the survey are located in Planning Area 2, in the Main Street Neighborhoods planning area in the northeast portion of NAS Alameda. In addition, the non-Marina Village Housing (US Coast Guard) located in the North Housing area was constructed in 1969 and the apartment-style buildings located in the East Housing area were built between 1966 and 1969.

Lead dust hazards were identified in the Big Whites and CPO Quarters housing areas. Lead was detected in some soil samples taken around the Big Whites and townhouse units. Lead concentrations in 4 of 87 soil samples taken in all housing and playground areas were above the Federal HUD action level of 400 ppm. Lead was detected in soil around all of the housing areas at concentrations below the action level. Response measures for lead hazards in soil will be determined based on an assessment of the potential risk to human health and the environment.

Intermediate Maintenance Facility Site (IRP Site 13). Soil with high lead concentrations and low pH was discovered during construction of the Intermediate Maintenance Facility site, part of IRP Site 13 in the southeastern portion of NAS Alameda. This soil was removed in 1994.

Lead-acid Batteries. Lead-acid battery overhaul and replacement has been performed at NAS Alameda. Batteries or battery acid are or have been stored at the PWC shops at Building 114 (SWMU/generator accumulation point [GAP] 3), the heavy equipment maintenance facility at Building 528 (SWMU/GAP 9), and the NADEP shops at Buildings 5 and 5A (SWMU/GAPs 4, 20, and 21).

1943-1956 Disposal Area and West Beach Landfill (IRP Sites 1 and 2). The former landfill sites contain lead-contaminated wastes.

Lead Waste Storage. 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 (SWMU/GAP 21), 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 (SWMU/GAP 72).

Spent Abrasive Materials. Sandblasting has been performed at NAS Alameda 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 (US Navy 1994c) 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 (IRP Site 2) (US Navy 1995a).

IWTP Collection System. The sediments in the manholes and catchbasins of the storm water system indicated elevated levels of heavy metals including lead. A removal action of these sediments was completed in 1997.

Lead in Drinking Water. A study of lead and copper in drinking water was performed in 1994 at both NAS Alameda and FISC Alameda. The results showed that lead and copper concentrations did not exceed action levels (US Navy 1995a).

Small Arms Range. NAS Alameda's outdoor small arms range, located at the west end of the property within IRP Site 1, has been used for years for rifle and pistol practice, resulting in spent lead projectiles 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.

FISC Alameda Lead Issues

Lead-based Paint. There are no residential buildings at FISC Alameda; therefore, no lead-based paint program has been developed. Because of the absence of residential buildings, no LBP survey is required or has been performed at FISC Alameda.

Lead in Drinking Water. A study of lead and copper in drinking water was performed in 1994 at both NAS Alameda and FISC Alameda. The results showed that lead and copper concentrations did not exceed action levels (US Navy 1995a).

3.13.10 Radiological

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 NAS Alameda. Radiological activities and facilities are managed under two Navy programs, the Naval Nuclear Propulsion Program (NNPP) and the General Radiological Material (G-RAM) program.

Naval Nuclear Propulsion Program at NAS Alameda

Nuclear-powered ships have used NAS Alameda port facilities. A radiological survey was performed in 1998 by the Navy's Radiological Control Office to assess the impact of nuclear-powered ship maintenance, overhaul, and refueling on the environment (US Navy 1998b). This survey concluded that the berthing and maintenance of nuclear-powered ships at NAS Alameda 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 EPA was consistent with the findings presented in the Navy report.

General Radiological Material Program at NAS Alameda

NAS Alameda has used and stored G-RAM during past base operations. G-RAM includes radiographic sources used for nondestructive 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. 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.

Initial radiological surveys were conducted at NAS Alameda on IRP Sites 1 and 2 in September 1995 (US Navy 1998a). As a result of the initial surveys, more detailed survey work was scheduled for Sites 1 and 2 for the Spring of 1996. The additional surveys for IRP Site 1 were performed in June 1996 and included complete coverage of the northwest point and the jogging trails. The additional survey work for IRP Site 2 included complete coverage of both the upper and lower jogging trails that pass through the site and also the location of the former radiation storage shack.

Because of the presence of a sensitive nesting habitat on IRP Site 2, the survey was not completed until September 1996. None of the anomalous locations found during the radiological surveys of IRP Sites 1 and 2 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 between a background value of 6 to 8 μRoentgen/hr and 280 μRoentgen/hr for the most active location on Site 1 (US Navy 1998a). As part of CERCLA investigations conducted within the IRP,

radiological issues will be further evaluated, including the risk of exposure to low-level radionuclides.

Surveys were completed in 1997 at Buildings 5 and 400, within IRP Sites 5 and 10; radium instruments are known to have been painted in these buildings. Industrial drains and storm sewer drains running from each building were included in the survey. Removal of surface anomalies, contaminated piping, sewer lines, and sediments identified during the survey will be completed by the end of 1999 (US Navy 1998a).

Mixed Hazardous and Radioactive Waste at NAS Alameda

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 has occurred. IRP Site 1 is located in Planning Area 6 in an area designated for golf course and open space use. Base closure activities may generate an additional small quantity of mixed waste.

FISC Alameda Radiological Issues

Radioactive materials typically have not been used or stored at FISC Alameda. During the RI in 1994, three pallets of bricks and three small drums labeled for depleted uranium were found at FISC Alameda. They were removed from the site and were transferred to the main FISC site in Oakland (US Navy 1996c).

No NNPP or G-RAM issues were identified at FISC Alameda during the EBS or BCP processes (US Navy 1996c).

3.13.11 Medical and Biohazardous Waste

NAS Alameda's Medical/Biological Waste Program is regulated under C.C.R., Title 22, Article 13. The Medical/Dental Clinic (Building 16) provided outpatient consultation and general clinical services. Small amounts of medical/biohazardous waste were generated at this location during clinic operations. Wastes were removed and disposed of off-site.

According to the NAS Alameda BCP (US Navy 1995a), 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.

Hospital supplies are stored at several buildings in the FISC Alameda Annex area. No medical or biohazardous waste issues were identified for FISC Alameda (US Navy 1996c).

3.13.12 Ordnance

Ordnance has been stored and used at NAS Alameda 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. Ordnance also has been stored at FISC Alameda. The Navy has removed all ordnance from NAS Alameda/FISC Alameda.

NAS Alameda Ordnance Issues

Small Arms Range Area. The small arms range facility at NAS Alameda, located at the west end of the island in the 1943-1956 disposal area (IRP Site 1), included a firing range and storage areas for small arms and ammunition. A former small arms and pyrotechnics magazine building has been demolished.

An environmental field investigation was completed at the Pistol Range, Shotgun Range and Spent Ordnance Disposal Site in August 1998. The investigation concluded that (1) significant concentrations of lead were found in the target berm as well as in the area between the target trench and firing line; (2) leachate analysis and grab ground water samples indicate that lead leaching from impacted soil to ground water is unlikely; and (3) elevated levels of SVOCs were found at discrete locations and may require remediation.

Ammunition Storage. Ammunition and arms were stored in several locations at NAS Alameda. Storage areas included the high explosives magazines at Buildings 50, 56, 57, 353, 354, 356, 358, and 359; the missile magazine at Building 58; the torpedo shop in Building 420; the weapons shops in Building 43; and small arms and ammunition storage at several locations on-site.

IRP Site 1, Landfill Area, Unexploded Ordnance. 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-1 to allow safe completion of the radiological survey.

Although the goal of the emergency removal action was accomplished, the site remains an ordnance concern. 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, has been scheduled to be carried out during April through July 1999. The minimum ordnance clearance requirements of the Department of Defense Explosives Safety Board must also be satisfied for planned Public Access (recreational) reuse of the site before the property can be transferred (US Navy 1998d). In addition, the Navy has instituted site safety screening and other security measures for all individuals entering IRP Site 1.

FISC Alameda Ordnance Issues

Small-arms ammunition has been stored at FISC Alameda. There are no small arms ranges at FISC Alameda. No other ordnance uses were identified in the EBS or BCP processes (US Navy 1996c).

3.13.13 Radon

Radon is a colorless and odorless gas that is produced by the decay of naturally occurring uranium to radium. Radium is found in high concentrations in rocks containing uranium, granite, shale, phosphate, and pitchblende. Atmospheric radon is diluted to insignificant concentrations; radon in soil, however, can enter a building through small spaces and openings and can accumulate in enclosed areas, such as basements. The cancer risk caused by inhaling radon is a topic of concern.

The amount of radon is measured in picocuries per liter of air (pCi/L). The average level of radon is estimated to be 1.3 pCi/L indoors and about 0.4 pCi/L outdoors. There are no laws that require testing and remediating radon, but the EPA has made recommendations for both residential housing and schools. The EPA-recommended action level for radon is 4 pCi/L.

Radon testing was performed in some housing units and at five locations at FISC Alameda in 1993 (US Navy 1994c; US Navy 1996c). Analysis found that no radon concentrations exceeded 4.0 pCi/L. An evaluation of the regional geological setting concluded that NAS Alameda is unlikely to be subject to radon hazards because of low radioactive isotope concentrations in the rocks and sediments underlying the region (US Navy 1995a).

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 (US Navy 1995a). No further radon assessments are planned at NAS Alameda/FISC Alameda.

3.13.14 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 1900 and 1940. The marsh crust, and the subtidal zone extending from it, is a horizon that is identifiable in the subsurface, which contains preserved grasses and other intertidal and subtidal features. This marsh crust/subtidal zone also contains, at least locally, elevated levels of petroleum-related VOC and SVOC constituents. Drilling activities in historic marsh areas of Alameda frequently encounter organic peat (marsh crust) layers two to six inches thick. The marsh crust and the subtidal zone occur at depths of approximately 25 feet below ground surface (bgs) and shallower depending on location. This layer occurs at the top of a sedimentary unit known as the Bay Mud. The portion of this layer associated with the historic marsh was identified in a previous geotechnical investigation. That investigation first used the term "marsh crust" to describe the marsh-derived peat layer in the Alameda area.

The presence of petroleum related constituents was first detected during an investigation for the Off-Base Housing expansions in the 1980s. These constituents suggested gaseous VOC constituent migration to the surface (PRC 1990). The FISC Alameda Facility and Alameda Annex Remedial Investigations (RI) field activities (PRC 1995) conducted in the early 1990s, detected VOC, SVOC, and petroleum hydrocarbon constituents in ground water at the marsh crust/subtidal zone. The marsh crust/subtidal zone extends westerly of the historic Alameda Island shoreline, and is presumed to extend to the western shoreline of NAS Alameda.

4. ENVIRONMENTAL CONSEQUENCES

4. ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential environmental consequences associated with the reuse of property at NAS Alameda/FISC Alameda. The reuse action would result in adaptive reuse of existing structures and facilities, potential new construction and would create public open space areas. The Reuse Plan identifies general categories and densities of land uses that would be allowed. Impacts are described at a relatively general level of detail, consistent with the level of detail in the Reuse Plan. Future specific projects and development proposals will be subject to CEQA and to the environmental review requirements set forth by the City of Alameda.

The proposed action considers only those impacts resulting from reuse of surplus land at NAS Alameda and land available for disposal at FISC Alameda. Impacts that may occur as a result of reuse of former NAS Alameda land subject to Federal interagency transfer are not analyzed as part of the proposed action. Impacts resulting from reuse of land being transferred to the USFWS and the USCG are addressed in Section 5.1, Cumulative Impacts.

For most resource areas evaluated in this EIR, impacts of each alternative reuse action, including the No Project Alternative, are projected to 2020. The Reuse Plan identifies 2020 as the year in which the plan is fully implemented and the former NAS Alameda/FISC Alameda property is integrated into the City of Alameda. Implementation of each reuse alternative is assumed in determining impacts.

Consistent with the discussion of the affected environment, this chapter has been organized by resource to provide a comparative framework for evaluating the impacts of the reuse actions on the individual resources. The baseline against which impacts are measured is identified for each resource area. The impacts discussion for each resource area includes an introduction indicating the criteria used to determine whether impacts would be significant, an impacts summary table, a description of planning issues associated with each resource area and a description of the region of influence (ROI) applicable to the specific resource area. A ROI is a geographic area in which impact for a particular resource would likely occur. The ROI for a resource having regional impacts would be different than the ROI for a resource with localized impacts. Where appropriate, analysis methodology and assumptions are described.

Each resource section identifies impacts of each of the reuse actions on the specific resources. For each impact, a determination has been made whether it would constitute a significant or nonsignificant impact. In addition, where beneficial impacts are identified, the nature of the beneficial impact is discussed in the text of the document. The level of significance for each impact resulting from community reuse actions for each resource is summarized in a table at the beginning of each section and also in Table ES-1 and Table 2-7.

Mitigation measures are identified for any impact determined to be significant. Significant impacts and mitigation measures are numbered, while nonsignificant impacts (which include beneficial impacts) are listed separately from the significant impacts and are not numbered. Unavoidable significant environmental impacts (i.e., impacts that cannot be mitigated to a nonsignificant level) also are identified. See Table 2-7 for a summary of mitigation measures. Procedures that would be implemented through local and regional planning processes or through implementing the Reuse Plan and that would affect other resources are described wherever applicable.

4.1 LAND USE

This section describes impacts to land use that could occur under the reuse actions and the No Project Alternative. Impacts to on-site and surrounding land uses are evaluated for each alternative and are compared to baseline conditions as described in Section 3.1. Demolition and construction impacts also are considered when evaluating the potential land use impacts of each alternative. In addition, compatibility with existing plans and policies is analyzed.

Region of Influence

The ROI for land use includes NAS Alameda/FISC Alameda and surrounding lands within half a mile.

Significance Criteria

Implementing the proposed reuse actions could cause a significant impact on land use if they conflict with established residential, recreational, or educational uses in the project area or if they disrupt or divide the established land use configurations. Table 4-1 summarizes the land use impacts of reuse. Because beneficial impacts are not identified as a separate level of significance in Table 4-1, they are shown as nonsignificant impacts.

Table 4-1
Summary of Land Use Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Consistency with Public Trust	○	◑	◑	◑	◑
RV Park Conflicts with Surrounding Land Uses	○	◑	○	○	◑
Consistency with SF Bay Plan Shoreline Access Policies	○	◌	◑	◌	◌
Construction of a New Cargo Crossing in the Northwest Territories	○	○	◑	○	○
Increased Vessel Traffic in Oakland Inner Harbor	○	○	○	◌	◌
Disrupt or Divide Established Land Use Configurations	○	◌	◌	◌	◌

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◌ = Nonsignificant
○ = None

The consistency of the proposed reuse actions with land use goals and policies of the City of Alameda, regional land use plans (e.g., the San Francisco Bay Plan and Seaport Plan), and allowable uses on public trust lands also are considered when evaluating the land use impacts of the proposed reuse actions because these goals and policies establish the planned land uses for the site. Because the acquisition action would convey property at NAS Alameda/FISC Alameda out of Federal ownership, future development of the site would be under the City's jurisdiction. To ensure consistency between the selected reuse action and the City's plans and policies, existing land use regulatory documents would need to be revised to incorporate the selected development plan for the site. Additionally, the City would need to coordinate with other agencies having land use regulatory authority over the site. The issues and process for achieving this consistency are described below.

Planning Issues and Process

City of Alameda Plans and Policies

Following conveyance of Federal property to the City of Alameda or other non-Federal entities, future development of the site would be under City jurisdiction. The City of Alameda's existing General Plan land use designations for the site would no longer apply or would not encompass all the proposed reuse land uses.

As required by CEQA, the reuse implementation process would include environmental review, public participation, and interagency coordination. Implementing this planning process would include zoning ordinance and General Plan revisions and associated review by the City of Alameda City Council, Planning Board, Planning Department, Central Permits Office, Community Improvement Commission, Public Works Department, and other City entities. Land use designations considered in the General Plan Amendment could include, but not be limited to, residential, commercial, civic/institutional, business park/light industry, and open space. Alameda has land use policies that govern land uses that potentially conflict with airport uses. However, because no airport uses are currently proposed under any of the reuse alternatives, none of the alternatives would conflict with these existing policies.

Following amendment of the Alameda General Plan, a specific plan or planned development master plan may be developed. This plan would more precisely identify the distribution, location, and extent of future land uses. It also would identify the distribution, location, extent, and intensity of the infrastructure required to support the land uses, would establish the development and conservation standards, and would include a program for carrying out reuse.

Relationship of the Reuse Plan to the General Plan

As described in Section 2.1.1, the Reuse Plan was adopted by ARRA and accepted by the City Council in 1996. As further explained in Section 2.2.2, the Reuse Plan forms the basis for the Reuse Plan Alternative, which is the project analyzed in the Preferred Alternative for purposes of this EIR. The Reuse Plan contains the community's general goals and policies for productive reuse of NAS Alameda/FISC Alameda, but it is not self implementing. Because the current General Plan designation for most of the site is Federal Facilities, before any redevelopment can take place, General Plan amendments (and, possibly, adoption of Specific Plans) setting forth specific densities, intensities and locations for development would have to be adopted by the City. To the extent that such General Plan amendments (and Specific Plans) would create new impacts or impacts that exceed the severity of impacts analyzed in this EIR, additional environmental review would be required.

Relationship of the General Plan and Reuse Plan to the Alameda Point Improvement Plan

Health and Safety Code Section 33367 requires that all Redevelopment Area plans be consistent with the General Plan of the adopting jurisdiction. Section 402 of the Community Improvement Plan for Alameda Point Improvement Project (APIP) identifies the permissible land uses within the

APIP as "Mixed Use," "Single-Family Residential," and "Open Space/ Habitat." Mixed Use is defined in section 403 as "residential, office, research & development, industrial, civic, institutional, business park, light industry, commercial parks, commercial recreation/marina, open space and public rights of way." Section 403 further states that the Mixed Uses permitted are only those which are consistent with the Alameda General Plan as amended. Single-Family Residential is defined in Section 404 as being the area (known historically as "East Housing") shown on the Redevelopment Land Use Map for single-family residential use and shall be used for the single-family residential uses consistent with the Amended General Plan. Open Space/Habitat is defined in Section 405 as the areas shown on the Redevelopment Land Use Map for open space/habitat uses and shall be used for open space habitat uses consistent with the Amended General Plan. [The two maps referenced here are in the Alameda General Plan as Attachment No. 3.] The Alameda General Plan currently designates the property within the APIP as Federal Facilities, Medium Density Residential and Public/Institutions. Under state law and the APIP Community Improvement 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. It is anticipated that the General Plan will be amended to incorporate the uses contemplated by the reuse alternative that is ultimately approved by the City of Alameda. To the extent that such General Plan amendments would create additional significant impacts or increase in severity of impacts analyzed in this EIR, such General Plan amendments would be subject to separate and additional CEQA review.

San Francisco Bay Conservation and Development Commission (BCDC)

BCDC's San Francisco Bay Plan (Bay Plan) identifies priority uses in all shoreline areas of the San Francisco Bay. In September 1997, the Bay Plan was revised to remove the port priority designation from land along the northern shoreline of the Northwest Territories planning area, and all of the alternatives would therefore be consistent with current land use designations under the current Bay Plan which allow non-maritime uses that are consistent with the public trust (see the following section for a discussion of public trust).

Documentation will be submitted by the Navy to BCDC for the disposal of NAS Alameda/FISC Alameda, in compliance with the Coastal Zone Management Act (CZMA). Following property conveyance, projects within BCDC's jurisdiction and undertaken by non-Federal entities, such as the City of Alameda or private developers, may require a BCDC permit. These projects could include public access improvements and marina development.

Public Trust Lands

As described in Chapter 3, certain land at NAS Alameda has been identified as public trust land subject to use restrictions. Potential impacts to public trust land and consistency of land uses proposed under the reuse alternatives with the public trust are discussed below.

4.1.1 Reuse Plan Alternative

Under the Reuse Plan Alternative, a mixture of civilian uses would be introduced at NAS Alameda/FISC Alameda. These uses would transform the site from the large-scale military installation to a collection of public and private civilian developments. These developments would serve to integrate the site with the adjoining civilian developments in the western portion of Alameda. The following section details the proposed land uses and potential impacts for each of the reuse planning areas described in Chapters 2 and 3.

Significant Impacts

Consistency with Public Trust

Impact 1: A significant and mitigable impact would result from inconsistencies between land uses proposed on public trust land and allowable uses on public trust land. Because specific locations for proposed land uses are not specified in the Reuse Plan, the following discussion identifies those categories of proposed land use with the potential to be located on public trust land. For the Reuse Plan Alternative, public trust inconsistencies would potentially occur in four planning areas. In the Civic Core planning area, the majority of the land, approximately 282 acres (114 ha) out of 334 total acres (135 ha), is subject to public trust restrictions. Proposed uses that would not be consistent with the public trust are residential, institutional, non-maritime related commercial and mixed use. In the Main Street Neighborhoods planning area, approximately 23 acres (9 ha) of the 265 total acres (107 ha) are subject to public trust land use restrictions. Proposed uses that would not be consistent with the public trust are residential, schools, and non-maritime related commercial. In the Marina planning area, approximately 86 acres (35 ha) of the 125 total acres (51 ha) are subject to public trust land use restrictions. Proposed uses that would not be consistent with the public trust are residential, and some of the proposed commercial uses. In the Northwest Territories planning area, the majority of the land is subject to public trust land use restrictions. The proposed sports complex use would be consistent with public trust.

Mitigation 1: This impact would be mitigated to a nonsignificant level by exchanging land currently in the public trust for land outside of the public trust. Negotiations between the City, ARRA, and the State Lands Commission for specific parcels to be traded are ongoing and the parties have identified lands available and suitable for exchange. Sufficient non-trust land is available on site or in the vicinity to bring all proposed land uses into compliance with the public trust either through land exchanges or, possibly, through contributions to the Kapiloff Land Bank Fund (Cal. Pub. Code § 8610 *et seq.*). An example of land that is currently outside the public trust and that would be available for exchange is the strip of land along the northern edge of NAS Alameda bordering the Oakland Estuary. Public trust land exchanges would be accomplished through agreement with the State Lands Commission. Refer to Section 3.1.3 for a discussion of the land exchange and possible contributions process. In the unlikely event that agreement cannot be reached among the City, ARRA, and the State Lands Commission for all land exchanges necessary to allow development of all proposed land uses consistent with the public trust, then no development that is inconsistent with the public trust would be permitted on public trust land at NAS Alameda. This impact would thereby be avoided.

Recreational Vehicle Park Conflicts With Surrounding Land Uses

Impact 2: A significant and mitigable impact would result from development of a new 13-acre (5 ha) RV park near residential uses proposed in the Marina planning area and the existing residential uses in the West End Neighborhood immediately east of Main Street. Land use conflicts could result from RV traffic and nighttime noise and glare. The severity of these conflicts cannot be determined at this time because a specific site design plan has not been completed and management details of the RV park have not been developed.

Mitigation 2: Attributes of site design that would limit or prevent potential land use conflicts include vegetative and nonvegetative screening, and careful placement of RV park facilities such as camp sites, restrooms, playgrounds, check-in buildings, and other park amenities. Additional regulations regarding the designation of RV routes, similar to truck routes, in the City of Alameda could be developed. If potential conflicts still remained following site design and review of nearby sensitive land uses, management restrictions for the RV park, such as noise and lighting restrictions, could be adopted. These restrictions may require close coordination between the City of Alameda and the EBRPD but would be expected to prevent any remaining land use conflicts. Implementing this mitigation would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Consistency With San Francisco Bay Plan Shoreline Access Policies. Implementation of the Reuse Plan Alternative would result in beneficial impacts by increasing public access to existing open space areas, including the Oakland-Alameda shoreline, and increasing the amount of open space area and developed recreational facilities. There would also be a shoreline link between the proposed regional park in the Inner Harbor planning area and the proposed USFWS wildlife refuge to the west.

Disrupt or Divide Established Land Use Configurations. Implementation of the Reuse Plan Alternative would represent in-fill development, both from the citywide and regional perspective. The 1,702 acre (dry land) area is generally surrounded by submerged land or the waters of the Oakland Inner Harbor, NAS Alameda Inner Harbor and San Francisco Bay on the north, south and west sides. On the east, the site bordered by existing City of Alameda development. Development envisioned under the Reuse Plan would extend existing City land uses toward the west, thereby incorporating the military bases into the community. This would be a beneficial impact. No adverse disruption or division of established uses would occur.

4.1.2 Seaport Alternative

The main difference between this alternative and the Reuse Plan Alternative is the designation of 220 acres (89 ha) in the Northwest Territories planning area for development of a port facility with five container ship berths.

Significant Impacts

Consistency with Public Trust

Impact 1: A significant and mitigable impact, as described under the Reuse Plan Alternative, would result from inconsistencies between land uses proposed on public trust land and allowable uses on public trust land. Because specific locations for proposed land uses are not specified in the Reuse Plan, the following discussion identifies those categories of proposed land use with the potential to be located within the public trust land. For the Seaport Alternative, public trust inconsistencies would potentially occur in three planning areas. In the Main Street Neighborhoods and the Marina planning areas, proposed land uses are similar to the Reuse Plan Alternative, and proposed uses that would not be consistent with the public trust would be the same as under the Reuse Plan Alternative. In the Civic Core planning area proposed land uses are somewhat different than the Reuse Plan Alternative. The campus use proposed under this alternative, that is not proposed as part of the Reuse Plan Alternative, would be inconsistent with the public trust.

Mitigation 1: The mitigation for this impact would be the same as described under the Reuse Plan Alternative. Land exchanges and possible contributions resulting in uses allowable under the public trust on all public trust land at NAS Alameda would mitigate this impact to a nonsignificant level. In the unlikely event that agreement cannot be reached among the City, ARRA, and the State Lands Commission for all land exchanges and possible contributions necessary to allow development of all proposed land uses consistent with the public trust, then no development that is inconsistent with the public trust would be permitted on public trust land at NAS Alameda. This impact would thereby be avoided.

Consistency With San Francisco Bay Plan Shoreline Access Policies

Impact 2: A significant and mitigable impact would result from development of port facilities in the Northwest Territories planning area that would decrease public access to the shoreline and conflict with implementation of the Bay Trail Project. Access would need to be restricted due to security and safety reasons.

Mitigation 2: Provide any feasible public access within the design of the port facilities development. Provide additional public access to shorelines in adjacent areas and in the general vicinity, consistent with San Francisco Bay Plan policies for enhancing shoreline access in cases where it is restricted for public safety reasons. Implementation of this mitigation would reduce the impact to a nonsignificant level.

Construction of a New Cargo Crossing in the Northwest Territories

Impact 3: A significant and mitigable impact would result from constructing a new bridge or tunnel for moving port cargo between Alameda and Oakland by requiring demolition or relocation of existing structures in the area for the tunnel portal or bridge supports. At this time, the location for the crossing has been conceptually identified as the north part of the Northwest Territories planning area crossing to the Oakland side of the Inner Harbor in the vicinity of the Port of Oakland. On the Alameda side, supports for a bridge or portals for a tunnel would be located within the industrial complex of the port facilities and could be designed as part of the project. On the Oakland side, the connection facilities would be within industrial and transportation uses. Because no specific plans for a crossing have been developed, it is not known whether any structures would need to be demolished or relocated. A new connection located in this area may conflict with the existing and planned land uses at the former FISC Oakland site. Potential demolition or relocation of structures in the vicinity of the Port of Oakland would be a significant impact.

Mitigation 3: Design the bridge or tunnel crossing to minimize displacing industrial or commercial development. Provide adequate noise attenuation and visual buffers to reduce impacts to surrounding land uses. These measures would reduce the impacts to a nonsignificant level.

4.1.3 Residential Alternative

This alternative focuses on adding 226 acres (91 ha) of housing in the Northwest Territories planning area and increasing acreage for housing in the Civic Core and Inner Harbor planning areas. In the North Waterfront planning area, a 200-slip marina would be added and housing would be increased.

Significant Impacts

Consistency with Public Trust

Impact 1: A significant and mitigable impact, as described under the Reuse Plan Alternative, would result from inconsistencies between land uses proposed on public trust land and allowable uses on public trust land. Because specific locations for proposed land uses are not specified in the Reuse Plan, the following discussion identifies those categories of proposed land use with the potential to be located within the public trust land. For the Residential Alternative, public trust inconsistencies would potentially occur in four planning areas. In the Civic Core planning area, although the acreage of proposed residential uses is greater, the categories of proposed uses that would not be consistent with the public trust would be similar to those under the Reuse Plan Alternative: residential, commercial, and mixed use. The campus use, proposed under this alternative also would be inconsistent with the public trust. In the Main Street Neighborhoods and Marina planning areas, proposed land uses are similar to the Reuse Plan Alternative, and proposed uses that would not be consistent with the public trust would be the same as under the Reuse Plan Alternative. In the Northwest Territories planning area, the majority of the land is subject to public trust restrictions. The proposed uses that would not be consistent with public trust would be the residential and school uses.

Mitigation 1: The mitigation for this impact would be the same as described under the Reuse Plan Alternative. Land exchanges and possible contributions resulting in uses allowable under the public trust on all public trust land at NAS Alameda would mitigate this impact to a nonsignificant level. In the unlikely event that agreement cannot be reached among the City, ARRA, and the State Lands Commission for all land exchanges and possible contributions necessary to allow development of all proposed land uses consistent with the public trust, then no development that is inconsistent with the public trust

would be permitted on public trust land at NAS Alameda. This impact would thereby be avoided.

Nonsignificant Impacts

Consistency With San Francisco Bay Plan Shoreline Access Policies. Beneficial impacts from increased public open space and shoreline access would be the same as those described under the Reuse Plan Alternative.

Increased Vessel Traffic in Oakland Inner Harbor. Developing a recreational marina in the North Waterfront planning area could result in nonsignificant impacts from conflicts between the marina and the Port of Oakland from increased vessel traffic in the Oakland Inner Harbor. The conflicts would not be significant because the USCG regulates the right-of-way for vessels operating in San Francisco Bay, thereby minimizing potential operating disruptions for commercial ships using the Port of Oakland.

Disrupt or Divide Established Land Use Configurations. Beneficial impacts of linking existing land uses east of the site with new on-site development would be the same as those described under the Reuse Plan Alternative.

4.1.4 Reduced Density Alternative

This alternative proposes uses similar to the Reuse Plan Alternative but at lower densities.

Significant Impacts

Consistency with Public Trust

Impact 1: A significant and mitigable impact, as described under the Reuse Plan Alternative, would result from inconsistencies between land uses proposed on public trust land and allowable uses on public trust land. Because specific locations for proposed land uses are not specified in the Reuse Plan, the following discussion identifies those categories of proposed land use with the potential to be located within the public trust land. For the Reduced Density Alternative, public trust inconsistencies would potentially occur in four planning areas as identified for the Reuse Plan Alternative. In the Civic Core planning area, proposed uses that would not be consistent with the public trust are residential, research and development, non-maritime related commercial, and mixed use. In the Main Street Neighborhoods, Marina, and Northwest Territories planning area, proposed land uses are similar to the Reuse Plan Alternative, although they would generally occur at lower densities. In these planning areas, the proposed uses that would not be

consistent with the public trust would be the same as under the Reuse Plan Alternative.

Mitigation 1: The mitigation for this impact would be the same as described under the Reuse Plan Alternative. Land exchanges and possible contributions resulting in uses allowable under public trust on all public trust land at NAS Alameda would mitigate this impact to a nonsignificant level. In the unlikely event that agreement cannot be reached among the City, ARRA, and the State Lands Commission for all land exchanges and possible contributions necessary to allow development of all proposed land uses consistent with the public trust, then no development that is inconsistent with the public trust would be permitted on public trust land at NAS Alameda. This impact would thereby be avoided.

Recreational Vehicle Park Conflicts With Surrounding Land Uses

Impact 2: A significant and mitigable land use conflict would result from development of the new 13-acre (5 ha) RV park near residential areas in the Main Street Neighborhoods planning area. Although the proposed location would be different than in the Reuse Plan, the RV park under this alternative would be located relatively close to the residential neighborhoods in the Main Street Neighborhoods planning area, and would therefore have the same potential for land use conflicts from RV traffic and nighttime noise and glare as described for the Reuse Plan Alternative.

Mitigation 2: Attributes of site design, additional regulations, and management restrictions would mitigate for potential land use conflicts, as described for the Reuse Plan Alternative. Implementation of this mitigation would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Consistency With San Francisco Bay Plan Shoreline Access Policies. Beneficial impacts from increased public open space and shoreline access would be the same as those described under the Reuse Plan Alternative.

Increased Vessel Traffic in Oakland Inner Harbor. Developing a recreational marina in the North Waterfront planning area could result in a nonsignificant impact despite conflicts between the marina and the Port of Oakland from increased vessel traffic in the Oakland Inner Harbor, as described for the Residential Alternative. The conflicts would not be significant because the USCG regulates the right-of-way for vessels operating in San Francisco Bay, thereby minimizing potential operating disruptions on commercial ships servicing the Port of Oakland.

Disrupt or Divide Established Land Use Configurations. Beneficial impacts of linking existing land uses east of the site with new on-site development would be the same as those described under the Reuse Plan Alternative.

4.1.5 No Project Alternative

Under this alternative, property at NAS Alameda/FISC Alameda would continue under Federal ownership in an inactive status with essential security and maintenance operations only. The USCG and USFWS would operate their facilities separately from the caretaker activities. The Alameda Unified School District would continue to operate the George Miller Elementary School on land leased from the Navy in the North Housing area.

There would be minimal use of the property and facilities under this alternative. No new construction would occur and no demolition is anticipated. Under caretaker status, ongoing activities would include minimum maintenance to minimize deterioration. While some deterioration of property and facilities can be expected to occur if the property remains in an inactive status, caretaker maintenance would be sufficient to prevent significant land use impacts such as unsightly or vandalized structures. This would result in no adverse land use impacts.

Open space and recreational areas at NAS Alameda/FISC Alameda would have minimal public access. This would represent no change over the past conditions and would, therefore, not result in an adverse environmental impact.

4.2 VISUAL RESOURCES

This section describes impacts to visual resources that could occur under the reuse actions and the No Project Alternative. The analysis focuses on physical changes associated with the reuse alternatives, which are compared to existing visual resource conditions. Impacts are compared to baseline conditions as described in Section 3.2.

Region of Influence

The ROI for visual resources includes NAS Alameda/FISC Alameda and a generalized viewshed extending out from the site approximately 5 miles (8 km) but limited within that radius by terrain and structures.

Significance Criteria

Visual resources were qualitatively evaluated by assessing the nature and extent of change in existing landscape character that would occur under each alternative. The analysis addresses landscape modifications as seen from viewpoints within the ROI. Impacts can be either adverse, by degrading existing scenic qualities, or beneficial, by enhancing existing scenic qualities. An impact is considered significant if:

- It would noticeably increase visual contrast and substantially reduce scenic quality, as seen from any high sensitivity foreground or middle ground viewpoint (as described in Section 3.2);
- It would create a new source of substantial light or glare which would adversely affect views;
- It would block or disrupt existing views or reduce public opportunities to view scenic resources; or
- Visual resource conditions resulting from an alternative would conflict with policies and regulations governing aesthetics.

Given the programmatic nature of the reuse alternatives, only a general idea of visual components and resulting potential visual contrasts of each alternative can be provided at this time. Where necessary, assumptions on the visual character of the components have been provided for individual alternatives. A summary of impacts and their significance is provided in Table 4–2. Beneficial impacts are shown as nonsignificant impacts in the table.

Table 4-2
Summary of Visual Resource Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Views of Northwest Territories from Oakland and Alameda Viewing Locations	○	◑	●	◐	◑
Blocked Views Due to New Development in the Northwest Territories	○	◑	●	◑	◑
Views of an RV Park from Existing Residential Neighborhoods	○	◑	○	○	◑
Views of New Development in the North Waterfront from Jack London Square and Vicinity	○	◐	◐	◐	◐
Views of Golf Course and Shoreline Park	○	◐	○	○	◐
Increased Viewing Opportunities	○	◐	◐	◐	◐
Reuse of Existing Facilities	○	◐	◐	◐	◐
Visual Effects During Caretaker Status	◐	○	○	○	○
Increased Light or Glare Affecting Views	○	◐	◐	◐	◐

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = None

4.2.1 Reuse Plan Alternative

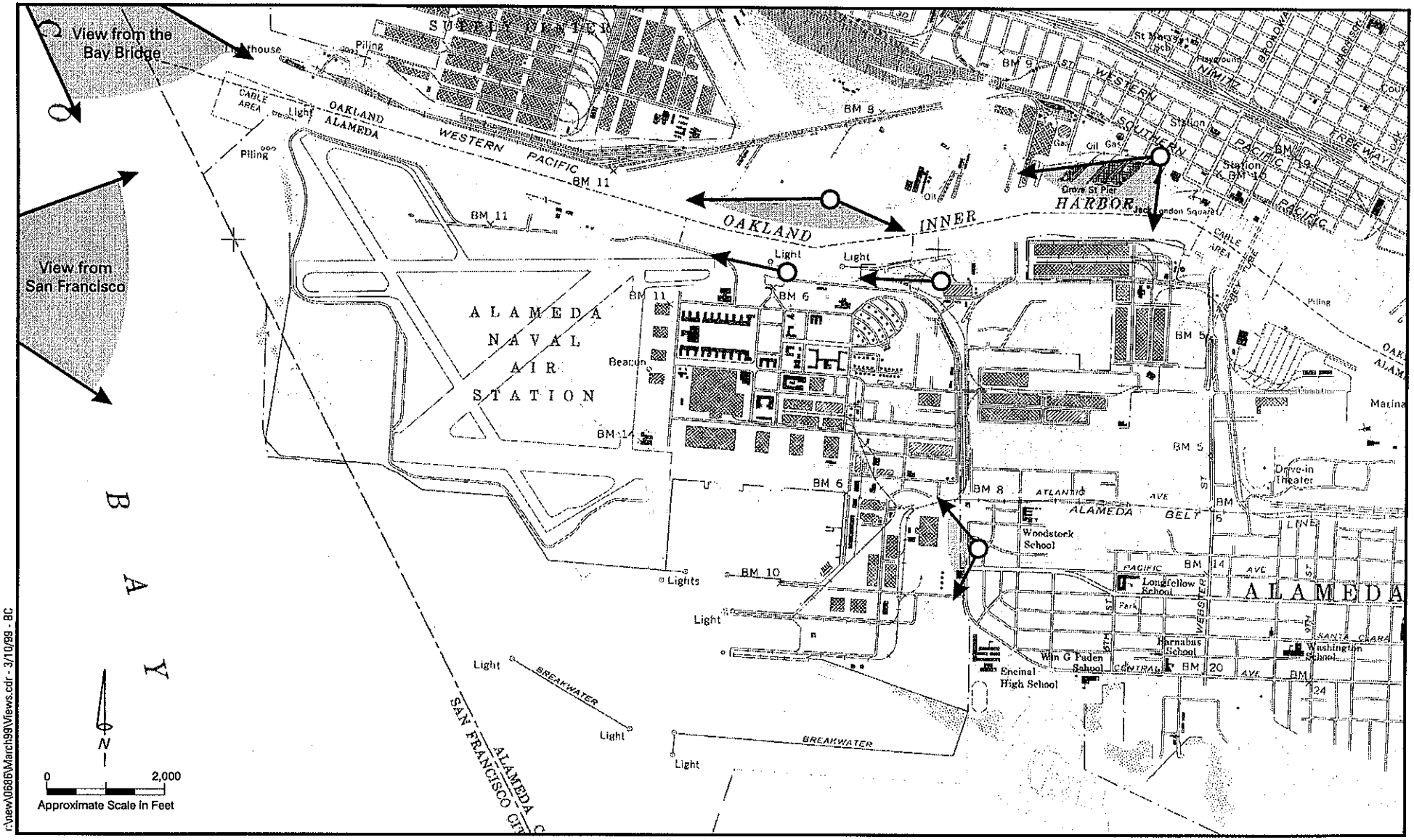
Under the Reuse Plan Alternative, a mix of land uses would be established or continued at NAS Alameda/FISC Alameda. These include commercial uses, single-family and attached housing, light industry, research and development, offices, a sports complex, parks and open space, an RV park, schools, a marina, a hotel and conference center, and a golf course and clubhouse.

This alternative would alter visual resources in areas visible from the Oakland Inner Harbor, Jack London Square area, and residential neighborhoods that border the site along Main Street and Central Avenue south of Atlantic Avenue as shown in Figure 4-1.

Significant Impacts

Views of Northwest Territories from Oakland and Alameda Viewing Locations

Impact 1: A significant and mitigable impact would result from light industrial development in the Northwest Territories planning area that



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NAS Alameda/FISC Alameda is visible from adjacent properties in the city of Alameda and Oakland, including Jack London Square and public access locations on the north and south shores of the Oakland Inner Harbor. The site is also visible from the Bay Bridge and San Francisco. The western runway area of NAS Alameda is generally level and provides unobstructed views. Viewing locations within the base were generally closed to public access under operational conditions.

Source: Tetra Tech 1999

LEGEND:

Viewpoint and Direction

Representative Views of NAS Alameda/FISC Alameda

NAS Alameda/FISC Alameda
Alameda, California

Figure 4-1

would decrease visual quality of the site from Oakland and Alameda viewing locations. The Northwest Territories planning area is visible from San Francisco Bay, ferry service operating within the Oakland Inner Harbor, and public access points along the shore of the Oakland Inner Harbor. Views from all of these points could be diminished. Depending on its final design characteristics, maritime-related light industry could increase visual contrast and reduce visual quality compared to the current minimally developed site.

Mitigation 1: Implementation of the following mitigation measures would reduce impacts to a nonsignificant level:

- Adopt appropriate design elements into the light industrial development to minimize the industrial character of the site and provide minimal visual contrast with surrounding uses.
- Develop and implement a landscape concept plan for the light industrial area that would relate to the landscape character of the proposed shoreline park, thus providing a unified visual identity for the Northwest Territories.
- Screen parking areas from view.

Blocked Views Due to New Development in the Northwest Territories

Impact 2: A significant and mitigable impact would result from light industrial facilities in the Northwest Territories planning area blocking views to the south and southwest from portions of the shoreline park near the light industrial development; however, the highest quality views from farther west along the shoreline would not be affected.

Mitigation 2: Locate new buildings associated with maritime-related light industry in places that preserve and emphasize views of the bay and more distant visual landmarks. After implementing the mitigation measure, impacts would not be significant.

Views of a Recreational Vehicle Park from Existing Residential Neighborhoods

Impact 3: A significant and mitigable impact would result from developing an RV park in the Inner Harbor planning area which would create visual contrasts with views from nearby residential neighborhoods or public streets.

Mitigation 3: The following measures could be implemented to reduce impacts to visual resources. After implementing the following mitigation measures, impacts would not be significant:

- Develop site layout and landscape concept plans for the Inner Harbor that would screen the RV park from view.
- Develop project-specific design guidelines that address building and site characteristics and consider views toward the area from off-site locations.

Nonsignificant Impacts

Views of New Development in the North Waterfront from Jack London Square and Vicinity. The North Waterfront planning area is visible from Jack London Square and the Oakland Ferry Terminal. New mixed use development in the North Waterfront planning area would replace aging warehouse uses and large ships historically berthed at the FISC Alameda Facility. New uses would continue the character of the adjoining mixed-use districts such as Marina Village, as would replacement of warehouses with residential uses. This impact would be beneficial.

Views of Golf Course and Shoreline Park. Development of a golf course in the Northwest Territories planning area would not substantially change the existing open space visual character of that area. A links-style golf course and a linear shoreline park along the entire length of the Oakland Inner Harbor would serve as positive visual features from viewing locations in Oakland. This impact would be beneficial.

Increased Light or Glare Affecting Views. Other than the proposed RV park, the Reuse Plan is not expected to result in development creating substantial light or glare affecting views. Potential adverse light and glare impacts of the RV park are noted in the Land Use section (4.1) under Impact 2 and would be addressed by Mitigation Measure 2. Increased night lighting on the site from light industrial development and the sports complex is discussed in the Biological Resources section (4.7) in terms of its potential adverse effects on the California least tern. Biological Resources Impact 1 and Mitigation Measure 1 address this issue. Neither the Land Use impact nor the Biological Resource impact related to light and glare would constitute significant adverse impacts to visual resources.

Increased Viewing Opportunities. Providing public access to the shoreline and thereby creating new viewing opportunities, some with expansive views of very high visual interest, represent beneficial impacts. The principal locations that could potentially offer these views include the perimeter of the site, particularly in the vicinity of the Marina and the Northwest Territories planning areas.

Reuse of Existing Facilities. Redevelopment in the Civic Core, Main Street Neighborhoods, and Inner Harbor planning areas would result in adaptive reuse of many of the existing buildings and would therefore continue views similar to existing views. Visual quality would not be expected to diminish. No mitigation would be required.

4.2.2 Seaport Alternative

Under the Seaport Alternative a different and distinct land use would be established in the Northwest Territories planning area by development of port facilities and berths for container vessels. Campus uses proposed in the Civic Core planning area also would differ from the Reuse Plan Alternative. Other land uses, similar to those proposed in the Reuse Plan Alternative, would include commercial uses, single-family and attached housing, light industry, offices, parks and open space, schools, a marina, and a hotel and conference center. An RV park would not be developed under this alternative.

Significant Impacts

Views of Northwest Territories from Oakland and Alameda Viewing Locations

Impact 1: A significant and not mitigable impact would result from port facilities in the Northwest Territories planning area imparting an industrial visual character to the south shore of the Oakland Inner Harbor. The current open runway area would be replaced by large cranes and other port facilities similar to those of the Port of Oakland facilities. This change in view would be visible from Jack London Square and other viewing points on the north shore of the Oakland Inner Harbor, as well as from the San Francisco-Oakland Bay Bridge.

Mitigation 1: It would not be possible to screen the proposed port facilities from public view. No feasible mitigation exists to substantially reduce the industrial character of new port development to a nonsignificant level.

Blocked Views Due to New Development in the Northwest Territories

Impact 2: A significant and not mitigable impact would result from large loading cranes (over 200 feet [61 m] high) on the waterfront at the proposed 5 container ship berths disrupting views to the west from portions of the Civic Core planning area as well as from some locations along the north shore of the Oakland Inner Harbor. Views to the northeast and east from the far western portion of the Northwest Territories planning area would also be blocked. Such conditions would be inconsistent with City of Alameda General Plan policies 3.2, 6.2.1, and 6.2.b, and the San Francisco

Bay Plan policy 8, relating to aesthetics, as described in Section 3.2.4. Figure 4-2 shows a simulated view of the loading cranes as viewed from the northern shoreline of the Civic Core planning area. The cranes would disrupt views to the west from the northern shoreline part of the Civic Core planning area. This is an area that has been accessible to the public during base operation. Views from the North Waterfront planning area, the private property in the vicinity of the Alameda ferry terminal, and the USCG housing area also would be blocked. Additionally, views to the northeast and east from the far western part of the Northwest Territories planning area would be blocked.

Port facilities also could include a cargo crossing bridge spanning the Oakland Inner Harbor from the Northwest Territories planning area to the Port of Oakland. This change in view would be visible from viewpoints along the northern shoreline of Alameda, which has been open to the public during base operation. The change in view also would be visible from public access viewpoints in Oakland and from the San Francisco-Oakland Bay Bridge. A simulated view of the cargo bridge is not provided because the specific location and design for such a facility have not been identified at this time.

Mitigation 2: It would not be possible to avoid disruption of views from some locations by loading cranes or the cargo bridge. No feasible mitigation exists that would reduce this impact to a nonsignificant level.

Nonsignificant Impacts

Views of New Development in the North Waterfront from Jack London Square and Vicinity. Mixed use development in the North Waterfront planning area, although of different types than under the Reuse Plan Alternative, would similarly increase the quality of views from Jack London Square and the Oakland Ferry Terminal. This impact would be beneficial.

Increased Light or Glare Affecting Views. The absence of an RV park in this alternative removes any potential light or glare impact from that source. As is the case for the Reuse Plan Alternative, increased night lighting would not constitute a significant adverse impact to visual resources.

Increased Viewing Opportunities. Although some new viewing opportunities would be created, due to the safety and security needs of port operation, public access and viewing opportunities along the south shore of the Oakland Inner Harbor of the bay and other regional features would not increase to the same degree as under the Reuse Plan. Because this area is not currently open to the public no public views currently exist from the site,

a. Existing view looking west from Alameda northern shoreline.

b. View looking west from Alameda northern shoreline under Seaport Alternative.

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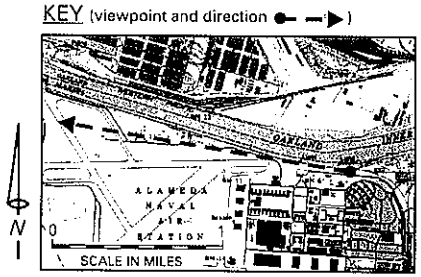
This figure shows the view from the northern Alameda shoreline looking west toward San Francisco after development of seaport facilities in the Northwest Territories.



Source: Tetra Tech 1999

View of Northwest Territories Seaport Alternative

NAS Alameda / FISC Alameda
Alameda, California

Figure 4-2

so the situation under port development would be similar to existing conditions for those areas directly affected by port facility development. No mitigation would be required.

Reuse of Existing Facilities. Redevelopment and adaptive reuse of existing facilities would be similar to the Reuse Plan Alternative and would continue views similar to existing views. Visual quality would not be expected to diminish. No mitigation would be required.

4.2.3 Residential Alternative

Under the Residential Alternative, emphasis would be placed on residential housing as compared to the other alternatives. Development would include more than 1,500 housing units on 200 acres (81 ha) in the Northwest Territories planning area, and increased numbers of residential units in the Civic Core, North Waterfront, and the Inner Harbor planning areas. Campus uses are proposed in the Civic Cove planning area. A mix of other uses, similar to those under the Reuse Plan Alternative, would also occur. An RV park would not be developed under this alternative.

Significant Impacts

Blocked Views Due to New Development in the Northwest Territories

Impact 1: A significant and mitigable impact would result from residential development in the Northwest Territories planning area blocking views to the west and southwest of the bay and other regional features from viewing points along the south shore of the Oakland Inner Harbor and, to a lesser degree, from viewing points in Oakland. The degree of view disruption would depend on the layout of the development and placement of structures on the site. This would be inconsistent with City of Alameda General Plan policies 3.2.a, 3.2.d, 3.2.i, and 6.2.a and the San Francisco Bay Plan policies 2 and 8 relating to aesthetics.

Mitigation 1: Residential development in the Northwest Territories planning area would be located so as to create view corridors toward the bay from viewing locations along the south shore of the Oakland Inner Harbor and from Oakland viewing locations. Impacts after implementing this mitigation measure would not be significant.

Nonsignificant Impacts

Views of Northwest Territories from Oakland and Alameda Viewing Locations. Residential development in the Northwest Territories planning area would have a generally pleasing and attractive visual character assuming City of Alameda design standards are implemented. By nature, residential development would stand in contrast with the industrial character of the Port of Oakland immediately across the Oakland Inner Harbor. No mitigation would be required.

Views of New Development in the North Waterfront from Jack London Square and Vicinity. Mixed use development in the North Waterfront planning area, although of different types than under the Reuse Plan Alternative, would similarly increase the quality of views from Jack London Square and the Oakland Ferry Terminal. This impact would be beneficial.

Increased Light or Glare Affecting Views. Impacts would be the same as those described under the Seaport Alternative.

Increased Viewing Opportunities. As under the Reuse Plan Alternative, the public would have increased access to the shoreline, creating new viewing opportunities, some with expansive views of very high visual interest, representing beneficial impacts. The principal locations that could potentially offer these views include the perimeter of the site, particularly in the vicinity of the Marina and the Northwest Territories planning areas. This impact would be beneficial.

Reuse of Existing Facilities. Redevelopment and adaptive reuse of existing facilities would be similar to the Reuse Plan Alternative and would continue views similar to existing views. Visual quality would not be expected to diminish. No mitigation would be required.

4.2.4 Reduced Density Alternative

Under the Reduced Density Alternative, land uses would be similar to those under the Reuse Plan Alternative, but would occur at reduced densities. The primary difference in land use between the alternatives occurs in the Northwest Territories, Civic Core, and Inner Harbor planning areas. Under the Reduced Density Alternative, 58 acres (23 ha) in the eastern portion of the Northwest Territories planning area designated for maritime-related light industry in the Reuse Plan would remain in open space during the planning time frame, but would be designated for eventual development. The golf course and soccer fields in this planning area would be developed. Housing would be developed in the Inner Harbor planning

area under this alternative. Research and development uses and an RV park would be developed in the Civic Core planning area.

Significant Impacts

Views of Northwest Territories from Oakland and Alameda Viewing Locations

Impact 1: A significant and mitigable impact would result from light industrial development in the Northwest Territories planning area that would decrease visual quality of the site from Oakland and Alameda viewing locations, similar to development under the Reuse Plan Alternative. Because this development would not occur during the buildout period for the Reuse Plan, this impact would not occur during this period, but would be expected to occur eventually.

Mitigation 1: Implementation of the same mitigation measures described under the Reuse Plan Alternative would reduce impacts to a nonsignificant level.

Blocked Views Due to New Development in the Northwest Territories

Impact 2: As under the Reuse Plan Alternative, a significant and mitigable impact would result from the eventual development of light industrial facilities in the Northwest Territories planning area blocking views to the south and southwest from portions of the shoreline park near the light industrial development; however, the highest quality views from farther west along the shoreline would not be affected.

Mitigation 2: Implementation of the same mitigation measure described under the Reuse Plan Alternative would reduce this impact to a nonsignificant level.

Views of a Recreational Vehicle Park from Existing Residential Neighborhoods

Impact 3: A significant and mitigable impact would result from development of an RV park in the Civic Core planning area, which would create visual contrasts. The presence of this use on the southern shore of the Oakland Inner Harbor could be considered unsightly if viewable from nearby residential neighborhoods or public streets.

Mitigation 3: After implementing the following mitigation measures, impacts would not be significant:

- Develop site layout and landscape concept plans for the Civic Core planning area that would screen the RV park from view.

- Develop project-specific design guidelines that address building and site characteristics and consider views toward the area from off-site locations.

Nonsignificant Impacts

Views of New Development in the North Waterfront from Jack London Square and Vicinity. Mixed use development in the North Waterfront planning area, although of a slightly different mix than under the Reuse Plan Alternative, would similarly increase the quality of views from Jack London Square and the Oakland Ferry Terminal. This impact would be beneficial.

Views of Golf Course and Shoreline Park. Development of a golf course in the Northwest Territories planning area would not substantially change the existing open space visual character of that area. A links-style golf course and a linear shoreline park along the entire length of the Oakland Inner Harbor would serve as positive visual features from viewing locations in Oakland. This impact would be beneficial.

Increased Light or Glare Affecting Views. Impacts would be the same as those described under the Reuse Plan Alternative.

Increased Viewing Opportunities. As under the Reuse Plan Alternative, the public would have increased access to the shoreline, creating new viewing opportunities, some with expansive views of very high visual interest, represent beneficial impacts. The principal locations that could potentially offer these views include the perimeter of the site, particularly in the vicinity of the Marina and the Northwest Territories planning areas.

Reuse of Existing Facilities. Redevelopment and adaptive reuse of existing facilities would be similar to the Reuse Plan Alternative and would continue views similar to existing views. Visual quality would not be expected to diminish. No mitigation would be required.

4.2.5 No Project Alternative

Nonsignificant Impacts

Visual Effects During Caretaker Status. Under this alternative no new construction would occur and no demolition is anticipated during caretaker status. Periodic maintenance would be carried out to limit deterioration, including some landscaping. The overall visual quality of NAS Alameda/FISC Alameda would be retained with only minor decreases in visual quality expected to result from the deterioration of structures and

landscaping. Public access would continue to be restricted. No new visual contrast would be created and existing views would not be disrupted or blocked. However, the essentially deserted property, with buildings closed and secured, would be visible from existing adjacent residential areas and to traffic on streets that border the property. These changes would not be significant and no mitigation would be required.

4.3 POPULATION AND HOUSING

This analysis describes impacts on population and housing that could occur under the reuse actions and the No Project Alternative. Impacts are analyzed against the specific baselines for each category of impact.

Region of Influence

The ROI for population and housing consists of one of the following areas: the Oakland PMSA (which consists of portions of Alameda and Contra Costa counties), Alameda County alone, or the City of Alameda depending on the data source.

Methodology

Population and housing impacts were analyzed against 2020 projections for local and regional population and household growth.

Year 2020 projections of population and households were developed by extending the 2015 projections published in ABAG *Projections '96* (see Section 3.3) assuming that the annual average growth rate between 2015 and 2020 would be the same as the rate between 2005 and 2015.

The effects of each reuse alternative are evaluated first by the estimated number of jobs generated, since the numbers and types of jobs generated strongly affect other socioeconomic conditions. When job opportunities exist, new residents move in, adding to the regional population. New households result in additional demand for local government services, including recreation and schools (addressed in Section 4.4, Public Services).

The impact analysis estimates only those long-term jobs that would likely be directly generated by the reuse alternatives on the site. Indirect jobs also would be generated but it is speculative to predict to what extent these jobs are likely to be contained within the City of Alameda or the Oakland PMSA. For this reason, an analysis of indirect jobs would not provide meaningful information and is therefore not included.

Significance Criteria

Regional changes in population and housing are considered neither beneficial nor adverse impacts because these changes reflect the normal range of fluctuations in these and related demographic indicators as people move to respond to job opportunities in the region. Population and housing growth can be perceived either positively or negatively, depending on the values and point of view of the people considering the impacts. For example, additional

housing may be deemed positive by the children of long-time residents who would like to stay in the area, but may be seen as negative by existing residents who may feel crowded or if local services are becoming strained. Regional planners generally consider that housing growth in the central part of the Bay Area is beneficial because it reduces the current jobs/housing imbalance, thereby reducing commuting times, freeway congestion, and air pollution. However, housing advocates may believe that prices for low-density housing in such a central location, with bay views and other amenities, would be too high to be affordable to many Bay Area residents.

Population and housing growth could lead to secondary impacts that may be adverse, such as the potential traffic and infrastructure improvements that may induce growth. These secondary impacts are discussed in Section 5.2, Growth-Inducing Impacts.

Impacts to population and housing would be considered significant if they would involve either of the following two effects:

- Displacement of substantial numbers of existing housing units, necessitating the construction of replacement housing; or
- Displacement of substantial numbers of existing residents, necessitating the construction of replacement housing.

Table 4-3 summarizes population and housing impacts that would result from reuse of NAS Alameda/FISC Alameda. Because beneficial impacts are not identified as a separate level of significance in Table 4-3, they are shown as nonsignificant impacts.

Table 4-3
Summary of Population and Housing Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Displacement of Existing Housing	○	◫	◫	◫	◫
Displacement of Existing Residents	○	◫	◫	◫	◫

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◫ = Nonsignificant
○ = None

4.3.1 Reuse Plan Alternative

Jobs On-site as an Input to Population and Housing Analysis

Under the Reuse Plan Alternative, employment-generating land uses at NAS Alameda/FISC Alameda would create the beneficial impact of approximately 18,978 jobs on-site (Table 4-4). The number of jobs that would be created by the Reuse Plan Alternative is based on the employment estimates generated by applying standard factors to nonresidential land uses (Appendix Table C-1). For comparison, the Navy installations at full operations in 1990 employed nearly 6,000 civilians and 12,800 military personnel (including reserves), for total NAS Alameda/FISC Alameda employment of approximately 18,800.

Table 4-4
Socioeconomic Effects of Reuse

	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	No Project Alternative
Jobs On-site	18,978	10,600	6,900	14,700	93[1]
Housing On-site	2,378	3,063	5,456	1,667	-
Population On-site	5,653	7,281	12,899	4,016	-

[1] Includes 63 caretaker staff and 30 employees at Miller Elementary School.
Note: USCG use of 582 housing units is not included in calculation totals. Please see Appendix C for more information.

Source: ERA

Nonsignificant Impacts

Population and Housing. At buildout, this alternative would contain 2,378 homes, which would represent a substantial addition to the available housing stock of the City of Alameda. Table 4-5 indicates that this number is about 24 percent more growth than projected by ABAG for the number of households in the City of Alameda by 2020. (As noted in Section 3.3, the ABAG projections do not reflect any reuse of NAS Alameda/FISC Alameda.)

Housing at the NAS Alameda/FISC Alameda site would represent only about two percent of growth anticipated for Alameda County over the next quarter century and less than one percent of projected housing increases in the PMSA.

Table 4-5
Housing Impacts in the Region of Influence

	Projected Household Growth 1995-2020	Reuse Plan Alternative	Seaport	Residential	Reduced Density	No Project
Housing Units by Reuse Alternative		2,378	3,063	5,456	1,667	-
Region of Influence	Housing for Each Alternative as a Percentage of Projected Housing Growth[1]					
Oakland PMSA	251,730	0.9%	1.2%	2.2%	0.7%	0.0%
Alameda County	112,650	2.1%	2.7%	4.8%	1.5%	0.0%
City of Alameda	1,920	123.9%	159.6%	284.0%	86.8%	0.0%

[1] Projections do not reflect growth that would be anticipated with the reuse of NAS Alameda/FISC Alameda.

Note: USCG use of 582 housing units is not included in calculation totals.

Source: ABAG 1995a

The increase in housing and jobs would attract approximately 7,300 additional residents to the City of Alameda (Table 4-6 and Appendix Table C-2). This figure represents about 50 percent more growth in the City's household population than projected by ABAG. Most of the new residents (5,653) would live in the housing located on the NAS Alameda/FISC Alameda property (Appendix Table C-2), and much of the remainder would be attracted to Alameda because of on-site job opportunities associated with reuse.

Table 4-6
Population Impacts in the Region of Influence

	Projected Population Growth 1995-2020	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	No Project Alternative
Oakland PMSA						
Population Increase Due to Reuse	618,700	28,385	27,854	26,382	26,748	180
Reuse Plan as a % of Projected Growth		4.6%	4.5%	4.3%	4.3%	0.03%
Alameda County						
Population Increase Due to Reuse	266,400	19,400	21,000	23,400	17,800	117
Reuse Plan as a % of Projected Growth		7.3%	7.9%	8.8%	6.7%	0.04%
City of Alameda – Total Population						
Population Increase Due to Reuse	2,300	7,300	9,000	14,600	5,700	59
Reuse Plan as a % of Projected Growth		317.4%	391.3%	634.8%	247.8%	2.6%
City of Alameda – Household Population						
Population Increase Due to Reuse	4,900	7,300	9,000	14,600	5,700	59
Reuse Plan as a % of Projected Growth		149.0%	183.7%	298.0%	116.3%	1.2%

Refer to Appendix Table C-2 for more information.

Source: ABAG 1995a

In estimating the growth attributable to job creation at the site, the analysis assumes that a maximum of 14 percent of all future employees on the NAS Alameda/FISC Alameda property would be new residents within the City of Alameda, which is consistent with the approximate proportion of Navy civilian employees that lived in Alameda when the base was operational (see Table 3-2). However, this assumption is further limited because it is not reasonable to assume that new residents would reduce the current five percent housing vacancy levels by more than two percent. At vacancy levels much lower than five percent, local prices would rise to the point where the local market is not competitive with other nearby housing opportunities. This 2 percentage point change equates to 1,544 new residents locating in about 628 existing Alameda units (see Appendix Table C-2, Footnote 1).

Approximately 19,400 of the new employees and residents would live within Alameda County under the Reuse Plan Alternative (which represents 7.3 percent of the growth predicted by 2020), and approximately 28,385 would live within the PMSA (4.6 percent of growth) (see Table 4-6). Because regional changes in population and housing are considered neither beneficial nor adverse, this would be a nonsignificant impact. No mitigation would be required.

Displacement of Existing Housing. The Reuse Plan Alternative would not result in any displacement of existing housing. Subsequent specific development projects may result in the demolition of substandard units, many of which are already vacant (e.g., East Housing Area), and their replacement by other mixed and residential uses. However, subsequent environmental review would ensure that these potential impacts would be analyzed and mitigation if significant.

Displacement of Existing Residents. The Reuse Plan Alternative would not result in any displacement of current residents.

Community Improvement Plans (APIP and BWIP). Tax increment projections made as a part of the Alameda Point Improvement Project (APIP) plan adoption process anticipate a total of $35 million present value or $127 million future value dollars specifically earmarked for housing over the 45-year life of the plan. Similar housing funds would be generated by the Business and Waterfront Improvement Project (BWIP) area. Thus, the existence of the APIP and BWIP redevelopment plans assures that funds will be set aside for the provision of very low, low- and moderate-income housing.

In addition to the 20 percent set-aside requirement, there are also inclusionary and production housing requirements in effect at APIP because it is a redevelopment area. At least 30 percent of all new or rehabilitated units

developed by the Community Improvement Commission (CIC) must be affordable to persons of very low, low- or moderate-income. Not less than 50 percent of these units must be affordable to persons of very low-income. Furthermore, at least 15 percent of all new or rehabilitated housing units developed within the project area by either public or private entities other than the CIC must be affordable to persons of very low, low- to moderate-income. At least 40 percent of these units must be affordable to very low-income households. Provision of funding for housing under these requirements would be considered a beneficial impact of the proposed project.

4.3.2 Seaport Alternative

Jobs On-site as an Input to Population and Housing Analysis

The Seaport Alternative would have land uses similar to the Reuse Plan Alternative, but also would include a five-berth container port facilities. This alternative would eliminate substantial areas of industrial land, one hotel, and the golf course. Overall, this alternative would generate about 44 percent fewer jobs (10,600 jobs) in the community than the Reuse Plan Alternative (about 18,978 jobs) (Appendix Table C-1).

It is expected that the Seaport Alternative would generate jobs that are more typical of what existed at NAS Alameda/FISC Alameda than would the Reuse Plan Alternative. Many of the jobs needed to support port activities are in mechanical repair, warehousing, and supply operations.

Nonsignificant Impacts

Population and Housing. The Seaport Alternative at buildout would contain 3,063 homes, which would represent a substantial addition to the housing stock of the City of Alameda. Table 4-5 indicates that this number is approximately 60 percent more growth than projected for the number of projected households in the City of Alameda by 2020.

Housing under the Seaport Alternative at the NAS Alameda/FISC Alameda site would represent only about three percent of growth anticipated for Alameda County over the next quarter century and about one percent of projected housing increases in the PMSA.

The increase in housing and jobs would attract an additional 9,000 residents to the City of Alameda (Table 4-6 and Appendix Table C-2). This figure represents nearly 85 percent more growth in the City's household population than projected by ABAG. Most of these new residents (7,281) would live in the new on-site housing, and the remainder would be attracted to Alameda because of on-site job opportunities.

It is estimated that nearly 21,000 new employees and residents would live within the county under the Seaport Alternative (which represents 7.9 percent of the growth projected by 2020), and 27,854 would live within the PMSA (4.5 percent of projected 2020 PMSA growth) (see Table 4-6). These projections are about 30 percent less than for the Reuse Plan Alternative. Because regional changes in population and housing are considered neither beneficial nor adverse, this would be a nonsignificant impact. No mitigation would be required.

Displacement of Existing Housing. Impacts would be the same as described under the Reuse Plan Alternative.

Displacement of Existing Residents. Impacts would be the same as described under the Reuse Plan Alternative.

Community Improvement Plans (APIP and BWIP). As with the Reuse Plan Alternative, the existence of the APIP and BWIP redevelopment plans assures that funds will be set aside for the provision of very low, low- and moderate-income housing.

4.3.3 Residential Alternative

Jobs On-site as an Input to Population and Housing Analysis

The Residential Alternative would have land uses similar to the Reuse Plan Alternative, but would have substantially more housing and substantially less industrial land, one less hotel, and no golf course. Overall, this alternative would create 64 percent fewer jobs (6,900 jobs) in the community compared to the Reuse Plan Alternative (about 18,978 jobs) (Appendix Table C-1).

Nonsignificant Impacts

Population and Housing. The Residential Alternative at buildout would contain 5,456 homes, which would represent a substantial addition to the housing stock of the City of Alameda. This number is nearly three times more growth than projected by 2020 (Table 4-5). Housing under the Residential Alternative would represent less than five percent of growth anticipated for Alameda County over the next quarter century and about two percent of projected housing increases in the PMSA.

The increase in housing and jobs would attract an additional 14,600 residents to the City of Alameda (Table 4-6 and Appendix Table C-2). This figure represents nearly three times the amount of growth in the City's household population than projected. Most of the new residents (12,899) would live in the new housing at the site, and the remainder would be attracted to Alameda

because of job opportunities on-site. This would be about 24 percent higher than under the Reuse Plan Alternative. About 23,400 new employees and residents would live within the county under the Residential Alternative (which represents 8.8 percent of the growth predicted by 2020), and 26,382 would live within the PMSA (4.3 percent of growth). This would be similar to the Reuse Plan Alternative. Because regional changes in population and housing are considered neither beneficial nor adverse, this would be a nonsignificant impact. No mitigation would be required.

Displacement of Existing Housing. Impacts would be the same as described under the Reuse Plan Alternative.

Displacement of Existing Residents. Impacts would be the same as described under the Reuse Plan Alternative.

Community Improvement Plans (APIP and BWIP). As with the Reuse Plan Alternative, the existence of the APIP and BWIP redevelopment plans assures that funds will be set aside for the provision of very low, low- and moderate-income housing.

4.3.4 Reduced Density Alternative

Jobs On-site as an Input to Population and Housing Analysis. The Reduced Density Alternative would have land uses similar to the Reuse Plan Alternative but at a generally reduced density. Density would be reduced more in the residential uses than in the employment-generating uses. Overall, this alternative would generate about 22.5 percent fewer jobs (14,700 jobs) in the community compared to the Reuse Plan Alternative (about 18,978 jobs) (see Appendix Table C-1).

Nonsignificant Impacts

Population and Housing. The Reduced Density Alternative at buildout would contain 1,667 homes, 30 percent fewer than in the Reuse Plan Alternative. These units still would represent a substantial addition to the housing stock of the City of Alameda. Table 4-5 indicates that this number is approximately 87 percent more growth than previously projected for the year 2020. Housing under the Reduced Density Alternative at the NAS Alameda/FISC Alameda site would represent about 1.5 percent of growth anticipated for Alameda County over the next quarter century and less than 1 percent of projected housing increases in the PMSA.

The increase in housing and jobs would attract an additional 5,700 residents to the City of Alameda (Table 4-6 and Appendix Table C-2). Most of these residents (4,016) would live in the new housing at the site, and the remainder

would be attracted to Alameda because of on-site jobs. About 17,800 new employees and residents would live within the county under the Reduced Density Alternative (which represents 6.7 percent of the growth predicted by 2020), and about 26,748 would live within the PMSA (4.3 percent of growth). These levels are about 10 percent less than under the Reuse Plan Alternative. Because regional changes in population and housing are considered neither beneficial nor adverse, this would be a nonsignificant impact. No mitigation would be required.

Displacement of Existing Housing. Impacts would be the same as described under the Reuse Plan Alternative.

Displacement of Existing Residents. Impacts would be the same as described under the Reuse Plan Alternative.

Community Improvement Plans (APIP and BWIP). As with the Reuse Plan Alternative, the existence of the APIP and BWIP redevelopment plans assures that funds will be set aside for the provision of very low, low- and moderate-income housing.

4.3.5 No Project Alternative

There would be no impacts to population and housing under No Project Alternative. No additional housing would be built and there would be no resident population. There could be a few more households in Alameda as a result of caretaker employment.

4.4 PUBLIC SERVICES

This section identifies potential impacts to public services that may result from the reuse of NAS Alameda/FISC Alameda and from the No Project Alternative. The public services evaluated include fire protection, emergency medical services, police protection, schools and recreation. Impacts are analyzed against baseline conditions as described in Section 3.4.

Region of Influence

The ROI for public services is the City of Alameda, including NAS Alameda/FISC Alameda. This ROI was chosen because Alameda will assume municipal jurisdiction over the property following disposal.

Significance Criteria

A project may have a significant public services impact if it would require a level of service beyond the capability of a public service provider, resulting in inadequate service for the site or for the ROI. Table 4-7 summarizes the impacts to public services.

With respect to schools, alternatives that overcrowd schools to the extent that new facilities are necessary beyond those proposed as part of the alternatives would be considered significant impacts. For recreation, alternatives that generate a parks-to-population ratio below the City goal of 2.3 acres per 1,000 residents would be considered significant impacts.

Table 4-7
Summary of Public Service Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Police Protection Jurisdictional Expansion	◐	◑	◑	◑	◑
Fire Protection and Emergency Medical Services Jurisdictional Expansion	◐	◑	◑	◑	◑
Adequacy of Schools (K-12)	○	◑	◑	◑	◑
Adequacy of Recreation Space/Facilities	○	◐	◐	◐	◐

LEGEND:

Level of Impact

- ● = Significant and not mitigable
- ◑ = Significant and mitigable
- ◐ = Nonsignificant
- ○ = None

Planning Issues and Process

In 1993, public services at NAS Alameda/FISC Alameda were provided by the Navy. Following closure in April 1997, NAS Alameda was placed into caretaker status. Under caretaker status, the Navy continues to be responsible for law enforcement, fire protection, and emergency medical services; however, these services are being provided by the City of Alameda through a cooperative agreement with the Navy. Under this agreement, there is a caretaker staff of 13 firefighters, 5 police officers, and 1 animal control officer. A staff of three security personnel was added in July 1997. Prior to closure, NAS Alameda was under exclusive Federal jurisdiction, which limited law enforcement to Federal authorities enforcing Federal laws. Following closure, the 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. FISC Alameda also is under concurrent jurisdiction, and public services are being provided through the cooperative agreement between the Navy and the City of Alameda.

4.4.1 Reuse Plan Alternative

Significant Impacts

Police Protection

Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department beyond its capability, resulting in an inadequate level of service.

Mitigation 1: The City of Alameda could mitigate this impact to a nonsignificant level by adding eight officers and four patrol cars to the department to meet the increased police protection demand. These additional services are project costs that could be funded from a variety of sources such as development impact fees, special taxes, and other public revenues. The method of funding for increased public services would be dealt with in the permitting process for specific development projects, development agreements entered into between the City and project proponents, and/or City development policy enactments.

Fire Protection and Emergency Medical Services

Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department beyond its capability, resulting in an inadequate level of service. The department's West End Station has a response time to NAS Alameda of approximately six minutes, which exceeds the department-wide goal of three and a half minutes. However, this station could provide adequate service to the FISC Annex and East Housing due to the close proximity of the station to these sites.

Mitigation 2: The City of Alameda could mitigate this impact to a nonsignificant level by constructing a new fire station or staffing the existing on-base fire stations to ensure adequate response times to emergency incidents. Impacts due to construction of a new fire station are discussed in the following sections: Water Resources Impact 1 (Surface Water Quality), Air Quality Impact 1 (Construction and Demolition), Noise Impact 1 (Construction and Demolition), and Hazardous Materials and Waste Impact 2 (Human and Ecological Exposure to Residual Contamination During Construction Activities). The on-base stations would require one engine company, one aerial ladder truck company, and one ambulance company. In addition, new equipment for hazardous materials incidents would be required. These increased equipment needs would result in a corresponding increase of 30 persons to the department's staff. These additional services are project costs that could be funded from a variety of sources such as development impact fees, special taxes, and other public revenues. The method of funding for increased public services would be dealt with in the permitting process for specific development projects, development agreements entered into between the City and project proponents, or City development policy enactments.

Schools (K-12)

Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 1,103 additional students attending AUSD schools at buildout. This would lead to AUSD schools overall operating at about 111 percent of school year 1997/1998 capacity (Table 4-8), which is greater than the current overall utilization rate of 106 percent. Enrollments in later years could be higher or lower than those projected for 2000 due to a variety of off-setting demographic factors.

Table 4-8
Impact on the Alameda Unified School District

AUSD Enrollment and Capacity	Reuse Plan Alternative[1]	Seaport Alternative[2]	Residential Alternative[3]	Reduced Density Alternative[4]	No Project Alternative[5]
Total for Alameda Unified School District					
Total Increase in Enrollment Due to Reuse	1,103	1,483	2,593	807	0
1997/1998 AUSD Enrollment Plus Increases Due to Reuse	11,584	11,964	13,074	11,288	10,481
1997/1998 AUSD School Capacity	10,409	10,565	11,759	10,329	9,909
1997/1998 Enrollment + Reuse as a Percentage of Capacity	111.3%	113.2%	111.2%	109.3%	105.8%
AUSD Local Schools, in the Area Near the Reuse Plan[6]					
1997/1998 Local Enrollment Plus Increases Due to Reuse	3,207	3,587	4,697	2,911	2,104
1997/1998 Local School Capacity	3,104	3,260	4,454	3,024	2,604
1997/1998 Enrollment + Reuse as a Percentage of Capacity	103.3%	110.0%	105.5%	96.3%	80.8%
– at Elementary Schools	101.3%	104.5%	101.8%	93.9%	89.8%
– at Middle Schools	86.8%	98.5%	132.8%	77.7%	52.7%
– at High Schools	114.6%	122.0%	98.0%	108.9%	93.4%

1 Assumes construction of a 500-student elementary school.
2 Assumes construction of 2 elementary schools with a total capacity of 656 students.
3 Assumes construction of 2 elementary schools with a total capacity of 1,250 students and a 600-student high school.
4 Assumes construction of a 420-student elementary school.
5 Assumes no new schools; however, George Miller Elementary School would continue to operate.
6 Includes George Miller Elementary School, Woodstock Elementary School, Chipman Middle School, and Encinal High School.

Source: AUSD 1998; City of Alameda 1998.

The housing units proposed on the NAS Alameda/FISC Alameda site under this alternative would generate approximately 1,103 students in the four schools that serve the area—Miller Elementary School, Woodstock Elementary School, Chipman Middle School, and Encinal High School. Although the size and type of new schools constructed on NAS Alameda/FISC Alameda have not yet been determined, this analysis assumes the addition of 1 new elementary school with a 500-student capacity under the Reuse Plan Alternative. With the addition of this school, the existing area schools would be operating at 87 to 115 percent of capacity. Additional development under the Reuse Plan Alternative would generate the need for approximately 8 additional classrooms and 2 new labs at 1 existing high school (Shilts Consultants, Inc. 1998).

Mitigation 3: Adding 8 high school classrooms and 2 new high school labs would reduce the impact to a nonsignificant level. Provision of these additional classrooms, funded by statutory impact fees or from other sources, would reduce this impact to a nonsignificant level. Tax increment projections, made as part of the APIP plan adoption process, estimate a total of $14 million present value or $52 million future value dollars specifically earmarked for AUSD over the 45-year life of the plan. Funds from the BWIP area would also be earmarked for AUSD.

Nonsignificant Impacts

Recreation. Implementation of the Reuse Plan Alternative would add approximately 345 acres (140 ha) of parks and open space, which includes 50 acres (20 ha) of neighborhood, schools, and regional park facilities. The ratio of these local-serving park uses to local population in this plan would be about 8.8 acres (3.6 ha) per 1,000 residents, well above the City goal of 2.3 acres (0.9 ha) per 1,000 residents (Table 4-9). This expansion of recreational facilities would be a beneficial impact.

Table 4-9
Recreation Impacts in the City of Alameda

	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	No Project Alternative
Total Additions to Parks/Open Space[1]	345	260	237	354	0
Parks & Open Space Designated in Reuse Alternatives	335	246	219	340	0
Regional Recreation	162	0	0	162	0
Regional Parks	36	49	36	36	0
Community Open Space	133	193	179	138	0
Neighborhood Parks	4	4	4	4	0
School Open Space[1]	10	14	18	14	0
Calculation of Parks/1,000 Persons: Subtotal: Neighborhood, Schools, Regional Park	50	67	58	54	0
Acres per 1,000 population[2]	8.8	9.2	4.5	13.5	0

1 This includes about half the space allocated to school campuses.
2 This calculation uses the onsite population under each alternative.

Source: ERA, ARRA 1996

4.4.2 Seaport Alternative

Significant Impacts

Police Protection

Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department beyond its capability, resulting in an inadequate level of service.

Mitigation 1: The City of Alameda could mitigate this impact to a nonsignificant level by adding 10 officers and 5 patrol cars to the department to meet the increased police protection demand. Potential funding sources would be the same as under the Reuse Plan Alternative.

Fire Protection and Emergency Medical Services

Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department beyond its capability, resulting in an inadequate level of service, as described under the Reuse Plan Alternative.

Mitigation 2: The mitigation for this impact would be similar to that described for the Reuse Plan Alternative. However, due to the type of development planned, different types of equipment could be needed.

Schools (K-12)

Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 1,483 additional students attending AUSD schools at buildout, compared with 1,103 for the Reuse Plan Alternative. This would lead to AUSD schools overall operating at about 113 percent of capacity (Table 4-8), which is greater than the current overall utilization rate of 106 percent. Since most schools in the AUSD are at or above enrollment capacity, the Seaport Alternative would result in overcrowding in general. This calculation of capacity includes new schools that would be built on the NAS Alameda/FISC Alameda site under this alternative.

The housing units proposed on the NAS Alameda/FISC Alameda site under this alternative would generate 1,483 students in the four local area schools. Although the size and type of new schools constructed on NAS Alameda/FISC Alameda have not yet been determined, this analysis assumes the addition of 2 new elementary schools with a total capacity of 656 students under the Seaport Alternative. With the addition of these

schools, the existing area schools would be operating at 98 to 122 percent of capacity. Additional development under the Seaport Alternative would generate the need for approximately 3 additional classrooms at 1 existing middle school and 11 additional classrooms and 3 new labs at 1 existing high school (Shilts Consultants, Inc. 1998).

Mitigation 3: Adding 3 middle school classrooms, 11 high school classrooms, and 3 high school labs would reduce the impact to a nonsignificant level. Provision of these additional classrooms, funded by statutory impact fees or from other sources, would reduce this impact to a nonsignificant level. As with the Reuse Plan Alternative, tax increment monies would be specifically earmarked for AUSD over the 45-year life of the plan.

Nonsignificant Impacts

Recreation. Implementation of the Seaport Alternative would add approximately 260 acres (105 ha) of parks and open space, which includes approximately 67 acres (27 ha) of neighborhood, schools, and regional park facilities. The ratio of these local-serving park uses to local population in this plan would be about 9.2 acres (4 ha) per 1,000 residents, well above the City goal of 2.3 acres (0.9 ha) per 1,000 residents. This expansion of recreational facilities would be a beneficial impact.

4.4.3 Residential Alternative

Significant Impacts

Police Protection

Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department beyond its capability, resulting in an inadequate level of service.

Mitigation 1: The City of Alameda could mitigate this impact to a nonsignificant level by adding 17 officers and 9 patrol cars to the department to meet the increased police protection demand under this alternative. Potential funding sources would be the same as under the Reuse Plan Alternative.

Fire Protection and Emergency Medical Services

Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department beyond its capability, resulting in an inadequate level of service, as described under the Reuse Plan Alternative.

Mitigation 2: The mitigation for this impact would be the same as described for the Reuse Plan Alternative.

Schools (K-12)

Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 2,593 additional students attending AUSD schools at buildout. This would lead to AUSD schools overall operating at about 111 percent of capacity, compared with 111 percent with the Reuse Plan Alternative (Table 4-8). Since most schools in the AUSD are at or above enrollment capacity, the Residential Alternative would result in overcrowding in general. This calculation includes new schools that would be built on the site under this alternative.

The housing units proposed on-site under this alternative would generate 2,593 students in the four local area schools. Although the size and type of new schools constructed on NAS Alameda/FISC Alameda have not yet been determined, this analysis assumes the addition of 2 new elementary schools with a total capacity of 1,250 students and 1 high school with a 600-student capacity under the Residential Alternative. With the addition of these schools, the existing area schools would be operating at 98 to 133 percent of capacity. Additional development under the Residential Alternative would generate the need for approximately 13 additional classrooms at 1 existing middle school (Shilts Consultants, Inc. 1998).

Mitigation 3: Adding 13 middle school classrooms would reduce the impact to a nonsignificant level. Provision of these additional classrooms, funded by statutory impact fees or from other sources, would reduce this impact to a nonsignificant level. As with the Reuse Plan Alternative, tax increment monies would be specifically earmarked for AUSD over the 45-year life of the plan.

Nonsignificant Impacts

Recreation. Implementation of the Residential Alternative would add approximately 237 acres (96 ha) of parks and open space, which includes approximately 58 acres (23 ha) of neighborhood, schools, and regional park facilities. The ratio of these local-serving park uses to local population in this plan would be about 4.5 acres (1.8 ha) per 1,000 residents (compared with 8.8 acres [3.6 ha] per 1,000 residents under the Reuse Plan Alternative), well above the City goal of 2.3 acres [0.9 ha] per 1,000 residents. This expansion of recreational facilities would be a beneficial impact.

4.4.4 Reduced Density Alternative

Significant Impacts

Police Protection

Impact 1: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Police Department beyond its capability, resulting in an inadequate level of service.

Mitigation 1: The City of Alameda could mitigate this impact to a nonsignificant level by adding 6 officers and 3 patrol cars to the department to meet the increased police protection demand. Potential funding sources would be the same as under the Reuse Plan Alternative.

Fire Protection and Emergency Medical Services

Impact 2: A significant and mitigable impact would be the expansion of the geographic jurisdiction of the City of Alameda Fire Department beyond its capability, resulting in an inadequate level of service, as described under the Reuse Plan Alternative.

Mitigation 2: The mitigation for this impact would be the same as described for the Reuse Plan Alternative.

Schools (K-12)

Impact 3: A significant and mitigable impact would result from the creation of housing and jobs that would result in about 807 additional students attending AUSD schools at buildout. This would lead to AUSD schools overall operating at about 109 percent of capacity, compared with 111 percent with the Reuse Plan Alternative (Table 4-8). Since most schools in the AUSD are at or above enrollment capacity, the Reduced Density

Alternative would result in overcrowding in general. This calculation includes new schools that would be built on the site under this alternative.

The housing units proposed on-site under this alternative would generate 807 students in the four local area schools. Although the size and type of new schools constructed on NAS Alameda/FISC Alameda have not yet been determined, this analysis assumes the addition of a new elementary school with a 420-student capacity under the Reduced Density Alternative. With the addition of this school, the existing area schools would be operating at 78 to 109 percent of capacity. Additional development under the Reduced Density Alternative would generate the need for approximately 8 additional classrooms and 2 labs at 1 existing high school (Shilts Consultants, Inc. 1998).

Mitigation 3: Adding 8 high school classrooms and 2 high schools labs would reduce the impact to a nonsignificant level. Provision of these additional classrooms, funded by statutory impact fees or from other sources, would reduce this impact to a nonsignificant level. As with the Reuse Plan Alternative, tax increment monies would be specifically earmarked for AUSD over the 45-year life of the plan.

Nonsignificant Impacts

Recreation. Implementation of the Reduced Density Alternative would add approximately 354 acres (143 ha) of parks and open space, which includes approximately 54 acres (22 ha) of neighborhood, schools, and regional park facilities. The ratio of these local-serving park uses to local population in this plan would be about 13.5 acres (5.5 ha) per 1,000 residents, well above the City goal of 2.3 acres (0.9 ha) per 1,000 residents. This beneficial impact would help to offset the City's existing local park space deficiency.

4.4.5 No Project Alternative

Under the No Project Alternative, the Navy would continue to be responsible for providing adequate levels of public services. The Navy would enter into an agreement with Alameda or with another outside agency to partially or fully provide these services.

Nonsignificant Impacts

Police Protection. Minimal demand for police services would be generated by caretaker activities. Service would be provided through an agreement or contract with Alameda or with another outside source. This impact would not be significant and no mitigation would be required.

Fire Protection and Emergency Medical Services. Minimal demand for fire services and emergency medical services would be generated by caretaker activities. Services would be provided through an agreement or contract with Alameda or with another outside source. This impact would not be significant and no mitigation would be required.

Schools. The staffing level of Miller Elementary School (approximately 30 employees) would be unchanged and there would be no other impacts to schools, since the number of school-age children would be unaffected by activities on the site.

Recreation. There would be no impacts to recreation under this alternative because it would not add or remove park or recreational facilities in Alameda.

4.5 UTILITIES

This section describes impacts to utility systems that could occur under the reuse actions and the No Project Alternative. The utility systems evaluated include those for water distribution, sanitary wastewater, industrial wastewater, stormwater drainage, solid waste management, telephone, electricity, natural gas, steam, and cable television. Impacts are analyzed against the baseline conditions described in Section 3.5. Water quality impacts related to the utility systems are discussed in Section 4.9.

Region of Influence

The ROI for utilities is the City of Alameda, including NAS Alameda/FISC Alameda, and the service areas of local utility providers.

Significance Criteria

A project may have significant impacts on a utility system if it increases demand in excess of system capacity to the point that substantial expansion to the infrastructure would be necessary. Significant environmental impacts also may result from system deterioration due to improperly maintaining or extending service beyond the system's useful life. Impacts would be considered significant if Federal, State, or local standards or requirements regulating a public utility system were violated. Table 4-10 summarizes utility impacts. The reuse actions would have no impact on the industrial wastewater and steam distribution systems. Reuse of the industrial wastewater system is not planned, and the steam distribution system would remain inactive. Because beneficial impacts are not identified as a separate level of significance in Table 4-10, they are shown as nonsignificant impacts. Impacts on the environment due to construction of new utilities are discussed in the following sections: Water Resources Impact 1 (Surface Water Quality), Air Quality Impact 1 (Construction and Demolition), Noise Impact 1 (Construction and Demolition), and Hazardous Materials and Waste Impact 2 (Human and Ecological Exposure to Residual Contamination During Construction Activities).

Because the actual capacities of many of the utility systems were unavailable, the impact analysis compared estimated future demands to estimated capacities, which were based on the highest published levels of historic demand. The projected utility demands were calculated by applying standard demand allowances to the various land use categories planned under each alternative.

Table 4-10
Summary of Utilities Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Noncompliance with Solid Waste Diversion Requirements	○	◑	◑	◑	◑
Water Distribution	○	⊕	⊕	⊕	⊕
Sanitary Wastewater	○	⊕	⊕	⊕	⊕
Industrial Wastewater	○	○	○	○	○
Stormwater Drainage	○	⊕	⊕	⊕	⊕
Solid Waste Management	○	⊕	⊕	⊕	⊕
Telephone	○	⊕	⊕	⊕	⊕
Electricity	○	⊕	⊕	⊕	⊕
Natural Gas	○	⊕	⊕	⊕	⊕
Steam	○	○	○	○	○
Cable Television	○	⊕	⊕	⊕	⊕

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
⊕ = Nonsignificant
○ = None

Planning Issues and Process

In 1993, most of the utility systems at NAS Alameda/FISC Alameda were operated by Navy personnel. Following closure of NAS Alameda in April 1997, the station was placed into caretaker status and the Navy entered into a cooperative agreement with the City of Alameda. Under the terms of this agreement, the City of Alameda manages the operation and maintenance of all Navy-owned utility systems at NAS Alameda. The Navy-owned utility systems at FISC Alameda and East Housing also are managed by the City of Alameda under the cooperative agreement.

The Reuse Plan outlines needed improvements and repairs to the currently Navy-owned utility systems. As part of the plan, these improvements are considered components of each reuse alternative.

4.5.1 Reuse Plan Alternative

Significant Impacts

Noncompliance with Solid Waste Diversion Requirements

Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing City of Alameda's compliance with State and county waste diversion requirements. The solid waste generated under this alternative could jeopardize Alameda's effort to divert 50 percent of solid waste from landfills by the year 2000 and 75 percent by the year 2010, as required by the California Integrated Waste Management Act and Alameda County Measure D, respectively. The buildings planned for demolition total approximately 5,889,981 square feet (547,179 square m), which would generate an estimated 1,541,997 cubic yards (1,178,240 cubic m) of demolition debris. Facilities construction would generate additional solid waste. The employees and resident population of NAS Alameda/FISC Alameda would generate approximately 28,046 tons (25,449 metric tons) of solid waste per year under the Reuse Plan Alternative, an increase of 197 percent over the total amount of solid waste generated at NAS Alameda in 1995.

Mitigation 1: Prior to major demolition, a solid waste management plan containing programs and procedures to meet the requirements of the California Integrated Waste Management Act and Alameda County Measure D should be prepared and implemented. The plan should emphasize reusing and recycling solid waste, particularly construction and demolition debris. At a minimum, the plan should include the City of Alameda's solid waste recycling and reuse programs. Construction and demolition contractors should be required to submit individual solid waste management plans consistent with the overall plan, detailing the types of waste to be generated, material handling procedures, and the methods of disposal. Implementation of the measures outlined in these plans would minimize the amount of solid waste disposed of at the landfill and would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Water Distribution. The Reuse Plan Alternative would not result in significant impacts to the water distribution system. The estimated average daily water demand would be approximately 1.42 million gallons per day (MGD) (5.37 million liters per day). Compared to the 1993 demand of 1.26 MGD (4.77 million liters per day), the projected demand represents a 13 percent increase in water requirements. This level of demand represents 73 percent of the estimated system capacity of 1.94 MGD (7.34 million liters

per day). All buildings would require water meters. No mitigation would be required.

Although no mitigations are required, the City of Alameda currently has in place several regulatory means to reduce water consumption and encourage conservation of water. These include:

- Policies in the City's General Plan to: (1) promote and implement water conservation measures, and (2) encourage the use of drought-resistant landscaping (City of Alameda General Plan, Open Space and Conservation Element, Policy 5.1.h, 5.1.i, 5.1.y, 5.1.z, and 5.1.aa); and

- Guidelines in the Alameda Municipal Code for requirements for water conservation in landscaping (Alameda Municipal Code, Chapter XXX, Article IV, Section 30-58).

Sanitary Wastewater. The Reuse Plan Alternative would not result in significant impacts to the sanitary wastewater system. The amount of wastewater generated would be approximately 1.06 MGD (4.01 million liters per day). This represents a 13 percent increase from 0.94 MGD (3.56 million liters per day), the amount of wastewater generated in 1993. The estimated amount of wastewater represents 68 percent of the estimated system capacity of 1.55 MGD (5.87 million liters per day); therefore, the existing system would adequately accommodate the proposed development. Due to the age of the wastewater collection system, some of the piping and lift stations are in poor condition and likely would require near-term replacement. No mitigation would be required.

Stormwater Drainage. The Reuse Plan Alternative would result in beneficial impacts to the storm drain system. This alternative would result in a slight reduction in the amount of impermeable surface area, due to the conversion of pavement and runway surface in the Northwest Territories planning area to a golf course. This reduction would result in a corresponding reduction in the amount of stormwater runoff. The light industry and soccer fields proposed in the Northwest Territories planning area would have similar amount of impermeable surface area as under operational conditions. As described in the Reuse Plan, stormwater collection pipes would be installed in areas of known flooding, and the existing collection system would undergo an inspection and replacement program. Stormwater discharges at NAS Alameda are regulated by an NPDES permit; once the City assumes ownership of the system, additional State and local permitting requirements, that were not applicable to the Federal installation, may be triggered. No mitigation would be required.

Solid Waste Management. The substantial amount of solid waste generated under this alternative would not contribute significantly to the daily tonnage received by the Altamont Landfill, which would still be within its maximum daily capacity. As development proceeds, the amount of solid waste generated would decrease with the cessation of demolition and construction activities. No mitigation would be required.

Although no mitigations are required, the City of Alameda currently has in place several regulatory means to reduce solid waste and encourage recycling of materials. These include:

- Policies in the City's General Plan to: (1) review proposed development plans for energy efficiency, and (2) reduce consumption of petroleum products through the use of transit, bikeways and other alternative means of transportation (City of Alameda General Plan, Open Space and Conservation Element, Policy 5.1.aa and Transportation Element, Policies 4.2, 4.3, 4.4 and 4.5); and

- Guidelines in the Alameda Municipal Code providing for recycling of materials (Alameda Municipal Code, Chapter XXI, Article III, Section 21-15 Residential and Nonresidential Recycling).

Telephone. The Reuse Plan Alternative would not result in significant impacts to the telephone system. If the demand for telephone service increases under this alternative, the new service provider likely would be able to accommodate the demand. No mitigation would be required.

Electricity. The Reuse Plan Alternative would not result in significant impacts to the electrical system. Any additional demand for electrical service as a result of this alternative likely could be accommodated by the Alameda BOE. Due to differences between the design of the Navy system and BOE standards, much of the redundant electrical equipment, including most of the substations, would require removal. This would occur as part of the cyclic replacement program outlined in the Reuse Plan. Reuse also would require installing individual meters on all buildings and installing additional streetlights. No mitigation would be required.

Natural Gas. The Reuse Plan Alternative would likely have beneficial impacts on the natural gas system. Under this alternative, natural gas consumption likely would decrease as a result of the proposed shutdown of the steam plant and the decrease in overall industrial operations. In addition, most buildings on the property would be converted from steam heat to individual natural gas heaters, which represent a more efficient use of natural gas for space heating. Installing additional pipelines would be

required to serve the converted buildings. Due to differences between the design of the Navy system and PG&E standards, the existing infrastructure likely would require modification. Installation and modification would occur as part of the cyclic replacement program outlined in the Reuse Plan. Natural gas service to the site has sufficient capacity to supply future developments on the property. Reusing buildings would require installing individual meters. No mitigation would be required.

Cable Television. The Reuse Plan Alternative would not result in significant impacts to the cable television system. TCI Cablevision of Alameda would accommodate any increases in the number of cable television subscribers. No mitigation would be required.

4.5.2 Seaport Alternative

Significant Impacts

Noncompliance with Solid Waste Diversion Requirements

Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements. The amount of solid waste generated during demolition and construction would be similar to that generated under the Reuse Plan Alternative. The employees and resident population would generate approximately 17,435 tons (15,820 metric tons) of solid waste per year under the Seaport Alternative, an increase of 85 percent over the total amount of solid waste generated at NAS Alameda in 1995.

Mitigation 1: The mitigation measures for solid waste impacts would be the same as those for the Reuse Plan Alternative.

Nonsignificant Impacts

Beneficial and nonsignificant impacts to the utility systems would be similar to those under the Reuse Plan Alternative. Under this alternative, the estimated average daily water demand would be approximately 1.25 MGD (4.73 million liters per day), and approximately 0.94 MGD (3.6 million liters per day) of sanitary wastewater would be generated. The water demand is a 1% decrease from the 1993 level, and the wastewater demand is the same as the 1993 level. These demands represent 64 percent and 61 percent, respectively, of the estimated capacities of the systems. Therefore, water distribution impacts would be beneficial and there would be no sanitary wastewater impacts. The Northwest Territories planning area would be developed for port facilities and container berths, rather than for

the golf course, light industry, and soccer fields. This additional development would increase the amount of impermeable surface area and contribute greater stormwater flows than under baseline conditions. Assuming that the stormwater collection system installed in the Northwest Territories planning area would be designed to accommodate these flows, the increase in flows would result in a nonsignificant impact to the stormwater drainage system. The stormwater collection system improvements described in the Reuse Plan also would occur under this alternative.

4.5.3 Residential Alternative

Significant Impacts

Noncompliance with Solid Waste Diversion Requirements

Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements. The amount of solid waste generated during demolition and construction would be similar to that generated under the Reuse Plan Alternative. The employees and resident population would generate approximately 14,880 tons (13,502 metric tons) of solid waste per year under the Residential Alternative, an increase of 58 percent over the total amount of solid waste generated at NAS Alameda in 1995.

Mitigation 1: The mitigation measures for solid waste impacts would be the same as those for the Reuse Plan Alternative.

Nonsignificant Impacts

Beneficial and nonsignificant impacts to the utility systems would be similar to those under the Reuse Plan Alternative. Under this alternative, the estimated average daily water demand would be approximately 1.71 MGD (6.47 million liters per day), and approximately 1.28 MGD (4.84 million liters per day) of sanitary wastewater would be generated. Both of these demand levels represent increases of 36 percent over the 1993 levels. The estimated levels of demand would be 88 percent and 83 percent, respectively, of the estimated capacities of the systems. The Northwest Territories planning area would be developed for residential use, rather than for the golf course, light industry, and soccer fields. This additional development would increase the amount of impermeable surface area and contribute greater stormwater flows than under baseline conditions. Because the stormwater collection system installed in the Northwest Territories planning area likely would be designed to accommodate these

flows, the increase in flows would result in a nonsignificant impact to the stormwater drainage system. The stormwater collection system improvements described in the Reuse Plan also would occur under this alternative.

4.5.4 Reduced Density Alternative

Significant Impacts

Noncompliance with Solid Waste Diversion Requirements

Impact 1: A significant and mitigable impact would be the increased generation of solid waste jeopardizing the City of Alameda's compliance with State and county waste diversion requirements. The amount of solid waste generated during demolition and construction would be similar to that generated under the Reuse Plan Alternative. The employees and resident population would generate approximately 21,545 tons (19,550 metric tons) of solid waste per year under the Reduced Density Alternative, an increase of 128 percent over the total amount of solid waste generated at NAS Alameda in 1995.

Mitigation 1: The mitigation measures for solid waste impacts would be the same as those for the Reuse Plan Alternative.

Nonsignificant Impacts

Beneficial and nonsignificant impacts to the utility systems would be similar to those under the Reuse Plan Alternative. Under this alternative, the estimated average daily water demand would be approximately 1.06 MGD (4.01 million liters per day), and approximately 0.79 MGD (3.0 million liters per day) of sanitary wastewater would be generated. Both of these demand levels represent decreases of 16 percent over the 1993 levels. These demands would be 55 percent and 51 percent, respectively, of the estimated capacities of the systems. These changes would not represent significant impacts. Under this alternative, the decrease in the amount of stormwater runoff would be slightly greater than under the Reuse Plan Alternative. The stormwater collection system improvements described in the Reuse Plan also would occur under this alternative.

4.5.5 No Project Alternative

The No Project Alternative would place Federal property at NAS Alameda/FISC Alameda in caretaker status. Utilities would be operated by the Navy, the City of Alameda, or by private owners. Due to the minimal population and operations during the caretaker period, there would be a minimal demand for utility service.

4.6 CULTURAL RESOURCES

This section describes impacts to cultural resources (including historical and archaeological resources) that could occur under the reuse actions and the No Project Alternative. Section 3.6 defines "historical resources" and "archaeological resources."

As explained in Section 3.6, the only properties at NAS Alameda/FISC Alameda identified as qualifying for listing on either the NRHP and thus also the California Register of Historic Resources are the NAS Alameda Historic District, the Training Wall, and the former USS Hornet. A plaque commemorating the inauguration of ocean airmail service and commercial airflight across the Pacific Ocean, located near the flagpole in front of Building 1, is a California Registered Historical Landmark and is also included in the CRHR. As further discussed in Section 3.6, the City of Alameda is considering listing the NAS Alameda Historic District as a City historical monument. Impacts to cultural resources are analyzed against baseline conditions described in Section 3.6.

Region of Influence

The ROI for cultural resources is the area defined by the boundaries of the NAS Alameda/FISC Alameda property. Because the undertaking is the reuse of Federal property at NAS Alameda/FISC Alameda, the area of potential effects is limited to the area within the boundaries of that property.

Criteria for Defining Significant Impacts

This analysis uses the significance criteria established by CEQA and the CEQA Guidelines in identifying significant effects on historical and archaeological resources. A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment pursuant to CEQA. 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. The significance of an historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of an historical resources that (1) convey its historical significance and justify its inclusion in, or eligibility for, the CRHR; (2) account for its inclusion in a local register of historical resources or a qualifying historical resources survey; or (3) convey its historical significance and justify its eligibility for inclusion in the CRHR as determined by the lead agency for purposes of CEQA. In addition, a project

would have a significant effect if it can be demonstrated that the project would cause damage to a unique archaeological resource.

A lead agency must identify potentially feasible measures to mitigate significant adverse changes in the significant of an historical resource [14 C.C.R. § 15064.5(b)(4)]. Generally, applying the *Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995) to a project that may create a substantial adverse change in the significance of an historical resource and, thus, a significant effect on the environment, will mitigate the effect to a less-than-significant level (14 C.C.R. § 15064.5[b][3]). In addition, if it is demonstrated that a project will significantly affect a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit the resource to be preserved in place or left undisturbed. To the extent that unique archaeological resources are not preserved in place or left undisturbed, mitigation is required, subject to certain financial and timing limitations set forth by CEQA.

To ensure appropriate treatment of cultural resources, a Memorandum of Agreement (MOA) is being negotiated by the Navy, the California State Historic Preservation Officer (SHPO), the ACHP, the City of Alameda, and other concerned parties as appropriate through the NHPA Section 106 consultation process. This MOA will be completed prior to the release of the Final EIR for this reuse action. Although its terms have not been finalized, it is anticipated that the MOA would contain terms similar to those identified in this EIR to mitigate the adverse effects to cultural resources associated with the project, but that neither the provisions of the MOA nor those identified in this EIR would be sufficient to reduce all such impacts to a less-than-significant level. Table 4-11 summarizes impacts of the reuse actions on cultural resources.

Identification and Evaluation of NAS Alameda/FISC Alameda Historic Properties

Archaeological Resources

Based on recent investigations at NAS Alameda/FISC Alameda, the Navy has determined and the City of Alameda concurs that there are no unique archeological deposits. Most of the property consisted of seawater and undeveloped marshland until 1918 when filling occurred, and the potential for encountering buried prehistoric archeological deposits is considered extremely low. Therefore, the reuse of NAS Alameda/FISC Alameda is not

Table 4-11
Summary of Cultural Resources Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Demolition of Buildings in Historic District	○	◑	◑	◑	◑
Deterioration of Historical Buildings	◴	◑	◑	◑	◑
Reuse or Rehabilitation of Historical Properties	○	◑	◑	◑	◑
Construction of Buildings in the Historic District	○	◑	◑	◑	◑
Demolition of the Training Wall	○	○	●	○	○
Construction of an RV Park within the Civic Core	○	○	○	○	◴

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◴ = Nonsignificant
○ = None

likely to affect unique known prehistoric archeological resources, and the current undertaking is judged to have no significant impacts on prehistoric archeological sites.

Historical Resources

Each reuse alternative has the potential to adversely affect historical resources. Historical resources within the NAS Alameda/FISC Alameda area include the Training Wall and the NAS Alameda Historic District. The 87 buildings and structures that contribute to the significance of the Historic District are listed in Table 4-12. The effect of the Reuse Plan and alternatives on the Historic District and the Training Wall, located in the Northwest Territories planning area, is discussed below. No adverse historical resource effects are associated with reuse of FISC Alameda because there are no historical resources there.

In addition, the former USS Hornet, a "moveable" object which is a National Historic Landmark on the NRHP and the CRHR is currently berthed at NAS Alameda. All reuse alternatives provide for the continued berthing of the former USS Hornet and its continued operation as a historical museum. Thus, the reuse alternatives would not have a significant

Table 4-12
Proposed Reuse Strategy for Contributing Buildings within the NAS Alameda Historic District

Reuse			Demolish
Building 1	106 Newport Road	117 Corpus Christi Road	Building 75A
Building 2	100 San Diego Road	118 Corpus Christi Road	Building 115
Building 3	102 San Diego Road	119 Corpus Christi Road	Building 116
Building 4	106 San Diego Road	120 Corpus Christi Road	Building 130
Building 6	108 San Diego Road	121 Corpus Christi Road	Building 135
Building 8	100 San Pedro Road	122 Corpus Christi Road	Building 137
Building 9	102 San Pedro Road	123 Corpus Christi Road	
Building 16	104 San Pedro Road		
Building 17	106 San Pedro Road		
Building 18	108 San Pedro Road		
Building 20	102 Pearl Harbor Road		
Building 21	104 Pearl Harbor Road		
Building 22	106 Pearl Harbor Road		
Building 23	100 Alameda Road		
Building 30	100 Pensacola Road		
Building 31	102 Pensacola Road		
Building 39	104 Pensacola Road		
Building 40	106 Pensacola Road		
Building 41	108 Pensacola Road		
Building 42	110 Pensacola Road		
Building 43	112 Pensacola Road		
Building 44	101 Corpus Christi Road		
Building 60	102 Corpus Christi Road		
Building 63	103 Corpus Christi Road		
Building 77	104 Corpus Christi Road		
Building 91	105 Corpus Christi Road		
Building 92	106 Corpus Christi Road		
Building 94	107 Corpus Christi Road		
Building 101	108 Corpus Christi Road		
Building 102	109 Corpus Christi Road		
Building 114	110 Corpus Christi Road		
Building 193	111 Corpus Christi Road		
100 Seattle Road	112 Corpus Christi Road		
102 Seattle Road	113 Corpus Christi Road		
100 Newport Road	114 Corpus Christi Road		
102 Newport Road	115 Corpus Christi Road		
104 Newport Road	116 Corpus Christi Road		

Source: ARRA 1995c

impact on the former USS Hornet. Under the No Project Alternative, the former USS Hornet would remain at NAS Alameda until completion of its existing lease.

No adverse effects are anticipated on California State Historic Landmark #968, the Alameda Marina plaque, which is also listed on the CRHR, because no historic features associated with this site exist. This site is commemorated by a plaque located near the flagpole in front of Building 1 at NAS Alameda.

4.6.1 Reuse Plan Alternative

The boundary of the NAS Alameda Historic District encompasses all of the Civic Core and parts of the Marina and Main Street Neighborhoods planning areas. The Historic District is organized into five functional area: Administrative Core; two Hangar Areas; Shop Area; and Residential Area. These areas are proposed for recreational, mixed-use, and residential uses under the Reuse Plan.

The Reuse Plan Alternative conceptualizes three basic strategies in the Historic District— reuse, layaway (until a reuse strategy has been developed), and demolition. These strategies will be refined through the MOA and the subsequent development review process. Implementing the Reuse Plan Alternative could affect contributing buildings and structures in the Historic District, through demolition, deterioration, reuse or rehabilitation and new construction activities. There would be no impacts to the Training Wall under this alternative.

Nonsignificant Impacts

Demolition of Buildings in Historic District. Demolition of non-contributing and less significant character-defining buildings within the NRHP-eligible Historic District would not diminish the integrity of the Historic District to an extent that it would no longer qualify for listing in the NRHP and CRHR.

The six contributing buildings currently identified for demolition under the Reuse Plan Alternative are listed in Table 4-13 and shown on Figure 3-5. These buildings are located within the Civic Core planning area in the Historic District. All were built to temporary standards during World War II and are minor contributing buildings to the Historic District. The buildings are out of keeping with the main character of the architecture of the Historic District, which is defined by reinforced concrete construction in an Art Deco detailing. Demolition of these six buildings will not

diminish the integrity of the Historic District to an extent that it would not qualify for listing in the NRHP and CRHR.

Table 4-13
Contributing Buildings within the NAS Alameda Historic District
Proposed for Demolition

Building Numbers		
Building 75A	Building 115	Building 116
Building 130	Building 135	Building 137

Source: ARRA 1995c

Significant Impacts

Demolition of Buildings in Historic District

Impact 1: A significant and mitigable impact would be the demolition of other buildings at NAS Alameda, including some in the historic district not covered by the 1996 demolition MOA.

Mitigation 1: The City of Alameda will provide a design review function for the HAB to protect the historic character elements of the contributing buildings within the Historic District. Any proposed additional demolitions would require review by the HAB to determine the effect of the demolition on the character of the Historic District. This design review function would ensure that the Historic District as a whole would not be modified to an extent that it would no longer be eligible for inclusion in the NRHP and CRHR.

Deterioration of Historical Buildings

Impact 2: A significant and mitigable impact would result from the deterioration of historical buildings because reuse would occur over a projected twenty-year period, and some building would remain in layaway for some time and may not be properly maintained.

Mitigation 2: The City of Alameda will provide for the use of appropriate standards for the care and custody of historic properties as presented in the National Park Service Preservation Brief 31, *Mothballing Historic Buildings* (National Park Service 1993). The City of Alameda would use such standards following property conveyance. Use of appropriate "mothball" standards will ensure that the Historic District will not be modified to an extent that it no longer qualifies for inclusion in the NRHP and CRHR.

Reuse and Rehabilitation of Historical Properties

Impact 3. A significant and mitigable impact would result from reuse and rehabilitation of historic buildings, structures and landscapes within the Historic District which could alter the characteristics of these properties so that they would no longer be eligible for inclusion in the NRHP and CRHR.

Mitigation 3. The City of Alameda will use appropriate standards in considering rehabilitation plans as published in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US Department of the Interior 1996b). Use of these standards would ensure that the reuse and rehabilitation activities would not modify the contributing buildings and site plan elements of the NAS Alameda Historic District to such and extent that the Historic District would no longer be eligible for inclusion in the NRHP or CRHR.

Construction of Buildings in the Historic District

Impact 4. A significant and mitigable impact would result from new construction of buildings within the Historic District that could impact individual buildings within the construction area and the general character of the Historic District.

Mitigation 4. The City of Alameda will use the standards set forth in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US Department of the Interior 1996b), or similar standards, concerning the design of new buildings in the vicinity of historic buildings. The application of such standards to the location and design of new construction within the Historic District will ensure that the Historic District would not be modified to such an extent that it no longer meets the criteria for inclusion in the NRHP or CRHR.

4.6.2 Seaport Alternative

The proposed disposition of contributing buildings within the NAS Alameda Historic District and associated environmental effects are the same as under the Reuse Plan Alternative. A MOA would be implemented to protect the NAS Alameda Historic District. Implementing the Seaport Alternative could affect contributing historical buildings and structures in the Historic District, through demolition, deterioration, reuse or rehabilitation and new construction activities, as described for the Reuse Plan Alternative. The difference between the Seaport Alternative and the other reuse alternatives pertaining to cultural resources is the proposed

construction of berthing facilities along the northern shoreline that would affect the Training Wall.

Significant Impacts

Demolition of the Training Wall

Impact 1: A significant and not mitigable impact would result from demolition of some or all of the National Register-eligible Training Wall, which is included in the CRHR, due to construction of berthing facilities along the northern shoreline. This would constitute an adverse effect as demolition or destruction of a resource.

Mitigation 1: A common mitigation strategy for this impact would be to record the property to HAER standards to ensure a permanent record of the property. Typically, the manner of recordation should be negotiated in advance of demolition with the HABS/HAER coordinator at the Pacific Great Basin System Support Office of the NPS in San Francisco to determine the level and kind of recordation required for the property. Copies of the documentation are distributed at the discretion of the agency, except for such copies as may be required for the NPS and Library of Congress. While the recordation assures a permanent record will be kept of the historic property, and therefore, is considered a mitigating factor, it does not eliminate the demolition. The adverse or significant impact of demolition would be reduced, but not to a level that is nonsignificant. This impact would be significant and not mitigable.

Demolition of Buildings in Historic District

Impact 2: Under the Seaport Alternative, a significant and mitigable impact would be the demolition of other buildings at NAS Alameda, including some in the historic district not covered by the 1996 demolition MOA, as described under the Reuse Plan Alternative

Mitigation 2: The mitigation for this impact would be the same as that described under the Reuse Plan Alternative.

Deterioration of Historical Buildings

Impact 3: Under the Seaport Alternative, a significant and mitigable impact would result from the deterioration of historical buildings because reuse would occur over a projected twenty-year period, and some building would remain in layaway for some time and may not be properly maintained, as described under the Reuse Plan Alternative

Mitigation 3: The mitigation would be the same as that described under the Reuse Plan Alternative.

Reuse and Rehabilitation of Historical Properties

Impact 4: Under the Seaport Alternative, a significant and mitigable impact would result from reuse and rehabilitation of historic buildings, structures and landscapes within the Historic District which could alter the characteristics of these properties so that they would no longer be eligible for inclusion in the NRHP and CRHR, as described under the Reuse Plan Alternative.

Mitigation 4: The mitigation would be the same as that described under the Reuse Plan Alternative.

Construction of New Buildings in the Historic District

Impact 5: Under the Seaport Alternative, a significant and mitigable impact would be new construction of buildings within the Historic District that could impact individual buildings within the construction area and the general character of the Historic District, as described under the Reuse Plan Alternative.

Mitigation 5: The mitigation would be the same as described under the Reuse Plan Alternative.

4.6.3 Residential Alternative

The proposed disposition of contributing buildings within the NAS Alameda Historic District and associated environmental effects are the same as under the Reuse Plan Alternative. A MOA would be implemented to protect the NAS Alameda Historic District. There would be no impacts to the Training Wall under this alternative as under the Reuse Plan Alternative.

Significant Impacts

Demolition of Buildings in Historic District

Impact 1: Under the Residential Alternative, a significant and mitigable impact would be the demolition of other buildings at NAS Alameda, including some in the historic district not covered by the 1996 demolition MOA, as described under the Reuse Plan Alternative

Mitigation 1: The mitigation for this impact would be the same as that described under the Reuse Plan Alternative.

Deterioration of Historical Buildings

Impact 2: Under the Residential Alternative, a significant and mitigable impact would result from the deterioration of historical buildings because reuse would occur over a projected twenty-year period, and some building would remain in layaway for some time and may not be properly maintained, as described under the Reuse Plan Alternative

Mitigation 2: The mitigation would be the same as that described under the Reuse Plan Alternative.

Reuse and Rehabilitation of Historical Properties

Impact 3: Under the Residential Alternative, a significant and mitigable impact would result from reuse and rehabilitation of historic buildings, structures and landscapes within the Historic District which could alter the characteristics of these properties so that they would no longer be eligible for inclusion in the NRHP and CRHR, as described under the Reuse Plan Alternative

Mitigation 3: The mitigation would be the same as that described under the Reuse Plan Alternative.

Construction of Buildings in the Historic District

Impact 4. Under the Residential Alternative, a significant and mitigable impact would be new construction of buildings within the Historic District that could impact individual buildings within the construction area and the general character of the Historic District, as described under the Reuse Plan Alternative.

Mitigation 4. The mitigation would be the same as described under the Reuse Plan Alternative.

4.6.4 Reduced Density Alternative

The proposed disposition of contributing buildings within the NAS Alameda Historic District and associated environmental effects are the same as under the Reuse Plan Alternative. A MOA would be implemented to protect the NAS Alameda Historic District. The difference between the Reduced Density Alternative and the other reuse alternatives pertaining to

cultural resources is the proposed construction of a 13-acre (5 ha) RV Park adjacent to the northern boundary of the Historic District.

Significant Impacts

Demolition of Buildings in Historic District

Impact 1: Under the Reduced Density Alternative, a significant and mitigable impact would be the demolition of other buildings at NAS Alameda, including some in the historic district not covered by the 1996 demolition MOA, as described under the Reuse Plan Alternative

Mitigation 1: The mitigation for this impact would be the same as that described under the Reuse Plan Alternative.

Deterioration of Historical Buildings

Impact 2: Under the Reduced Density Alternative, a significant and mitigable impact would result from the deterioration of historical buildings because reuse would occur over a projected twenty-year period, and some building would remain in layaway for some time and may not be properly maintained, as described under the Reuse Plan Alternative

Mitigation 2: The mitigation would be the same as that described under the Reuse Plan Alternative.

Reuse and Rehabilitation of Historical Properties

Impact 3: Under the Reduced Density Alternative, a significant and mitigable impact would result from reuse and rehabilitation of historic buildings, structures and landscapes within the Historic District which could alter the characteristics of these properties so that they would no longer be eligible for inclusion in the NRHP and CRHR, as described under the Reuse Plan Alternative

Mitigation 3: The mitigation would be the same as that described under the Reuse Plan Alternative.

Construction of New Buildings in the Historic District

Impact 4: Under the Reduced Density Alternative, a significant and mitigable impact would be new construction of buildings within the Historic District that could impact individual buildings within the construction area and the general character of the Historic District, as described under the Reuse Plan Alternative.

Mitigation 4: The mitigation would be the same as described under the Reuse Plan Alternative.

Nonsignificant Impacts

Construction of RV Park. The visual contrasts created by construction of an RV Park adjacent to the northern boundary of the Historic District would not change Historic District characteristics to such an extent that it would no longer be eligible for inclusion in the NRHP or CRHR. The City of Alameda would require the site developer to employ appropriate standards for new construction in the vicinity of historic properties as published in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US Department of the Interior 1996b), or similar standards.

4.6.5 No Project Alternative

Under this alternative, the property would remain in caretaker status under continued Federal ownership. On-site activities would be limited to security, maintenance, and remediation activities and limited interim leases. No new construction would occur and no demolition is anticipated.

As long as the property remains under Navy control and jurisdiction, each action that affects a National Register-eligible resource would be reviewed under the requirements of NHPA § 106, 16 U.S.C. § 470f, and 16 U.S.C. § 470h-2. Such reviews would conform to implementing regulations, 36 C.F.R. Part 800, that require consideration of alternatives to adverse actions, in consultation with the SHPO, ACHP, and other interested parties. While such review would not ensure preservation of the affected National Register resources, it would ensure that preservation alternatives are considered.

Nonsignificant Impacts

Lease of NRHP-eligible Properties to Non-Federal Entities. A nonsignificant impact would result from the lease and sublet of historical resources NRHP-eligible properties. The Navy may lease buildings to the ARRA, which may sublet these properties to non-Federal parties. The Navy would enforce standards for maintenance, repair, or rehabilitation on the lessees. These standards would be designed to avoid adverse effects and to maintain the integrity of the historic properties. The appropriate standards are those published in the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US Department of the Interior 1996b).

Deterioration of NRHP-eligible Historic Properties. A nonsignificant impact would result from deterioration of historic buildings in layaway. The Navy would use the appropriate standards published in National Park Service Preservation Brief 31, *Mothballing Historic Buildings* (National Park Service 1993) for the layaway and maintenance of historic properties.

4.7 BIOLOGICAL RESOURCES

This section describes impacts to biological resources that could occur under the reuse actions and the No Project Alternative. Issues examined include sensitive species, sensitive habitats, and nonsensitive species and habitats. Impacts are analyzed against baseline conditions as described in Section 3.7.

Region of Influence

The ROI for biological resources includes NAS Alameda/FISC Alameda and surrounding native habitats within a one-mile (1.6 km) radius. Sensitive species that have been observed off-site within the ROI may use habitat at NAS Alameda/FISC Alameda.

Significance Criteria

Criteria used to evaluate the significance of impacts to biological resources are derived from the legal requirements to protect sensitive species and sensitive habitats.

Impacts to biological resources would be considered significant if a proposed action results in the following:

- Harm to, harassment of, or destruction of individuals of any species listed as endangered, threatened, or rare under Federal or California law.
- Harm to, harassment of, or destruction of individuals of other special status species under the following conditions:
  - Survival and reproduction of the species in the wild are in immediate jeopardy;
  - The species exists in such small numbers throughout all of or a significant portion of its range that it may become endangered if its environment worsens; or
  - The species is likely to become endangered in the foreseeable future and may be categorized as "threatened" under Federal law;
- Modification or destruction of the habitat, migration corridors, or breeding areas of endangered, threatened, rare, or other special status species;

- Loss of a substantial number of any plant or animal species that could affect abundance or diversity of that species beyond normal variability; or

- Measurable degradation of sensitive habitats, such as wetlands and other legally protected habitats.

Potential impacts can be classified as direct or indirect. Direct impacts also include those that may result from an activity, such as increased human activity and noise, that would disturb or interfere with breeding or foraging. Indirect impacts are those impacts that are not a direct result of the proposed action but that are reasonably certain to occur as a result of the proposed action.

Impacts can be short-term or long-term. Short-term activities are those that are brief relative to the duration of a breeding season or other biological time context. The significance level of the impact depends on the duration of the temporal loss and the ability of a population to respond to changes.

Table 4-14 summarizes potential impacts to biological resources.

Planning Issues

Sensitive Species. The Navy has completed a Biological Assessment in compliance with the Federal Endangered Species Act, Section 7, 16 U.S.C. § 1536, consultation requirements to address the impact of the subsequent reuse of the NAS Alameda/FISC Alameda properties. The Biological Assessment is included in Appendix D. The USFWS has issued a Biological Opinion (provided in Appendix D to this EIR) indicating that the disposal and subsequent community reuse of NAS Alameda/FISC Alameda would not jeopardize the continued existence of Federally endangered or threatened species. Because no critical habitat has been designated for endangered or threatened species occurring at NAS Alameda/FISC Alameda, none will be adversely modified or destroyed. USFWS has determined that a series of measures (referred to as "Terms and Conditions") are necessary to minimize any incidental take of listed species, particularly the California least tern and the California brown pelican. These measures are presented on page 17 of the biological opinion in Appendix D.

The CDFG could adopt the Federal Biological Opinion for purposes of consultation under the California Endangered Species Act, Cal. Fish and Game Code § 2050, *et seq*. As part of a separate process, the Navy will consult with the USFWS prior to implementation of any environmental cleanup activities.

Table 4-14
Summary of Biological Resources Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Loss of individuals and disruption of breeding of the California least tern from increased predation	○	◑	●	●	◑
Loss of individuals and disruption of breeding of the California least tern and California brown pelican from increased human activity in the Northwest Territories planning area	○	◑	◑	●	◑
Disruption of foraging of the California least tern and other wildlife; disruption of roosting site for California brown pelican, nesting site for western gulls, and haul-out site for harbor seals from boat traffic	○	◑	◑	◑	◑
Disruption of foraging of the California least tern and other wildlife from dredging and in-water construction in the Marina planning area	○	◑	◑	◑	◑
Disruption of foraging of the California least tern and other wildlife from dredging and in-water construction in the Oakland Inner Harbor	○	○	◑	○	○
Pollutants in stormwater runoff	○	◑	◑	◑	◑
Disruption of foraging of the American peregrine falcon	○	◐	◐	◐	◐
Disruption of spawning of winter-run chinook salmon	○	◐	◐	◐	◐
Human activity in the Marina and Civic Core planning areas	○	◐	◐	◐	◐
Impacts to nonsensitive species and habitats	○	◐	◐	◐	◐

LEGEND:

Level of Impact
● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = None

Sensitive Habitats. The West Beach Landfill Wetland and the Runway Wetland, which are located within the USFWS wildlife refuge, have been determined to be jurisdictional wetlands under the Clean Water Act, 33 U.S.C. § 1251, *et seq.* (US Navy 1993d). None of the alternatives would directly affect these wetlands. Any impacts affecting wetlands occurring within the USFWS wildlife refuge would require an environmental analysis, review, and approval by the USFWS wildlife refuge manager.

Any dredging associated with reuse would be subject to COE, Regional Water Quality Control Board, and San Francisco BCDC review. Disposal of dredge material would be guided by the regional LTMS for dredge material disposal.

4.7.1 Reuse Plan Alternative

Most of the biological impacts that distinguish the reuse alternatives from one another are from development in areas adjacent to the USFWS wildlife refuge. The Reuse Plan Alternative would develop 81 acres (33 ha) of maritime-related light industry, golf clubhouse, and soccer fields, in the Northwest Territories planning area. The soccer fields would be part of a sports complex that would also include ball fields in the Civic Core planning area. Impacts of these land uses primarily are related to building heights, and the affect of increased human activities, noise, and light on predation and breeding success of the California least tern. The Northwest Territories planning area also would include 162 acres (66 ha) of golf course and 29 acres (12 ha) of open space development. Golf course development may result in an increase of predation of least terns and may result in additional stormwater runoff in the USFWS wildlife refuge. Increasing the size of the golf course and eliminating light industrial uses from the Northwest Territories planning area would not substantially change impacts to biological resources. Significant impacts from this alternative are mitigable.

Significant Impacts

Increased Predation of the California Least Term

Impact 1: A significant and mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to new development located adjacent to the wildlife refuge. The development of light industry, soccer fields, and a golf course in the Northwest Territories planning area and ball fields in the Civic Core planning 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 disturbance by predators may result in decreased breeding success. Terns may abandon their nests after detecting the presence of predators (US Navy 1995b).

Development in the Northwest Territories planning 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 terns to detect incoming predators. Under the Reuse Plan Alternative, developed land uses in the Northwest Territories planning area would be approximately 2,200 feet (671 m) to the

north of the least tern colony, which is approximately 900 feet (274 m) closer than existing facilities in the Northwest Territories planning area. Developed land uses east of the colony would remain, as under historic conditions, approximately 1,650 feet (503 m) away. For purposes of this EIR, it is assumed that the Northwest Territories planning area may be developed adjacent to the boundary. The proposed golf course, in particular, may provide nesting and foraging areas for ravens and raptors. Landscaping trees in the Northwest Territories planning 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 (Caffrey 1997). 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 (US Navy 1995b).

Increased night lighting associated with light industrial 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 terns. Such predators are difficult to control because they hunt at night and are thus hard to detect (Caffrey 1996). In addition, night lighting could reduce the ability of terns to detect approaching predators (Small 1996). The light poles associated with the soccer fields and ball fields would also provide additional perches.

Mitigation 1: The potential for increased predation on California least terns could be reduced to a nonsignificant level by implementation of the following mitigation measures. The USFWS would be responsible for managing predator control activities and protecting the least tern nesting site within the wildlife refuge. Some predator management activities are described in Section 5.1, Cumulative Impacts. Other, nondiscretionary measures that must be undertaken by either the Navy or the City of Alameda are outlined in the biological opinion for the proposed action (in Appendix D of this EIR). That memorandum (USFWS 1999) establishes minimization of the potential for harassment, harm, or mortality to least tern and any other Federally-listed or proposed species as the "reasonable and prudent measure" necessary and appropriate to address the potential impact. A series of detailed "terms and conditions" is set forth (some of which are described below). With the implementation of these measures, the proposed action is not likely to jeopardize the continued existence of the least tern. In addition, other specific predator management activities will be included when the USFWS develops a plan for managing the wildlife refuge.

It is assumed in this EIR that upon transfer of the property to be used as a wildlife refuge, the USFWS would install a boundary barrier, such as a fence or wall, between the Northwest Territories planning area and the wildlife refuge, to limit unauthorized human and domestic animal access into the refuge.

Buildings in the proposed light industrial area of the Northwest Territories planning area should be no higher than two stories (40 feet [12 m]) to limit new perch sites available to potential predators (US Department of the Interior 1996a). The City of Alameda (City of Alameda 1997a and b) has agreed that buildings will not exceed 40 feet (12 m) in height in the Northwest Territories planning area. Trees planted in the Northwest Territories planning area should be less than 20 feet (6 m) in height at maturity and should be light limbed to reduce avian predator nesting and perching opportunities. The City of Alameda (City of Alameda 1997a and b) has concurred with this mitigation measure regarding tree height. Shrubs should be less than 15 feet (5 m) in height at maturity and should not have dense foliage. Covenants, conditions, and restrictions (CC&Rs) for development should require that all garbage cans and large open trash containers be tightly closed to eliminate potential food sources for predators. Feeding stations or colonies for feral cats and any native or non-native wildlife species that are potential predators of least terns would be prohibited.

In the light industrial area, night lighting should be directed away from the wildlife refuge and should be reduced as much as possible. The Sports Complex Master Plan (City of Alameda 1997c) includes measures to reduce the impact of night lighting on the California least terns. ARRA (ARRA 1997a and b) has agreed that in the soccer fields, light poles would not exceed 20 feet (6 m) in height and would include electric anti-perching devices, and the fields would not be lit during the least tern breeding season (April through September), unless lighting could be designed to limit light levels on the refuge to acceptable levels developed in consultation with the USFWS. The ball fields would have light poles that do not exceed 40 feet (12 m) in height and would be equipped with electric anti-perching devices, and would be lit throughout the year. Lighting levels in the ball fields would be similarly limited.

Impacts from predators would be reduced to a nonsignificant level with this mitigation measure.

Human Activity in the Northwest Territories

Impact 2: A significant and mitigable impact to the California least tern and brown pelican (loss of individuals and disruption of breeding) would result from the increased presence of people and domestic animals in the Northwest Territories planning area. Under this alternative, there would be fewer access restrictions to all areas of NAS Alameda/FISC Alameda, including the Northwest Territories planning area, than when the property was occupied by the Navy. Recreational use in the Northwest Territories planning area would be expected to increase, as would the presence of people and domestic animals. Although the USFWS would 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.

Mitigation 2: As discussed in Mitigation 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. In addition, it is assumed that upon transfer of the wildlife refuge, the USFWS would install a boundary barrier, such as a fence or wall, between the Northwest Territories planning area and the wildlife refuge to limit unauthorized human and domestic animal access into the refuge. Additional USFWS management measures anticipated at the wildlife refuge are covered in Section 5.1, Cumulative Impacts. The impact from human disturbance would be reduced to a nonsignificant level following implementation of this mitigation measure.

Increased Boat Traffic

Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals near Breakwater Island. Increased boat traffic from the proposed marina in the Seaplane Lagoon could disrupt least tern foraging (see Figure 3-8 for location of foraging areas) and could disrupt roosting of the California brown pelican, nesting for western gulls, and the haul-out site for harbor seals near Breakwater Island. During active naval operations at NAS Alameda, boat traffic in the channel near Breakwater Island was limited to relatively infrequent passage of large ships, such as aircraft carriers, and a moderate number of small to medium ships. Access was controlled by the Navy. The proposed 900-slip marina in the Seaplane Lagoon in the Marina planning area under the Reuse Plan Alternative would increase boat traffic in the vicinity of Breakwater Island and south of the landing field. It is likely that boat traffic would consist mainly of small to medium sailboats and motor boats. Breakwater Island, which is within the boundaries of the 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. 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. Potentially significant impacts from boat traffic include decreased foraging success for terns, decreased breeding success for the western gulls, and disturbance of California brown pelican and harbor seal.

Mitigation 3: Marina operators should educate boat owners and others who use the marina about access restrictions to Breakwater Island and its immediate vicinity. Install signs that warn boaters about the sensitivity of the wildlife at the site and about prohibitions for disturbing protected bird and mammal species. Existing access restrictions to Breakwater Island should be retained and enforced by the USFWS. The impact from disturbance due to increased boat traffic would be reduced to a nonsignificant level following implementation of these mitigation measures.

Dredging and In-water Construction

Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging and in-water construction activities in the Marina planning area. Mammals and birds that feed on fish, including the California least tern, could be affected by dredging. California least terns that nest at the wildlife refuge do most of their 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 (see Section 3.13 for more information).

Dredging and in-water construction activities would also increase the turbidity of the water, reducing visibility for California least terns, California brown pelicans, and other species. Increased turbidity also could discourage the terns' 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 terns 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.

The effect of the possible contaminants and increased turbidity of the water on the food web would be a significant short-term impact. 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. However, dredging of the Seaplane Lagoon would involve contaminated materials and could result in a significant dispersal of contaminants.

Mitigation 4: There should be no dredging in heavily used least tern foraging areas during the period from March 15 to September 30. Any dredging would require a permit from the COE. Before issuing a permit, the COE would be required to consult with the USFWS under Section 7 of the Endangered Species Act to ensure that no jeopardy to the least tern or other threatened or endangered species would result from the action. Reasonable and prudent habitat conservation and other mitigation measures developed through collaboration between the COE permit applicant and the USFWS will be incorporated into such projects through the Section 7 consultation process. Because the COE probably would not issue a dredging permit unless the USFWS renders a non-jeopardy Biological Opinion, and with the implementation of Water Resources Mitigations 3a and 3b regarding limitations on depth and area of dredgings and specifying dredging techniques, the impact to fish prey for the California least tern from Seaplane Lagoon dredging would be reduced to a nonsignificant level.

Pollutants in Stormwater Runoff

Impact 5: A significant and mitigable impact would result from stormwater runoff from the golf course and paved areas in the Northwest Territories planning area. 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, NAS Inner Harbor, and Oakland Inner Harbor). During construction in the Northwest Territories, Marina, and the Civic Core planning 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 seals and fish, as well as birds, such as the least tern, that forage in the waters.

Mitigation 5: Develop and implement stormwater management and monitoring plans. In addition, 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. These plans should emphasize the minimal use of herbicides, pesticides, and fertilizers. The proposed links-style golf course would be designed to minimize chemical inputs. Future developments in the Northwest Territories planning area would be required to meet California Regional Water Quality Control Board (RWQCB) stormwater management programs and requirements. Special

consideration should be given to the proximity and sensitivity of the tern colonies, wetlands, and water bodies at the site. To the extent possible, all stormwater drainage from new development in the Northwest Territories and Marina planning areas should be directed away from the adjacent USFWS wildlife refuge. A plan should be developed for managing the discharge of pollutants from boats using the marina. The impact would be reduced to a nonsignificant level by implementing this mitigation measure.

Nonsignificant Impacts

American Peregrine Falcon. Individual American peregrine falcons forage in the central bay and nest on the Bay Bridge and Golden Gate Bridge. This species may hunt over portions of NAS Alameda/FISC Alameda. The Reuse Plan Alternative would not substantially change the habitat of the falcon's common prey species (small birds) at NAS Alameda/FISC Alameda; therefore, this species is unlikely to be affected by development proposed under the Reuse Plan Alternative. In addition, because of the potential for falcons to take least terns, measures that would enhance American peregrine falcon habitat, such as additional roosting sites at NAS Alameda, would not be encouraged because of the potential effect on the least tern due to predation. Development under the Reuse Plan Alternative would not result in significant impacts to the American peregrine falcon. No mitigation would be required.

Winter-run Chinook Salmon. Although the NMFS reports that individual winter-run chinook salmon may occur in the waters surrounding the site during spawning, these individuals are most likely to have strayed from their migration route (the Pacific Ocean through the bay to the Sacramento River). Individuals of this species can move to avoid localized turbidity caused by dredging. This movement would not constitute a significant impact and would not require mitigation because better quality habitat is available locally for this species.

Human Activity in the Marina and Civic Core Planning Areas. Human and domestic/feral animal access into the USFWS wildlife refuge from the Marina and Civic Core planning areas would not be a significant impact. Because the Marina and Civic Core planning areas are adjacent to the USFWS wildlife refuge and there would be fewer access restrictions to all areas of NAS Alameda/FISC Alameda, the presence of people and animals would be expected to increase. However, these planning areas are already developed under historic conditions and reuse would not be anticipated to result in a significant increase in the human and animal population. No mitigation would be required.

Nonsensitive Species and Habitats. No significant impacts are expected to occur from the potential removal of nonsensitive species and habitat on the facility. The intensively developed areas at NAS Alameda/FISC Alameda (see Figure 3-10) do not support significant biological resources. Landscaped areas are dominated by nonnative plants that provide limited habitat for native wildlife, although nonsensitive species do use this remaining habitat. Much of this habitat is nonnative vegetation and therefore does not provide the higher food, cover, and nesting values associated with wetlands or habitats important for sensitive species. Removing nonnative vegetation would not substantially degrade the use of the site by native plant and animal species beyond the ranges of normal variability of use associated with nonsensitive species. Therefore, the potential removal of such habitat represents a nonsignificant impact. No mitigation would be required.

The common Mexican free-tailed bat has been identified at 3 of the 330 buildings that were surveyed at NAS Alameda/FISC Alameda and may be affected as buildings are vacated and bats are removed in the process of reuse. All of these buildings are within FISC Alameda. Bats can be removed from the buildings under health regulations without extensive environmental documentation unless endangered or threatened species are involved. This impact would not be significant because no endangered, threatened, or sensitive bat species were identified as inhabiting NAS Alameda/FISC Alameda (Constantine 1996). No mitigation would be required.

Removal of the trees in the Officers' Quarters areas bounded by Barber's Point Road and Pearl Harbor Drive could result in the removal of autumnal roost sites for the monarch butterfly. While this would not be considered a significant impact, it is recommended that if tree removal in this area is to occur, it be completed prior to or following the autumn roost period to avoid direct impacts to monarch butterflies that may be using the area.

4.7.2 Seaport Alternative

Under the Seaport Alternative, the Northwest Territories planning area would be developed with a 220-acre (89 ha), 5-berth container port facility. There would be no golf course, but there would be 52 acres (21 ha) of open space and developed recreational uses. Land uses in the other planning areas would be similar to those of the Reuse Plan Alternative. Under this alternative, the impact of greatest concern would be from cranes and other structures associated with the container port facility that would provide breeding and high perching sites for raptors and other predators of the California least tern. This impact is considered to be significant and not mitigable.

Significant Impacts

Increased Predation of the California Least Term

Impact 1: A significant and not mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to port development located adjacent to the USFWS wildlife refuge. The port would likely involve the installation of several cranes in excess of 200 feet (61 m) high (equivalent to a 20-story building), which would provide perching sites for raptors and other predators. Container stacking, usually to a height of 50 feet (15 m) (5 containers), would also provide perching sites. This could result in increased predation on California least terns and increased predator-related disturbance, resulting in decreased breeding success; for example, terns may abandon their nests after detecting predators (US Navy 1995b).

Other impacts associated with port development that may indirectly increase predation of California least terns are litter and night lighting. 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 (US Navy 1995b). Night lighting required for port activities would be significantly greater than under existing conditions, resulting in a possible increase in predation. This impact cannot be mitigated to a nonsignificant level.

Mitigation 1: The impact from the installation of cranes cannot be mitigated because antiperching devices are not feasible on the tall cranes. Antiperching devices would impede the moving parts of the cranes (Small 1996). Buildings associated with port development in the Northwest Territories planning area should be no taller than 2 stories (40 feet [12 m]) to reduce new perch sites available to potential predators (US Department of the Interior 1996a). Developers should consult with the USFWS at the design phase for buildings that are proposed to be higher than two stories. Containers should be stacked no higher than the equivalent of two stories.

Garbage cans and large open trash containers should be kept tightly closed. Feeding stations or colonies for feral cats and any native or non-native wildlife species that are potential predators of least terns would be prohibited. Night lighting should be reduced as much as possible during the California least tern breeding season (April through September). Predator management activities at the USFWS wildlife refuge that would be carried out by the USFWS are discussed in Section 5.1, Cumulative Impacts.

The impact of increased predation from port development would remain significant after mitigation.

Human Activity in the Northwest Territories

Impact 2: A significant and mitigable impact to the California least tern and brown pelican (loss of individuals and disruption of breeding) would result from increased presence of people and domestic animals in the Northwest Territories planning area. The impact to the California least tern and brown pelican due to an increase in the number of people having access to NAS Alameda for recreation would be similar to Impact 2 of the Reuse Plan Alternative except that the additional residential area in the Inner Harbor planning area would further contribute to this impact.

Mitigation 2: Same as Mitigation 2 for the Reuse Plan Alternative. The impact from human disturbance would be reduced to a nonsignificant level following implementation of this mitigation measure.

Increased Boat Traffic

Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals near Breakwater Island. The proposed marina in the Seaplane Lagoon would result in increased boat traffic compared to historic Navy uses in the vicinity of Breakwater Island and south of the landing field, potentially disturbing wildlife that use these areas. This would be a significant impact as in Impact 3 of the Reuse Plan Alternative.

Mitigation 3: Same as Mitigation 3 for the Reuse Plan Alternative. The impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Dredging and In-water Construction

Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging and in-water construction activities in the Marina planning area. The impact is the same as those presented under Impact 4 for the Reuse Plan Alternative. In addition, the Seaport Alternative would require substantial dredging and dredge material disposal for the development of five container ship berths along the Oakland Inner Harbor Channel adjacent to the Northwest Territories planning area.

The affect of turbidity from dredging in the Oakland Inner Harbor on California least terns would be similar to that which is described for the Marina planning area under Impact 4 for the Reuse Plan Alternative. Because of the endangered status of the least tern, any impacts may be considered potentially significant. However, the proposed dredging activities would not

be expected to affect the least tern foraging areas because they would be distant from primary foraging areas and would be of short duration. The potentially affected foraging areas represent a small fraction of the tern's foraging range.

If dredging occurs south of the existing channel there is a likelihood that contaminated materials would be encountered. Fish and other aquatic organisms would be affected by berthfront sediment dredging in the Oakland Inner Harbor, as a result of implementing the Seaport Alternative. Mammals and birds, including the California least tern, that feed on fish could, in turn, be affected by dredging. California least terns forage less in the Oakland Inner Harbor than in the waters near the Marina planning area, but the impact on the food web from this dredging could be potentially significant if contaminated materials are released. The effect of the possible contaminants and increased turbidity of the water on the food web would be a significant short-term impact.

The following mitigation represents likely options available to the seaport developer to reduce this impact to a less than significant level. However, these measures may be revised or additional measures may be formulated during the subsequent environmental review in support of specific development projects.

Mitigation 4: The seaport developer should initiate informal discussions with the USFWS and the COE to assure that dredging and in-water construction activities do not pose significant, adverse impacts on least tern foraging. To prepare for this consultation, the seaport developer may conduct a least tern survey along the Oakland Inner Harbor channel during their breeding season or turbidity studies to determine the effects of dredging and construction disturbance on tern feeding behavior. If, as a result of these studies, it is determined that the project could have a significant impact, specific mitigation measures would be implemented.

If dredging and in-water construction activity cannot be avoided completely in the Oakland Inner Harbor during the breeding season, mitigation measures should focus on minimizing the turbidity associated with these activities. Best management practices should be implemented to control turbidity and to increase dredging efficiency. Appropriate management practices could include increasing cycle times,[1] limiting the number of dredging operations during least tern nesting season, or implementing engineering measures to reduce turbidity, such as silt curtains. Additional mitigation measures described in the Reuse Plan Alternative for dredging in the Marina planning area should be applied.

[1] Increasing cycle times means that the length of time is increased for each sediment removal (e.g., less number of buckets per hour). This would reduce the frequency in which the bottom sediments are disturbed, thereby decreasing turbidity.

The impact from dredging and in-water construction activities in the Oakland Inner Harbor would be reduced to a nonsignificant level by implementing these mitigation measures.

Pollutants in Stormwater Runoff

Impact 5: A significant and mitigable impact would result from stormwater runoff from the development of port industrial facilities in the Northwest Territories planning area. Large-scale industrial facilities associated with port development would have the potential for accidental spills of petrochemicals and other substances. The impact would be similar to that which is described in Impact 5 under the Reuse Plan Alternative, except that there would be more runoff and associated pollutants from urban and industrial development, but less pollutants such as herbicides, pesticides, and fertilizers generally associated with golf course development.

Mitigation 5: Develop and implement stormwater management and monitoring plans. Stormwater management conditions of approval for developments over five acres (2 ha) should include requirements for development and implementation of a spill control and countermeasure plan to mitigate the potential impacts of spills on water quality. Future developments in the Northwest Territories planning area would be required to meet California RWQCB stormwater management programs and requirements. Special consideration should be given to the proximity and sensitivity of the tern colonies, wetlands, and water bodies at the site. To the extent possible, all drainage from new development in the Northwest Territories planning area should be directed away from the USFWS wildlife refuge. A plan should be developed for managing the discharge of pollutants from boats using the marina. Impacts would be reduced to a nonsignificant level with implementation of this mitigation measure.

Nonsignificant Impacts

American Peregrine Falcon. Impacts to American peregrine falcons would be similar to those described under the Reuse Plan Alternative, except that additional breeding and roosting sites for these birds would be created by the cranes. No mitigation would be required.

Water-run Chinook Salmon. Impacts that may result in the disruption of spawning of the winter-run chinook salmon would be the same as those described under the Reuse Plan Alternative. No mitigation would be required.

Human Activity in the Marina and Civic Core Planning Areas. Impacts related to human activity in the Marina and Civic Core planning areas would be the

same as those described under the Reuse Plan Alternative. No mitigation would be required

Nonsensitive Species and Habitats. Impacts would be the same as for the Reuse Plan Alternative, except that due to the increase in perching areas for predators, additional nonsensitive predator species would be present and would likely be removed by predator management to protect endangered species.

4.7.3 Residential Alternative

The Residential Alternative includes 226 acres (91 ha) of mixed use residential and attached housing, 8 acres (3 ha) for school facilities, and 38 acres (15 ha) of developed shoreline open space in the Northwest Territories planning area. This alternative also includes residential development in the Inner Harbor planning area. Biological impacts of the alternative would be categorically similar to those of the Reuse Plan Alternative but would be greater, due to increased predator habitat and human disturbances from the additional residential areas. Residential development in the Northwest Territories planning area would be expected to result in significant and not mitigable impacts, due primarily to increased predator, human, and pet populations in close proximity to the tern colony.

Significant Impacts

Increased Predation of the California Least Term

Impact 1: A significant and not mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to residential development located adjacent to the USFWS wildlife refuge. The Residential Alternative would introduce a permanent residential land use to within 2,250 feet (686 m) of the least tern nesting site, resulting in predation above current levels. This residential population could affect California least terns in several ways related to increased predation. Residential structures and associated landscaping provide additional nesting and perching areas for avian predators. All types of landscaping around residences can provide nesting habitat for predators, and large trees and rooftops provide perching sites. Additionally, pets kept by residents would significantly increase the number of domestic animals that could prey on or disturb the terns. A much higher permanent cat population would be located closer to the terns under this alternative. Cats could cause substantial predation on the least tern colony because they can climb six-foot (2 m) chain-link fences topped with barbed wire, and can get through electric fences (US Navy 1995b, US Navy 1989d). In addition, garbage cans, large trash receptacles, and uncontained litter associated with residential development

would attract crows, gulls, dogs, cats, skunks, and raccoons, which may then be attracted to tern eggs and chicks nearby (US Navy 1995b).

Increased night lighting associated with residential development could enhance the ability of nocturnal predators, such as owls and cats, to prey on the terns. Such predators are difficult to detect (Caffrey 1996). In addition, night lighting could reduce the ability of terns to detect approaching predators (Small 1996).

In addition to creating additional predator problems, residential development would pose problems with predator management because the attitudes and safety of residents must be considered when implementing various management practices. For example, shooting, which is generally considered to be an efficient method of predator control because individual predators can be targeted, may not be acceptable near residences.

The impact of increased predation on the California least tern colony due to the proximity of residences would be considered significant.

Mitigation 1: This impact cannot be mitigated to a nonsignificant level. The following mitigation actions would reduce the impacts from predators associated with residential areas, but this would remain a significant not mitigable impact.

Residential structures in the Northwest Territories planning area should be no higher than 2 stories (30 feet [9 m]) to reducing perching sites available to potential predators (U.S. Department of Interior 1996a). A maximum of 30 feet (9 m) in height is consistent with the City of Alameda's R2 zone (City of Alameda 1996). Developing CC&Rs on residential development that limited landscaping to trees less than 20 feet (6 m) in height at maturity with light limbs would reduce the extent of new nesting and perching sites for avian predators of least terns. In addition, shrubs should be less than 15 feet (5 m) in height at maturity and should not have dense foliage to reduce the potential for nesting by avian predators. The CC&Rs should require that all garbage cans and large open trash containers be tightly closed. Feeding stations or colonies for feral cats and any native or non-native wildlife species that are potential predators of least terns would be prohibited.

Night lighting in the Northwest Territories planning area should be directed away from the wildlife refuge and should be reduced as much as possible. However, for safety reasons, some outside lighting around the residences would be necessary.

Although it is expected that the USFWS would maintain a predator management program at the wildlife refuge at a similar level to the current Navy program, cats

and dogs from adjoining residences would be expected to increase predation on the least tern colony above historic levels. For purposes of this analysis, a total prohibition of cats and dogs in the Northwest Territories planning area is considered unfeasible and unenforceable and is therefore not proposed as a mitigation measure.

Under the Residential Alternative, impacts from increased predation on the California least tern colony due to the proximity of residential development would be anticipated to be significant even after implementing all feasible mitigation measures due to the greater number of additional predators and habitat.

Human Activity in the Northwest Territories

Impact 2: A significant and not mitigable impact to the California least tern and brown pelican (loss of individuals and disruption of breeding) would result from increased presence of people and domestic animals in the Northwest Territories planning area. This alternative would increase the number of people having access to the area surrounding the tern colony and roosting site. The impact due to the increase in the number of people would be similar to those described in Impact 2 under the Reuse Plan Alternative, except that additional residential areas in the Northwest Territories and Inner Harbor planning areas would cause a higher potential for impact.

Mitigation 2: Mitigation 2 as described for the Reuse Plan Alternative would reduce the impacts from increased human activity, but this would remain a significant not mitigable impact. This impact cannot be fully mitigated because the increase in the number of people, including children, and domestic animals at all times of the day and evening would be so great that measures to protect the least terns would not be sufficient to prevent a significant loss of individuals and disruption of breeding of the California least tern and brown pelican.

Increased Boat Traffic

Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals near Breakwater Island. The proposed marina in the Seaplane Lagoon would result in increased boat traffic compared to historic Navy uses in the vicinity of Breakwater Island and south of the landing field, potentially disturbing wildlife that use these areas.

Mitigation 3: Same as Mitigation 3 for the Reuse Plan Alternative. The impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Dredging and In-water Construction

Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging in the Marina planning area. The impacts are the same as those presented under the Reuse Plan Alternative. In addition, there may be increased dredging and marine vessel release of contaminants resulting from development of the marina in the North Waterfront planning area.

Mitigation 4: Same as Mitigation 4 for the Reuse Plan Alternative. The impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Pollutants in Stormwater Runoff

Impact 5: A significant and mitigable impact would result from stormwater runoff from the golf course and paved areas in the Northwest Territories planning area. The impact of stormwater runoff from the Northwest Territories planning area entering the least tern colony, the West Beach Landfill Wetland, Runway Wetland, and surrounding water bodies would be similar to the impact under the Reuse Plan Alternative. The specific pollutants would be slightly different with residential uses as opposed to a golf course and light industry. There would be less potential for pollutants related to industrial paved-surface runoff (such as oil and grease), but higher potential for stormwater runoff containing herbicides, pesticides, and fertilizers used in residential developments. Impacts from marina-related uses would be the same as described for Impact 5 under the Reuse Plan Alternative.

Mitigation 5: Same as Mitigation 5 under the Reuse Plan Alternative. This impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Nonsignificant Impacts

American Peregrine Falcon. Impacts to American peregrine falcon would be the same as those described under the Reuse Plan Alternative. No mitigation would be required.

Winter-run Chinook Salmon. Impacts to winter-run chinook salmon would be the same as those described under the Reuse Plan Alternative. No mitigation would be required.

Human Activity in the Marina and Civic Core Planning Areas. Impacts related to human activity in the Marina and Civic Core planning areas would be the same as those described under the Reuse Plan Alternative. No mitigation would be required.

Nonsensitive Species and Habitats. Impacts related to these species and habitats would be the same as for the Reuse Plan Alternative. No mitigation would be required.

4.7.4 Reduced Density Alternative

Acreages of land uses in the Reduced Density Alternative would be similar to those in the Reuse Plan Alternative, except for single-family residential development in the Inner Harbor planning area rather than light industry. However, the density of development would be reduced, thereby reducing the number of people at the site and the potential for impacts. The impacts from the additional areas of residential development would be negated by the reduction in density across the site, making impacts to biological resources from this alternative similar to those described under the Reuse Plan Alternative. Significant impacts from this alternative are mitigable.

Significant Impacts

Increased Predation of the California Least Term

Impact 1: A significant and mitigable impact would result from increased predation of the California least tern (loss of individuals and disruption of breeding) due to new development located adjacent to the USFWS wildlife refuge after the build-out period. The impact of predators on the California least tern colony would be the same as described under Impact 1 for the Reuse Plan Alternative.

Mitigation 1: Same as described under Mitigation 1 for the Reuse Plan Alternative. This impact would be reduced to a nonsignificant level with implementation of these mitigation measures.

Human Activity in the Northwest Territories

Impact 2: A significant and mitigable impact to the California least tern and brown pelican (loss of individuals and disruption of breeding) would result from increased presence of people and domestic animals in the Northwest Territories. The impacts to the California least tern and brown pelican due to a substantial increase in the number of people having access to the site and using the site for recreation would be similar to those described in Impact 2 under the Reuse Plan Alternative.

Mitigation 2: Same as described under Mitigation 2 for the Reuse Plan Alternative. The impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Increased Boat Traffic

Impact 3: A significant and mitigable impact would result from increased boat traffic from the proposed marina in the Seaplane Lagoon, which could disrupt least tern foraging, California brown pelican roosting, western gull nesting, and the haul-out site for harbor seals near Breakwater Island. The proposed marina in the Seaplane Lagoon probably would result in increased boat traffic compared to historic Navy uses in the vicinity of Breakwater Island and south of the landing field, disturbing wildlife that use these areas. The impact is the same as those presented under the Reuse Plan Alternative.

Mitigation 3: Same as described under Mitigation 3 for the Reuse Plan Alternative. The impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Dredging and In-water Construction

Impact 4: A significant and mitigable impact on fish and other aquatic organisms could result from berthfront sediment dredging in the Marina planning area. The impacts are the same as those presented under the Reuse Plan Alternative. There may be increased dredging and marine vessel release of contaminants resulting from development of the marina in the North Waterfront planning area.

Mitigation 4: Same as Mitigation 4 for the Reuse Plan Alternative. The impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Pollutants in Stormwater Runoff

Impact 5: A significant and mitigable impact would result from stormwater runoff from the golf course and paved areas in the Northwest Territories planning area. The impact of stormwater runoff on the least tern colony, the West Beach Landfill Wetland, Runway Wetland, and surrounding water bodies would be similar to Impact 5 under the Reuse Plan Alternative, except that with the reduction of developed uses in the Northwest Territories planning area there would be less potential for the generation of urban runoff from that area. Some of the open areas would still have turf that would require herbicide, pesticide, and fertilizer application. Impacts from marina-related uses would be the same as described under Impact 5 under the Reuse Plan Alternative.

Mitigation 5: Same as Mitigation 5 for the Reuse Plan Alternative. The impact would be reduced to a nonsignificant level with implementation of this mitigation measure.

Nonsignificant Impacts

American Peregrine Falcon. Impacts to American peregrine falcon would be the same as those described under the Reuse Plan Alternative. No mitigation would be required.

Winter-run Chinook Salmon. Impacts to winter-run chinook salmon would be the same as those described under the Reuse Plan Alternative. No mitigation would be required.

Human Activity in the Marina and Civic Core Planning Areas. Impacts related to human activity in the Marina and Civic Core planning areas would be the same as those described under the Reuse Plan Alternative. No mitigation would be required.

Nonsensitive Species and Habitats. Same as for the Reuse Plan Alternative.

4.7.5 No Project Alternative

Maintaining NAS Alameda/FISC Alameda in caretaker status would result in no impacts to biological resources because no new construction or demolition, and very limited public use of the site would occur. Monitoring and predator management, including retaining the electric fence around the tern colony, would be continued by the Navy at the existing level until transfer of the refuge site to the USFWS. Remediation activities would continue, and USFWS would be consulted if impacts to listed species and their habitats are anticipated.

Under the No Project Alternative all of the existing open space around the California least tern colony would remain as such and the closest buildings in the Northwest Territories planning area would be approximately 3,150 feet (960 m) north of the tern colony. None of the identified impacts of predation and human disturbance identified with the reuse alternatives would occur. No new landscaping that could provide perches or nesting sites for predators would be installed. Predation levels would remain similar to historic levels, barring an unforeseen influx of predators and continued maintenance of the airfield to prevent the growth of vegetation. Under the No Project Alternative, there would be minimal boat traffic in the vicinity of Breakwater Island and south of the landing field. Boat traffic would continue to be restricted. Therefore, disturbance to wildlife would be minimal. Dredging of the Navy berths would no longer be needed, and no new dredging would

occur. There would be limited potential for degradation of water quality of runoff from caretaker and limited leasing activities affecting the California least tern and Caspian tern colonies, wetlands, and water bodies. There would be no increase in people having access to the site or using the site for recreation. Therefore, there would be no impact to the wetlands.

There would be no impacts to nonsensitive species and habitat under the No Project Alternative.

4.8 GEOLOGY AND SOILS

This section describes impacts to geology and soils that could occur under the reuse actions and the No Project Alternative. Impacts are analyzed against baseline conditions as described in Section 3.8.

Region of Influence

The ROI for soils and geologic resources includes lands within the boundaries of NAS Alameda/FISC Alameda and adjacent land.

Significance Criteria

A project may result in a significant geologic impact if it exposes people or structures to major geologic hazards (such as slope failure, liquefaction, and ground shaking), limits the recovery of mineral resources, results in a loss of prime agricultural land, causes substantial soil erosion, or adversely affects unique geologic or topographic features. Table 4-15 summarizes the geologic impacts identified for each alternative and the significance of these impacts. Impacts due to soil erosion are discussed in Section 4.9 Water Resources Impact 1 (Surface Water Quality).

Table 4-15
Summary of Geologic and Soils Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Seismic Shaking Hazards	◐	◑	◑	◑	◑
Liquefaction Potential Hazards	◐	◑	◑	◑	◑
Settlement Damage	◐	◑	◑	◑	◑
Differential Settlement Damage	◐	◑	◑	◑	◑
Dike Failure Hazards	◐	◑	◑	◑	◑
Lateral Spreading Hazards	◐	◑	◑	◑	◑

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = None

4.8.1 Reuse Plan Alternative

Significant Impacts

Seismic Shaking

Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking, which could result in injuries and loss of life and could cause moderate to extreme levels of damage to structures. ABAG studies suggest that a strong earthquake centered on the northern segment of the Hayward Fault would have an intensity in the vicinity of NAS Alameda/FISC Alameda in the range of VIII to X on the Mercalli scale (Perkins et al. 1996). Although this alternative would not change the likelihood of an earthquake, increasing the number of people and structures in the vicinity of an active earthquake fault is considered a significant and mitigable impact.

Damage to structures generally would be greatest in older buildings but damage would 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. It is difficult to find data with which to quantify the risk of buildings becoming uninhabitable during a strong earthquake. A recent ABAG report (Perkins et al. 1996) suggests that on average, about 8 percent of the post-1939 1- to 3-story single-family wood-frame houses and about 15 percent of the post-1939 multifamily 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 NAS Alameda/FISC Alameda should be much lower.

The amount of ground shaking that would occur in geologic materials at the western edge of the Civic Core planning area (Carlisle and Rollins 1994) 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.

Based on the ABAG model, the intensity of ground movement would be lowest in the Inner Harbor planning area, which is closest to the bedrock core of Alameda Island (Perkins et al. 1996). The most significant impacts are likely to be concentrated within the Civic Core planning area, where most of the larger public occupancy buildings would be located. Portions of the Inner Harbor (with its light industrial park), the Main Street Neighborhood

planning area (which would contain schools), and the North Waterfront planning area (which would contain light industry, office space, and schools) would be similarly impacted.

Mitigation 1: Seismic upgrades of existing structures designated for reuse should be performed to reduce life safety risks from failures in a large earthquake. Existing utilities that are essential for maintaining emergency services or that could increase hazards if ruptured should be inspected and retrofitted or replaced. Structures that cannot feasibly be retrofitted to meet a life safety objective should be demolished. Utilities that cannot be retrofitted would be replaced or supplemented by backup systems. New residential units should meet the requirements of the current CBC. Industrial and commercial buildings, buildings intended for public occupancy, structures supporting essential services, and buildings housing sensitive populations (schools and medical facilities) should be required to identify and accommodate site-specific seismic forces in their design. Designing and retrofitting existing and new structures and utilities to Federal, State, and local standards would minimize the potential hazards and reduce this impact to a nonsignificant level.

Liquefaction

Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities. During a strong earthquake, liquefaction would be likely throughout the filled portion of NAS Alameda/FISC Alameda and along the historic shoreline of the Bay, 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, 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.

Mitigation 2: Geotechnical studies have been performed by the Navy for many of the existing Navy buildings. Past reports and the condition of foundations should be reevaluated to determine if retrofitting is necessary or appropriate to strengthen existing structures proposed for reuse. Soil studies and geologic reports should be required for each new building site. Future building design should incorporate the recommendations of the engineering geologist. Replacing existing heterogeneous fill, and vibrocompacting new or existing fill materials have been successful in reducing liquefaction of surficial materials at sites similar to NAS Alameda/FISC Alameda and should be considered. To mitigate liquefaction effects, all sensitive structures, including most industrial and commercial buildings, buildings greater than three stories, buildings intended for public occupancy, structures supporting essential services, and

buildings housing sensitive populations (schools and medical facilities) should be supported by pile systems founded in the dense Merritt Sand or Yerba Buena Mud. New utility infrastructure should be fitted with flexible joints, where appropriate, to accommodate lateral stresses. Critical or potentially hazardous existing substandard utility infrastructure should be replaced or retrofitted with flexible joints to reduce the potential for rupture. Implementing these mitigation measures would reduce this impact to a nonsignificant level.

Settlement

Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill. Settlement is a gradual process that could cause ponding, increased flooding potential, or water-logging of soils in severely affected areas.

Mitigation 3: Mitigation measures for settlement would be the same as those for liquefaction. In addition, excess fill may be placed in anticipation of settlement to raise the ground surface elevation above the predicted final elevation. A capillary barrier should be installed beneath low-lying slab-on-grade foundations to prevent capillary rise into the slab. Implementing the recommendations of a qualified geotechnical engineer would reduce this impact to a nonsignificant level.

Differential Settlement

Impact 4: A significant and mitigable impact would result from differential settlement, which can damage foundations, tilt or buckle structural supports, and misalign horizontal features, such as doorways, utility connections, or other rigid transitions. Volume changes associated with wetting and drying of soils with a high shrink-swell potential can cause damage to roads and foundations similar to damage caused by differential settlement. This impact may be economically significant but is unlikely to affect life safety. Differential settlement is a potential hazard throughout NAS Alameda/FISC Alameda, and would be most severe in areas with recently placed uncompacted fill or in areas not previously developed, such as the Northwest Territories planning area. Roads and foundations in the Main Street Neighborhoods planning area north of Atlantic Avenue are likely to be impacted by soils with a high clay content in that area. These soils have a high shrink-swell potential and are poorly drained.

Mitigation 4: Design plans and details and other improvement plans should be reviewed by a geotechnical engineer to determine whether they are compatible with the geotechnical conditions of the site. A geotechnical engineer and

engineering geologist also should inspect site grading and should document placement of engineered fills, stability of cut and fill slopes, and placement of subdrains. Mitigation measures for differential settlement would be the same as for liquefaction. Large structures should be constructed on pile foundations. Using mat foundation for smaller structures could reduce differential settlement by distributing loads over a larger area and increasing the flexibility of the foundation. Implementing these mitigation measures would reduce this impact to a nonsignificant level.

Dike Failure

Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached. 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 Navy and are thought to be in good condition.

Mitigation 5: Owners of shoreline properties would be required to inspect, maintain, and repair the perimeter dikes as needed to comply with applicable standards. Implementing this mitigation measure would reduce this impact to a nonsignificant level. Because the Civic Core and Marina planning areas may be vulnerable to flooding caused by catastrophic failure of one of the western dikes, the feasibility of constructing flood-control levees along the inland boundaries of the Civic Core and Marina planning areas should be studied as an alternative to dependence on the western exterior dikes.

Lateral Spreading

Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure. While the probability of this occurring is relatively low, it would be a potentially significant impact in the shoreline areas. As mentioned above, existing data are not adequate to rule out the possibility of a catastrophic dike failure due to a large earthquake.

Mitigation 6: Studies should be conducted to determine the seismic stability of perimeter dikes in developed shoreline areas before shoreline construction designs are completed. Unstable dikes should be strengthened according to the recommendations of a qualified geotechnical engineer. Alternatively, structures in areas near unstable dikes should be designed to withstand lateral spreading. Potential mitigation measures could include those identified for mitigation of impacts from liquefaction. Implementing these mitigation measures would reduce the impact to a nonsignificant level.

4.8.2 Seaport Alternative

The principal differences between the Reuse Plan Alternative and the Seaport Alternative that may result in different geologic impacts include increased industrial development associated with the seaport, replacement of a light industry business park with 378 single-family housing units in the Inner Harbor planning area, and replacement of a hotel and light industrial development in the North Waterfront planning area with an additional 552 duplex housing units. The increases in the number of housing units relative to the Reuse Plan Alternative would be accompanied by additional space devoted to schools. Some of the increased school space is assumed to be increased classroom space to accommodate the larger residential population under this alternative. The increased residential development would probably somewhat increase the magnitude of the geologic impacts described for the Reuse Plan Alternative because a larger permanent population would be exposed to seismic hazards; however, no new impacts would be created.

Significant Impacts

Seismic Shaking

Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking, which could result in injuries and loss of life and would cause moderate to extreme levels of damage to structures. The amplification of seismic waves by the geologic materials underlying the Inner Harbor planning area is expected to be somewhat less than in other portions of NAS Alameda/FISC Alameda. There would be an increase of 378 single-family housing units in the Inner Harbor

planning area compared to the Reuse Plan Alternative, which would increase the exposed population in that area to seismic hazards. Since the Inner Harbor planning area is the most geologically stable portion of NAS Alameda/FISC Alameda, the seismic hazard is minimized under this alternative. Increased industrial development associated with the seaport could increase hazard of spills or releases of hazardous materials in the event of a large earthquake. Duplex units proposed for the North Waterfront planning area may be slightly larger than single-family units, may involve a higher exposed population density, and would be more vulnerable to seismic shaking because of their location on less stable materials than the single-family units in the Reuse Plan Alternative. Although this alternative would not change the likelihood of an earthquake, increasing the number of people and structures in the vicinity of an active earthquake fault is considered a significant and mitigable impact.

Mitigation 1: The mitigation measures for seismic shaking would be the same as those for the Reuse Plan Alternative. In addition, business plans, including spill prevention, containment, and countermeasures plans to address spills of hazardous substances, would be required for industries storing or handling hazardous materials. These mitigation measures would reduce the impact to a nonsignificant level.

Liquefaction

Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities. The impacts from liquefaction would be potentially greater under the Seaport Alternative than for the Reuse Plan Alternative because larger industrial and commercial structures that would likely be constructed on piles set on relatively firm materials would be replaced by residential units built on less costly but less stable mat foundations. The new housing units proposed for the North Waterfront planning area could be severely impacted by liquefaction.

Mitigation 2: The mitigation measures for liquefaction would be the same as those described for the Reuse Plan Alternative. Depending on the size and design of the housing units, it may be feasible to construct them on pile foundations. Implementing these mitigation measures would reduce the impact to a nonsignificant level.

Settlement

Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill. Impacts from settlement of low-density materials in proposed development areas would occur under the Seaport Alternative as

they would under the Reuse Plan Alternative. However, the magnitude of the settlement impacts probably would be somewhat greater because the residential units that replace larger industrial and commercial structures would not be constructed on pile foundations and would be supported by compressible sediments.

Mitigation 3: Mitigation measures for soil settlement are the same as those described under the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Differential Settlement

Impact 4: A significant and mitigable impact would result from differential settlement, which can damage foundations, tilt or buckle structural supports, and misalign horizontal features, such as doorways, utility connections, or other rigid transitions. The magnitude of the impact from differential settlement may be somewhat greater for the increased number of residential units in the Seaport Alternative for the same reasons as described above for settlement and liquefaction. These units would be constructed on shallow foundations, which are more subject to differential settlement than the pile foundations more likely to be used on larger buildings.

Mitigation 4: The mitigation measures for differential settlement would be the same as those described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Dike Failure

Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached. The potential for and the impact resulting from dike failure would be the same under the Seaport Alternative as for the Reuse Plan Alternative.

Mitigation 5: Mitigation measures to avoid dike failure would be the same as those described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Lateral Spreading

Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure.

Mitigation 6: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to nonsignificant levels.

4.8.3 Residential Alternative

The major difference affecting geologic impacts between the Residential Alternative and the Reuse Plan Alternative would be an increase of about 3,000 dwelling units. Most of the new housing units (1,200 single-family and 312 attached housing units or duplexes) would be located in the Northwest Territories planning area and would replace the maritime-related light industry proposed for this area in the Reuse Plan Alternative. In addition, compared to the Reuse Plan Alternative, this alternative would have 264 more attached housing units in the North Waterfront planning area, 378 more single-family and 156 more attached units in the Inner Harbor planning area, and 768 more attached units in the Civic Core planning area. As described under the Seaport Alternative, residential structures tend to be constructed on shallow foundations and would be more susceptible to damage from ground shaking, liquefaction, and differential settlement than larger buildings built on pile foundations. Also, the residential population would be expected to have a greater probability of being present in the area during an earthquake than would workers.

Significant Impacts

Seismic Shaking

Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking, which could result in injuries and loss of life and would cause moderate to extreme levels of damage to structures. The amplification of seismic waves by the geologic materials underlying the Inner Harbor planning area is expected to be somewhat less than in other portions of NAS Alameda/FISC Alameda. Larger, attached units proposed for the North Waterfront planning area would be more vulnerable to seismic shaking because of their size and location on less stable materials. The Northwest Territories planning area is one of the areas expected to be most vulnerable to ground shaking because the fill is thicker, more heterogeneous, and has been less compacted by past development than areas to the east. In addition, less is known about the seismic response of the geologic materials in the Northwest Territories planning area. Although this alternative would not change the likelihood of an earthquake, increasing the number of people and structures in the vicinity of an active earthquake fault is considered a significant and mitigable impact.

Mitigation 1: The mitigation measures for seismic shaking would be the same as those for the Reuse Plan Alternative. Implementing the mitigation measures would minimize the potential hazards and reduce the impact to a nonsignificant level.

Liquefaction

Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities. The impact from liquefaction would be potentially greater than for the Reuse Plan Alternative for the same reasons described under the Seaport Alternative—the larger industrial and commercial structures that would likely be constructed on piles set on relatively firm materials would be replaced by residential units built on less costly but less stable mat foundations. Of the additional housing units proposed in the Residential Alternative, those that would be most severely impacted by liquefaction are located in the North Waterfront, Northwest Territories, and Civic Core planning areas.

Mitigation 2: The mitigation measures for liquefaction would be the same as those described for the Reuse Plan Alternative. Depending on the specific design of the attached housing structures, it may be feasible to construct them on pile foundations. Implementing these measures would reduce the impact to a nonsignificant level.

Settlement

Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill. The impact due to settlement of the low-density materials in proposed development areas would be the same under the Residential Alternative as for the Reuse Plan Alternative. The magnitude of the impact probably would be greater because the residential units that replace larger industrial and commercial structures would not be constructed on pile foundations, so the net loading on uncompacted surficial materials would be greater.

Mitigation 3: Mitigation measures for soil settlement would be the same as those for the Reuse Plan Alternative. Implementing these mitigation measures would reduce the impact to a nonsignificant level.

Differential Settlement

Impact 4: A significant and mitigable impact would result from differential settlement, which can damage foundations, tilt or buckle structural supports, and misalign horizontal features, such as doorways, utility connections, or other rigid transitions. The magnitude of the impact from differential settlement may be greater for the increased number of residential units in the Residential Alternative, for the same reasons as described above for settlement and liquefaction. These units would be constructed on shallow foundations,

which are more subject to differential settlement than the pile foundations more likely to be used to support larger buildings.

Mitigation 4: The mitigation measures for differential settlement would be the same as those described for the Reuse Plan Alternative. Implementing these mitigation measures would reduce the impact to a nonsignificant level.

Dike Failure

Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached. The potential for dike failure would be the same under the Residential Alternative as for the Reuse Plan Alternative. Because of the greater length of the submarine slope west of the perimeter dikes on the west side of the Northwest Territories planning area, these dikes may be more vulnerable to slope failure in an earthquake. The west-facing dikes are probably the most vulnerable to erosion from storm waves since they are exposed to the most intense wave action.

Mitigation 5: Mitigation measures to reduce the potential for dike failure would be similar to those described for the Reuse Plan Alternative, except that responsibility for inspecting, maintaining, and repairing the dikes would be with the City of Alameda rather than property owners. Also, greater reliance would be placed on the stability of the western dikes with no opportunity to construct secondary inland levees for flood protection. Implementing these mitigation measures would reduce this impact to a nonsignificant level.

Lateral Spreading

Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure. The potential for impacts due to lateral spreading would be greater in the Northwest Territories planning area than in other locations due to the amount of new construction along a potentially vulnerable perimeter dike.

Mitigation 6: Mitigation would be the same as that described for the Reuse Plan Alternative and could reduce the impact to a nonsignificant level.

4.8.4 Reduced Density Alternative

The principal differences between the Reuse Plan Alternative and the Reduced Density Alternative that may result in different geologic impacts include the location of private research and development facilities in the Civic Core planning area, replacing light industrial facilities by single-family housing units in the Inner Harbor planning area, creating additional open space/recreational

facilities in the North Waterfront planning area, and shifting 121.5 acres (49.2 ha) from light industry to wildlife preservation in the Northern Territories planning area and the adjacent USFWS wildlife refuge. The decreased level of development would decrease the magnitude of geologic impacts compared to the Reuse Plan Alternative but would not eliminate any of the impacts or reduce them to a nonsignificant level.

Significant Impacts

Seismic Shaking

Impact 1: A significant and mitigable impact would result from increasing the number of people and structures exposed to seismic shaking, which could result in injuries and loss of life and would cause moderate to extreme levels of damage to structures. The impact under the Reduced Density Alternative from ground motion during a large earthquake would be higher in some areas but lower in others than under the Reuse Plan Alternative. Lower impacts are expected in areas with a reduced level of development, but they would be greater in areas of more intense development. Overall the impact is expected to be lower. Light industrial and office space would be decreased in the Northwest Territories, North Waterfront and Inner Harbor planning areas. Altogether, there would be about a one-third reduction in the number of workers potentially exposed to earthquake hazards. There would be an increase of 228 single-family housing units in the Inner Harbor planning area compared to the Reuse Plan Alternative, which would increase the exposed population in that area to seismic hazards. Since the Inner Harbor planning area is the most geologically stable portion of NAS Alameda/FISC Alameda, the seismic hazard is minimized under this alternative. Although this alternative would not change the likelihood of an earthquake, increasing the number of people and structures in the vicinity of an active earthquake fault is considered a significant and mitigable impact.

Mitigation 1: Mitigation measures to reduce the impact due to seismic shaking would be the same as for the Reuse Plan Alternative. Implementing the mitigation measures would minimize the potential hazards and reduce the impact to a nonsignificant level.

Liquefaction

Impact 2: A significant and mitigable impact would result from liquefaction, affecting structures, roads, and utilities. Liquefaction would be similar in developed areas to that which is described under the Reuse Plan Alternative. The magnitude of the impact would be reduced in the same areas where reductions in the seismic shaking hazard occur, as described above. Overall, the magnitude of the impact from liquefaction would be less than under the

Reuse Plan Alternative because the number of structures and the resident and working populations would be less in the Reduced Density Alternative.

Mitigation 2: Mitigation measures to reduce the impact due to liquefaction would be the same as those described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Settlement

Impact 3: A significant and mitigable impact due to settlement could occur as fill materials and Bay Mud underlying building sites adjust to new loading from buildings and fill. Ground settlement would continue to occur throughout NAS Alameda/FISC Alameda. The reduction in development under the Reduced Density Alternative would decrease the magnitude of the overall impact but would not reduce the significance of the individual impacts.

Mitigation 3: Mitigation measures would be the same as those for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Differential Settlement

Impact 4: A significant and mitigable impact would result from differential settlement, which can damage foundations, tilt or buckle structural supports, and misalign horizontal features, such as doorways, utility connections, or other rigid transitions. The increase in single-family dwelling units in the Inner Harbor planning area would increase the magnitude of the adverse impact since these units would be constructed on shallow foundations. However, there would be a net reduction in the impacts relative to the Reuse Plan Alternative, due to a decreased level of development overall, particularly in the Northwest Territories planning area.

Mitigation 4: The mitigation measures for differential settlement would be the same as those described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Dike Failure

Impact 5: A significant and mitigable impact due to flooding of the interior of NAS Alameda/FISC Alameda could occur if the perimeter dikes were breached. The impact due to potential dike failure would be the same as described for the Reuse Plan Alternative. The lower level of development in the Northwest Territories planning area would result in few potential impacts in this area, although a dike failure could cause flooding further inland.

Mitigation 5: Mitigation measures to prevent dike failure would be the same as described for the Reuse Plan Alternative. Implementing the mitigation measures would reduce the impact to a nonsignificant level.

Lateral Spreading

Impact 6: A significant and mitigable impact would result from lateral spreading of the land upslope of a dike failure.

Mitigation 6: Mitigation would be the same as those described for the Reuse Plan Alternative and could reduce the impact to nonsignificant level.

4.8.5 No Project Alternative

Nonsignificant Impacts

Under the No Project Alternative seismic and other geologic impacts to structures or infrastructure could still occur. The potential for injuries or loss of life would be minimal because only a small population would be present on NAS Alameda/FISC Alameda. This would be a nonsignificant impact. No mitigation would be required.

4.9 WATER RESOURCES

This section describes impacts to water resources that could occur under the reuse actions and the No Project Alternative. Issues examined include stormwater runoff, surface water quality, flooding potential, and ground water quality and quantity. Impacts are analyzed against baseline conditions as described in Section 3.9.

Region of Influence

The ROI is limited to land at NAS Alameda and FISC Alameda sites, immediately adjacent land areas, underlying ground water basins, and surrounding water bodies (Oakland Inner Harbor, NAS Alameda Inner Harbor, Seaplane Lagoon, and eastern San Francisco Bay).

Significance Criteria

An alternative may have a significant impact on water resources if it would:

- Violate any water quality standards or waste discharge requirements; create or contribute runoff water that would provide substantial additional sources of polluted runoff; or otherwise substantially degrade water quality;

- Substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site; 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 that would impede or redirect flows; or expose people or structures to a significant risk of loss, injury or death involving flooding;

- Expose people or structures to a significant loss, injury or death by seiche, tsunami or mudflow; or

- Substantially deplete ground water supplies or interfere substantially with ground water recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table.

Impacts on the capacity of the stormwater drainage system to handle the predicted increase in runoff due to the alternatives is analyzed in Section 4.5 (Utilities).

Planning Issues

Any new development at NAS Alameda/FISC Alameda would be required to comply with the City's Stormwater Management and Discharge Control Program performance standards and applicable portions of the Stormwater Management Plan for the Alameda County Urban Runoff Clean Water Program, which are intended to implement the county/City NPDES permit (No. CA 0029831). Those plans and the NPDES permit apply to stormwater generated during both construction and operation of the project facilities. In addition, individual industrial operations at the site would be required to obtain NPDES permits for any wastewater discharges.

New development also would be required to comply with the City's General Plan policies regarding dredging and water quality protection policies enumerated in Sections 5.1 and 8.3 of the City's General Plan. Any dredging associated with reuse would be subject to COE, Regional Quality Control Board, and San Francisco BCDC review. Disposing of dredge materials would be guided by the regional LTMS for dredge material disposal.

Development on the site also would be subject to flood protection policies contained in Section 8.3 of the City's General Plan, as well as FEMA flood insurance program policies. Table 4-16 summarizes water resources impacts for the various alternatives. Beneficial impacts are shown as nonsignificant impacts in Table 4-16.

4.9.1 Reuse Plan Alternative

Significant Impacts

Surface Water Quality

Impact 1: A significant and mitigable impact could result from site preparation, surface grading and new construction. These activities could disturb soil and increase erosion/sedimentation into the Oakland Inner Harbor, NAS Alameda Inner Harbor, Seaplane Lagoon, and San Francisco Bay. Construction equipment and operations (such as storage of construction materials and debris) may result in spills and other accidental emissions of pollutants, which could enter and contaminate the surrounding water bodies. In addition, increased public use of the sites, including use and maintenance of the RV park, golf course, parking lots, and park turf areas could introduce pollutants, including oil and grease, herbicides, pesticides, and fertilizers, into the runoff stream. The proposed maritime light

Table 4-16
Summary of Water Resources Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Adverse Effects on Surface Water Quality	◐	◑	◑	◑	◑
Exposure to Flood Hazards	◐	◑	◑	◑	◑
Water Quality Degradation from Dredging and Marina Operations	◐	◑	◑	◑	◑
Water Quality Degradation from Disposal of Dredge Materials	◐	◑	◑	◑	◑
Degradation of Ground Water Quality/Quantity	◐	◐	◐	◐	◐
Adequacy of Stormwater Drainage	◐	◐	◐	◐	◐

LEGEND:

Level of Impact
● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = None

industry uses in the Marina planning area could introduce pollutants from boat maintenance and repair activities, and spills from boat fueling and waste disposal. Marina use also could result in discharges of contaminants to surface waters. These potential water quality impacts would be significant and mitigable. The City of Alameda's Stormwater Management and Discharge Control Program includes requirements set forth by the Alameda County Urban Runoff Clean Water Program, which, in turn, is required to comply with the NPDES permit (No. CA 0029831). These programs address both construction and operational stormwater quality impacts.

Mitigation 1a: Implement the City's best management practices (BMPs) for both construction and post-construction stormwater runoff consistent with the City's stormwater management and discharge control program. This includes applying the City's standard stormwater conditions of approval as applicable to all proposed redevelopment at the site.

Mitigation 1b: 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. These plans should emphasize the minimal use of fertilizers, pesticides, and herbicides, and contain a

mechanism to insure continued use of BMPs, which could include monitoring, reporting, and/or inspection.

Mitigation 1c: The RV park and all parking lots should drain to oil and grease traps, or alternately, other approaches such as biological filters should be used as specified in the City's standard conditions of approval. Permeable pavement should be used to the maximum extent practicable, and impervious surfaces should be minimized. In addition, BMPs should include specific restrictions on vehicle maintenance. If vehicle washing is proposed in the RV park, the park should include a specified area for washing of vehicles that is contained, uses recycled water, and connects to the sanitary sewer system.

Mitigation 1d: The stormwater management conditions of approval for redeveloping the site should include requirements for a spill control and countermeasure plan to mitigate the potential impacts of construction-related and industrial and commercial spills on water quality. The plan should address vehicle fueling, storage, and handling of quantities of fuels, lubricants, solvents, paints, and other materials as appropriate.

Mitigation 1e: Runoff from the proposed maritime light industry use areas in the Marina planning area should be directed to structural (e.g., oil and grease traps and sand filters) and nonstructural (e.g., grassy swales) stormwater contaminant control facilities, as determined to be appropriate by the City of Alameda's stormwater management staff and in compliance with adopted BMPs. Runoff from maritime and equipment maintenance operations that may generate substantial pollutant loads should be directed to contained areas where spills can be controlled prior to entering receiving waters. BMPs and structural controls should include adequate budget and conditions to assure development and implementation of specific monitoring, maintenance, and inspection programs.

Mitigation 1f: All marina usage should include structural controls and BMPs. In addition, signs, pamphlets, and other public education and outreach activities advising users to eliminate any discharges of pollutants to receiving waters should be provided to private/recreation boat owners/users at the marina.

Implementing these mitigation measures would reduce the impact to a nonsignificant level.

Flood Hazards

Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas of the site near its bay and channel frontages.

Reuse of these areas would subject residents, workers, and other occupants of those areas to flood hazards in the event of the 100-year high tide, backed up stormwater runoff, or the unlikely combination of these events with a major tsunami. This impact would worsen with a rise in sea level. Although the flood potential at NAS Alameda/FISC Alameda has not been mapped, just outside the base, stormwater backups from the Main Street storm drain in the 100-year storm extend up to about 0.3 miles (0.5 km) upstream. Proposed roadway and stormwater pumping improvements would reduce this impact on the road and should alleviate the backups (Timothy 1996).

As described in Section 3.9, portions of the site below about nine feet (3 m) NGVD may be subject to seepage or inundation in the event of extreme high tides accompanied by high waves. These areas include bay-facing portions of the Northwest Territories planning area, and low-lying areas of the North Waterfront, North Main Street, Civic Core, and portions of the Marina planning areas.

The projected rise in sea level would increase substantially the frequency and magnitude of tidal and non-tidal flooding on the site in the future. The bayfront (western and southern) portions of the site under an elevation of approximately 9.5 to 10 feet (2.9 to 3.0 m) NGVD could be flooded periodically in the case of the predicted rise in sea level of 0.5 foot (0.1 m) or more, if not adequately protected. Low-lying areas of the site adjacent to the Oakland Inner Harbor also could be subject to exacerbated flood hazards due to rising sea level. This would be a significant impact if not mitigated.

Although unlikely, a tsunami runup of over 2 feet (0.6 m) coincident with high tides, also could inundate the western, southern, and northwestern frontages of the site, potentially affecting portions of the Northwest Territories and Marina planning areas (Ritter and Dupree 1972). This would be a significant and mitigable impact.

Mitigation 2a: Map all 100-year floodplains on the site by FEMA as part of the FIRM process. Protect any new development at sites below 10 feet (3 m) MSL from flooding by raising base level of the site to a minimum of 10 feet (3 m) MSL. This elevation may be revised, as appropriate, based on the revised estimates of sea level rise and based on expected rates of surface subsidence. Include provisions in the project for ongoing regular maintenance of new and existing levees.

Mitigation 2b: All seawalls surrounding the property should be regularly inspected and maintained by the City to assure their continued integrity. Any development along the site's waterfront areas should include an adequate setback to allow for future enlargement of the seawall to protect

the area in the event of a substantial rise in sea level. Rights-of-way for levees protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional height so that no fill for levee widening is placed in the bay.

Mitigation 2c: Any new development should comply fully with the City's General Plan policy 8.3b which stipulates that all new development for sites located on floodplains should be provided adequate protection from floods.

Implementing these mitigation measures would reduce the impact to a nonsignificant level.

Dredging and Marina Operations

Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon. Although the Navy will remediate sediment contamination prior to property conveyance, some water column contamination could still occur from maintenance dredging. It is unlikely that dredging would be required in the near future in the deep-water docks. Any dredging would be subject to specific COE and other regulatory agency requirements.

Dredging of uncontaminated sediments typically does not cause significant fluctuations in salinity, temperature, or pH over the short or long term.

Dredging can increase turbidity in the water. Clamshell dredging typically has much lower impacts on dredge-area water quality than hopper dredging. Assuming the use of clamshell dredging, which produces the lowest concentrations of suspended sediments, dredging would result in temporary increases in turbidity as some sediments are released from the dredge as it is raised from the bottom. Temporary increases in turbidity also occur when the scow receiving the dredged sediments is allowed to overflow with sediment-laden water so that it can be fully filled with sediments. Past studies have found that turbidity resulting from clamshell dredge and scow operations would result in temporary and nonsignificant impacts in waters near the dredging site (Port of Oakland 1996).

If berthfront dredging is reduced compared with historic dredging required for operation of NAS Alameda/FISC Alameda, water quality effects and dredge material disposal effects also would be reduced. Shallower or no berthfront dredging might decrease the potential for exposure and dispersion of existing contaminated sediments, if any, along the waterfronts.

Water quality impacts due to other activities associated with marina operations, such as incidental disturbance of bottom sediments by keels, propellers, and anchors, would be nonsignificant.

Mitigation 3a: Limit the depths and areas of dredging to minimize disturbance of contaminated sediments. All materials proposed for excavation and dredging shall be tested for heavy metals, hydrocarbons, PCBs, tributyltin, and pesticides, as well as any other contaminants of concern to the RWQCB prior to dredging. Careful delineation and segregation of the contaminated material prior to, during, and after dredging would minimize the volume of contaminated sediments generated and the dispersion of potential contaminants into the water column.

Mitigation 3b: Use clamshell dredge or other appropriate dredging method that minimizes the disturbance of surrounding sediments and release of contaminants into the water column.

Implementing these mitigation measures would reduce the impact to a nonsignificant level.

Dredge Disposal

Impact 4: A significant and mitigable impact could result from disposal of contaminated dredged sediments that could contaminate receiving waters. Disposal of noncontaminated dredge sediments could increase turbidity at aquatic disposal sites. It would affect primarily marine disposal sites outside of NAS Alameda and FISC Alameda properties; however, should dredge materials be dried at the site and should water be decanted locally, it also could affect water quality in the Oakland harbor channels.

Mitigation 4: All dredge materials should be disposed of at approved sites in compliance with State and Federal regulations. All dredge materials should be tested prior to disposal, and any contaminated sediments should be disposed of in approved upland facilities. All sediment disposal programs and methods should comply with applicable LTMS sediment disposal priorities, which favor reusing sediments as feasible for construction fill, habitat enhancement projects, and similar environmentally beneficial disposal strategies over bay and ocean disposal. Implementing this mitigation would reduce this impact to a nonsignificant level.

Nonsignificant Impacts

Ground Water. Implementing the Reuse Plan Alternative would not substantially alter ground water quantity underlying the site. Any ongoing ground water cleanup operations would continue. The Reuse Plan Alternative would not increase the use of local ground water on the site. Infiltration of precipitation falling on the site into the upper ground water aquifers would not be substantially affected by implementing the Reuse Plan Alternative. No mitigation would be required.

Stormwater Drainage. Ponding currently occurs in the north Main Street Neighborhoods planning area, the northern Civic Core planning area, and several low-lying areas of the Northwest Territories planning area. The Main Street Neighborhoods planning area storm water pump station and other improvements currently underway (see Section 3.9), would eliminate the inundation problems in that area. In addition, the Reuse Plan calls for the installation of stormwater collection pipes in areas of known ponding. Assuming that these improvements would be completed prior to the construction of new facilities in these areas, there would be no increase in the number of structures exposed to these hazards. No mitigation would be required.

4.9.2 Seaport Alternative

Reuses identified under the Seaport Alternative generally are similar to those of the Reuse Plan Alternative. The primary differences with respect to water resources are the replacement of the proposed maritime-related light industry, soccer fields, and golf course uses in the Northwest Territories planning area with 220 acres (89 ha) of port and related facilities (5 container ship berths and associated landside uses), a larger (49 acres [20 ha] vs. 36 acres [15 ha]) regional park in the Inner Harbor planning area, and residential uses replacing light industrial uses, also in the Inner Harbor planning area. Impacts of the Seaport Alternative on water resources are described below.

Significant Impacts

Surface Water Quality

Impact 1: A significant and mitigable impact could result from site preparation, surface grading and new construction. These activities could disturb soil and increase erosion/sedimentation in the Oakland Inner Harbor, NAS Alameda Inner Harbor, Seaplane Lagoon, and San Francisco Bay. Impacts under this alternative would be similar to the Reuse Plan Alternative, but there would be more potential construction-related impacts. In addition, construction and use of the transportation link required for

development of this alternative would generate additional pollutants. This alternative would eliminate golf course-related herbicide, pesticide, and fertilizer contaminant runoff and would replace it with industrial paved surface runoff contaminants (such as oil, grease, and metals) and possible boat maintenance/repair contaminants from the maritime support areas. Vessels using the seaport facilities and marina activities could adversely affect water quality by releasing bilge materials into the bay and channel areas and by accidentally releasing oil or wastewater into these areas. These contaminants would constitute a significant and mitigable impact.

Mitigation 1a-d: Reuse Plan Alternative mitigation measures 1a-1d also would apply to this alternative, but the reference to the golf course in Mitigation 1b would be eliminated. Mitigation 1e is replaced with the following:

Mitigation 1e: Runoff from the proposed maritime use areas in the Northwest Territories planning area should be directed to structural (e.g., oil and grease traps and sand filters) and nonstructural (e.g., grassy swales) stormwater contaminant control facilities, as determined to be appropriate by the City of Alameda's stormwater management staff and in compliance with adopted BMPs. Runoff from maritime and equipment maintenance operations (including vessel loading and support facilities) that may generate substantial pollutant loads to the Oakland Inner Harbor should be directed to contained areas where spills can be controlled prior to entering the channel. BMPs and structural controls should include adequate budget and conditions to assure specific monitoring, maintenance, and inspection programs.

Mitigation 1f: Prohibit any vessel using the site's proposed marine terminal and marina from discharging bilge materials into San Francisco Bay. Provide adequate facilities for waste from berthed ships and docked boats. Place floating booms around all ships docked at the marine terminal.

Mitigation 1g: All marina usage should include structural controls and BMPs with public education for private/recreation boat owners.

Implementing these mitigation measures would reduce the impact to a nonsignificant level.

Flood Hazards

Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas of the site near its bay and channel frontages. Reuse of these areas would subject residents, workers, and other occupants of those areas to flood hazards in the event of the 100-year high tide, backed

up stormwater runoff, or the unlikely combination of these events with a major tsunami. Flood hazard impacts associated with this alternative would be similar to those described under Impact 2 for the Reuse Plan Alternative.

Mitigation 2: Mitigation measures for this impact would be the same as Mitigation 2 for the Reuse Plan Alternative.

Dredging and Marina Operations

Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon. The Seaport Alternative would require substantial dredging and dredge material disposal for developing five container ship berths along the Oakland Inner Harbor adjacent to the Northwest Territories planning area. The impacts of berthfront dredging would depend on the extent of new dredging required beyond the channel maintenance and deepening dredging currently occurring in the Oakland Inner Harbor. If the new berths are primarily in areas already dredged as part of the existing channel, impacts would not be significant; however, if substantial berth dredging were required south of the existing channel, contaminated materials likely would be encountered. The dissolved contaminants that would be released by berth-front dredging could significantly affect water quality at or near the dredge sites. The types and amounts of contaminated materials proposed for dredging or excavation as part of the new berth development are not known. However, similar dredging for the Howard Terminal encountered substantial quantities of contaminated materials (Port of Oakland and US Navy 1994). In addition, dredging can temporarily increase turbidity levels and reduce oxygen levels in the areas immediately adjacent to dredging. The significance of this potential impact would depend on the levels of contamination in the materials to be dredged, the method of dredging, and the degree of isolation of dredged materials from receiving waters.

Marina dredging and operation impacts associated with this alternative would be the same as those described for the Reuse Plan Alternative.

Mitigation 3a-3b: Mitigation measures 3a and 3b identified for the Reuse Plan Alternative also would apply to this alternative.

Mitigation 3c: To the extent feasible, conduct landside excavations/dredging prior to breaching the levee/training wall. This would separate most of the excavation/dredging activities from open water susceptible to contamination.

Dredge Disposal

Impact 4: A significant and mitigable impact would result from disposal of contaminated dredged sediments that could contaminate receiving waters. Dredge material disposal impacts would be similar to those described for the Reuse Plan Alternative, but would involve larger quantities of dredge material.

Mitigation 4: Mitigation measures for this impact would be the same as Mitigation 4 for the Reuse Plan Alternative.

Nonsignificant Impacts

Ground Water. Impacts to ground water would be the same as under the Reuse Plan Alternative. No mitigation would be required.

Stormwater Drainage. Impacts to stormwater drainage would be similar to those described for the Reuse Plan Alternative. In addition, development within the Northwest Territories planning area would create approximately 149 acres (60 ha) of additional impermeable surface and increase the amount of surface runoff. Under this alternative, the improvements to the stormwater collection system would be designed to accommodate this increased runoff, there would be no additional ponding problems, thus the increase would result in a nonsignificant impact. No mitigation would be required.

4.9.3 Residential Alternative

The Residential Alternative focuses on maximizing residential development in the Northwest Territories and Civic Core planning areas compared with the other alternatives. With respect to water resources, the major differences between this alternative and the Reuse Plan Alternative would be the replacement of the 162-acre (66 ha) golf course with residential uses, the replacement of the RV park with residences, and the development of a marina in the Northern Waterfront planning area.

Significant Impacts

Surface Water Quality

Impact 1: A significant and mitigable impact could result from site preparation, surface grading and new construction. These activities could disturb soil and increase erosion/sedimentation into the Oakland Inner Harbor, NAS Alameda Inner Harbor, Seaplane Lagoon, and San Francisco Bay. Surface water quality impacts of this alternative would be similar to

the Reuse Plan Alternative but with the added potential of increased dredging and marine vessel release. In addition, contaminants resulting from developing the marina in the North Waterfront planning area and added urban pollutants from typical urban residential activities (gardening, dumping, and car washing) from residential development in the Northwest Territories planning area would replace the agricultural (herbicide, pesticide, and fertilizer) pollutants that would be generated from the Reuse Plan Alternative's golf course. Residential uses may increase discharges. The impact would be significant and mitigable.

Mitigation 1a-1f: Mitigation measures for this impact would be the same as identified for the Reuse Plan Alternative (Measures 1a through 1f), except that golf course contaminant plans (part of Measure 1b) would not be required and the reference to the RV park in Mitigation 1c would be eliminated.

Flood Hazards

Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas of the site near its bay and channel frontages. Reuse of these areas would subject residents, workers, and other occupants of those areas to flood hazards in the event of the 100-year high tide, backed up stormwater runoff, or the unlikely combination of these events with a major tsunami. This alternative would have similar flood hazards as described for the Reuse Plan Alternative but with the addition of tsunami hazards to the proposed residential development in the Northwest Territories planning area. These flood hazards would be a significant and mitigable impact.

Mitigation 2: Mitigation measures for this impact would be the same as Mitigation 2 for the Reuse Plan Alternative.

Dredging and Marina Operations

Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon. Dredging and operation impacts of this alternative would be similar to those described for the Reuse Plan Alternative but with the additional dredging required for the development of the marina in the North Waterfront planning area resulting in potential water quality and dredge materials disposal impacts in that area.

Mitigation 3: Mitigation measures for this impact would be the same as identified for Mitigation 3 for the Reuse Plan Alternative, but extended to apply to the marina in the North Waterfront planning area.

Dredge Disposal

Impact 4: A significant and mitigable impact would result from disposal of contaminated dredged sediments that could contaminate receiving waters. Dredge disposal impacts would be the same as those described for the Reuse Plan Alternative.

Mitigation 4: Mitigation measures for this impact would be the same as Mitigation 4 for the Reuse Plan Alternative.

Nonsignificant Impacts

Ground Water. Impacts to ground water would be the same as under the Reuse Plan Alternative. No mitigation would be required.

Stormwater Drainage. Impacts to stormwater drainage would be similar to those described for the Reuse Plan Alternative. In addition, development within the Northwest Territories planning area would create approximately 163 acres (66 ha) of additional impermeable surface and would increase the amount of surface runoff. Under this alternative, the improvements to the stormwater collection system would be designed to accommodate this increased runoff, there would be no additional ponding problems, thus the increase would result in a nonsignificant impact. No mitigation would be required.

4.9.4 Reduced Density Alternative

This alternative is similar to the Reuse Plan Alternative but with reduced areas for mixed-uses so as to house a relocated RV park, and 52 acres (21 ha) of research and development uses in the Civic Core planning area.

Significant Impacts

Surface Water Quality

Impact 1: A significant and mitigable impact could result from site preparation, surface grading and new construction. These activities could disturb soil and increase erosion/sedimentation into the Oakland Inner Harbor, NAS Alameda Inner Harbor, Seaplane Lagoon, and San Francisco Bay. Surface water quality impacts of this alternative would be similar to those of the Reuse Plan Alternative. However, with the reduced residential densities there would be less potential for the generation of oil, grease, and heavy metals but increased potential for herbicide, pesticide, and fertilizer pollutants, due to more landscaped space and larger yards.

Mitigation 1: Mitigation measures for this impact would be the same as Mitigation 1 for the Reuse Plan Alternative.

Flood Hazards

Impact 2: A significant and mitigable impact would result from developing and reusing low-lying areas of the site near its bay and channel frontages. Reuse of these areas would subject residents, workers, and other occupants of those areas to flood hazards in the event of the 100-year high tide, backed up stormwater runoff, or the unlikely combination of these events with a major tsunami. Under this alternative, flood hazards would be similar to those described for the Reuse Plan Alternative.

Mitigation 2: Mitigation measures for this impact would be the same as Mitigation 2 for the Reuse Plan Alternative.

Dredging and Marina Operations

Impact 3: A significant and mitigable impact would result from dispersal of contaminants due to dredging the Seaplane Lagoon. Dredging and operation impacts would be the same as those described for the Reuse Plan Alternative.

Mitigation 3: Mitigation measures for this impact would be the same as Mitigation 3 for the Reuse Plan Alternative.

Dredge Disposal

Impact 4: A significant and mitigable impact would result from disposal of contaminated dredged sediments that could contaminate receiving waters. Dredge disposal impacts would be the same as those described for the Reuse Plan Alternative.

Mitigation 4: Mitigation measures for this impact would be the same as Mitigation 4 for the Reuse Plan Alternative.

Nonsignificant Impacts

Ground Water. Impacts to ground water would be the same as under the Reuse Plan Alternative. No mitigation would be required.

Stormwater Drainage. Impacts to ground water would be the same as under the Reuse Plan Alternative. No mitigation would be required.

4.9.5 No Project Alternative

Maintaining NAS Alameda/FISC Alameda in caretaker status would result in few impacts to water resources since there would be minimal use of the site. No new construction would occur and no demolition is anticipated. Dredging the existing Navy berths would no longer be needed, and no new dredging would occur.

Nonsignificant Impacts

Stormwater Drainage. This alternative would not increase runoff from the site. Existing localized ponding would continue to occur during heavy rains; however, because there would be minimal use of the site, this would not result in any significant impact. No mitigation would be required.

Surface Water Quality. This alternative would beneficially affect surface water quality. Surface water quality would be improved, compared to operational conditions by eliminating potential erosion from development and urban contaminants from vehicles and landscaping that otherwise would be deposited on the roadways, parking lots, and open spaces and then would be washed into the Oakland Inner Harbor. No mitigation would be required.

Flood Hazards. Structures and roadways in low-lying portions of the site would continue to be subject to flooding. The proposed Main Street improvements would be completed, reducing or eliminating that flood problem. Under the No Project Alternative, few occupants or uses would be subject to flood hazards. Therefore, the flood hazards would not be considered a significant impact and no mitigation would be required.

Dredging and Dredge Disposal. Under the No Project Alternative, the Navy would no longer perform berthfront maintenance dredging. The berths that currently are dredged would gradually fill with sediment. As a result of discontinuing berthfront dredging, no additional dredge material would be disposed of in regional disposal areas. No mitigation would be required.

Ground Water. Implementing the No Project Alternative would not alter ground water quantity underlying the site. Any ongoing ground water cleanup operations would continue and thereby improve ground water quality. No mitigation would be required.

4.10 TRAFFIC AND CIRCULATION

This section describes impacts to traffic and circulation that could occur under the reuse actions and the No Project Alternative. The section also identifies specific mitigation measures for eliminating or reducing those impacts. Potential significant traffic impacts resulting from implementing the alternatives are evaluated assuming build-out of the reuse alternatives. The 2020 buildout traffic volumes have been applied to a 2010 roadway network to be consistent with regional planning analysis and to allow full integration of this analysis with regional analysis. The Alameda County Congestion Management Agency (CMA) travel demand model was used to forecast regional traffic and the TRAFFIX software program was used to forecast local intersection traffic. The 2020 buildout traffic impacts are compared to projected 2020 traffic conditions without buildout of the reuse alternatives. The future baseline was developed by applying a per year growth factor to the 1990 "existing without project" traffic volume database, as described in Section 3.10.

Region of Influence

The ROI includes regional freeways near Alameda from I-80 near Berkeley, along I-880 to just south of 98th Avenue in San Leandro, and I-980 between I-880 and I-580. Access routes in Oakland and Alameda near the base, and the road network on NAS Alameda/FISC Alameda also is in the ROI. Additionally, roadway segments on the CMA and Metropolitan Transportation Commission (MTC) circulation systems including portions on I-80, I-880, I-980, and I-580 and 12 arterial segments along State routes and roadways in Alameda are in the ROI.

The transit service ROI includes AC Transit routes directly serving NAS Alameda/FISC Alameda or passing near the property along Atlantic Avenue, Webster Street and other local streets which access the site. Ferry services to the existing terminal near Main Gate Road on the Alameda Estuary; and BART service in Oakland including access and transit services from the 12th and 19th Street and West Oakland BART Transfer Center also are in the ROI.

Significance Criteria

Potential traffic impacts to intersections, roadways, and freeways were evaluated for their impacts based on the following significance criteria.

- *Intersections operating at acceptable levels of service (LOS).* The cities of Alameda and Oakland have identified LOS D as the minimum acceptable operating condition for intersections. Therefore, an

alternative would have a significant impact on traffic if the project plus background traffic would reduce the level of service below LOS D.

- *Intersections operating at LOS E or LOS F:* If an intersection currently operates at LOS E or LOS F, any increase in volume at this intersection would be considered a significant impact.
- *CMA network roadways and freeways operating at acceptable levels of service:* The CMA has established LOS E as the standard for all roadways and freeways on its designated network. Therefore, traffic generated by an alternative would have a significant impact on traffic if it resulted in a CMA roadway or freeway segment operating at LOS F.
- *Freeway segments on CMA network operating at LOS F:* Freeway segments part of the CMA defined regional network operating at LOS F without reuse, would be adversely affected by any increase in traffic. For this analysis, an increase in the volume/capacity ratio of 0.03 at an existing LOS F condition would constitute a significant impact, since this increase would be perceived by the public. A less than 0.03 increase in the volume/capacity ratio would not be perceived by the public.
- *On-site accident potential.* If traffic using the on-site traffic and circulation system would create safety hazards for pedestrians, bicycles and automobiles, it would be considered a significant impact.

The CMA LOS E standard does not apply to CMA network freeway segments operating at LOS F in 1991 (Alameda County Congestion Management Agency 1995). The following LOS F segments are therefore excluded from conformance with CMA's LOS standards:

- I-80 westbound from University to the I-80/I-580 split;
- I-80 eastbound and westbound west of the I-80/I-580 split;
- I-580 southbound from I-80/580 to I-980/State Highway 24;
- I-980 northbound from I-880 to I-580;
- I-880 southbound from Hegenberger Road to Washington Street; and
- SR 260 southbound from 7th Street/Webster Street to Atlantic Avenue.

Table 4-17 summarizes projected impacts and their significance.

Table 4-17
Summary of Traffic and Circulation Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Peak Hour Traffic Impacts - Level of Service at Local Intersections					
Atlantic Avenue at Main Street	◐	◑	◑	◑	◐
Atlantic Avenue at West Campus Drive	◐	◑	◐	◐	◐
Atlantic Avenue at Webster Street	◐	◑	◑	◑	◑
Atlantic Avenue at Constitution Way	◐	◐	◐	◐	◐
Central Avenue at Webster Street	◐	◑	◑	◑	◑
Tinker Avenue at Webster Street	◐	◑	◑	◑	◑
Harrison Street at 7th Street	◐	◑	◑	◑	◑
Webster Street at 8th Street	◐	◑	◐	◐	◐
Broadway at 5th Street	◐	◑	◑	◑	◑
Peak Hour Traffic Impacts – Level of Service on Regional Access Circulation System					
I-80, I-580 to north of Berkeley	◐	◑	◑	◐	◐
I-80, I-80/I-580 to Toll Plaza	◐	◐	◐	◐	◐
I-880, I-980 to south of 98th Avenue	◐	◑	◑	◑	◑
SR 61, Oakland City Limit to Otis Drive	◐	◑	◑	◑	◑
Atlantic Avenue, Main to Webster Streets	◐	◑	◑	◑	◑
Park Street, Oakland City Limit to SR 61	◐	◑	◑	◑	◑
Santa Clara Avenue	◐	◐	◐	◐	◐
High Street, I-880 to SR 61	◐	◑	◑	◑	◑
SR 260 (Webster/Posey Tubes)	◐	◑	◑	◑	◐
Other Traffic Impacts					
Increased On-Site Traffic Volumes	○	◑	◑	◑	◑
Increased On-Site Parking Demand	○	◑	◑	◑	◑
Increased Potential for Accidents	○	◑	◑	◑	◑
Transit Service	○	◐	◐	◐	◐
On-Street Parking	○	◐	◐	◐	◐

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◐ = Nonsignificant
○ = None

Methodology and Assumptions

Intersection and Roadway Traffic Operating Conditions. Typical day traffic conditions were evaluated for periods when on-street traffic volumes were expected to be the highest, e.g. during the morning and evening commute periods—6:00 to 9:00 AM and 3:00 to 6:00 PM. NAS Alameda and FISC Alameda historically generated earlier peak traffic flows than normal commute periods because of staggered Navy work hours. Additionally, about 30 percent of the commute trips to and from the Navy facilities were pedestrian trips. The proposed reuse alternatives would be expected to have less staggered working hours, thereby generating peak vehicle trips during the 6:00 to 9:00 AM and 3:00 to 6:00 PM peak commute hours.

The traffic operating conditions at intersections and on freeways were compared to peak hour level of service criteria to identify potentially significant impacts. The projected traffic volumes on the regional system were reported and compared to available hourly volume capacities to establish project alternative impacts and levels of service. Other traffic and circulation elements were evaluated, including transit service, impacts on neighborhoods adjacent to the site, and consistency with applicable transportation plans and regulations.

Traffic Volume Databases. An "existing without project" traffic volume database was developed by eliminating the 1990 traffic generated by NAS Alameda/FISC Alameda. The specific steps used to create this database are described in Appendix F. A growth factor of 0.5 percent per year was applied to the 1990 traffic database to create the "future without project" condition. The background growth rate of 0.5 percent per year was assumed to include all potential development.

Transportation Modeling

The regional transportation system was evaluated using the CMA travel demand model, which produces travel demand forecasts that incorporate influences of regional travel demand on transportation facilities in Alameda County. Appropriate data was input to the CMA model to develop traffic forecasts for each reuse alternative. For the "future with project" scenarios, 2020 projected traffic volumes were applied to a 2010 transportation network using the CMA travel demand model. Transportation conditions were analyzed assuming completion of the I-880 Cypress Freeway project between I-980 and I-80, which has occurred since the analysis was conducted. "Future without" NAS Alameda/FISC Alameda was used as the basis for the comparison between alternatives. See Appendix F, Traffic and Circulation, for complete CMA modeling results.

The local intersections within the cities of Alameda and Oakland were evaluated using the TRAFFIX software program. Two background traffic scenarios are included in the analysis—existing without NAS Alameda/FISC Alameda and future without NAS Alameda/FISC Alameda. The term "without-NAS Alameda/FISC" assumes no activity on the site in the background data and no changes in the existing roadway network. To address the future with project condition, the traffic generated by each project alternative was added to the year 2010 background condition.

Level of Service Methodology

Analysis of intersection capacity and freeway capacity was performed using the methodologies contained in the 1994 Highway Capacity Manual. LOS for each alternative are shown in the impacts sections for each alternative.

Trip Generation

Although this analysis does not define any significance criteria based on average daily traffic (ADT), comparative ADT information is presented to identify differences in ADT volumes between the alternatives and former Navy operations. Trip generation rates were developed based on standards published by the Institute of Transportation Engineers and the San Diego Association of Governments. The trip generation rates used for this analysis are based on actual surveys and therefore include a certain amount of trip reduction due to transit, pedestrian, and bicycle travel. Table 4-18 shows the AM and PM peak-hour and ADT generated for each of the alternatives. The number of trips shown in Table 4-18 does not include any reduction for internal traffic. The traffic model applies a reduction for internal trips before assigning traffic to the surrounding street system.

Generally, non-automobile trips represent about 5 percent of the daily traffic generated by a project. Depending upon the access to transit service, bicycle use, and the proximity to local residential areas (walking distance), the peak hour reductions in trip generation can be higher than the daily average. Implementing the Transportation System Management (TSM) and/or trip reduction programs would reduce these rates further. For this analysis, the standard trip generation rates were not reduced to compensate for the development of a TSM program.

The various reuse alternatives would generate higher ADT volumes than traffic volumes generated when NAS Alameda/FISC Alameda was operational. ADT estimated for the former facilities at NAS Alameda was about 29,000 trips, while traffic generated by the reuse alternatives would range from approximately 51,624 daily trips for the Reduced Density alternative to approximately 90,530 trips for the Reuse Plan alternative. The No Project Alternative assumes only caretaker activities on the site and would generate about 652 daily trips.

Table 4-18
Total Trip Generation – Average Daily Traffic

Traffic Generator	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	No Project Alternative
AM Peak Hour					
Inbound	7,458	4,786	3,919	3,874	163
Outbound	2,842	2,580	3,469	1,759	0
Total	10,300	7,366	7,388	5,633	163
PM Peak Hour					
Inbound	3,150	3,079	4,201	2,142	0
Outbound	7,806	5,061	4,648	3,975	163
Total	10,956	8,140	8,849	6,117	163
Average Daily Traffic (ADT)					
Inbound	45,265	36,533	41,469	25,812	326
Outbound	45,265	36,533	41,469	25,812	326
Total	90,530	73,066	82,938	51,624	652

Source: Institute of Transportation Engineers 1991; San Diego Association of Governments 1990

Trip Distribution

Figure 4-3 illustrates the trip distribution patterns used to assign project traffic to the surrounding street system. Of the total peak hour trip generation, 14 percent of the AM and 23 percent of the PM trips were assigned to NAS Alameda. These trips were assumed to travel between activities within the base and not use any of the off-base external streets. A comparison of the trip distribution values for each alternative was made using the CMA model outputs. In general, the distribution patterns did not change between alternatives. Therefore, the trip distribution values shown in Figure 4-3 were used for all of the alternatives.

4.10.1 Reuse Plan Alternative

The Reuse Plan Alternative would generate about 10,300 AM and 10,956 PM peak-hour trips. The Reuse Plan Alternative would generate the highest level of peak-hour and daily traffic of any of the alternatives. Summaries of the LOS analysis and potentially significant intersection impacts are shown in Table 4-19. Freeway and local arterial street impacts produced from CMA model results are shown in Table 4-20. Detailed peak hour volume and level of service details are included in Appendix F. The analysis includes completion of the Mitchell Mosley Extension and

extension of Tinker Avenue with a connection at Webster Street and Constitution Way.

Significant Impacts

Peak-Hour Traffic Impacts – LOS at Local Intersections

Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at eight local intersections (Table 4-19). The LOS at these intersections would be LOS E and lower:

City of Alameda Intersections

- Atlantic Avenue at Main Street;
- Atlantic Avenue at West Campus;
- Atlantic Avenue at Webster Street;
- Central Avenue at Webster Street;
- Tinker Avenue at Webster Street;

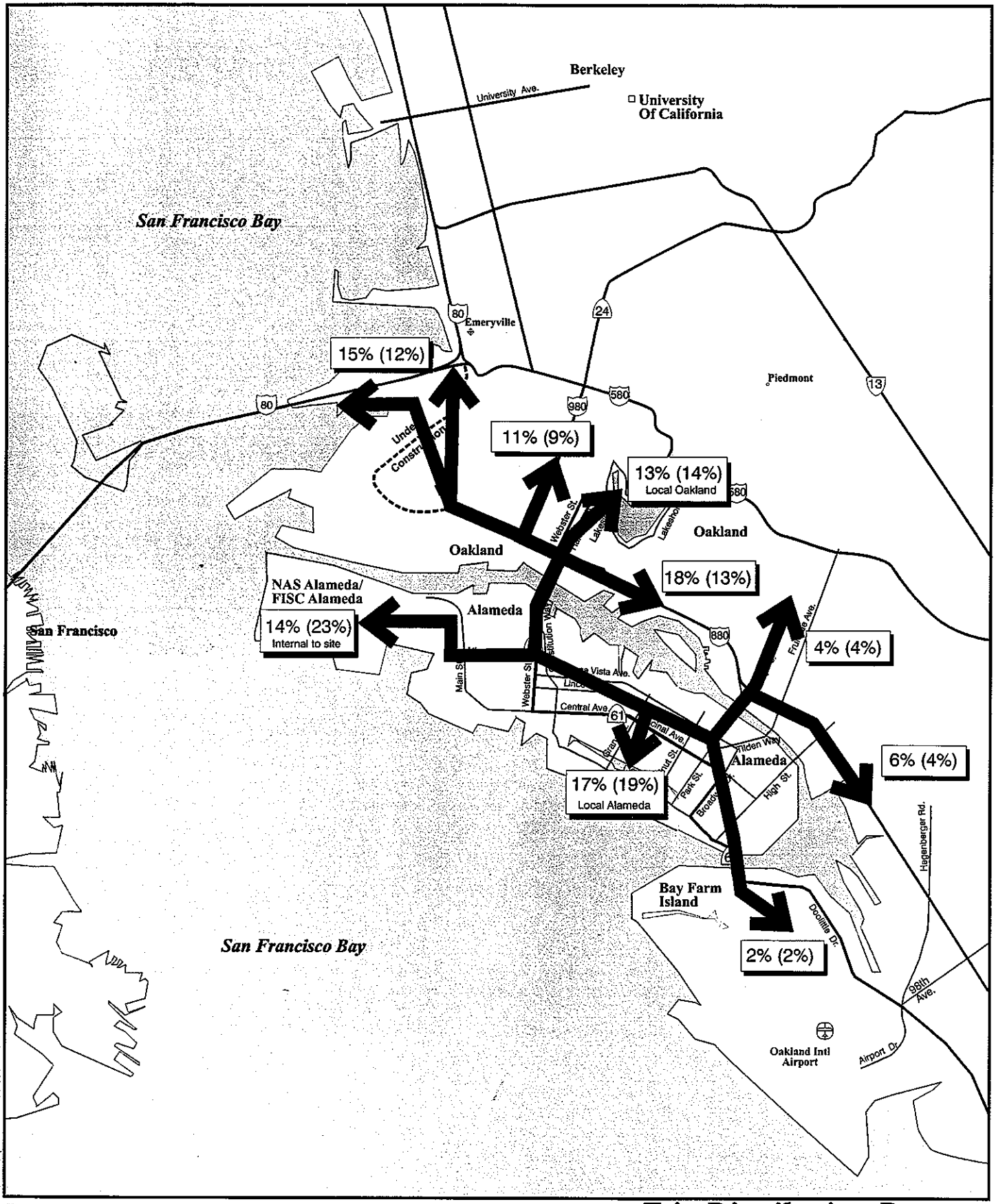
City of Oakland Intersections

- Harrison Street at 7th Street;
- Webster Street at 8th Street;
- Broadway at 5th Street.

Mitigation measures at these intersections are shown in Figure 4-4.

Mitigation 1a: Atlantic Avenue at Main Street: Reconstruct the existing free right-turn lane on the westbound approach of Atlantic Avenue to ensure smooth traffic flows and merging for entering and exiting vehicle movements. This modification would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1b: Atlantic Avenue at West Campus: Construct a free right turn lane on the westbound approach to Atlantic Avenue and provide two westbound through lanes. This modification would mitigate the traffic impact at this intersection to a nonsignificant level.



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The Region of Influence for traffic and circulation includes Berkeley to the north and San Leandro to the south.

N

Not to Scale

xx = AM trip distribution percentage
(xx) = PM trip distribution percentage

Source: Tetra Tech and Dowling Associates 1997

Trip Distribution Patterns from NAS Alameda/FISC Alameda

NAS Alameda/FISC Alameda
Alameda, California

Figure 4-3

Table 4-19
Reuse Plan Alternative Intersection LOS Summary

Analysis Intersection	Future Without Reuse Plan Alternative				Future With Reuse Plan Alternative			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]
City of Alameda								
Atlantic Avenue/Main Street	C	15.3	C	15.1	F	(Exc.)[2]	D	35.1
Atlantic Avenue/West Campus	A	2.9	A	3.1	E	49.7	B	10.9
Atlantic Avenue/Webster Street	B	9.4	C	15.5	F	(Exc.)[2]	F	(Exc.)[2]
Atlantic Avenue /Constitution Way	B	13.6	C	17.3	C	22.2	C	23.5
Pacific Avenue/Main Street	N/A	N/A	A	2.6	B	12.9	B	6.1
Lincoln Avenue/Webster Street	B	6.6	B	11.4	B	10.2	C	19.2
Lincoln Avenue/8th Avenue	C	17.4	C	16.3	C	17.1	C	19.2
Central Avenue/Webster Street	B	12.8	C	16.5	F	(Exc.)[2]	D	27.3
Central Avenue/8th Avenue	C	16.6	D	34.4	C	16.8	D	27.3
Constitution Way/Marina Village Pkwy.	C	21.2	B	13.8	C	22.9	B	13.7
Tinker Avenue at Webster Street	A	0.8	B	13.8	F	(Exc.)[2]	F	(Exc.)[2]
City of Oakland								
Oak Street/5th I-80 on-ramp	B	10.1	C	16.9	B	9.0	D	27.4
Oak Street/6th I-80 off-ramp	B	10.1	B	11.6	B	8.4	B	11.0
Jackson Street/7th Street	B	9.3	B	12.6	C	21.2	C	19.9
Jackson Street/6th Street	B	8.9	B	14.9	B	7.5	C	24.7
Jackson Street/5th Street	B	11.4	B	13.4	B	17.9	B	14.2
Harrison Street/8th Street	A	3.4	B	9.7	B	14.3	B	12.4
Harrison Street/7th Street	B	9.3	B	13.3	F	(Exc.)[2]	F	(Exc.)[2]
Webster Street/8th Street	B	11.6	B	11.4	E	47.1	B	12.7
Webster Street/7th Street	B	11.4	B	13.1	D	37.3	B	14.6
Broadway/5th Street	C	15.2	C	21.8	F	(Exc.)[2]	F	(Exc.)[2]
Brush Street/12th Street	A	3.2	B	10.6	A	3.1	B	10.5
Brush Street/11th Street	A	4.4	B	7.9	B	6.2	B	7.8
Brush Street/5th Street	B	11.0	B	11.9	C	17.2	B	11.6

[1] Delay in seconds.
[2] Indicates significant and mitigable impact.
(Exc.) = excessive delay, volume to capacity ratio exceeds 1.2 , therefore, the delay values are not meaningful.

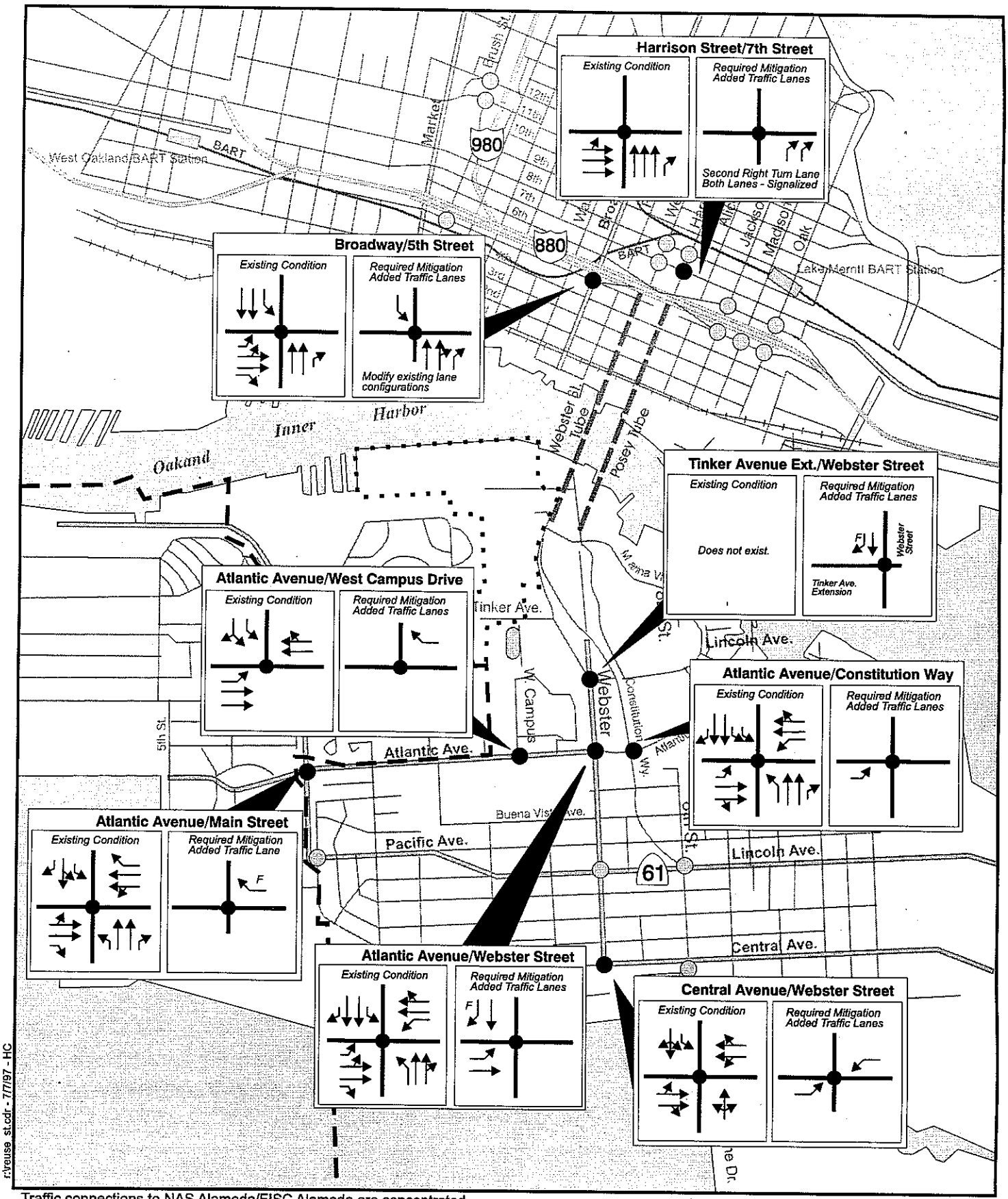
Source: Developed by Dowling Associates

Table 4-20
Reuse Plan Alternative Freeway and Arterial Street LOS Summary

Roadway Segment	Future Without Reuse Plan Alternative		Future With Reuse Plan Alternative	
	Am Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)	AM Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)
Freeway Segments				
I-80, I-580 to north of Berkeley	F (1.26)	F (1.13)	F (1.24)	F (1.16)
I-80, I-80/I-580 to Toll Plaza	F (1.11)	F (1.91)	F (1.10)	F (1.88)
I-880, I-980 to south of 98th Avenue	F (1.02)	F (1.03)	E (0.94)	F (1.02)
I-880, I-980 to I-80/I-580	C (0.74)	C (0.74)	C (0.69)	C (0.73)
I-980, I-880 to I-580	C (0.63)	C (0.70)	C (0.65)	C (0.75)
I-580, I-80 to I-980/Hwy 24	F (1.25)	F (1.35)	F (1.25)	F (1.34)
State Route Segments				
SR 61, Doolittle Drive Oakland City Limits to Otis Drive	F (1.56)	F (1.74)	F (1.54)	F (1.75)
SR 61, Otis Drive Doolittle Drive to Broadway	A (0.58)	B (0.65)	C (0.73)	C (0.71)
SR 61, Broadway Otis Drive to Encinal Avenue	A (0.12)	A (0.15)	A (0.11)	A (0.14)
SR 61, Encinal Avenue Broadway to Central Avenue	A (0.19)	A (0.26)	A (0.25)	A (0.37)
SR 61, Central Avenue Encinal Avenue to Webster Street	A (0.07)	A (0.10)	A (0.13)	A (0.18)
SR 260, Webster Street Central Avenue to 7th Street (Webster/Posey Tubes)	C (0.74)	D (0.84)	F (1.02)	F (1.17)
Local Arterial Segments				
Atlantic Avenue, Main to Webster	A (0.01)	A (0.32)	F (1.04)	F (1.38)
Park Street, Oakland Limits to SR 61	E (0.96)	F (1.28)	F (1.03)	F (1.37)
Santa Clara Avenue	A (0.60)	A (0.53)	D (0.89)	D (0.83)
Broadway, Santa Clara to Encinal	A (0.07)	A (0.26)	A (0.09)	A (0.16)
Park Avenue, SR 61 to Otis Drive	A (0.51)	A (0.59)	A (0.46)	A (0.59)
High Street, I-880 to SR 61	D (0.88)	F (1.04)	E (0.99)	F (1.23)

V/C = volume to capacity ratio.

Source: Developed by Dowling Associates



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Traffic connections to NAS Alameda/FISC Alameda are concentrated on several major arterials in Alameda and the City of Oakland.

N

0 1/2 1
Approximate Scale in Miles

Source: Tetra Tech and Dowling Associates 1997

Legend:

- Study Intersection
- Mitigated Intersection
- F · Free Right Turn Lane
- NAS Alameda
- FISC Alameda

Reuse Plan Alternative Mitigation Measures

NAS Alameda/FISC Alameda
Alameda, California

Figure 4-4

Mitigation 1c: Atlantic Avenue at Webster Street: Provide a second left-turn lane on the eastbound Atlantic Avenue and a free right-turn lane on the southbound approach of Webster Street. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1d: Central Avenue at Webster Street: Provide a left turn lane on both approaches of Central Avenue and Webster Street to maintain adequate peak-hour levels of service. Central Avenue is currently a four-lane street without any left-turn storage lanes at the Webster Street intersection. To accommodate this mitigation measure, parking adjacent to the left turn lanes must be eliminated. Providing the left turn lane would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1e: Tinker Avenue at Webster Street: Provide a separate free right turn lane to the southbound approach of Webster Street. As part of the Reuse Plan Alternative, Tinker Avenue on base would be extended and routed through the College of Alameda to connect with both Webster Street and Constitution Way at the existing "T" intersection of Constitution Way and Mariner Village Parkway. The preliminary configuration provided a left, through, and through-right turn lane on Webster Street southbound at Tinker Avenue. Providing the separate right turn lane would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1f: Harrison Street at 7th Street and Broadway at 5th Street: The cities of Oakland and Alameda, as part of the proposed Oakland Estuary Plan, have jointly developed a plan to mitigate unacceptable traffic conditions at Harrison Street at 7th Street. The mitigation program is called the "I-880 Corridor – Broadway/Jackson Interchange." The plan also provides mitigation at Broadway and 5th Street. The components of the plan are discussed in Section 3.10. Implementing this plan would mitigate the traffic impacts at both intersections to a nonsignificant level.

Mitigation 1g: Webster Street at 8th Street: Convert one of the westbound through lanes to a left turn lane. This modification would mitigate the traffic impact at this intersection to a nonsignificant level.

Peak-Hour Traffic Impacts – LOS on Regional Access Circulation System

Impact 2: Significant and mitigable impacts would result from traffic generated by the Reuse Plan Alternative being added to some nearby freeway segments and some of the local arterial streets serving the site. Project traffic would result in significant and mitigable impacts on 6 of the 18 segments evaluated in the EIR. These segments include:

- I-80, I-580 to north of Berkeley;
- I-880, I-980 to south of 98th Avenue;
- SR 61, Doolittle Drive (Oakland City Limits to Otis Drive);
- Atlantic Avenue, Main to Webster;
- Park Street, Oakland City Limits to SR 61; and
- High Street, I-880 to SR 61.

Mitigation 2a: To reduce peak hour traffic along freeway and local arterial roadways to levels below those forecast in this analysis (which assumed no reduction in trip generation rates to account for TSM programs), the project shall implement a comprehensive set of TSM programs. The existing City of Alameda ordinance for trip reduction programs is discussed in Section 3.10. The project TSM program should include the following components:

- Create a position of City Transportation System Manager. The manager would coordinate, monitor and implement the site's ride sharing programs, preferential parking plans, car and van pooling programs, bicycle and pedestrian programs, and the promotion and marketing activities;
- Develop parking management strategies for the site. Most parking management plans are directed at the employment end of the trip. Elements such as carpools and vanpools, preferential parking and transit incentives should be used to reduce parking demand. The Transportation System Manager would need to work with all employer groups to develop the parking management strategies. To the degree that on-site home-to-work opportunities may exist, internal shuttle systems could be provided which would reduce parking on-site;
- Work with BART to expand parking opportunities at BART stations;
- Implement a shuttle bus system that inter-connects on-site developments and the internal transit centers. Implement shuttle services and/or contribute to the expansion of AC transit service to provide linkages between the site and off-site ferry and BART terminals;
- Require implementing one or more peak hour trip reduction and/or trip elimination programs. These components would include: compressed work weeks, telecommuting, staggered hours, flex-time and other trip reduction activities; and
- As a condition of approval, the City of Alameda would require contributions to fund the various trip reduction programs developed

by the Transportation System Manager. Contributions would be based on numbers of employees.

Based on MTC and other resources within the San Francisco Bay Area, a 10 percent reduction in peak hour traffic appears to be a reasonable goal for the TSM program.

Mitigation 2b: The Transportation System Manager for the site should participate in all of the areawide or regional transportation planning studies that relate to the access routes leading to the site. To the degree possible, the TSM program for the site should be augmented to incorporate the portions of these regional and local studies that would enhance the site's TSM program and reduce regional traffic during the peak hours.

Peak-Hour Traffic on SR 260 (Webster/Posey Tubes)

Impact 3: A significant and mitigable impact would result from traffic generated by the Reuse Plan Alternative creating traffic congestion on SR 260 (Webster/Posey Tubes). Traffic through the tubes would increase by 1,928 trips during the AM peak hour and 2,566 trips during the PM peak hour. The level of service would deteriorate from LOS C to LOS F in the AM peak hour and from LOS D to LOS F in the PM peak hour. (The CMA has identified this segment as currently operating at LOS F. Oakland and Alameda have identified feasible mitigation that would improve this segment to LOS C, as discussed in Section 3.10.4.) The traffic analysis on which these estimated trip figures are based represents a worst case scenario for this alternative. It is anticipated that local and regional factors will combine to result in lower peak travel characteristics under actual conditions. For example, it is anticipated that the capacity of the tubes may be as high as 3,910 vehicles per hour based on traffic counts taken during the period that the Park Street bridge was closed. In addition, there has been no reduction taken for employer trip reduction (TSM) programs. The trip rates used in the analysis reflect measured modal splits for the region, but do not include any site-specific programs. If employers do provide funded site-specific TSM programs, it may be possible to reduce employee trips by up to 10 percent. Finally, MTC's survey of Bay Area travel behavior (MTC 1996) indicates that there has been a shift of employee commute trips to the shoulders of the peak period. Such a diurnal shift in commute patterns could further reduce peak hour trips below what they otherwise would be.

Although implementing the TSM programs described under Mitigation 2 would reduce this volume of traffic on SR 260, the reduction in traffic would not be enough to reduce the impact to a nonsignificant level.

Mitigation 3a: While construction of a new crossing between Alameda and Oakland as mitigation for regional traffic impacts on the Webster/Posey Tubes would mitigate this impact to a nonsignificant level, a new crossing is not considered feasible because it is not planned at this time and would require the approval of other agencies in addition to the City of Alameda, such as Caltrans, the City of Oakland, the Port of Oakland, BCDC, and the US Army Corps of Engineers. The City should work cooperatively with these agencies to obtain approval of and funding for a new crossing.

Mitigation 3b: The impact may be mitigated by limiting traffic generated by the Reuse Plan Alternative to levels such that traffic from the Reuse Plan Alternative, together with cumulative traffic growth, would not cause traffic in the Webster/Posey Tubes to exceed LOS E. The traffic generated by the Reuse Plan Alternative would be monitored by the City as follows, pursuant to procedures to be adopted in City plans and ordinances:

- Applications for projects involving significant new development or changes in use at NAS Alameda/FISC Alameda would be accompanied by a traffic study that indicates at a minimum, the number of additional peak hour trips that the proposed project would contribute to traffic through the tubes. The City would not approve the proposed development or change of use if it would cause the cumulative traffic produced by the project, in combination with past, current, and probable future development in the area, to exceed the then-current capacity of the Webster/Posey Tubes. The City would evaluate each proposed project, taking into account additional information that could alter assumptions about the amount of traffic that can be generated by the Reuse Plan Alternative without exceeding the capacity of the tubes (such as technological improvements that increase the capacity of the tubes, changes in origin/destination patterns, changes in mode of travel, changes in citywide development patterns, changes in land use patterns that reduce the number of trips through the tubes, and fundamental changes in commuting habits, perhaps encouraged by government sponsored live/work incentives) to determine if project approval is appropriate in light of the then-current constraints on the traffic capacity of the tubes.
- Every three years, or more frequently as the capacity of the tubes is close to being reached, the City would 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 at NAS Alameda/FISC Alameda without exceeding the capacity of the tubes.

Limiting traffic generated by development of the Reuse Plan Alternative, until such time as a new crossing is constructed, would mitigate this impact to a nonsignificant level.

This mitigation measure would require that the pattern and phasing of development under the Reuse Plan Alternative be monitored to ensure that the traffic generated by development of NAS Alameda/FISC Alameda does not exceed the capacity of the tubes. Various scenarios for development under the Reuse Plan would be feasible without exceeding the capacity of the tubes. By way of illustration, one possible development scenario that would not exceed the capacity of the tubes is presented in Table 4-21. This scenario would allow development of most areas of NAS Alameda/FISC Alameda consistent with the Reuse Plan Alternative except that, should the many conservative assumptions of the traffic analysis persist, development of certain parcels adjacent to and east of the Seaplane Lagoon, in the Civic Core, Marina and Inner Harbor planning areas, and parcels in the Northwest Territories planning area, would be delayed. The parcels adjacent to the Seaplane Lagoon which are planned for light industry, R&D, and open space would not be developed within the planning time frame, nor would the area planned for maritime light industry in the Northwest Territories planning area which would be used instead for enlargement of the golf course. This scenario is considered to be conservative as it does not take into account possible changes in trip generation rates caused by increasing carpooling, bicycling and walking which would reduce vehicle trips, changing commute patterns, increased ferry service to Alameda, improvements in the tubes that would increase their capacity, or other future developments that could change the traffic volumes predicted to travel through the tubes.

Increased On-Site Traffic Volumes

Impact 4: A significant and mitigable impact would result from increased traffic congestion on NAS Alameda/FISC Alameda. Implementing the Reuse Plan Alternative would substantially increase on-site traffic and require roadway/intersection improvements to accommodate the increased traffic.

Mitigation 4: Implementing the following traffic improvements would reduce the impact to a nonsignificant level: traffic circles at Central/Lincoln/Avenue M and Atlantic/Ninth; the extension of Mitchell and Mosley Avenues; extension of Tinker Avenue to Webster and Constitution Way; and upgrading of all local streets to meet City capacity and roadway design criteria. Although these improvements are contemplated in the NAS Alameda Street Improvement Plan, the designs could change to respond to specific development proposals.

Table 4-21
Traffic and Circulation Mitigation 3b: Illustrative Development Scenario

Land Use Categories	Units	Planning Area					
		Civic Core	Main Street Neighborhoods	Inner Harbor	North Waterfront	Marina	Northwest Territories
Total Acres	acres	334	265	120	88	125	272
Light Industry or Business Park	Square feet of Development[1]	1,219,000					
Marina-Related Industry	Square feet of Development[1]					55,000	
Mixed Core or Mixed Use or R&D or Office/Workspace	Square feet of Development[1]				1,300,000		
Civic/Institutional Buildings	Square feet of Development[1]	102,000					
Marina	slips (live-aboard)						
RV Park	RV spaces						
Schools	# schools		3	1			
School Facilities	Acres		21		8		
Parks	Acres		4	49			
Sports Complex	Acres	37					
Open Space	Acres	57				47	52
Single-family Residential (6 units per acre)	# dwelling units		903				
Attached Housing (12 units per acre)	# dwelling units				243		
Hotel/Conference Center	# rooms		70				
Commercial	sq. ft. of development[1]	66,000	66,000				
Visitor-Serving Recreation/Commercial	sq. ft. of development[1]					59,000	
Golf Clubhouse/ Conference Facilities	sq. ft. of development[1]						26,000
Links Golf Course	acres						220

Source: City of Alameda 1998

Increased On-Site Parking Demand

Impact 5: A significant and mitigable impact would result from projected parking demand exceeding existing supply. The Reuse Plan Alternative would create the need for approximately 14,500 parking spaces at NAS Alameda/FISC Alameda. This would represent an increase over the 11,543 existing spaces provided at NAS Alameda/FISC Alameda.

Mitigation 5: The City will require development projects to provide adequate off-street and curbside parking for proposed reuse development consistent with City ordinances and requirements. Adherence to City ordinances and requirements regarding parking would reduce this impact to a nonsignificant level.

Increased Potential for Accidents

Impact 6: A significant and mitigable impact to public safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes. The increase in on-site traffic would increase the potential for accidents at NAS Alameda/FISC Alameda from conflicts with motor vehicles, bicycles, and pedestrians.

Mitigation 6: Existing City ordinances and plans specify standards for all city roadways. These standards address bicycle, pedestrian, and vehicular safety and would be used to design the internal roadway system at NAS Alameda. Adherence to City ordinances and plans would provide adequate safety features in roadway design including bicycle lanes and paths and would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Transit Service. Implementing the Reuse Plan Alternative would result in a nonsignificant increase in demand for BART, bus, and ferry transit services. NAS Alameda is served by several existing AC Transit lines (see Figure 3-19), and the potential increase in demand could be met with the existing bus routes and frequencies and the existing shuttles between BART, the ferry terminal, and the site. While transit impacts would not be expected to be significant, operating subsidies for any expanded services to the site may be required.

Data from the 1990 US Census for City of Alameda workers and residents were used to allocate the 10 percent reduction in peak hour trips to the various transit modes of travel. The City of Alameda, being an island, has unique access conditions. Further, the City strongly encourages alternative transportation programs and the development of bicycle and other non-

automobile circulation facilities. The NAS Alameda Street Improvement Plan proposes that existing AC transit services be maintained. Transit improvements include a peak period shuttle between Oakland 12th Street BART and the ferry terminal at NAS Alameda and 5th Avenue and an amphibious transportation vehicle to reduce congestion at the Webster/Posey Tubes. Improvements and extensions of several AC Transit lines are also proposed. Therefore, while a 10 percent diversion from peak hour vehicle travel to transit was assumed in the following ridership projections, the actual increase in transit ridership could be somewhat greater.

The potential ridership for BART, bus, and ferry usage for the Reuse Plan Alternative assuming a 10 percent diversion rate would be as follows:

- BART = 331 peak hour person trips
- Bus = 744 peak hour person trips
- Ferry = 46 peak hour person trips

These levels of increased ridership could be accommodated by existing service levels and would not represent a significant impact. No mitigation would be required.

On-Street Parking. On-street parking spaces near Central Avenue and Webster Street would be lost as a result of roadway improvements at the Central Avenue/Webster Street intersection. Parking lost would be limited to spaces adjacent to the left-turn lanes. This impact would not be significant. No mitigation would be required.

4.10.2 Seaport Alternative

The Seaport Alternative would generate approximately 7,366 trips during the AM peak hour and about 8,140 trips during the PM peak hour. Summaries of the LOS analysis and potentially significant impacts are shown in Table 4-22 and Table 4-23.

Significant Impacts

Peak-Hour Traffic at Local Intersections

Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at six local intersections. The level of service at these intersections would be LOS E or lower:

Table 4-22
Seaport Alternative Intersection LOS Summary

Analysis Intersection	Future Without Seaport Alternative				Future With Seaport Alternative			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]
City of Alameda								
Atlantic Avenue/Main Street	C	15.3	C	15.1	F	(Exc.)[2]	C	22.9
Atlantic Avenue/West Campus	A	2.9	A	3.1	C	15.9	B	7.7
Atlantic Avenue/Webster Street	B	9.4	C	15.5	F	(Exc.)[2]	F	(Exc.)[2]
Atlantic Avenue /Constitution Way	B	13.6	C	17.3	C	19.8	C	23.3
Pacific Avenue/Main Street	N/A	N/A	A	2.6	B	7.9	B	7.7
Lincoln Avenue/Webster Street	B	6.6	B	11.4	B	9.2	C	15.2
Lincoln Avenue/8th Avenue	C	17.4	C	16.3	C	17.0	C	18.2
Central Avenue/Webster Street	B	12.8	C	16.5	F	95.3	C	19.0
Central Avenue/8th Avenue	C	16.6	D	34.4	C	16.8	D	27.8
Constitution Way/Marina Village Pkwy.	C	21.2	B	13.8	C	21.9	B	13.7
Tinker Avenue at Webster Street	A	0.8	B	13.8	F	(Exc.)[2]	F	(Exc.)[2]
City of Oakland								
Oak Street/5th I-80 on-ramp	B	10.1	C	16.9	B	9.1	C	20.9
Oak Street/6th I-80 off-ramp	B	10.1	B	11.6	B	8.3	B	11.0
Jackson Street/7th Street	B	9.3	B	12.6	B	14.7	C	16.7
Jackson Street/6th Street	B	8.9	B	14.9	B	6.6	C	24.5
Jackson Street/5th Street	B	11.4	B	13.4	B	10.5	B	14.3
Harrison Street/8th Street	A	3.4	B	9.7	B	12.8	B	12.3
Harrison Street/7th Street	B	9.3	B	13.3	F	(Exc.)[2]	F	(Exc.)[2]
Webster Street/8th Street	B	11.6	B	11.4	B	13.1	B	12.6
Webster Street/7th Street	B	11.4	B	13.1	B	13.3	B	14.6
Broadway/5th Street	C	15.2	C	21.8	E	55.4	F	(Exc.)[2]
Brush Street/12th Street	A	3.2	B	10.6	A	3.1	B	10.5
Brush Street/11th Street	A	4.4	B	7.9	B	5.9	B	7.8
Brush Street/5th Street	B	11.0	B	11.9	C	16.4	B	11.6

[1] Delay in seconds.
[2] Indicates significant and mitigable impact.
(Exc.) = excessive delay, volume to capacity ratio exceeds 1.2, therefore, the delay values are not meaningful.

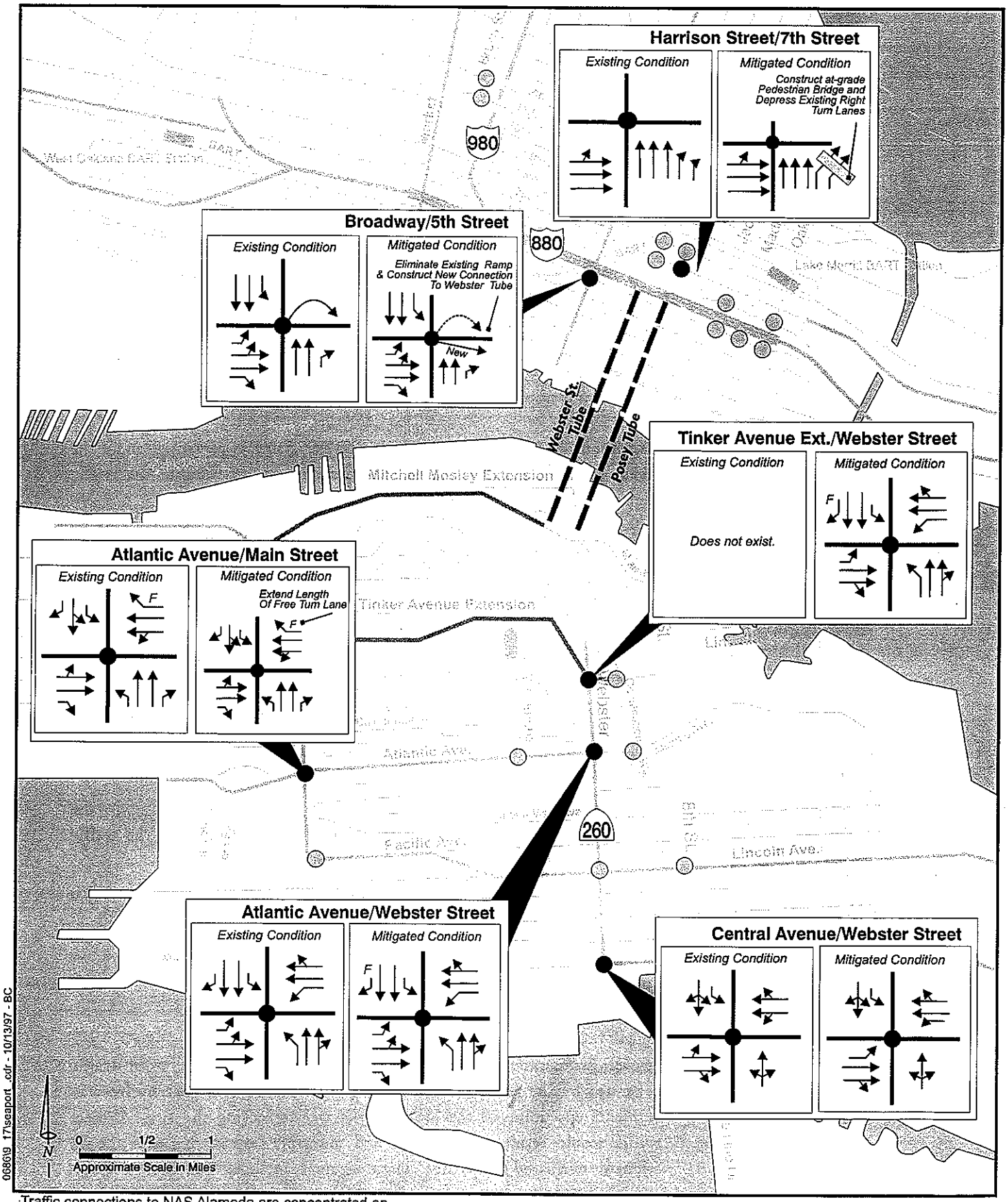
Source: Developed by Dowling Associates

Table 4-23
Seaport Alternative Freeway and Arterial Street LOS Summary

Roadway Segment	Future Without Seaport Alternative		Future With Seaport Alternative	
	Am Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)	AM Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)
Freeway Segments				
I-80, I-580 to north of Berkeley	F (1.26)	F (1.13)	F (1.21)	F (1.14)
I-80, I-80/I-580 to Toll Plaza	F (1.11)	F (1.91)	F (1.10)	F (1.89)
I-880, I-980 to south of 98th Avenue	F (1.02)	F (1.03)	F (1.05)	F (1.08)
I-880, I-980 to I-80/I-580	C (0.74)	C (0.74)	C (0.74)	C (0.73)
I-980, I-880 to I-580	C (0.63)	C (0.70)	C (0.63)	C (0.74)
I-580, I-80 to I-980/Hwy 24	F (1.25)	F (1.35)	F (1.23)	F (1.34)
State Route Segments				
SR 61, Doolittle Drive Oakland City Limits to Otis Drive	F (1.56)	F (1.74)	F (1.59)	F (1.79)
SR 61, Otis Drive Doolittle Drive to Broadway	A (0.58)	B (0.65)	B (0.62)	C (0.70)
SR 61, Broadway Otis Drive to Encinal Avenue	A (0.12)	A (0.15)	A (0.13)	A (0.14)
SR 61, Encinal Avenue Broadway to Central Avenue	A (0.19)	A (0.26)	A (0.22)	A (0.27)
SR 61, Central Avenue Encinal Avenue to Webster Street	A (0.07)	A (0.10)	A (0.09)	A (0.11)
SR 260, Webster Street Central Avenue to 7th Street (Includes Webster/Posey Tubes)	C (0.74)	D (0.84)	D (0.88)	F (1.04)
Local Arterial Segments				
Atlantic Avenue, Main to Webster	A (0.01)	A (0.32)	C (0.75)	F (1.18)
Park Street, Oakland Limits to SR 61	E (0.96)	F (1.28)	F (1.06)	F (1.32)
Santa Clara Avenue	A (0.60)	A (0.53)	B (0.69)	B (0.65)
Broadway, Santa Clara to Encinal	A (0.07)	A (0.26)	A (0.08)	A (0.08)
Park Avenue, SR 61 to Otis Drive	A (0.51)	A (0.59)	A (0.51)	A (0.57)
High Street, I-880 to SR 61	D (0.88)	F (1.04)	E (0.97)	F (1.16)

V/C = volume to capacity ratio

Source: Developed by Dowling Associates



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Traffic connections to NAS Alameda are concentrated on several major arterials in Alameda and the City of Oakland.

Legend:

- ○ Study Intersection
- ● Mitigated Intersection
- F Free Right Turn Lane

Seaport Alternative Mitigation Measures

NAS Alameda/FISC Alameda
Alameda, California

Source: Tetra Tech and Dowling Associates 1997

Figure 4-5

City of Alameda Intersections

- Atlantic Avenue at Main Street;
- Atlantic Avenue at Webster Street;
- Central Avenue at Webster Street; and
- Tinker Avenue at Webster Street.

City of Oakland Intersections

- Harrison Street at 7th Street; and
- Broadway at 5th Street.

Mitigation measures at these intersections are shown in Figure 4-5.

Mitigation 1a: Atlantic Avenue at Main Street: Same as presented under the Reuse Plan Alternative. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1b: Atlantic Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1c: Central Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. To accommodate this mitigation measure, parking adjacent to the left turn lanes must be eliminated. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1d: Tinker Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1e: Harrison at 7th Street and Broadway at 5th Street: Same as presented under the Reuse Plan Alternative. Therefore, the impact would be mitigated to a nonsignificant level.

Peak-Hour Traffic on Freeways and Local Arterial Streets

Impact 2: Significant and mitigable impacts would result from traffic generated by the Seaport Alternative being added to some nearby freeway segments and some of the local arterial streets serving the site. Project traffic would result in significant and mitigable impacts on 6 of the 18 segments evaluated in the EIR. These segments include:

- I-80, I-580 to north of Berkeley
- I-880, I-980 to south of 98th Avenue;

- SR 61, Doolittle Drive (Oakland City Limits to Otis Drive);
- Atlantic Avenue, Main to Webster;
- Park Street, Oakland City Limits to SR 61; and
- High Street, I-880 to SR 61.

Mitigation 2a: To reduce peak hour traffic along freeway and local arterial roadways, a comprehensive set of TSM programs should be implemented similar to the Reuse Plan Alternative. Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.

Mitigation 2b: The site tenants, through the TSM program, should participate in the corridor/areawide transportation planning process for impacted segments of the Metropolitan Transportation System. Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.

Peak-Hour Traffic on SR 260 (Webster/Posey Tubes)

Impact 3: A significant and mitigable impact would result from traffic generated by the Seaport Alternative creating traffic congestion on SR 260 (Webster/Posey Tubes), where traffic would increase by 2,020 trips during the PM peak hour. The level of service would deteriorate from LOS C to LOS D in the AM peak hour and from LOS D to LOS F in the PM peak hour. (The CMA has identified this segment as currently operating at LOS F. Oakland and Alameda have identified feasible mitigation that would improve this segment to LOS C, as discussed in Section 3.10.4.)

Although implementing the TSM programs described under Mitigation 2 would reduce the volume of traffic on SR 260, the reduction in traffic would not be enough to reduce the impact to a nonsignificant level.

Mitigation 3a: Construction of a new crossing between Alameda and the City of Oakland as mitigation for regional traffic impacts would mitigate this impact, and the Seaport Alternative includes a transportation link for cargo that may or may not include vehicle access. Because an actual alignment for this crossing has not been determined, it is difficult to determine how a new linkage might affect the analysis intersections. Therefore, this traffic analysis does not include the new linkage, and it is not identified as mitigation in this EIR. This impact would be significant and not mitigable.

It is assumed that the Alameda portal would be in the area of Marina Village and the Oakland portal in the vicinity of Madison and Jackson Streets. The size and location for a crossing would be the subject of a future planning study and site-specific environmental analysis.

Mitigation 3b: This impact may be mitigated to a nonsignificant level by limiting traffic generated by the Seaport Alternative as discussed under Mitigation 3b for the Reuse Plan Alternative.

Increased On-Site Traffic Volumes

Impact 4: A significant and mitigable impact would result from increased traffic congestion on NAS Alameda/FISC Alameda. The Seaport Alternative would generate less traffic than the Reuse Plan Alternative; however, it includes significant maritime activities in the Northwest Territories and additional roadway capacity would be needed to serve these uses.

Mitigation 4: Same as the Reuse Plan Alternative with expanded roadway improvements in the Northwest Territories. These improvements would include additional access roads suitable for transport trucks and maritime operations.

Increased On-Site Parking Demand

Impact 5: As under the Reuse Plan Alternative, a significant and mitigable impact would result under this alternative from projected parking demand exceeding existing supply.

Mitigation 5: Same as the Reuse Plan Alternative.

Increased Potential for Accidents

Impact 6: A significant and mitigable impact to safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes. The increase in on-site traffic would increase the potential for accidents at NAS Alameda/FISC Alameda from conflicts with motor vehicles, bicycles, and pedestrians.

Mitigation 6: Same as the Reuse Plan Alternative.

Nonsignificant Impacts

Transit Service. Increases in demand for BART, bus, and ferry transit services would result from this alternative, similar to the Reuse Plan Alternative. The potential ridership for BART, bus and ferry usage for the Seaport Alternative assuming a 10 percent diversion rate would be as follows:

- BART = 246 peak hour person trips
- Bus = 607 peak hour person trips
- Ferry = 34 peak hour person trips

These levels of increased ridership could be accommodated by existing service levels and would not represent a significant impact. No mitigation would be required.

On-Street Parking. On-street parking spaces near Central Avenue and Webster Street would be lost as a result of roadway improvements at the Central Avenue/Webster Street intersection. Parking lost would be limited to spaces adjacent to the left-turn lanes. This impact would not be significant. No mitigation would be required.

4.10.3 Residential Alternative

The Residential Alternative would generate approximately 7,388 trips during the AM peak hour and about 8,849 trips during the PM peak hour. Summaries of the LOS analysis and potentially significant impacts are shown in Table 4-24 and Table 4-25.

Significant Impacts

Peak-Hour Traffic at Local Intersections

Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at six local intersections. The level of service at these intersections would be LOS E or lower:

City of Alameda Intersections

- Atlantic Avenue at Main Street;
- Atlantic Avenue at Webster Street;
- Central Avenue at Webster Street;
- Tinker Avenue at Webster Street;

City of Oakland Intersections

- Harrison Street at 7th Street;
- Broadway at 5th Street

Mitigation measures at these intersections are shown in Figure 4-6.

Table 4-24
Residential Alternative Intersection LOS Summary

Analysis Intersection	Future Without Residential Alternative				Future With Residential Alternative			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]
City of Alameda								
Atlantic Avenue/Main Street	C	15.3	C	15.1	F	(Exc.)[2]	F	(Exc.)[2]
Atlantic Avenue/West Campus	A	2.9	A	3.1	B	9.5	B	6.6
Atlantic Avenue/Webster Street	B	9.4	C	15.5	F	(Exc.)[2]	F	(Exc.)[2]
Atlantic Avenue /Constitution Way	B	13.6	C	17.3	C	19.3	C	23.8
Pacific Avenue/Main Street	N/A	N/A	A	2.6	B	7.2	B	9.2
Lincoln Avenue/Webster Street	B	6.6	B	11.4	B	8.8	B	14.7
Lincoln Avenue/8th Avenue	C	17.4	C	16.3	C	17.2	C	18.3
Central Avenue/Webster Street	B	12.8	C	16.5	E	56.1	C	18.7
Central Avenue/8th Avenue	C	16.6	D	34.4	C	17.1	D	27.2
Constitution Way/Marina Village Pkwy.	C	21.2	B	13.8	C	23.3	B	13.7
Tinker Avenue at Webster Street	A	0.8	B	13.8	F	(Exc.)[2]	F	(Exc.)[2]
City of Oakland								
Oak Street/5th I-80 on-ramp	B	10.1	C	16.9	B	8.9	C	20.3
Oak Street/6th I-80 off-ramp	B	10.1	B	11.6	B	8.5	B	10.8
Jackson Street/7th Street	B	9.3	B	12.6	B	1.3	C	18.9
Jackson Street/6th Street	B	8.9	B	14.9	B	6.7	D	33.5
Jackson Street/5th Street	B	11.4	B	13.4	B	10.4	B	14.2
Harrison Street/8th Street	A	3.4	B	9.7	B	12.1	B	13.2
Harrison Street/7th Street	B	9.3	B	13.3	F	(Exc.)[2]	F	(Exc.)[2]
Webster Street/8th Street	B	11.6	B	11.4	B	12.5	B	12.8
Webster Street/7th Street	B	11.4	B	13.1	B	12.8	C	16.7
Broadway/5th Street	C	15.2	C	21.8	D	3.8	F	(Exc.)[2]
Brush Street/12th Street	A	3.2	B	10.6	A	3.1	B	10.4
Brush Street/11th Street	A	4.4	B	7.9	B	5.3	B	7.7
Brush Street/5th Street	B	11.0	B	11.9	B	14.8	B	11.6

[1] Delay in seconds.
[2] Indicates significant and mitigable impact.
(Exc.) = excessive delay, volume to capacity ratio exceeds 1.2, therefore, the delay values are not meaningful.

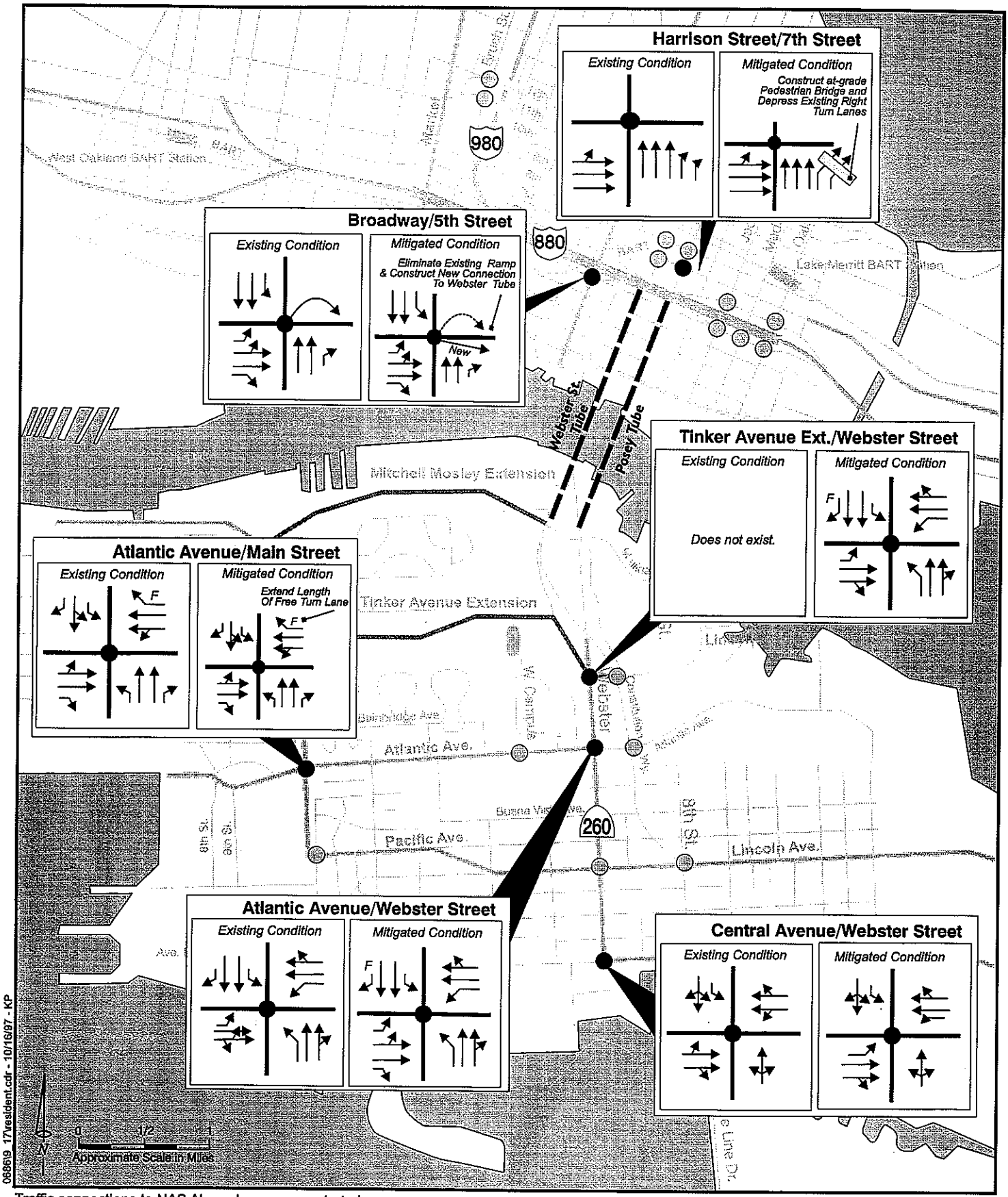
Source: Developed by Dowling Associates

Table 4-25
Residential Alternative Freeway and Arterial Street LOS Summary

Roadway Segment	Future Without Residential Alternative		Future With Residential Alternative	
	Am Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)	AM Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)
Freeway Segments				
I-80, I-580 to north of Berkeley	F (1.26)	F (1.13)	F (1.20)	F (1.13)
I-80, I-80/I-580 to Toll Plaza	F (1.11)	F (1.91)	F (1.11)	F (1.91)
I-880, I-980 to south of 98th Avenue	F (1.02)	F (1.03)	F (1.06)	F (1.08)
I-880, I-980 to I-80/I-580	C (0.74)	C (0.74)	C (0.74)	C (0.74)
I-980, I-880 to I-580	C (0.63)	C (0.70)	C (0.66)	C (0.72)
I-580, I-80 to I-980/Hwy 24	F (1.25)	F (1.35)	F (1.23)	F (1.34)
State Route Segments				
SR 61, Doolittle Drive Oakland City Limits to Otis Drive	F (1.56)	F (1.74)	F (1.62)	F (1.82)
SR 61, Otis Drive Doolittle Drive to Broadway	A (0.58)	B (0.65)	B (0.62)	C (0.74)
SR 61, Broadway Otis Drive to Encinal Avenue	A (0.12)	A (0.15)	A (0.17)	A (0.19)
SR 61, Encinal Avenue Broadway to Central Avenue	A (0.19)	A (0.26)	A (0.20)	A (0.29)
SR 61, Central Avenue Encinal Avenue to Webster Street	A (0.07)	A (0.10)	A (0.08)	A (0.11)
SR 260, Webster Street Central Avenue to 7th Street (includes Webster/Posey Tubes)	C (0.74)	D (0.84)	E (0.96)	F (1.10)
Local Arterial Segments				
Atlantic Avenue, Main to Webster	A (0.01)	A (0.32)	A (0.59)	F (1.09)
Park Street, Oakland Limits to SR 61	E (0.96)	F (1.28)	F (1.06)	F (1.31)
Santa Clara Avenue	A (0.60)	A (0.53)	B(0.67)	B (0.63)
Broadway, Santa Clara to Encinal	A (0.07)	A (0.26)	A (0.09)	A (0.08)
Park Avenue, SR 61 to Otis Drive	A (0.51)	A (0.59)	A (0.55)	A (0.57)
High Street, I-880 to SR 61	D (0.88)	F (1.04)	E (0.91)	F (1.12)

V/C = volume to capacity ratio

Source: Developed by Dowling Associates



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Traffic connections to NAS Alameda are concentrated on several major arterials in Alameda and the City of Oakland.

Legend:

- Study Intersection
- Mitigated Intersection
- F Free Right Turn Lane

Residential Alternative Mitigation Measures

NAS Alameda/FISC Alameda
Alameda, California

Source: Tetra Tech and Dowling Associates 1997

Figure 4-6

Mitigation 1a: Atlantic Avenue at Main Street: Same as presented under Mitigation 1a for the Reuse Plan Alternative. This modification would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1b: Atlantic Avenue at Webster Street: Same as presented under Mitigation 1b for the Reuse Plan Alternative. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1c: Central Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. To accommodate this mitigation measure, parking adjacent to the left turn lanes must be eliminated. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1d: Harrison at 7th Street and Broadway at 5th Street: Same as presented under the Reuse Plan Alternative. This mitigation would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1e: Tinker Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Peak-Hour Traffic on Freeways and Local Arterial Streets

Impact 2: Significant and mitigable impacts would result from traffic generated by the Residential Alternative being added to some nearby freeway segments and some of the local arterial streets serving the site. Project traffic would result in significant and mitigable impacts on 5 of the 18 segments evaluated in the EIR. These segments include:

- I-880, I-980 to south of 98th Avenue;
- SR 61, Doolittle Drive (Oakland City Limits to Otis Drive);
- Atlantic Avenue, Main to Webster;
- Park Street, Oakland City Limit to SR 61; and
- High Street, I-880 to SR 61.

Mitigation 2a: To reduce peak hour traffic along freeway and local arterial roadways, a comprehensive set of TSM programs should be implemented similar to the Reuse Plan Alternative. Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.

Mitigation 2b: The site tenants, through the TSM program, should participate in the corridor/areawide transportation planning process for impacted segments of the Metropolitan Transportation System.

Implementing this mitigation would reduce impacts on these roadway segments to nonsignificant levels.

Peak-Hour Traffic on SR 260 (Webster/Posey Tubes)

Impact 3: A significant and mitigable impact would result from traffic generated by the Residential Alternative creating traffic congestion on SR 260 (Webster/Posey Tubes), where traffic would increase by 1,607 trips during the AM peak hour and 1,992 trips during the PM peak hour. The level of service would deteriorate from LOS C to LOS E in the AM peak hour and from LOS D to LOS F in the PM peak hour. (The CMA has identified this segment as currently operating at LOS F. Oakland and Alameda have identified feasible mitigation that would improve this segment to LOS C, as discussed in Section 3.10.4.)

Mitigation 3a: Although implementing the TSM programs described under Mitigation 2 would reduce the volume of traffic on SR 260, the reduction in traffic would not be enough to reduce the impact to a nonsignificant level. While construction of a new crossing between Alameda and the City of Oakland as mitigation for regional traffic impacts would mitigate this impact to a nonsignificant level, a new crossing is not considered feasible because it is not planned at this time and would require the approval of other agencies in addition to the City of Alameda, such as Caltrans, the City of Oakland, the Port of Oakland, BCDC, and the US Army Corps of Engineers.

Mitigation 3b: This impact may be mitigated to a nonsignificant level by limiting traffic generated by the Residential Alternative as discussed under Mitigation 3b for the Reuse Plan Alternative.

Increased On-Site Traffic Volumes

Impact 4: A significant and mitigable impact would result from increased traffic congestion on NAS Alameda/FISC Alameda. The Residential Alternative would generate less traffic than the Reuse Plan Alternative, but would need similar improvements to the existing roadway system to accommodate full build out of this alternative.

Mitigation 4: Same as the Reuse Plan Alternative.

Increased On-Site Parking Demand

Impact 5: As under the Reuse Plan Alternative, a significant and mitigable impact would result under this alternative from projected parking demand exceeding existing supply.

Mitigation 5: Same as the Reuse Plan Alternative.

Increased Potential for Accidents

Impact 6: A significant and mitigable impact to safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes. The increase in on-site traffic would increase the potential for accidents at NAS Alameda/FISC Alameda from conflicts with motor vehicles, bicycles, and pedestrians.

Mitigation 6: Same as for the Reuse Plan Alternative.

Nonsignificant Impacts

Transit Service. Increases in demand for BART, bus, and ferry transit services could result from this alternative, similar to the Reuse Plan Alternative. The potential ridership for BART, bus and ferry usage for the Residential Alternative assuming a 10 percent diversion rate would be as follows:

- BART = 260 peak hour person trips
- Bus = 672 peak hour person trips
- Ferry = 32 peak hour person trips

These levels of increased ridership could be accommodated by existing service levels and would not represent a significant impact. No mitigation would be required.

On-Street Parking. On-street parking spaces near Central Avenue and Webster Street would be lost as a result of roadway improvements at the Central Avenue/Webster Street intersection. Parking lost would be limited to spaces adjacent to the left-turn lanes. This impact would not be significant. No mitigation would be required.

4.10.4 Reduced Density Alternative

The Reduced Density Alternative would generate approximately 5,633 trips during the AM peak hour and about 6,117 trips during the PM peak hour. Summaries of the LOS analysis and potentially significant impacts are shown in Table 4-26 and Table 4-27.

Table 4-26
Reduced Density Alternative Intersection LOS Summary

Analysis Intersection	Future Without Reduced Density Alternative				Future With Reduced Density Alternative			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]
City of Alameda								
Atlantic Avenue/Main Street	C	15.3	C	15.1	D	27.9	C	18.7
Atlantic Avenue/West Campus	A	2.9	A	3.1	C	19.9	B	9.0
Atlantic Avenue/Webster Street	B	9.4	C	15.5	E	46.4	D	37.3
Atlantic Avenue /Constitution Way	B	13.6	C	17.3	C	19.0	C	21.1
Pacific Avenue/Main Street	N/A	N/A	A	2.6	B	7.4	B	7.5
Lincoln Avenue/Webster Street	B	6.6	B	11.4	B	8.8	B	13.9
Lincoln Avenue/8th Avenue	C	17.4	C	16.3	C	17.0	C	17.9
Central Avenue/Webster Street	B	12.8	C	16.5	E	41.8	C	17.9
Central Avenue/8th Avenue	C	16.6	D	34.4	C	17.0	D	28.6
Constitution Way/Marina Village Pkwy.	C	21.2	B	13.8	C	22.4	B	13.7
Tinker Avenue at Webster Street	A	0.8	B	13.8	F	(Exc.)[2]	D	34.9
City of Oakland								
Oak Street/5th I-80 on-ramp	B	10.1	C	16.9	B	9.4	C	19.4
Oak Street/6th I-80 off-ramp	B	10.1	B	11.6	B	8.5	B	11.2
Jackson Street/7th Street	B	9.3	B	12.6	B	13.5	B	15.0
Jackson Street/6th Street	B	8.9	B	14.9	B	6.7	C	19.9
Jackson Street/5th Street	B	11.4	B	13.4	B	10.4	B	14.4
Harrison Street/8th Street	A	3.4	B	9.7	B	12.1	B	11.5
Harrison Street/7th Street	B	9.3	B	13.3	F	(Exc.)[2]	F	(Exc.)[2]
Webster Street/8th Street	B	11.6	B	11.4	B	12.5	B	12.3
Webster Street/7th Street	B	11.4	B	13.1	B	12.8	B	13.9
Broadway/5th Street	C	15.2	C	21.8	D	33.8	F	88.0
Brush Street/12th Street	A	3.2	B	10.6	A	3.1	B	10.5
Brush Street/11th Street	A	4.4	B	7.9	B	5.2	B	7.8
Brush Street/5th Street	B	11.0	B	11.9	B	14.6	B	11.7

[1] Delay in seconds.
[2] Indicates significant and mitigable impact.
(Exc.) = excessive delay, volume to capacity ratio exceeds 1.2, therefore, the delay values are not meaningful.

Source: Developed by Dowling Associates

Table 4-27
Reduced Density Alternative Freeway and Arterial Street LOS Summary

Roadway Segment	Future Without Reduced Density Alternative		Future With Reduced Density Alternative	
	Am Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)	AM Peak Hour LOS (V/C)	PM Peak Hour LOS (V/C)
Freeway Segments				
I-80, I-580 to north of Berkeley	F (1.26)	F (1.13)	F (1.20)	F (1.13)
I-80, I-80/I-580 to Toll Plaza	F (1.11)	F (1.91)	F (1.11)	F (1.90)
I-880, I-980 to south of 98th Avenue	F (1.02)	F (1.03)	F (1.08)	F (1.07)
I-880, I-980 to I-80/I-580	C (0.74)	C (0.74)	C (0.75)	C (0.72)
I-980, I-880 to I-580	C (0.63)	C (0.70)	C (0.65)	C (0.74)
I-580, I-80 to I-980/Hwy 24	F (1.25)	F (1.35)	F (1.21)	F (1.34)
State Route Segments				
SR 61, Doolittle Drive Oakland City Limits to Otis Drive	F (1.56)	F (1.74)	F (1.59)	F (1.76)
SR 61, Otis Drive Doolittle Drive to Broadway	A (0.58)	B (0.65)	B (0.61)	B (0.68)
SR 61, Broadway Otis Drive to Encinal Avenue	A (0.12)	A (0.15)	A (0.11)	A (0.15)
SR 61, Encinal Avenue Broadway to Central Avenue	A (0.19)	A (0.26)	A (0.21)	A (0.26)
SR 61, Central Avenue Encinal Avenue to Webster Street	A (0.07)	A (0.10)	A (0.09)	A (0.11)
SR 260, Webster Street Central Avenue to 7th Street (includes Webster/Posey Tubes)	C (0.74)	D (0.84)	D (0.82)	D (0.99)
Local Arterial Segments				
Atlantic Avenue, Main to Webster	A (0.01)	A (0.32)	A (0.55)	F (1.03)
Park Street, Oakland Limits to SR 61	E (0.96)	F (1.28)	F (1.02)	F (1.29)
Santa Clara Avenue	A (0.60)	A (0.53)	B (0.68)	B (0.62)
Broadway, Santa Clara to Encinal	A (0.07)	A (0.26)	A (0.08)	A (0.07)
Park Avenue, SR 61 to Otis Drive	A (0.51)	A (0.59)	A (0.52)	A (0.58)
High Street, I-880 to SR 61	D (0.88)	F (1.04)	D (0.89)	F (1.12)

V/C = volume to capacity ratio

Source: Developed by Dowling Associates

Significant Impacts

Peak-Hour Traffic at Local Intersections

Impact 1: Significant and mitigable impacts would result from AM and PM peak-hour traffic congestion at five local intersections. The level of service at these intersections would be LOS E or lower:

City of Alameda Intersections

- Atlantic Avenue at Webster Street
- Central Avenue at Webster Street;
- Tinker Avenue at Webster Street;

City of Oakland Intersections

- Harrison Street at 7th Street; and
- Broadway at 5th Street

Mitigation measures at these intersections are shown in Figure 4-7.

Mitigation 1a: Atlantic Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

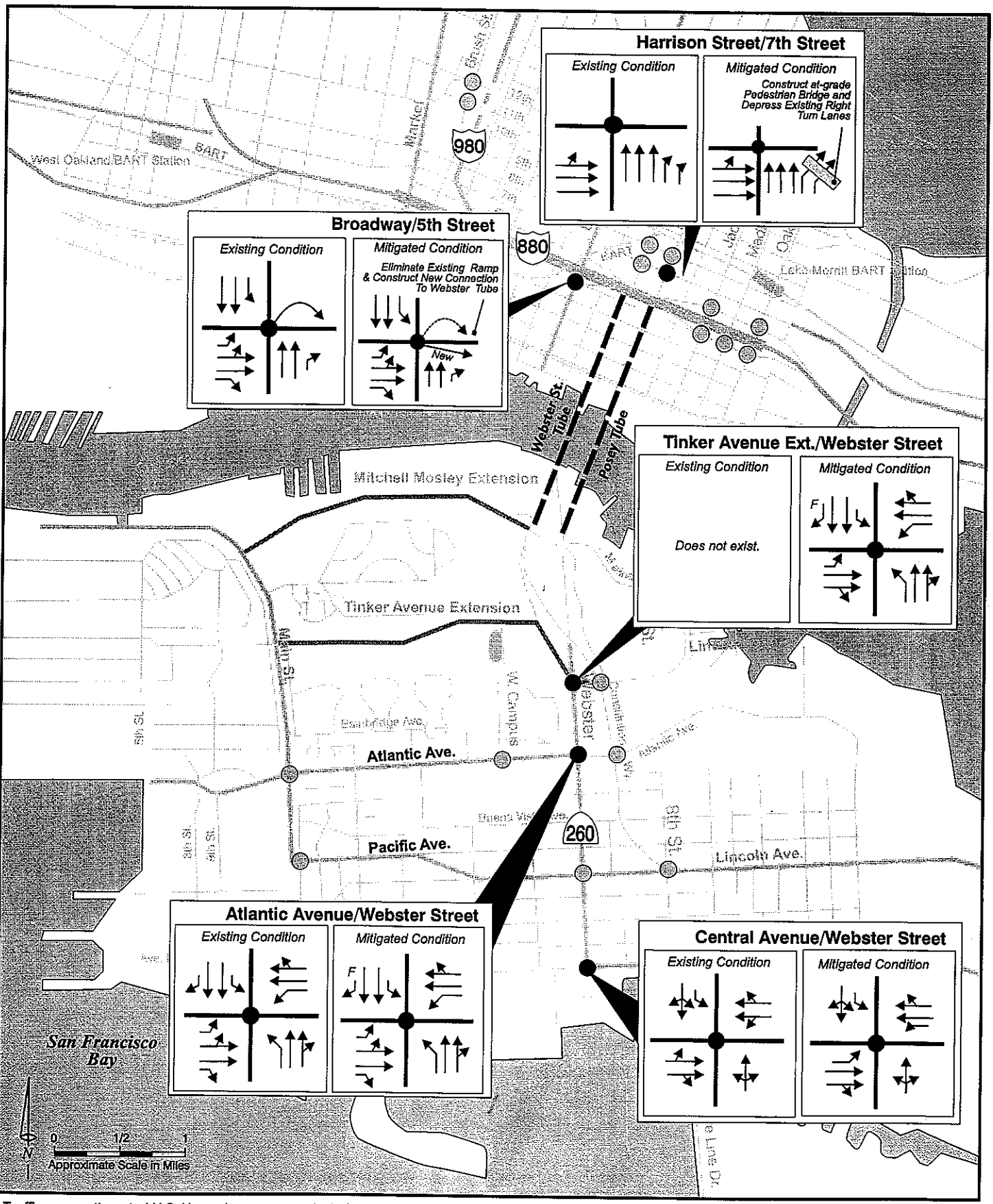
Mitigation 1b: Central Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. To accommodate this mitigation measure, parking adjacent to the left turn lanes must be eliminated. These modifications would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1c: Tinker Avenue at Webster Street: Same as presented under the Reuse Plan Alternative. This modification would mitigate the traffic impact at this intersection to a nonsignificant level.

Mitigation 1d: Harrison at 7th Street and Broadway at 5th Street: Same as presented under the Reuse Plan Alternative. This mitigation would mitigate the traffic impact at this intersection to a nonsignificant level.

Peak-Hour Traffic on Freeways and Local Arterial Streets:

Impact 2: Significant and mitigable impacts would result from traffic generated by the Reduced Density Alternative being added to some nearby freeway segments and some of the local arterial streets serving the site. Project traffic would result in significant and mitigable impacts on 5 of the 18 segments evaluated in the EIR. These segments include:



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Traffic connections to NAS Alameda are concentrated on several major arterials in Alameda and the City of Oakland.

Legend:

- Study Intersection
- Mitigated Intersection
- F Free Right Turn Lane

Source: Tetra Tech and Dowling Associates 1997

Reduced Density Alternative Mitigation Measures

NAS Alameda/FISC Alameda
Alameda, California

Figure 4-7

- I-880, I-980 to south of 98th Avenue
- SR 61, Doolittle Drive (Oakland City Limits to Otis Drive);
- Atlantic Avenue, Main to Webster;
- Park Street, Oakland City Limits to SR 61; and
- High Street, I-880 to SR 61.

Mitigation 2a: To reduce peak hour traffic along freeway and local arterial roadways, a comprehensive set of TSM programs should be implemented similar to the Reuse Plan Alternative.

Mitigation 2b: The site tenants, through the TSM program, should participate in the corridor/areawide transportation planning process for impacted segments of the Metropolitan Transportation System.

Increased On-Site Traffic Volume

Impact 3: A significant and mitigable impact would result from increased traffic congestion on NAS Alameda/FISC Alameda. The Reduced Density Alternative would generate less traffic than the Reuse Plan Alternative, but would need similar improvements to the existing roadway system to accommodate full buildout of this alternative.

Mitigation 3: Same as Mitigation 4 for the Reuse Plan Alternative.

Increased On-Site Parking Demand

Impact 4: As under the Reuse Plan Alternative, a significant and mitigable impact would result under this alternative from projected parking demand exceeding existing supply.

Mitigation 4: Same as Mitigation 5 for the Reuse Plan Alternative.

Increased Potential for Accidents

Impact 5: A significant and mitigable impact to safety would result from increased use of NAS Alameda/FISC Alameda by a variety of transportation modes. The increase in on-site traffic would increase the potential for accidents at NAS Alameda/FISC Alameda from conflicts with motor vehicles, bicycles, and pedestrians.

Mitigation 5: Same as Mitigation 6 for the Reuse Plan Alternative.

Nonsignificant Impacts

Peak-Hour Traffic on SR 260 (Webster/Posey Tubes). The Reduced Density Alternative would increase traffic on SR 260 (Webster/Posey Tubes). The level of service would deteriorate from LOS C to LOS D in the AM peak hour and would remain at LOS D for the PM peak hour. (The CMA has identified this segment as currently operating at LOS F. Oakland and Alameda have identified feasible mitigation that would improve this segment to LOS C, as discussed in Section 3.10.4.) This impact would not be significant. No mitigation would be required.

Transit Service. Increases in demand for BART, bus, and ferry transit services could result from this alternative, similar to the Reuse Plan Alternative. The potential ridership for BART, bus, and ferry usage for the Reduced Density Alternative assuming a 10 percent diversion rate would be as follows:

- BART = 186 peak hour person trips
- Bus = 454 peak hour person trips
- Ferry = 14 peak hour person trips

These levels of increased ridership could be accommodated by existing service levels and would not represent a significant impact. No mitigation would be required.

On-Street Parking. On-street parking spaces near Central Avenue and Webster Street would be lost as a result of roadway improvements at the Central Avenue/Webster Street intersection. Parking lost would be limited to spaces adjacent to the left-turn lanes. This impact would not be significant. No mitigation would be required.

4.10.5 No Project Alternative

The No Project Alternative would directly generate 93 trips during the AM peak hour and 93 trips during the PM peak. No change to the existing internal roadway system would occur and the roadway system would be adequate to accommodate the small amount of traffic generated. There would be a very low demand for both on-street and off-street parking associated with this alternative, and this demand would be met by the existing parking supply. The existing roadway system and intersection controls would be adequate to ensure public safety, bicycle, and pedestrian activities. No increases in demand for BART, bus, and ferry transit services would result from this alternative.

Nonsignificant Impacts

Direct Increase in Traffic on Area Roadways and Effect on Intersections and Regional Circulation. The No Project Alternative would directly generate only 652 daily trips. There would be a small amount of peak hour traffic from the site and the average stopped delay at some intersections and along the freeway would be reduced very slightly. The resultant levels of service would be acceptable and there would be no significant impacts. No mitigation would be required.

Indirect Increase in Traffic on Area Roadways. The total amount of traffic between Alameda and Oakland may be increased indirectly from the loss of local jobs and housing opportunities. When NAS Alameda/FISC Alameda were operational facilities, there were a significant number of jobs occupied by local residents. Without these jobs, local residents would need to seek employment elsewhere. Some of these residents may find employment outside of Alameda. The traffic they would generate during commuting would therefore increase the total number of trips between Alameda and the surrounding area. This would be a nonsignificant impact. No mitigation would be required.

4.11 AIR QUALITY

This section describes impacts to air quality that could occur under the reuse actions and the No Project Alternative. The analysis includes construction and demolition activities, traffic-related emissions, and odors. Impacts are analyzed by comparison to numerical air quality standards and by comparison to baseline conditions as described in Section 3.11.

Region of Influence

The ROI for air quality issues varies according to the type of air pollution being discussed. Primary pollutants are those that are directly emitted, such as carbon monoxide and particulate matter from construction activities. Primary pollutants have a localized ROI generally restricted to the immediate vicinity of the emission source. For construction and demolition activity, the ROI would be within a few hundred feet of the construction or demolition site. For traffic-related carbon monoxide emissions, the ROI would be within a few hundred feet of roadways that experience a project-related change in traffic conditions. Secondary pollutants are those that are formed by chemical reactions in the atmosphere, such as ozone and some PM_{10}. Secondary pollutants have a more regional ROI that includes the entire San Francisco Bay Area.

Significance Criteria

Air quality impact assessments address a mix of physical impacts, regulatory requirements, and policy or program consistency issues. This mix of impact analyses requires a fairly broad range of criteria for judging the significance of individual impact issues. Air quality impacts typically are judged to be significant if project implementation would directly or indirectly result in any of the following:

- Produce emissions that would cause or contribute to a violation of Federal or State ambient air quality standards, exposing sensitive receptors to substantial pollutant concentrations;
- Cause a net increase in pollutant or pollutant precursor emissions that exceeds the Bay Area Air Quality Management District (BAAQMD) emission significance thresholds (15 tons [14 metric tons] per year for reactive organic compounds, nitrogen oxides, or PM_{10});
- Create objectionable odors affecting a substantial number of people;
- Conflict with specific air quality management plan policies or programs; or

- Foster or accommodate development in excess of the levels assumed by the applicable air quality management plan.

The significance criteria for physical air quality impact issues are set largely by the technical procedures used for the impact assessment. When dispersion modeling analyses are performed, the most appropriate impact significance criteria relate to the potential for causing or contributing to violations of Federal or State carbon monoxide air quality standards. When dispersion modeling analyses are not performed, impact significance is evaluated in the context of appropriate emission thresholds (BAAQMD 1996).

Air quality emissions from buildout of each of the reuse alternatives have been applied to a 2010 condition, consistent with the traffic analysis presented in Section 4.10. Emissions analyses projected to 2010 are adequate to determine the effects on air quality from buildout of the Reuse Plan. Emissions are likely to decrease over time due to the replacement of older vehicles with more efficient models and from improvements in control technologies and cleaner burning fuels.

Table 4-28 summarizes the significance of air quality impacts for the various alternatives.

No odor impacts from any of the reuse alternatives have been identified.

4.11.1 Reuse Plan Alternative

Significant Impacts

Construction and Demolition

Impact 1: A significant and mitigable impact would result from temporary generation of fugitive dust during demolition, construction, and remodeling activities. Construction vehicle emissions would be minor sources of emissions. Building demolition, site preparation for new building construction, utility extension and improvements, and roadway reconstruction would be the most significant dust-generating activities. Construction and demolition activities would occur intermittently over an extended period, with market conditions significantly influencing the extent, timing, and location of construction activities. Developing a reliable estimate of construction-related dust emissions for any particular year is therefore not possible.

Table 4-28
Summary of Air Quality Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Construction and Demolition	○	◑	◑	◑	◑
Carbon Monoxide Concentrations	◔	◑	◑	◑	◔
Traffic-related Ozone Precursor Emissions	◔	◑	◑	◑	◑
Traffic-related PM_{10} Emissions	◔	◑	◑	◑	◔
Asbestos and Lead Particles from Demolition and Remodeling	○	◔	◔	◔	◔
Industrial Emission Sources	○	◔	◔	◔	◔
Consistency with Air Quality Plans	○	◔	◔	◔	◔
Federal Clean Air Act Conformity Requirements	○	○	○	○	○

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◔ = Nonsignificant
○ = None

Mitigation 1: Construction-related emissions could be reduced to acceptable levels by following standard dust control measures. The BAAQMD (1996) considers implementing the following types of dust control measures as adequate mitigation for general construction-related air quality impacts:

- The area disturbed by clearing, earthmoving, or excavation activities should be minimized at all times;
- All excavated or graded areas should be sufficiently watered to prevent excessive dust generation;
- All clearing, grading, earthmoving, and excavating activities should be halted during periods of sustained strong winds (hourly average wind speeds of 20 mph [32 km per hour] or greater);
- All unpaved inactive portions of the construction site should be seeded and watered to maintain a grass cover;
- All unpaved active portions of the construction site should be watered or treated with dust control solutions as necessary to minimize wind-blown dust and dust generated by vehicle traffic;
- Any petroleum-based dust control products used on the site should meet BAAQMD regulations for cutback asphalt paving materials;

- Paved portions of the construction site should be swept as necessary to control wind-blown dust and dust generated by vehicle traffic;
- On-site vehicle speeds should be limited to 15 mph (24 km per hour) or less on the construction site; and
- Streets adjacent to the construction site should be swept as necessary to remove accumulated dust and soil.

Carbon Monoxide Concentrations

Impact 2: A significant impact would result from carbon monoxide concentrations at two intersections exceeding Federal and State air quality standards. The high traffic volumes generated under the Reuse Plan Alternative could cause the State 1-hour and the Federal and State 8-hour carbon monoxide standards to be violated at two intersections: Tinker Avenue and Webster Street in Alameda, and Harrison and 7th Street in Oakland (Table 4-21).

The modeling analysis included the following roadways adjacent to NAS Alameda: Main Street south of Singleton Avenue; Central Avenue west of Sherman Street; Lincoln Avenue west of Sherman Street; Marshall and Pacific Avenue west of 5th Street; Atlantic Avenue west of 9th Street; Webster Street from Central Avenue to 10th Street in Oakland; an approximate configuration for Constitution Way north of Lincoln Avenue; Harrison Street and the Posey Tube south of 10th Street in Oakland; 7th Street in Oakland between Franklin Street and Madison Street; and I-880 east of I-980. Projected buildout afternoon peak hour traffic volumes, as developed for the traffic and circulation impact analysis, were used for all modeling analyses.

Vehicle emission rates were estimated for year 2010 conditions using the California Air Resources Board's EMFAC7F model. Emission rates produced by the EMFAC7F model were adjusted to account for extended vehicle idling at congested intersections. Standard dispersion modeling practice was followed for estimating the potential for air quality problems by assuming unfavorable weather conditions—low wind speed, slight ground level temperature inversion, and limited horizontal wind direction fluctuations. Potential afternoon peak hour carbon monoxide concentrations were modeled directly. The peak hour results then were extrapolated to estimate maximum 8-hour average concentrations using a persistence factor based on actual monitoring data from the Alice Street monitoring station. Additional technical details of the modeling analysis are documented in tables presented in Appendix G.

The dispersion modeling analysis was focused on the following intersections: Atlantic Avenue and Main Street; Lincoln Avenue and Webster Street; Atlantic Avenue and Webster Street; Tinker Avenue and Webster Street; 7th Street and Webster Street in Oakland; and 7th Street and Harrison Street in Oakland.

Table 4-29 summarizes the results of the dispersion modeling analyses for each of the reuse alternatives and the No Project Alternative. In the absence of significant traffic mitigation measures, the Reuse Plan Alternative would lead to potential violations of the State 1-hour carbon monoxide standard and the Federal and State 8-hour carbon monoxide standards at two intersections: Tinker Avenue and Webster Street in Alameda, and Harrison Street and 7th Street in Oakland.

The two locations identified as carbon monoxide "hot spots" do not significantly affect sensitive receptors. The area around Tinker and Webster Street is a commercial district. There are no sensitive receptors, such as schools or day care facilities, at the 7th and Harrison Street area in Oakland.

Mitigation 2a: Potential carbon monoxide levels at the affected intersections could be reduced by roadway and intersection improvements that reduce vehicle delays and traffic congestion. Roadway and intersection design mitigations discussed in Section 4.10 would reduce but not eliminate potential carbon monoxide exceedances at both intersections (Table 4-22). The roadway and intersections design mitigations would not eliminate the violation of the Federal and State 8-hour standard at these intersections.

Mitigation 2b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related carbon monoxide emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process.

Traffic-related Ozone Precursor Emissions

Impact 3: A significant and mitigable impact would result from increased emissions of ozone precursors generated by vehicle traffic. The Reuse Plan Alternative would generate more traffic-related ozone precursor emissions than would be associated with a continuation of operational activity levels (Table 4-31). The operational activity levels are from the 1994 Bay Area Clean Air Plan, which is based on land use and transportation patterns that existed in the early 1990s. Because most military installations were accounted for in the air quality plan as active facilities, the operational activity scenario

provides a useful basis for judging the extent to which reuse would cause increases or decreases in traffic-related emissions.

As indicated in Table 4-31, under the Reuse Plan Alternative the net increase in traffic-related ozone precursor emissions would be about 31 tons (28 metric tons) per year for organic compounds and 96 tons (87 metric tons) per year for nitrogen oxides. These emission increases would exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year.

The trip generation analysis used to develop Table 4-31 was based on daily trip generation rates for the reuse alternatives, as projected for the traffic and circulation impact analysis. Those daily trip generation rates were subsequently modified to account for trips between reuse alternative land uses. In addition, trip rates were further reduced to reflect the effects of transit use, ridesharing, and nonvehicular travel.

Mitigation 3a: Regional air quality plan documents identify various land use and transportation measures that local agencies can implement to help minimize the regional air quality impacts of development projects. Most of these transportation measures focus on expanding transit service and encouraging ridesharing programs. As discussed in Section 4.10, the City of Alameda intends to implement a transportation system management (TSM) program as a mitigation measure for traffic and parking impacts associated with the Reuse Plan Alternative. This program would include a TSM program manager for the project, parking management strategies at the site, on-site shuttle bus and other transit services. Such programs, however, would not reduce the net increase in vehicle emissions to less than 15 tons (14 metric tons) per year.

Mitigation 3b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related ozone precursor emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process.

Table 4-29
Summary of Carbon Monoxide Dispersion Modeling Results without Traffic Mitigation

Receptor Location	Estimated Peak-Hour Background Value (ppm)	Maximum 1-Hour Carbon Monoxide Level (ppm) Including Background					Maximum 8-Hour Carbon Monoxide Level (ppm) Including Background				
		No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
75 ft NW of Lincoln Ave. and Webster St.	2.0	3.0	5.3	4.2	4.5	3.7	2.4	4.2	3.3	3.6	2.9
75 ft SW of Lincoln Ave. and Webster St.	2.0	3.1	5.4	4.3	4.6	3.8	2.4	4.3	3.4	3.6	3.0
75 ft NE of Lincoln Ave. and Webster St.	2.0	2.8	4.8	3.9	4.2	3.4	2.2	3.8	3.1	3.3	2.7
75 ft SE of Lincoln Ave. and Webster St.	2.0	2.9	5.0	4.2	4.4	3.6	2.3	4.0	3.3	3.5	2.8
75 ft NW of Atlantic Ave. and Main St.	2.0	2.6	4.8	4.2	4.9	3.2	2.1	3.8	3.3	3.9	2.5
75 ft SW of Atlantic Ave. and Main St.	2.0	2.6	4.6	4.0	4.5	3.3	2.1	3.6	3.2	3.6	2.6
75 ft NE of Atlantic Ave. and Main St.	1.5	1.8	3.1	2.9	3.5	2.2	1.4	2.4	2.3	2.8	1.7
75 ft SE of Atlantic Ave. and Main St.	1.5	2.0	3.8	3.6	4.6	2.7	1.6	3.0	2.8	3.6	2.1
75 ft NW of Atlantic Ave. and Webster St.	2.0	3.2	6.1	4.6	5.2	3.9	2.5	4.8	3.6	4.1	3.1
75 ft SW of Atlantic Ave. and Webster St.	2.0	3.5	7.6	6.0	5.9	4.7	2.8	6.0	4.7	5.5	3.7
75 ft NE of Atlantic Ave. and Webster St.	1.5	2.6	5.5	4.3	4.9	3.5	2.1	4.3	3.4	3.9	2.8
75 ft SE of Atlantic Ave. and Webster St.	2.0	3.3	6.4	5.2	5.8	4.3	2.6	5.1	4.1	4.6	3.4
75 ft NW of Tinker Ave. and Webster St.	2.0	3.7	18.3	13.0	16.4	8.2	2.9	**14.5**	**10.3**	**13.0**	6.5
75 ft SW of Tinker Ave. and Webster St.	2.0	3.8	17.6	12.1	14.3	7.7	3.0	**13.9**	**9.6**	**11.3**	6.1
75 ft NE of Tinker Ave. and Webster St.	2.0	4.6	17.6	12.6	15.9	7.7	3.6	**13.9**	**10.0**	**12.6**	6.1
75 ft SE of Tinker Ave. and Webster St.	2.0	4.8	**27.4**	17.3	**20.5**	11.0	3.8	**21.6**	**13.7**	**16.2**	8.7
50 ft NW of 7th St. and Webster St.	3.8	4.6	8.9	6.0	6.5	5.5	3.6	7.0	4.7	5.1	4.3
50 ft SW of 7th St. and Webster St.	3.0	4.2	8.6	5.8	6.4	5.0	3.3	6.8	4.6	5.1	4.0
50 ft NE of 7th St. and Webster St.	3.0	4.4	9.1	5.6	5.6	5.0	3.5	7.2	4.4	4.4	4.0
50 ft SE of 7th St. and Webster St.	3.0	4.0	9.0	5.3	5.4	4.6	3.2	7.1	42	4.3	3.6
50 ft NW of 7th St. and Harrison St.	3.0	4.8	18.3	9.8	9.3	7.8	3.8	**14.5**	7.7	7.2	6.2
50 ft SW of 7th St. and Harrison St.	2.5	3.6	**22.0**	10.7	9.7	7.9	2.8	**17.4**	8.5	7.7	6.2
50 ft NE of 7th St. and Harrison St.	3.0	4.5	**22.9**	12.2	11.4	9.2	3.6	**18.1**	**9.6**	9.0	7.3
50 ft SE of 7th St. and Harrison St.	3.0	4.2	16.9	8.9	8.2	7.0	3.3	**13.4**	7.0	6.5	5.5

Notes: ppm = parts per million, by volume
Federal carbon monoxide standards are 35 ppm for a 1-hour average and 9 ppm for an 8-hour average. Levels in bold exceed standards.
California carbon monoxide standards are 20 ppm for a 1-hour average and 9 ppm for an 8-hour average. Levels in bold exceed standards.
Modeling results were generated using the CALINE4 dispersion model and EMFAC7F emission rates for 2010.
Emissions from extended vehicle idling at congested intersections are included in the modeling analysis.
Modeling analyses assumed poor dispersion conditions: a mild temperature inversion (stability class E), a wind speed of 1 meter per second (2.2 mph), a mixing height limit of 50 meters (164 feet), and a 15 degree horizontal wind direction fluctuation parameter.
Receptor distances are measured from the centerlines of the adjacent streets.
Results presented in this table represent the highest concentrations at each receptor location (based on wind directions varied in 10 degree increments).
Peak-hour background carbon monoxide estimates are based on unmodeled upwind roadways for the worst case wind direction.
Peak 8-hour carbon monoxide concentrations are estimated as 79% of the peak 1-hour concentration (based on monitoring data from the Alice Street monitoring station).

Table 4-30
Summary of Carbon Monoxide Dispersion Modeling Results with Traffic Mitigation

Receptor Location	Estimated Peak-hr Background Value (ppm)	Peak 1-Hour Carbon Monoxide Level (ppm) With Background				Peak 8-Hour Carbon Monoxide Level (ppm) With Background			
		Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
75 ft NW of Lincoln Ave. and Webster St.	2.0	4.5	3.7	3.8	3.4	3.6	2.9	3.0	2.7
75 ft SW of Lincoln Ave. and Webster St.	2.0	4.6	3.8	3.9	3.5	3.6	3.0	3.1	2.8
75 ft NE of Lincoln Ave. and Webster St.	2.0	4.0	3.3	3.5	3.1	3.2	2.6	2.8	2.4
75 ft SE of Lincoln Ave. and Webster St.	2.0	4.2	3.6	3.7	3.3	3.3	2.8	2.9	2.6
75 ft NW of Atlantic Ave. and Main St.	2.0	4.2	3.3	3.8	3.0	3.3	2.6	3.0	2.4
75 ft SW of Atlantic Ave. and Main St.	2.0	4.0	3.3	3.6	3.0	3.2	2.6	2.8	2.4
75 ft NE of Atlantic Ave. and Main St.	1.5	2.9	2.4	2.8	2.2	2.3	1.9	2.2	1.7
75 ft SE of Atlantic Ave. and Main St.	1.5	3.6	2.8	3.5	2.5	2.8	2.2	2.8	2.0
75 ft NW of Atlantic Ave. and Webster St.	2.0	4.9	3.8	4.1	3.6	3.9	3.0	3.2	2.8
75 ft SW of Atlantic Ave. and Webster St.	2.0	5.7	4.4	4.8	4.1	4.5	3.5	3.8	3.2
75 ft NE of Atlantic Ave. and Webster St.	1.5	4.2	3.2	3.7	3.0	3.3	2.5	2.9	2.4
75 ft SE of Atlantic Ave. and Webster St.	2.0	5.2	4.2	4.6	3.8	4.1	3.3	3.6	3.0
75 ft NW of Tinker Ave. and Webster St.	2.0	10.0	6.5	8.4	4.7	7.9	5.1	6.6	3.7
75 ft SW of Tinker Ave. and Webster St.	2.0	10.0	6.4	7.6	4.8	7.9	5.1	6.0	3.8
75 ft NE of Tinker Ave. and Webster St.	2.0	12.8	7.0	7.8	5.5	**10.1**	5.5	6.2	4.3
75 ft SE of Tinker Ave. and Webster St.	2.0	15.3	8.9	10.3	6.3	**12.1**	7.0	8.1	5.0
50 ft NW of 7th St. and Webster St.	3.0	8.6	6.4	6.3	5.7	6.8	5.1	5.0	4.5
50 ft SW of 7th St. and Webster St.	3.0	8.1	5.8	5.6	5.1	6.4	4.6	4.4	4.0
50 ft NE of 7th St. and Webster St.	3.0	8.8	5.9	5.7	5.2	7.0	4.7	4.5	4.1
50 ft SE of 7th St. and Webster St.	3.0	8.4	5.6	5.3	4.8	6.6	4.4	4.2	3.8
50 ft NW of 7th St. and Harrison St.	3.0	18.3	10.3	9.5	8.1	**14.5**	8.1	7.5	6.4
50 ft SW of 7th St. and Harrison St.	2.5	19.1	9.6	8.7	7.2	**15.1**	7.6	6.9	5.7
50 ft NE of 7th St. and Harrison St.	3.0	18.5	10.0	9.4	7.7	**14.6**	7.9	7.4	6.1
50 ft SE of 7th St. and Harrison St.	3.0	16.9	9.1	8.3	7.0	**13.4**	7.2	6.6	5.5

Notes: ppm = parts per million, by volume
Federal carbon monoxide standards are 35 ppm for a 1-hour average and 9 ppm for an 8-hour average. Levels in bold exceed standards.
California carbon monoxide standards are 20 ppm for a 1-hour average and 9 ppm for an 8-hour average. Levels in bold exceed standards.
Modeling results were generated using the CALINE4 dispersion model and EMFAC7F emission rates for 2010.
Emissions from extended vehicle idling at congested intersections are included in the modeling analysis.
Modeling analyses assumed poor dispersion conditions: a mild temperature inversion (stability class E), a wind speed of 1 meter per second (2.2 mph), a mixing height limit of 50 meters (164 feet), and a 15 degree horizontal wind direction fluctuation parameter.
Receptor distances are measured from the centerlines of the adjacent streets.
Traffic mitigation measures were modeled by changing roadway widths and the amount of idling emissions at congested intersections.
Results presented in this table represent the highest concentrations at each receptor location (based on wind directions varied in 10 degree increments).
Peak-hour background carbon monoxide estimates are based on unmodeled upwind roadways for the worst case wind direction.
Peak 8-hour carbon monoxide concentrations are estimated as 79% of the peak 1-hour concentration (based on monitoring data from the Alice Street monitoring station).

Table 4-31
Comparison of Vehicle Traffic Emissions for Reuse Alternatives

Alternative	Annual Vehicle Trips	Annual VMT	Estimated Annual Vehicle Emissions (Tons per Year)				
			ROG	NO_x	CO	SO_x	PM_{10}
Operational Activity Level	6,426,600	99,077,000	33.3	63.7	271.1	1.4	101.3
No Project Alternative	163,000	1,846,363	0.8	1.9	8.4	0.1	1.9
Reuse Plan Alternative	17,356,250	174,042,306	64.3	160.0	792.4	5.8	179.7
Seaport Alternative	14,338,000	136,539,086	50.8	117.4	629.6	4.5	140.0
Residential Alternative	16,500,000	150,233,427	56.3	116.5	700.6	5.0	152.6
Reduced Density Alternative	9,785,500	95,487,688	35.3	84.8	435.2	3.2	98.3

Alternative	Net Change Compared to Operational Activity Scenario (Tons per Year)						
	Annual Vehicle Trips	Annual VMT	ROG	NO_x	CO	SO_x	PM_{10}
No Project Alternative	-6,263,600	-97,230,637	-32.5	-61.8	-262.7	-1.3	-99.4
Reuse Plan Alternative	10,929,650	74,965,306	31.0	96.3	521.3	4.4	78.4
Seaport Alternative	7,911,400	37,462,086	17.5	53.7	358.5	3.1	38.8
Residential Alternative	10,073,400	51,156,427	23.0	52.8	429.5	3.6	51.3
Reduced Density Alternative	3,358,900	-3,589,312	2.0	21.1	164.1	1.8	-3.0

Notes: VMT = vehicle miles traveled
ROG = reactive organic compounds
NO_x = nitrogen oxides
CO = carbon monoxide
SO_x = sulfur oxides
PM_{10} = inhalable particulate matter
Estimated trip generation for alternative reuse scenarios is based on data from the traffic and circulation projections, with subsequent modification to remove double-counting of internal trips and to account for the effects of transit use, ridesharing, and nonvehicular travel.
Estimated motor vehicle emissions for a continuation of operational activity levels are extrapolated from data in the Mobile Source Conformity Baseline Inventories (Radian 1996), with adjustments for vehicle emission rate reductions between 2001 and 2010.
Annual emission estimates assume 250 work days per year.
Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.
Sulfur oxide emissions assume emission rates of 0.03 grams/VMT (BAAQMD 1996).
PM_{10} emissions include 0.69 grams/VMT for re-entrained roadway dust (BAAQMD 1996).
The BAAQMD uses 15 tons (14 metric tons) per year as an impact significance threshold for ROG, NO_x or PM_{10}.

Traffic-related PM_{10} Emissions

Impact 4: A significant and mitigable impact would result from increased emissions of PM_{10} by vehicle traffic. As indicated in Table 4-31, the Reuse Plan Alternative would generate more traffic-related PM_{10} emissions than would be associated with a continuation of operational activity levels. Net increases in PM_{10} emissions would be about 78 tons (71 metric tons) per year. These emission increases would exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year.

Mitigation 4a: The effects of the TSM program have largely been incorporated into the analyses presented in Table 4-31. Such programs, however, would not be able to reduce the net increase in vehicle emissions to less than 15 tons (14 metric tons) per year.

Mitigation 4b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related PM_{10} emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process for the crossing.

Nonsignificant Impacts

Asbestos and Lead Particles from Demolition and Remodeling. Older buildings on the NAS Alameda/FISC Alameda site may have lead-based paints and materials containing friable asbestos. Building renovation or demolition activities could release lead- or asbestos-contaminated materials into the air. Complying with Federal, State, and BAAQMD regulations during building demolition or remodeling would prevent significant airborne releases of these materials. No significant impacts would occur and no mitigation would be required.

Industrial Emission Sources. The Reuse Plan Alternative would not include any heavy industrial sources, but light industrial sources could be developed. Sources would be subject to BAAQMD permit regulation procedures that determine required emission controls on a case-by-case basis. These procedures would minimize any net increase in industrial source emissions. No significant impacts would occur and no mitigation would be required.

Consistency with Air Quality Plans. Both Federal and State air quality legislation require adoption of regional air quality plans that are coordinated with local and regional land use and transportation plans. The 1994 Bay Area Clean Air Plan was based on development patterns and plans that existed in the early 1990s. Because the NAS Alameda/FISC Alameda Reuse Plan was not completed until 1996, it was not incorporated into the land use, transportation, and air quality forecasts based on the 1994 plan.

Regional air quality plans are required under State law to be updated every three years, to reflect changing land use and transportation plans. The 1997 revision to the Bay Area Clean Air Plan, currently in progress, will incorporate updated land use and transportation assumptions, including land uses identified in the Reuse Plan. The required updating of Federal and State air quality plans provides an automatic mechanism for addressing the regional

air quality impacts of base reuse plans. No significant impact would be anticipated and no mitigation would be required.

4.11.2 Seaport Alternative

The primary difference between the Seaport Alternative and Reuse Plan Alternative would be the development of a 5-berth container port in the Northwest Territories planning area. This alternative also would include more heavy industrial activity than under the Reuse Plan Alternative.

Significant Impacts

Construction and Demolition

Impact 1: A significant and mitigable impact would result from temporary sources of fugitive dust and vehicle emissions due to demolition, construction, utility extension and improvements, and remodeling activities. This air quality impact would be similar to that discussed for the Reuse Plan Alternative.

Mitigation 1: The mitigation measures for construction and demolition impacts would be the same as those for the Reuse Plan Alternative.

Carbon Monoxide Concentrations

Impact 2: A significant and mitigable impact would result from carbon monoxide concentrations localized near two congested intersections. Although the Seaport Alternative would generate less severe traffic congestion conditions than those associated with the Reuse Plan Alternative. Nevertheless, the Federal and State 8-hour standards for carbon monoxide could be violated at the intersections of Tinker Avenue/Webster Street and 7th Street/Harrison Street (Table 4-29).

Mitigation 2: This impact could be mitigated to a nonsignificant level by the traffic mitigation measures related to carbon monoxide hot spots for the Reuse Plan Alternative identified in Section 4.10. As shown in Table 4-30, these measures would eliminate the potential for violation of the Federal and State 8-hour standard at both the Tinker Avenue/Webster Street intersection and the 7th Street/Harrison intersection.

Traffic-related Ozone Precursor Emissions

Impact 3: A significant and mitigable impact would result from the increased emission of ozone precursors by vehicle traffic. The Seaport Alternative would generate more traffic-related ozone precursor emissions than would be

associated with a continuation of operational activity levels. As shown by Table 4-31, the net increase in traffic-related emissions would be about 18 tons (16 metric tons) per year for organic compounds and 54 tons (49 metric tons) per year for nitrogen oxides. These emission increases exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year.

Mitigation 3a: As discussed for the Reuse Plan Alternative, the City of Alameda intends to implement a TSM program as a mitigation measure for traffic and parking impacts. Such programs would not be able to reduce the net increase in vehicle emissions to less than 15 tons (14 metric tons) per year.

Mitigation 3b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related ozone precursor emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process.

Traffic-related PM_{10} Emissions

Impact 4: A significant and mitigable impact would result from the increased emission of PM_{10} by vehicle traffic. As indicated in Table 4-31, the Seaport Alternative would generate more traffic-related PM_{10} emissions than would be associated with a continuation of operational activity levels. Net increases in PM_{10} emissions would be about 39 tons (35 metric tons) per year. These emission increases would exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year.

Mitigation 4a: As discussed for the Reuse Plan Alternative, the City of Alameda intends to implement a TSM program as a mitigation measure for traffic and parking impacts. Such programs would not be able to reduce the net increase in vehicle emissions to less than 15 tons (14 metric tons) per year.

Mitigation 4b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related PM_{10} emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process for the crossing.

Nonsignificant Impacts

Asbestos and Lead Particles from Demolition and Remodeling. The potential for release of lead- or asbestos-contaminated materials would be similar to that

discussed for the Reuse Plan Alternative. Complying with Federal, State, and BAAQMD regulations during building demolition or remodeling would prevent significant airborne releases of these materials. No significant impacts would occur and no mitigation would be required.

Industrial Source Emissions. The Seaport Alternative would not include any significant areas of heavy industrial uses that would generate typical industrial emissions. The type of port facilities envisioned for this alternative would be unlikely to generate odor or other air quality-related land use compatibility problems. Most industrial emission sources would be subject to BAAQMD permit regulation procedures that determine required emission controls on a case-by-case basis. These procedures would minimize any net increase in industrial source emissions. No significant impacts would be anticipated and no mitigation would be required.

Consistency with Air Quality Plans. Air quality plan consistency issues for the Seaport Alternative are similar to those discussed for the Reuse Plan Alternative. The required updating of Federal and State air quality plans provides a mechanism for addressing the regional air quality impacts of base reuse plans. No significant impacts would be anticipated and no mitigation would be required.

4.11.3 Residential Alternative

This alternative would provide more residential housing than under the Reuse Plan Alternative. It would provide housing in the Northwest Territories planning area and increased acreage for housing in the Civic Core and Inner Harbor planning areas. In the North Waterfront planning area, a 200-slip marina and increased housing would be added.

Significant Impacts

Construction and Demolition

Impact 1: Significant and mitigable impacts would result from temporary sources of fugitive dust and vehicle emissions due to demolition, construction, utility extension and improvements, and remodeling activities. Air quality impacts would be similar to those discussed for the Reuse Plan Alternative.

Mitigation 1: The mitigation measures for construction and demolition impacts would be the same as those for the Reuse Plan Alternative.

Carbon Monoxide Concentrations

Impact 2: A significant and mitigable impact would result from carbon monoxide concentrations localized near two congested intersections. Although the Residential Alternative would generate less severe traffic congestion conditions than those associated with the Reuse Plan Alternative, the State 1-hour carbon monoxide standard and the Federal and State 8-hour carbon monoxide standard could be violated at the intersection of Tinker Avenue and Webster Street (Table 4-29). The carbon monoxide concentrations projected for the intersection of 7th Street and Harrison Street would not exceed the Federal and State 8-hour standard.

Mitigation 2: This impact could be mitigated to a nonsignificant level by implementing the traffic mitigation measures for carbon monoxide hot spots as discussed for the Reuse Plan Alternative. As shown in Table 4-30, these measures would eliminate the potential for violations of the Federal and State 8-hour standard at both the Tinker Avenue/Webster Street intersection and the 7th Street/Harrison Street intersection.

Traffic-related Ozone Precursor Emissions

Impact 3: A significant and mitigable impact would result from the increased emission of ozone precursors by vehicle traffic. The Residential Alternative would generate more traffic-related ozone precursor emissions than would be associated with a continuation of operational activity. As indicated in Table 4-31, the net increase in traffic-related emissions would be about 23 tons (21 metric tons) per year for organic compounds and 53 tons (48 metric tons) per year for nitrogen oxides. These emission increases exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year.

Mitigation 3a: As discussed for the Reuse Plan Alternative, the City of Alameda intends to implement a TSM program as a mitigation measure for traffic and parking impacts. Such programs would not be able to reduce the net increase in vehicle emissions to less than 15 tons (14 metric tons) per year.

Mitigation 3b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related ozone precursor emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process for the crossing.

Traffic-related PM_{10} Emissions

Impact 4: A significant and mitigable impact would result from the increased emissions of PM_{10} by vehicle traffic. As indicated in Table 4-31, the Residential Alternative would generate more traffic-related PM_{10} emissions than would be associated with a continuation of operational activity levels. Net increases in PM_{10} emissions would be about 51 tons (46 metric tons) per year. These emission increases would exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year.

Mitigation 4a: As discussed for the Reuse Plan Alternative, the City of Alameda intends to implement a TSM program as a mitigation measure for traffic and parking impacts. Such programs would not be able to reduce the net increase in vehicle emissions to less than 15 tons (14 metric tons) per year.

Mitigation 4b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related PM_{10} emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process for the crossing.

Nonsignificant Impacts

Asbestos and Lead Particles from Demolition and Remodeling. The potential for release of lead- or asbestos-contaminated materials would be similar to that discussed for the Reuse Plan Alternative. Complying with existing Federal, State, and BAAQMD regulations during building demolition or remodeling would prevent significant airborne releases of these materials. No significant impacts would be anticipated and no mitigation would be required.

Industrial Emission Sources. The Residential Alternative would not include any heavy industrial sources, but light industrial activity could occur. Most industrial emission sources would be subject to BAAQMD permit regulation procedures that would determine required emission controls on a case-by-case basis. These procedures would minimize any net increase in industrial source emissions. No significant impacts would be anticipated and no mitigation would be required.

Consistency with Air Quality Plans. Air quality plan consistency issues for the Residential Alternative would be similar to those discussed for the Reuse Plan Alternative. The required updating of Federal and State air quality plans provides a mechanism for addressing the regional air quality impacts of base

reuse plans. No significant impact would be anticipated and no mitigation would be required.

4.11.4 Reduced Density Alternative

This alternative proposes uses similar to the Reuse Plan alternative but at lower densities.

Significant Impacts

Construction and Demolition

Impact 1: Significant and mitigable impacts would result from temporary sources of fugitive dust and vehicle emissions due to demolition, construction, utility extension and improvements, and remodeling activities. Air quality impacts would be similar to those discussed for the Reuse Plan Alternative.

Mitigation 1: The mitigation measures for construction and demolition impacts would be the same as those for the Reuse Plan Alternative.

Traffic-related Ozone Precursor Emissions

Impact 2: A significant and mitigable impact would result from the increased emission of ozone precursors by vehicle traffic. The Reduced Density Alternative would generate more vehicle-related ozone precursor emissions than would be associated with a continuation of operational activity levels. As shown by Table 4-31, the net increase in traffic-related emissions would be about 2 tons (2 metric tons) per year for organic compounds and 21 tons (19 metric tons) per year for nitrogen oxides. The nitrogen oxide emission increases exceed the BAAQMD impact significance threshold of 15 tons (14 metric tons) per year.

Mitigation 2a: As discussed for the Reuse Plan Alternative, the City of Alameda intends to implement a TSM program as a mitigation measure for traffic and parking impacts. Such programs would not be able to reduce the net increase in vehicle emissions to less than 15 tons (14 metric tons) per year.

Mitigation 2b: Implementing mitigation measure 3b in Section 4.10, with the commensurate reduction in traffic, would have the incidental effect of lowering traffic related carbon monoxide emissions to a nonsignificant level. If a new crossing of the Oakland/Alameda Estuary is constructed in the future, potential adverse air quality impacts associated with that project would be taken into consideration in the planning and environmental review process for the crossing.

Nonsignificant Impacts

Carbon Monoxide Concentrations. The Reduced Density Alternative would generate much less severe traffic congestion conditions than those associated with the Reuse Plan Alternative. As shown in Table 4-29, Federal and State carbon monoxide standards would not be exceeded at any of the modeled intersections. No significant impacts would occur and no mitigation would be required.

Traffic-Related PM_{10} Emissions. The Reduced Density Alternative would generate less traffic-related PM_{10} emissions than would be associated with continuation of operational activity levels (Table 4-31). There would therefore be no net increase in traffic-related PM_{10} emissions as compared to the operational activity level. No significant impacts would occur and no mitigation would be required.

Asbestos and Lead Particles from Demolition and Remodeling. The potential for release of lead- or asbestos-contaminated materials would be similar to that discussed for the Reuse Plan Alternative. Complying with existing Federal, State, and BAAQMD regulations during building demolition or remodeling would prevent significant airborne releases of these materials. No significant impacts would occur and no mitigation would be required.

Industrial Emission Sources. The Reduced Density Alternative would not include any heavy industrial uses, but light industrial activity could occur. Most industrial emission sources would be subject to BAAQMD permit regulations procedures that determine required emission controls on a case-by-case basis. These procedures would minimize any net increase in industrial source emissions. No significant impacts would be anticipated and no mitigation would be required.

Consistency with Air Quality Plans. Air quality plan consistency issues for the Reduced Density Alternative would be similar to those discussed for the Reuse Plan Alternative. The required updating of Federal and State air quality plans provides a mechanism for addressing the regional air quality impacts of base reuse plans. No significant impacts would occur and no mitigation would be required.

4.11.5 No Project Alternative

Under the No Project Alternative, NAS Alameda/FISC Alameda would remain under Federal control in a caretaker status. Activities would be limited to facility maintenance, security, and remediation activities. Because no new construction would occur and no demolition is anticipated under this alternative, there would be no air quality impacts from asbestos, lead particles,

and industrial sources that could be generated by these activities. Retaining NAS Alameda/FISC Alameda in caretaker status is not a Federal agency action subject to Clean Air Act conformity determination requirements.

Nonsignificant Impacts

Carbon Monoxide Concentrations. Caretaker status would generate minimal additional traffic. As shown in Table 4-29, the No Project Alternative would not significantly impact localized carbon monoxide concentrations. No mitigation would be required.

Traffic-related Ozone Precursor Emissions. As shown in Table 4-31, caretaker status would generate minimal traffic and thus would not significantly impact regional ozone precursor emissions. No mitigation would be required.

Traffic-related PM_{10} Emissions. As shown in Table 4-31, caretaker status would generate minimal traffic and thus would not significantly impact regional PM_{10} emissions. No mitigation would be required.

Consistency with Air Quality Plans. There would be minimal reuse of the NAS Alameda/FISC Alameda site under caretaker status. The required updating of Federal and State air quality plans could incorporate the reduced use of the site as part of the update. No significant impacts would occur and no mitigation would be required.

4.12 NOISE

This section describes the noise impacts that could result from the reuse actions and the No Project Alternative. The analysis focuses on the effects of construction, demolition and traffic noise and on the compatibility of noise and land uses. Impacts are analyzed against noise compatibility criteria and by the incremental changes compared to projected future conditions without the project. Baseline noise conditions are described in Section 3.12.

Region of Influence

Noise levels decrease as the distance from the noise source increases; this results in a fairly limited ROI for noise issues. The ROI for fixed site noise sources (such as industrial equipment or construction and demolition sites) is generally less than 0.5 mile (0.8 km) from the site. The ROI for highway traffic noise is generally less than 1,000 feet (305 m) from roadways.

Significance Criteria

Annoyance effects are the primary consideration for most noise impact assessments. Land use compatibility guidelines from local general plans are the most common source of criteria for evaluating the impact significance of noise issues. Regulatory thresholds established by State and local codes also can provide some of the criteria to judge the significance of noise impacts.

Because the reaction to noise level changes involves both physiological and psychological factors, the magnitude of a noise level change can be as important as the resulting overall noise level. A readily noticeable increase in noise levels 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.

A variety of factors related to the nature of a noise source also can affect people's reaction to it. Most people find evening and nighttime noise more objectionable than daytime noise. Similarly, temporary noises generally are tolerated more than permanent noises. Depending on the repetition pattern, intermittent noises can be either more or less objectionable than continuous noises.

A proposed action can have significant noise impacts in two ways—by creating new sources of noise in an area and by establishing noise-sensitive land uses where noise levels are high. Both situations are considered when establishing significance criteria for noise impact.

The noise impact significance criteria used in this EIR consider the establishment of noise-sensitive residential, educational, and health care land uses in areas exposed to ambient CNEL levels higher than the 60 dB land use compatibility criterion an adverse project impact. Noise levels from buildout of each of the reuse alternatives have been applied to a 2010 condition, consistent with the traffic analysis presented in Section 4.10.

In addition, noise levels would be considered a significant impact under the following conditions:

- If there is an increase in noise exposure of 4 dB or more that would result in noise levels exceeding those described as normally acceptable of the affected land use (City of Alameda General Plan Policy 8.7.h);
- If there is an increase of 6 dB or more, due to potential for adverse community response (City of Alameda General Plan Policy 8.7.h); or
- Temporary noise sources restricted to daytime hours (such as most construction and demolition activities) would be considered a significant impact only if they affect noise-sensitive land uses and result in CNEL levels of 70 dB or more (i.e., 10 dB above the land use compatibility criterion for noise-sensitive land uses).

In addition to noise that travels from point of origin to a receptor above ground, significant impacts could result from exposure of persons to excessive groundborne vibration or noise levels.

Table 4-32 summarizes the significance of noise impacts for the various alternatives.

Table 4-32
Summary of Noise Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Construction and Demolition: Noise and Vibration	○	◑	◑	◑	◑
Traffic Noise, Main Street and Atlantic Avenue	○	◑	◑	◑	◑
Traffic Noise, Webster Street	○	◔	◔	◔	◔
Port-related Truck Traffic	○	○	◔	○	○
Noise/Land Use Compatibility Conflicts	○	◔	◔	◔	◔

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◔ = Nonsignificant
○ = None

Planning Issues and Process

Alameda County Airport Land Use Policy Plan. The 1986 Alameda County Airport Land Use Policy Plan includes the former airfield at NAS Alameda. Because Navy aircraft no longer use the airfield, the noise contours and associated noise zone identifications for the NAS Alameda airfield contained in the 1985 AICUZ report (see Figure 3-20) are no longer applicable to noise conditions in the City of Alameda. The majority of the airfield is being transferred to USFWS and will no longer be operated as an airfield. The Alameda County Airport Land Use Policy Plan will need to be amended to reflect that there will no longer be an airfield on NAS Alameda property.

4.12.1 Reuse Plan Alternative

Significant Impacts

Construction and Demolition: Noise and Vibration

Impact 1: A temporary significant and mitigable impact would result from demolition, construction, utility extension and improvements, and remodeling activities, which would cause temporary noise and vibration disturbance to adjacent land uses. Building demolition, building construction, and roadway reconstruction would be the primary noise and vibration sources. There would be intermittent construction and demolition activities over an extended period, with market conditions having a significant influence on the extent, timing, and location of construction activities.

Many residential units in the Main Street Neighborhoods planning area would be reused initially, but some would eventually be replaced by new units. Similar patterns of early reuse of existing buildings followed by eventual redevelopment may occur in areas planned for light industrial and office development.

When relatively large areas are redeveloped at one time, the size of the construction area may provide some buffering of adjacent land uses from construction noise. Construction noise and vibration generally would not be considered a significant impact in areas devoted to light industrial, warehouse, or office uses. Construction noise and vibration is an issue of greater importance in residential and mixed-use areas.

Figure 4-8 illustrates maximum expected construction site noise levels generated by heavy equipment use during site preparation and foundation construction activities. The noise levels illustrated in Figure 4-8 reflect eight hours of actual equipment operation, with five items of equipment operating in proximity to each other. In most cases, equipment use would be less than

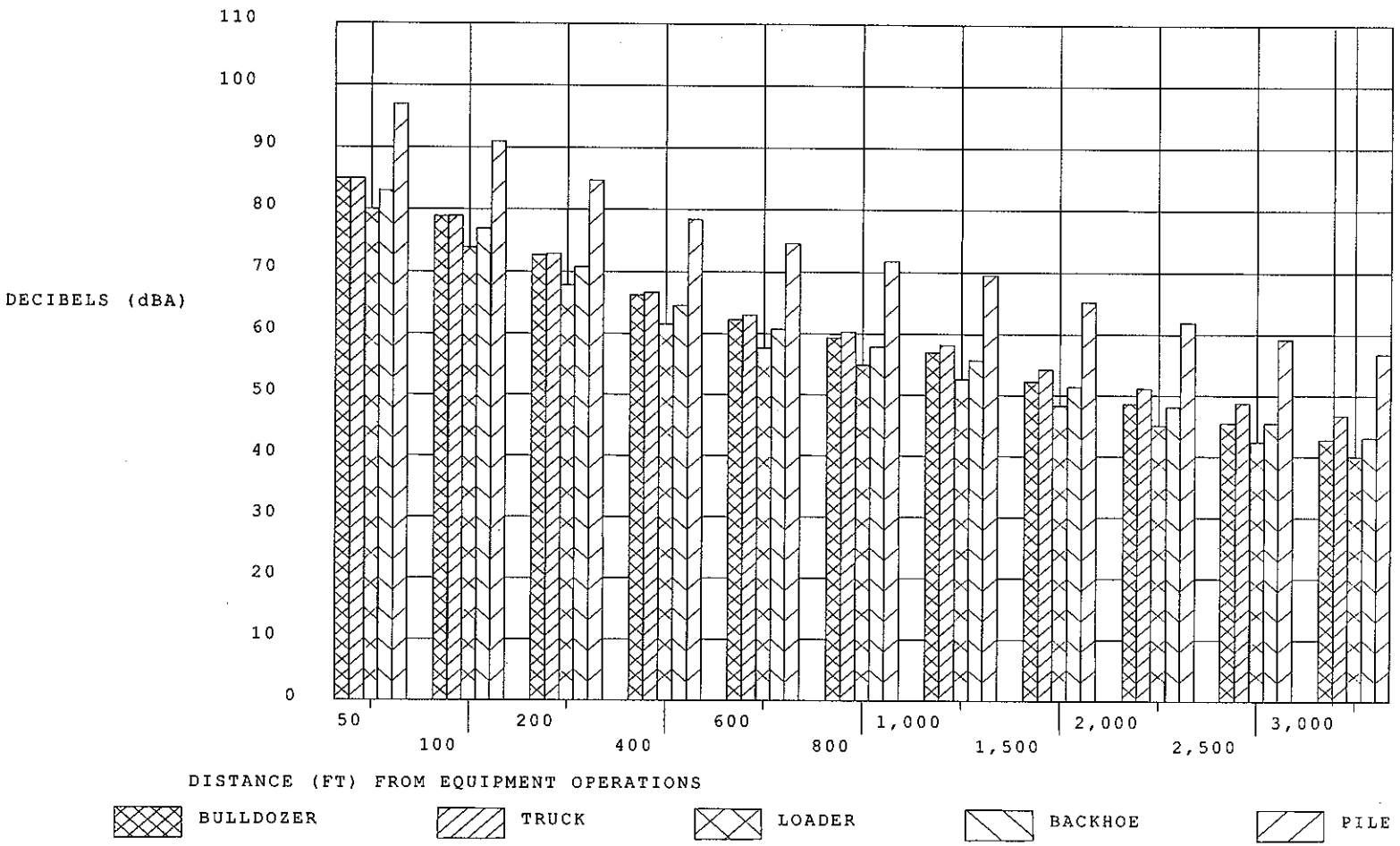
this, with fewer pieces of equipment operating for shorter periods. Noise-sensitive land uses within 300 feet (91 m) of a construction site may be impacted temporarily by construction noise.

Because most of NAS Alameda/FISC Alameda was established on fill material, piles may be needed for adequate foundation support of some new structures. This typically would require the use of pile driving equipment, which is noisier than other types of construction equipment, and the repetitious character of pile driving noise can be especially annoying. Figure 4-9 illustrates typical noise levels associated with diesel pile drivers. Noise-sensitive land uses within about 600 feet (183 m) of a pile driving site may experience temporary disturbance from construction noise. In addition, pile driving may produce noticeable vibration for nearby land uses, depending on the proximity and soil characteristics.

Mitigation 1: Construction noise and vibration impacts can be mitigated to nonsignificant levels by restricting most construction activity to normal daytime periods. Where it is necessary to use extensive heavy equipment close to residential, educational, or medical land uses, temporary construction site noise shielding, such as heavy plywood fencing, often can be used to minimize noise impacts on adjacent areas. Carefully phasing demolition, construction, and remodeling activities also can minimize the extent to which occupied areas are exposed to construction noise and vibration.

Off-site Noise Generated by Traffic Associated with Reuse

Impact 2: A significant and mitigable impact from traffic noise would occur along Main Street and Atlantic Avenue, where traffic noise levels would increase by about 4 dB along Main Street and by about 6 dB along Atlantic Avenue. Buildout of the Reuse Plan Alternative would significantly increase traffic volumes for on-site roadways and major access roadways in the City of Alameda. Roadways in Oakland would experience lesser changes in traffic volumes. Traffic noise levels increase slowly with increasing traffic volumes. In general, a doubling of traffic volumes would cause a 3 dB increase in noise levels. Because background traffic volumes are already high in Oakland, the Reuse Plan Alternative would not cause large percentage changes in traffic volumes on Oakland streets. Consequently, traffic noise analyses have been focused on roadways in the City of Alameda.



R:\0686\11\C-noise.cdr - 11/2/97 - BC

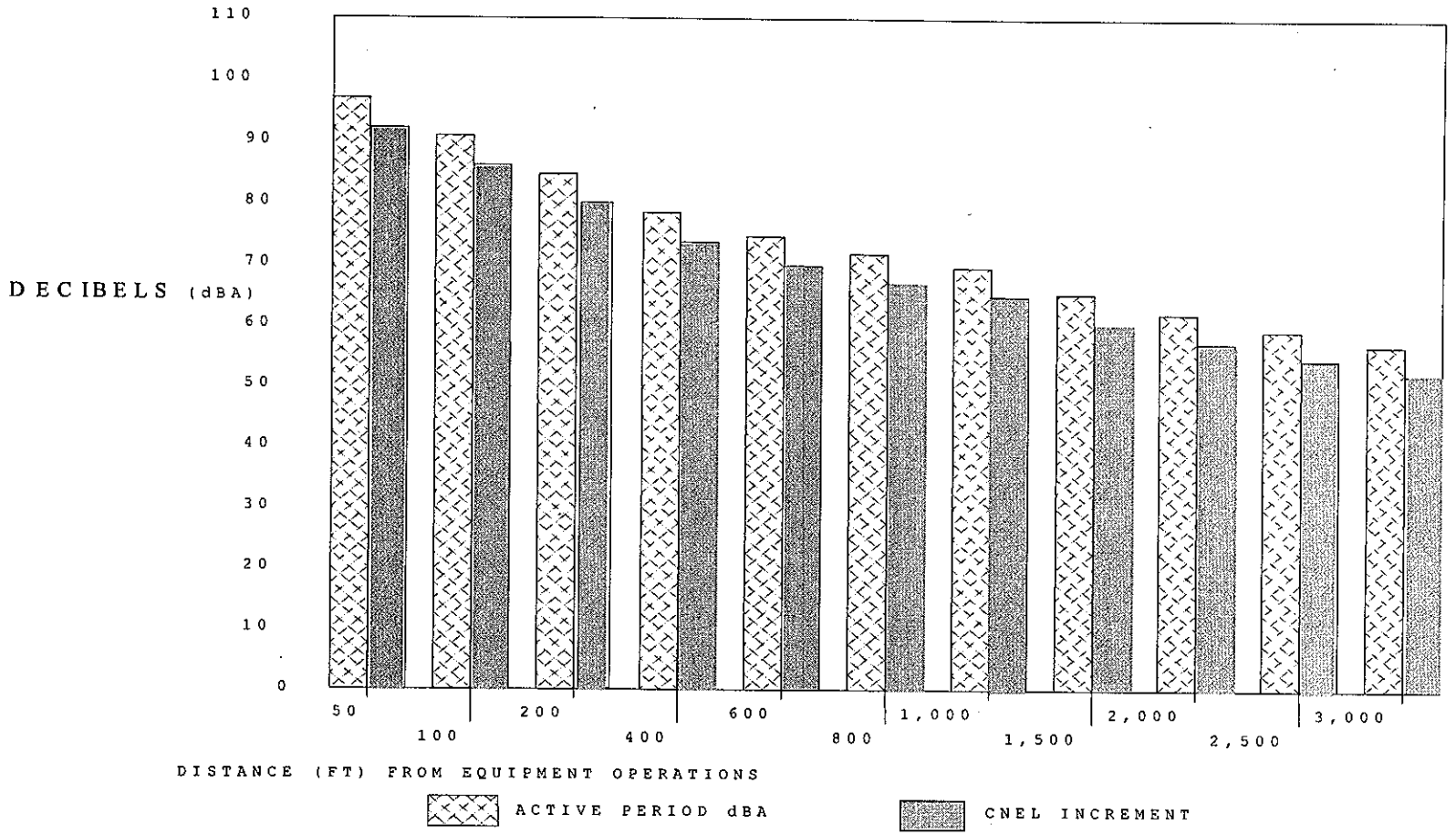
This figure illustrates maximum expected construction site noise levels from heavy equipment use during site preparation and foundation work stages of construction projects. Noise-sensitive land uses within 300 feet of a construction site may be impacted temporarily by construction noise.

Construction Site Noise

NAS Alameda/FISC Alameda
Alameda, California

Source: Tetra Tech 1997

Figure 4-8



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This figure illustrates typical noise levels associated with diesel pile drivers. Noise-sensitive land uses within about 600 feet of a pile driving site may experience temporary disturbance from construction noise.

Typical Pile Driver Noise

NAS Alameda/FISC Alameda
Alameda, California

Source: Tetra Tech 1997

Figure 4-9

Traffic noise impacts were evaluated by using a spreadsheet version of the Federal Highway Administration traffic noise prediction model (Barry and Reagan 1978). The model was structured to evaluate hourly noise levels over a daily cycle. Traffic speeds used in the model were adjusted downward from free flow speeds according to hourly volume:capacity ratios. CNEL values were computed from the hourly average noise levels. Noise level predictions were made for transects perpendicular to major roadways at the following locations:

- Main Street near Avenue D;
- Atlantic Avenue between Poggi Street and Campus Loop Road;
- Webster Street near Buena Vista Avenue; and
- Webster Street north of Ford Avenue.

Table 4-33 summarizes the result of the traffic noise analysis for all reuse alternatives. The Reuse Plan Alternative would have traffic noise impacts that are similar to those of the other alternatives, but the differences among the alternatives would not be detectable by the average person.

As commonly occurs for major roadways with modest amount of truck traffic, CNEL levels within 300 feet (91 m) of major roadways would exceed 60 dB. CNEL levels would exceed 65 dB within about 100 feet (30 m) of the roadway.

Compared to future conditions without the project, traffic noise levels under the Reuse Plan Alternative would increase by about 4 dB along Main Street and by about 6 dB along Atlantic Avenue. Noise level changes along Webster Street would be much less (about 1.5 dB). Most people have difficulty detecting noise level changes of less than 2 dB but readily notice noise level change of more than 3 dB. A 4 dB increase generally would be perceived as a 32 percent increase in loudness, while a 6 dB change would be perceived as a 52 percent increase in loudness. The incremental change in noise levels is considered significant for Main Street and Atlantic Avenue, but not for Webster Street.

The noise element of the General Plan for the City of Alameda uses a CNEL value of 60 dB as a general land use compatibility standard for noise-sensitive residential, educational, and health care land uses. Complaints about noise levels typically begin at about this noise level and increase rapidly as CNEL levels rise above 65 dB. The noise element of the General Pan for the City of Alameda identifies CNEL values of 60 to 70 dB as "conditionally acceptable"

Table 4-33
Summary of Traffic Noise Conditions for the Reuse Alternatives

Location	Modeled CNEL Levels (dBA) by Alternative					Incremental Change in CNEL Levels (dBA) Compared to No Project Alternative			
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
100 ft W of Main St. near Avenue D	62.1	66.3	67.0	67.0	66.1	4.3	4.9	4.9	4.0
200 ft W of Main St. near Avenue D	57.8	61.9	62.5	62.6	61.7	4.1	4.8	4.8	3.9
300 ft W of Main St. near Avenue D	55.4	59.4	60.0	60.0	59.1	4.0	4.6	4.6	3.7
500 ft W of Main St. near Avenue D	52.7	56.4	56.9	57.0	56.1	3.7	4.2	4.3	3.4
750 ft W of Main St. near Avenue D	50.8	54.1	54.6	54.6	53.8	3.4	3.8	3.8	3.0
100 ft E of Main St. near Avenue D	62.1	66.3	67.0	67.0	66.1	4.3	4.9	4.9	4.0
200 ft E of Main St. near Avenue D	57.9	62.0	62.6	62.6	61.7	4.1	4.7	4.8	3.8
300 ft E of Main St. near Avenue D	55.6	59.6	60.1	60.2	59.3	3.9	4.5	4.6	3.7
500 ft E of Main St. near Avenue D	53.3	56.9	57.4	57.4	56.6	3.6	4.1	4.1	3.3
750 ft E of Main St. near Avenue D	52.0	55.2	55.6	55.6	54.9	3.2	3.6	3.6	2.8
100 ft N of Atlantic between Poggi and Campus	61.3	67.6	68.2	68.2	67.1	6.2	6.8	6.9	5.7
200 ft N of Atlantic between Poggi and Campus	57.5	63.2	63.8	63.9	62.7	5.7	6.3	6.3	5.2
300 ft N of Atlantic between Poggi and Campus	55.7	60.8	61.4	61.4	60.4	5.1	5.7	5.7	4.7
500 ft N of Atlantic between Poggi and Campus	53.9	58.1	58.6	58.6	57.7	4.2	4.7	4.7	3.8
750 ft N of Atlantic between Poggi and Campus	53.0	56.4	56.7	56.7	55.9	3.4	3.7	3.7	2.9
100 ft S of Atlantic between Poggi and Campus	61.3	67.6	68.2	68.2	67.1	6.2	6.8	6.9	5.7
200 ft S of Atlantic between Poggi and Campus	57.5	63.2	63.8	63.9	62.8	5.7	6.3	6.4	5.2
300 ft S of Atlantic between Poggi and Campus	55.6	60.9	61.4	61.5	60.4	5.3	5.8	5.9	4.8
500 ft S of Atlantic between Poggi and Campus	53.7	58.2	58.6	58.6	57.7	4.5	5.0	5.0	4.0
750 ft S of Atlantic between Poggi and Campus	52.5	56.4	56.7	56.7	55.9	3.9	4.2	4.2	3.3
100 ft W of Webster near Buena Vista	65.8	67.3	66.9	67.0	66.8	1.5	1.1	1.2	1.0
200 ft W of Webster near Buena Vista	61.5	63.1	62.8	62.8	62.6	1.7	1.3	1.4	1.2
300 ft W of Webster near Buena Vista	59.1	60.9	60.6	60.7	60.4	1.8	1.6	1.6	1.3
500 ft W of Webster near Buena Vista	56.4	58.5	58.4	58.4	58.0	2.1	2.0	2.1	1.6
750 ft W of Webster near Buena Vista	54.6	57.1	57.1	57.1	56.6	2.5	2.5	2.5	2.0
100 ft E of Webster near Buena Vista	65.8	67.3	66.9	67.0	66.8	1.5	1.1	1.2	1.0
200 ft E of Webster near Buena Vista	61.4	63.1	62.7	62.7	62.5	1.6	1.3	1.3	1.1
300 ft E of Webster near Buena Vista	59.0	60.7	60.4	60.4	60.2	1.8	1.4	1.5	1.2
500 ft E of Webster near Buena Vista	56.1	58.0	57.7	57.8	57.5	1.9	1.7	1.7	1.4
750 ft E of Webster near Buena Vista	54.0	56.0	55.8	55.8	55.5	2.0	1.8	1.9	1.5

Table 4-33
Summary of Traffic Noise Conditions for the Reuse Alternatives *(continued)*

Location	Modeled CNEL Levels (dBA) by Alternative					Incremental Change in CNEL Levels (dBA) Compared to No Project Alternative			
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
100 ft W of Webster north of Ford	67.2	68.5	68.8	68.7	68.3	1.3	1.6	1.4	1.0
200 ft W of Webster north of Ford	62.9	64.2	64.5	64.4	63.9	1.3	1.6	1.5	1.1
300 ft W of Webster north of Ford	60.5	61.9	62.2	62.1	61.6	1.5	1.7	1.6	1.1
500 ft W of Webster north of Ford	57.7	59.4	59.6	59.5	59.1	1.7	1.9	1.8	1.3
750 ft W of Webster north of Ford	55.8	57.8	58.0	57.9	57.4	2.0	2.2	2.1	1.6
100 ft E of Webster north of Ford	67.3	68.5	68.8	68.7	68.3	1.2	1.6	1.4	1.0
200 ft E of Webster north of Ford	62.9	64.2	64.5	64.4	63.9	1.3	1.6	1.5	1.0
300 ft E of Webster north of Ford	60.5	61.8	62.1	61.9	61.5	1.4	1.6	1.5	1.1
500 ft E of Webster north of Ford	57.7	59.1	59.3	59.2	58.8	1.4	1.6	1.5	1.1
750 ft E of Webster north of Ford	55.8	57.2	57.3	57.2	56.8	1.4	1.5	1.4	1.0

Source: Tetra Tech 1998

for noise-sensitive land uses. Acceptability depends on adequate building design to control interior noise levels and on the extent of outdoor activity associated with the use.

By their nature, the roadway system plans under the Reuse Plan Alternative made it difficult to evaluate noise impacts for specific properties. When outdoor activity is limited, it is relatively easy to design buildings that adequately minimize the intrusion of outdoor noise. Consequently, traffic noise impacts of the Reuse Plan Alternative are considered significant and mitigable.

Mitigation 2: Proper site planning and building design measures, such as setting a building back from adjacent roadways, using acoustical insulation, and limiting the number of windows and glass doors that face major roadways, can maintain acceptable interior noise levels for new or renovated buildings. Replacing single-pane windows and doors with double- or triple-pane windows can improve acoustical insulation for existing structures. When direct site access to a roadway is not required, sound walls can be a feasible measure for reducing traffic noise levels in outdoor activity areas. Implementation of these mitigation measures would reduce traffic-related noise impacts to a nonsignificant level.

Nonsignificant Impacts

Noise/Land Use Compatibility Conflicts. The Reuse Plan Alternative does not include any significant areas of heavy industrial use. Most light industrial uses are not major noise sources. Reasonable attention to site planning and building design would minimize the potential for noise problems in mixed use zones. Consequently, no significant noise-related land use conflicts are anticipated. No mitigation would be required.

4.12.2 Seaport Alternative

Significant Impacts

Construction and Demolition: Noise and Vibration

Impact 1: A temporary significant and mitigable impact would result from demolition, construction, utility extension and improvements, and remodeling activities. Noise and vibration impacts would be similar to those discussed for the Reuse Plan Alternative.

Mitigation 1: The mitigation measures for construction noise and vibration are the same as those for the Reuse Plan Alternative.

Off-site Noise Generated by Traffic Associated with Reuse

Impact 2: A significant and mitigable traffic noise impact would occur along Main Street and Atlantic Avenue, where traffic noise levels would increase by about 4 dB along Main Street and by about 6 dB along Atlantic Avenue. As shown in Table 4-33, traffic noise impacts associated with the Seaport Alternative would be similar to those discussed for the Reuse Plan Alternative, except for additional truck traffic through residential areas, as discussed below under port-related truck traffic noise. Noise level changes along Webster Street would not be significant.

Mitigation 2: The mitigation measures for traffic noise would be the same as those for the Reuse Plan Alternative.

Nonsignificant Impacts

Port-related Truck Traffic. Port facility development would generate about 1,000 vehicle trips per day, including about 380 truck trips per day (Institute of Transportation Engineers 1991). An alternate crossing of the Oakland Inner Harbor is proposed as part of the Seaport Alternative to accommodate this port-related truck traffic. An alternate crossing would prevent truck traffic from using local roadways in Alameda and would prevent truck-related noise from being a significant impact.

Noise/Land Use Compatibility Conflicts. The Seaport Alternative includes commercial port facilities and light industry areas but not any heavy manufacturing industry areas. Port facilities can be a localized source of noise from motorized cranes, ship engines, and truck or rail traffic. Most light industrial uses are not major noise sources. Noise-related land use compatibility problems can be avoided by adequately separating port facilities from noise-sensitive land uses. Reasonable attention to site planning and building design would minimize the potential for noise problems in mixed-use zones. Consequently, no significant noise-related land use conflicts are anticipated. No mitigation would be required.

4.12.3 Residential Alternative

Significant Impacts

Construction and Demolition: Noise and Vibration

Impact 1: A temporary significant and mitigable impact would result from demolition, construction, utility extension and improvements, and remodeling activities. Noise and vibration impacts would be similar to those discussed for the Reuse Plan Alternative.

Mitigation 1: The mitigation measures for construction noise and vibration are the same as those for the Reuse Plan Alternative.

Off-site Noise Generated by Traffic Associated with Reuse

Impact 2: A significant and mitigable traffic noise impact would occur along Main Street and Atlantic Avenue, where noise levels would increase by about 4 dB along Main Street and about 6 dB along Atlantic Avenue. As shown in Table 4-33, traffic noise impacts associated with the Residential Alternative would be similar to those discussed for the Reuse Plan Alternative. Noise level changes along Webster Street would not be significant.

Mitigation 2: The mitigation measures for traffic noise would be the same as those for the Reuse Plan Alternative.

Nonsignificant Impacts

Noise/Land Use Compatibility Conflicts. The Residential Alternative includes limited light industry areas but not any heavy manufacturing industry areas. Most light industrial uses are not major noise sources. Potential noise-related land use compatibility problems can be avoided by adequately separating industrial facilities from noise-sensitive land uses. Reasonable attention to site planning and building design would minimize the potential for noise problems in mixed-use zones. Consequently, no significant noise-related land use conflicts are anticipated. No mitigation would be required.

4.12.4 Reduced Density Alternative

Significant Impacts

Construction and Demolition

Impact 1: A temporary significant and mitigable impact would result from demolition, construction, utility extension and improvements, and remodeling activities. Noise and vibration impacts would be similar to those discussed for the Reuse Plan Alternative.

Mitigation 1: The mitigation measures for construction noise and vibration would be the same as those for the Reuse Plan Alternative.

Off-site Noise Generated by Traffic Associated with Reuse

Impact 2: A significant and mitigable traffic noise impact would occur along Main Street and Atlantic Avenue, where noise levels would increase by about 4 dB on Main Street and by about 5 dB along Atlantic Avenue. As shown in

Table 4-33, traffic noise impacts associated with the Reduced Density Alternative would be very similar to those discussed for the Reuse Plan Alternative. Noise level changes along Webster Street would not be significant.

Mitigation 2: The mitigation measures for traffic noise would be the same as those for the Reuse Plan Alternative.

Nonsignificant Impacts

Noise/Land Use Compatibility Conflicts. The Reduced Density Alternative includes limited light industry areas but not any heavy manufacturing industry areas. Most light industrial uses are not major noise sources. Potential noise-related land use compatibility problems can be avoided by adequately separating industrial facilities from noise-sensitive land uses. Reasonable attention to site planning and building design would minimize the potential for noise problems in mixed-use zones. Consequently, no significant noise-related land use conflicts are anticipated. No mitigation would be required.

4.12.5 No Project Alternative

Under the No Project Alternative, NAS Alameda/FISC Alameda would remain under Federal control in a caretaker status. No new construction would occur and no demolition is anticipated during the caretaker period. Consequently, there would be no noise and vibration impacts generated by such activities or by traffic associated with the caretaker activities. As indicated in Table 4-33, there would be no traffic-related noise impacts generated by this alternative. Caretaker status would not produce any significant active land uses at NAS Alameda/FISC Alameda. Consequently, no noise-related land use compatibility conflicts would be anticipated.

4.13 HAZARDOUS MATERIALS AND WASTE

This section describes impacts related to hazardous materials and hazardous wastes that are associated with the reuse actions and the No Project Alternative. Impacts are analyzed against baseline conditions as described in Section 3.13.

While the Navy is committed to complete all required remediation of contamination resulting from Navy activities at NAS Alameda/FISC Alameda, delays or restrictions in disposal and reuse could occur, depending on the extent of contamination and the results of the risk assessment and remedial designs developed for contaminated sites. Examples of conditions resulting in land use restrictions would be the space required for operating soil or ground water treatment systems and for access to long-term monitoring wells. These conditions would be considered in the layout of future site plans.

Section 3.13 of this EIR details the Navy, regulatory, and public review processes established to protect human health and the environment. Specifically, the BCPs for NAS Alameda and FISC Alameda (US Navy 1998a, 1996c) summarize the status of the environmental programs and present strategies for carrying out response actions necessary to protect human health and the environment. The BCPs are updated periodically to reflect the status of cleanup operations at NAS Alameda/FISC Alameda. Data and analysis in this EIR are based primarily on the Alameda Point Draft BCP (US Navy 1998a) and the FISC Alameda BCP (US Navy 1996c), which are comprehensive updates of all environmental cleanup information.

Proposed reuse of the property was considered when the BCPs were prepared, and risk-based cleanup levels are being established to be consistent with the Reuse Plan. Final cleanup remedies have not yet been selected at NAS Alameda/FISC Alameda. In accordance with the guidelines in US EPA's *Land Use in the CERCLA Remedy Selection Process* (US EPA 1995b), the proposed future land uses at NAS Alameda/FISC Alameda, as indicated in the Reuse Plan, will be considered in selecting the final remedies. The selected remedies and use restrictions will be developed with consideration of public concerns and comments, as required under CERCLA, § 113(k)(2)(B)(I-v) and 117(a)(2) and other applicable authorities.

Prior to real property conveyance, the Navy must remediate hazardous substances to a level consistent with the protection of human health and the environment for the intended use. If conveying contaminated property before completion of the required response actions under the applicable authority, the Navy must ensure that the property is suitable for conveyance for the use intended, and that the intended use is consistent with

the protection of human health and the environment. In either case, this determination would be documented in a Finding of Suitability to Transfer (FOST). Future property recipients would be advised and notified of the environmental condition of the property and, where appropriate, covenants, conditions, or restrictions may be included in the deed to ensure protection of human health and the environment, taking into consideration the intended land uses.

In most circumstances, contaminated or potentially contaminated properties cannot be conveyed until remediation is complete. However, the Department of Defense (DOD) has established a policy for leasing contaminated or potentially contaminated properties. The Navy, with regulatory participation, has prepared two Finding of Suitability to Lease (FOSL) documents covering NAS Alameda property, the FOSL for Sector I NAS Alameda (US Navy 1996e) and the FOSL for Sector II NAS Alameda (US Navy 1997b). The Navy has also prepared a FOSL for the FISC Alameda property (US Navy 1998b).

These FOSLs document environmental findings for NAS Alameda and FISC Alameda and the suitability of these properties for leasing. The FOSLs include summaries of contamination and risk, present lease notifications and restrictions necessary to preclude threats to human health and the environment, and ensure Navy access to the property to conduct investigation and remediation of CERCLA- and non-CERCLA-regulated contamination. These FOSL documents are currently used to support interim leasing of portions of NAS Alameda/FISC Alameda. Although not currently proposed, the restrictions described in these FOSL documents could serve as restrictions during a Lease in Furtherance of Conveyance (LIFOC) or as part of an early transfer of property, after completion of the EIR process and a final disposal decision. The restrictions established in these FOSLs are described later in this section.

Properties that contain or that potentially contain contamination may be conveyed prior to completion of environmental remediation only if the conditions for a § 334 early transfer, as set forth in Section 120(h)(3)(c) of CERCLA (42 U.S.C. § 9620[h][3][C]), are met. These conditions include the following:

- Agreement by the US EPA and the State that the property is suitable for the intended use and that the intended use will be protective of human health and the environment;
- Public notice and comment;
- Assurances from the Federal government that conveyance or transfer of the property will not substantially delay response actions at the

property and that the Federal government will continue any necessary response actions after conveyance or transfer; and

- Property use restrictions, if necessary, to ensure that human health and the environment are protected and that the necessary remedial actions can take place. These restrictions would likely be similar to or the same as restrictions currently identified in the FOSLs for leasing property at NAS Alameda and FISC Alameda as described later in this section.

Region of Influence

The ROI for hazardous materials and waste is NAS Alameda/FISC Alameda and any adjacent area that may have been affected by hazardous materials or hazardous wastes originating at NAS Alameda/FISC Alameda or from which hazardous materials or wastes could migrate onto NAS Alameda/FISC Alameda.

Significance Criteria

An alternative may have a significant hazardous materials and waste impact if implementing it would:

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

- Create a significant hazard to the public or to the environment by being located on a hazardous materials site; or

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Table 4-34 summarizes hazardous material and waste impact determinations. No impacts were identified for radon; therefore, this subject is not discussed further in this section. Potential impacts related to pesticides are discussed in Sections 4.7, Biological Resources, and 4.9, Water Resources.

Table 4-34
Summary of Hazardous Materials and Waste Impacts

IMPACT ISSUES	COMMUNITY REUSE ALTERNATIVES				
	No Project Alternative	Reuse Plan Alternative	Seaport Alternative	Residential Alternative	Reduced Density Alternative
Human Exposure to Unremediated Areas During Site Use Prior to Completion of Remediation	○	◑	◑	◑	◑
Human and Ecological Exposure to Residual Contamination During Construction Activities	○	◑	◑	◑	◑
Human Exposure to Residual Contamination During Routine Use	○	◑	◑	◑	◑
Human Exposure to Surface Emissions of Subsurface Gases During Routine Use	○	◑	◑	◑	◑
Human Exposure to Contamination During Remediation Activities	○	◌	◌	◌	◌
Ecological Exposure to Contamination During Remediation Activities	○	◌	◌	◌	◌
Human and Ecological Exposure to Unidentified Subsurface Hazards During Construction Activities	○	◌	◌	◌	◌
Hazardous Materials Use	◌	◌	◌	◌	◌
Hazardous Waste Generation	◌	◌	◌	◌	◌
Asbestos	○	◌	◌	◌	◌
Polychlorinated Biphenyls	○	◌	◌	◌	◌
Storage Tanks	○	◌	◌	◌	◌
Lead Hazards	○	◌	◌	◌	◌
Radioactive Materials	○	◌	◌	◌	◌
Medical/Biohazardous Waste	○	◌	◌	◌	◌
Radon[1]	○	○	○	○	○

LEGEND:

Level of Impact

● = Significant and not mitigable
◑ = Significant and mitigable
◌ = Nonsignificant
○ = None

[1]No impacts were identified for radon; therefore, this subject is not further discussed in this section.

4.13.1 Reuse Plan Alternative

Significant Impacts

Impact 1: Human Exposure to Unremediated Areas During Site Use Prior to Complete Remediation. As described in Section 1.4.2, Intended Uses of the EIR, use of a LIFOC or a § 334 early transfer, although not proposed at this time, could enable the City of Alameda or other acquiring entity to begin reuse activities while remediation is being conducted, subject to restrictions identified in a FOSL or FOST document. A significant and mitigable impact would result from human exposure to unremediated areas during routine site use. During use that is consistent with the land use designation in the Reuse Plan Alternative, people who occupy portions of NAS Alameda/FISC Alameda 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 from time to time need to excavate site soils to maintain or replace utilities, repair foundations, make other sub-surface repairs, or conduct other activities that disturb soil or that disturb flooring, pavement or concrete covering soil. Dermal contact with unremediated soil by construction workers, or inhalation of soils by workers or the public, could pose a human health risk. In addition, inadvertent contact with lead-based paint (LBP), asbestos-containing materials and polychlorinated biphenyls (PCBs) during routine building or equipment renovation or repair could expose construction workers, tenants, residents, or visitors, which, depending on the quantity of material, could pose a human health risk. Unless properly managed, human exposure to contaminants in the soil or ground water could occur through inhalation of vapors from petroleum products or other volatile compounds that might have accumulated in the soils; from inhalation of soil particles or dust containing elevated concentrations of metals, polycyclic aromatic hydrocarbons (PAHs), or asbestos; or from direct contact with contaminants.

Exposure to unexploded ordnance (UXO) prior to complete remediation is unlikely because the landfill (IRP Site 1) where the UXO was discovered is not leased for routine non-Navy use. Furthermore, the Navy has instituted site safety screening and other security measures for all individuals entering IRP Site 1. Prior to opening the area for planned reuse, IRP Site 1 will be investigated and remediated by the Navy.

To address these potential impacts prior to remediation, the Navy would impose notifications, conditions, and restrictions to support proposed uses through the § 334 early transfer process or as conditions described in a FOSL prior to entering into an interim lease or a LIFOC. The

notifications, conditions, and restrictions would address two main requirements: 1) that the risk to human health and the environment is acceptable and 2) that the leasing or early transfer of the property will not interfere with environmental restoration activities.

For simplicity, this assessment assumes interim leasing or implementation of a phased transfer through a LIFOC prior to complete remediation. While neither a § 334 early transfer nor a LIFOC is proposed at this time, protective requirements have been imposed as conditions on interim leases. If a § 334 early transfer were to be implemented instead, the terms "lease," "leasing," "lessee," "leased," and "FOSL" would be modified to reflect other mechanisms for implementing restrictions established in consultation with the State, the US EPA, and the transferee.

Mitigation 1: Implementation by the Navy of notifications, conditions, and restrictions in leased areas would reduce this potential impact to a nonsignificant level. The primary notifications, conditions, and restrictions, some or all of which are elements of the current FOSLs for NAS Alameda/FISC Alameda, include the following:

- Prohibit lessees from digging, excavating, or otherwise disturbing flooring, soil, sediment, or pavement, without prior approval from the Navy and coordination with Federal and State regulatory agencies. Prohibitions could include, but are not limited to, shoveling, digging, trenching, installing wells, and conducting subsurface excavations. The lessee shall submit all proposed construction and modification plans to the Navy for prior approval to ensure protection of human health and the environment at the leased premises. Precautionary measures would be implemented by lessees during construction activities prior to remediation. The measures discussed are general and would be refined based on site-specific information and consultation with regulatory agencies. The measures include the following:
  - Obtain site-specific information about soil or ground water that would be disturbed during construction activities. Such information could include existing information from the Navy or derive from consultation with regulatory agencies or from new testing.
  - Obtain Navy approval and coordinate with Federal and State regulatory agencies before disturbing soil or ground water, or conducting intrusive activities such as shoveling, digging, trenching, installing wells, excavating below the ground surface, or building renovation. This coordination would result in identification of precautionary measures to be implemented

during construction activities. The precautionary measures would be incorporated into a site-specific Health and Safety Plan (HASP) for managing the contaminants of concern.

- Implement dust suppression measures to prevent unacceptable exposures to airborne contaminants in accordance with BAAQMD requirements. Odor controls would also be implemented for active construction sites when odors are anticipated. In addition, interim cleanup or interim cover of accessible portions of the site would be conducted prior to final remediation to lessen or avoid unacceptable exposures to hazardous materials. Perimeter air monitoring would be performed for active construction sites within close proximity to occupied structures.
- Handle and dispose of soil in accordance with Federal, State, and local laws and regulations.
- Implement the following access controls on the site and adjoining areas as necessary during construction: secure the site with fencing or other barriers of sufficient height and structural integrity to prevent unauthorized entry; post "no trespassing" signs; arrange site security, and provide on-site meetings with construction workers to inform them about security measures and reporting/contingency measures.
- Prevent potentially hazardous materials and waste from migrating off of the construction site and affecting nearby populations, including NAS Alameda/FISC Alameda workers, tenants, residents, and visitors in accordance with control measures as specified in the site-specific HASP.

- Implement asbestos and lead-based paint (LBP) measures described under the nonsignificant impacts portion of the Reuse Plan Alternative.
- Prohibit new use of ground water at NAS Alameda/FISC Alameda for any purpose. The Lessee shall be prohibited from installing any water wells at the leased premises or otherwise using ground water.
- Notify lessees that investigations and remediation are ongoing at IRP sites at NAS Alameda/FISC Alameda. Lessees must not interfere with ongoing environmental field investigation and remediation efforts. Areas where sampling and remediation crews are working must be avoided. Installation Restoration Program (IRP) site use will be restricted based on site conditions; and site restrictions will be imposed as appropriate.

- Prohibit lessees from entering fenced-off areas, areas where environmental field investigations are in progress, or areas where access is not authorized, as indicated by appropriate signs. Restrict access to fenced-off areas until remediation activities have been completed.
- Notify lessees that petroleum hydrocarbons and CERCLA-defined hazardous substances have been detected in the soil and ground water at NAS Alameda/FISC Alameda.

Implementing these measures would reduce this impact to a nonsignificant level.

Impact 2: Human and Ecological Exposure to Residual Contamination During Construction Activities. A significant and mitigable impact would result from human and ecological exposure to residual contamination during construction activities. As described in Section 3.13, Hazardous Materials and Waste, there are 25 IRP sites on NAS Alameda and 7 IRP sites on FISC Alameda undergoing investigation (see Figures 3-21 and 3-22 in Section 3 and Figures H-1 and H-2 in Appendix H). Residual contamination could potentially remain at these sites and elsewhere after the required environmental clean-up is completed.

The Reuse Plan Alternative would require various construction activities, such as utility trench excavation, foundation excavation, pile installation, and construction dewatering. These and other types of construction activities could result in both human and ecological exposure to potential residual contaminants in soil and ground water. After construction, potential human health impacts could occur if NAS Alameda/FISC Alameda workers, tenants, residents, and visitors were exposed to elevated levels of residual constituents in the soil and ground water. Potential exposure pathways include inhalation of contaminated soil particles, inhalation of vapors from soil or ground water that has migrated into an indoor environment, and direct contact with contaminated soils or ground water.

During excavation to install underground utility lines or construct building foundations, construction and utility workers could encounter contaminated soils and ground water. These workers could be exposed to residual contamination through inhaling vapors, including airborne contaminated dust, incidentally ingesting or directly contacting contaminated soil or ground water. Similar impacts could occur during placement of pile-supported mats for building foundations. If drilling is required to place the piles, contaminated material could be encountered as soil and ground water are removed to the surface.

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 ground water. Pumping water from excavation pits or dewatering wells at construction sites could release contaminated ground water, exposing construction workers or the public.

Disrupting soil during construction activities also could expose ecological receptors to contamination. One pathway for the transport of chemicals to the Bay would be surface water runoff from construction sites. Runoff that travels over potentially contaminated soil could transport dissolved chemicals and sediment to sensitive ecological receptors.

Other pathways include discharge of potentially contaminated ground water to the Bay via the storm water system (through cracks or leaks in the pipes and pipe connections) and migration of contaminated ground water. 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.

Mitigation 2: The potential for human and ecological exposure to residual contamination is a significant impact that could be mitigated by requiring developers to implement some or all of the following measures as appropriate based on site conditions and the nature of construction proposed:

- Prior to undertaking proposed construction activities, obtain soil and ground water information from testing or other existing data to help identify the location and extent of contaminated soil and ground water and to determine if contamination might be encountered or spread during construction activities.
- Develop a site-specific site management plan (SMP). The SMP would include a HASP, emergency procedures for accidental releases, and requirements for disposing contaminated soil and ground water at approved facilities. The HASP would protect workers and occupants of nearby buildings during construction by establishing engineering controls and monitoring and security measures to prevent unauthorized entry to construction sites and to reduce hazards outside the construction area.
- Implement the following site access controls during construction: secure the site with fencing or other barriers of sufficient height and structural integrity to prevent unauthorized entry; post "no

trespassing" signs; and provide on-site meetings with construction workers to inform them about security measures and reporting/contingency measures. The HASP also would specify effective control measures to prevent potentially hazardous media from migrating off of the construction site and affecting nearby populations, including NAS Alameda/FISC Alameda workers, tenants, residents, and visitors.

- For surface water impacts, follow all conditions of the State of California storm water construction permit, including implementing best management practices (BMPs) to reduce storm water runoff from the site. BMPs listed in Section 4.9, Water Resources, include limiting oil and grease runoff from parking areas, and whenever possible, providing on-site treatment of urban pollutants prior to discharge to the Bay. Other possible BMPs include covering spoil piles with impermeable coverings and installing silt fences.

- For ground water discharge impacts, follow applicable City or RWQCB permit requirements for discharge into the storm water system or sanitary sewer system. Treat water as appropriate to comply with discharge levels as required by the permit. Any contaminated ground water not treatable for discharge at NAS Alameda/FISC Alameda would be disposed of in an appropriately permitted off-site facility.

- Dredging would require permits/approvals from BCDC, RWQCB and US Army COE. Prior to dredging, and in compliance with Section 404 of the Clean Water Act, 33 U.S.C. §1344, if applicable, test all materials proposed for excavation and dredging for heavy metals, petroleum hydrocarbons, PCBs, tributyl tin, pesticides, and any other contaminants of concern to the RWQCB. Any contaminated material should be carefully delineated and segregated to minimize the volume of contaminated sediments generated.

- For boring and pile driving activities, the piles should be driven directly into the sediments without boring where practical. This would minimize and localize sediment disruption.

Implementing these mitigation measures would reduce this impact to a nonsignificant level.

Impact 3: Human Exposure to Residual Contamination During Routine Use. A significant and mitigable impact could result from the potential for long-term exposure of NAS Alameda/FISC Alameda workers, tenants, residents, and visitors to residual contamination in soil or ground water. Mixed use redevelopment of the site will involve many different types of people and activities. The CERCLA RODs will consider the land uses

identified in the Reuse Plan and identify necessary restrictions, if any, to protect human health and the environment.

The Navy is required to remediate the property for its intended use prior to transfer, consistent with the land uses identified in the Reuse Plan. This means that all areas of the site will be remediated consistent with the Reuse Plan, but not necessarily for unrestricted use. Much of the housing proposed for the site is single-family residential with backyard areas where children may play and families may garden. These areas will be remediated for unrestricted land uses prior to occupancy. Nonresidential areas will be remediated to levels consistent with their proposed use. Should actual land uses be potentially inconsistent with remediation, such as uses that were not contemplated in the land use exposure assumptions, then unacceptable risks may occur. In addition, over time, land uses may change from those that were originally approved and for which the remediation was designed and approved.

Mitigation 3: Restrictive measures that protect future site users and occupants from unacceptable exposures to contaminants of concern may be required. Such restrictive measures could include the following:

- The Navy or others may establish deed restrictions or other institutional controls that restrict uses that are inconsistent with land use exposure assumptions.
- For land subject to use restrictions, the City would implement a permitting program, in coordination with environmental regulatory agencies, to review development proposals constituting changes in land use from the approved Reuse Plan, as incorporated into the City's General Plan. The City, in consultation with the appropriate environmental regulatory agencies, would determine if remediation would be required prior to construction or occupancy of the proposed use. The City would be authorized, upon approval by the environmental regulatory agencies, to approve changes in land use under the terms of any deed restrictions.
- In consultation with the environmental regulatory agencies, the City would create a land use and construction permitting program that requires consideration of residual contamination. In areas of the site for which there is evidence of residual contamination requiring restrictions on use or activities, the permitting process would include:
  - A means for tracking any 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; and
- A system for ongoing communication with the environmental regulatory agencies.

Implementation of these measures would mitigate this impact to a nonsignificant level.

Impact 4: Human Exposure to Surface Emissions of Subsurface Gases During Routine Use. A significant and mitigable impact could result from routine use of, and development in, areas where surface emissions of hazardous soil gas could expose site users to risks associated with such gases. The vicinity of IRP Site 1 (1943-56 Disposal Area) is an example of such an area. IRP Site 1 is believed to have received all wastes produced on NAS Alameda 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 important for two reasons. First, methane is á combustible gas that can explode when ignited if concentrations in air exceed 5%. 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 gas may be hazardous would be on land in the vicinity of soil, groundwater or subsurface waste containing volatile organic compounds in hazardous amounts. 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.

Mitigation 4: The City would adopt procedures in City plans and ordinances that provide for adequate control measures, such as vapor barriers and venting, for all buildings constructed on or near areas where surface emissions of hazardous soil gases may occur. Surface emissions may include gases emanating from the landfills, contaminated ground water plumes or subsurface soils impacted by former refinery operations, which may collect in enclosed spaces. Implementation of these measures, as applicable, would mitigate this impact to a nonsignificant level.

Nonsignificant Impacts

Human Exposure to Contamination During Remediation Activities. Remediation activities could potentially expose workers, tenants, occupants, and visitors at NAS Alameda/FISC Alameda to hazardous materials and hazardous waste during soil disturbance and transport. Specific types of remediation activities, such as moving soil both on and off site and removing underground storage tanks (USTs), could expose workers and the public to contaminated dusts, soil gases, and other contaminated material.

Remediation workers who could directly contact contaminated dust, soil, or groundwater must perform all remediation activities in accordance with a site-specific HASP developed for the specific contaminants of concern (petroleum, volatile organic compounds [VOCs], metals, radium, UXO, etc.) on site. The HASP would protect those workers and other occupants adjacent to remediation activities by including engineering controls, monitoring, and security measures to prevent unauthorized entry to remediation sites and to reduce hazards outside the investigation/remediation area. The HASP would address the possibility of encountering unknown buried hazards and include procedures to protect workers and the public. If prescribed exposure levels were exceeded, personal protective equipment would be required for workers in accordance with California Occupational Safety and Health Act (CAL OSHA) regulations. While the primary intent of CAL OSHA requirements is to protect workers, compliance with these regulations also reduces potential hazards to other NAS Alameda/FISC Alameda occupants (tenants and visitors) because of required site monitoring, reporting, and other controls. Potential site access controls implemented during remediation could include:

- Securing the site with fencing or other barriers of sufficient height and structural integrity to prevent unauthorized pedestrian/vehicular entry.
- Posting "no trespassing" signs.
- Providing on-site meetings with construction workers to inform them about security measures and reporting/contingency procedures.

- Dust produced during remediation could contain inorganic chemicals, PAHs, and other constituents. Effective dust control prevents nuisance dust and potentially contaminated dust from migrating off site and affecting nearby populations, including off-site residents, on- and off-site workers, and visitors. Dust control measures could include wetting soil materials and placing covers on trucks to reduce the potential for generating airborne dust.
- Control of site runoff.
- Soil pile management and erosion control.

Implementing required safety laws, regulations, and Navy standard operating procedures (SOPs) would be adequate to ensure that potential impacts on workers, visitors, and occupants near remediation activities would be nonsignificant. No mitigation would be required.

Ecological Exposure to Contamination During Remediation Activities. Existing ecological receptors could be exposed to contamination during remediation activities. Potential pathways of exposure to contaminants are briefly described below.

- *Surface Water Runoff.* Surface water runoff from remediation sites could, if not properly controlled, contain contaminants. As a condition of a Notice of Intent (NOI) to comply with the State storm water permit, the Navy has developed a Storm Water Pollution Prevention Plan (SWPPP), which provides Best Management Practices (BMPs) to prevent surface water runoff from contacting contaminants at NAS Alameda/FISC Alameda. If determined to be necessary under CERCLA or other laws, the Navy would control contaminated runoff during remediation efforts. The specific procedures to be used in connection with the remedial activities would be identified as part of the decisions made through the Navy's IRP. This would be a nonsignificant impact and no mitigation would be required.
- *Ground Water Discharge.* Extracting and discharging contaminated ground water could impact ecological receptors in the Bay if it were discharged directly into the storm water system without treatment. If any such discharge were to occur in connection with the remediation, the specific procedures for discharge would be identified as part of the decisions made through the Navy's IRP. Alternatively, water could be discharged to the EBMUD's sanitary sewer system under permit if the discharge requirements established by EBMUD were met. This would be a nonsignificant impact and no mitigation would be required.

- *Air Emissions.* Potential impacts of remediation-related emissions on the ecological environment would include potential exposure of terrestrial and avian wildlife, as well as aquatic organisms, through deposition of particulates onto surface water bodies. Air emissions from dust could be minimized by implementing dust suppression methods (e.g., watering) as outlined in the HASP. Potential emissions of asbestos- and lead-contaminated dust during demolition activities could be minimized by following US EPA and BAAQMD abatement and emission reduction requirements. This would be a nonsignificant impact and no mitigation would be required.

- *Dredging and Dredged Material Disposal.* Remedial alternatives under consideration include dredging contaminated sediment. Standard operating procedures established for the handling of contaminated dredged materials include use of special dredging equipment such as a closed clamshell bucket to minimize sediment dispersal, silt curtains, and other specialized equipment. The specific procedures to be used for dredging and dredged material disposal would be identified as part of the decisions made through the Navy's IRP. This would be a nonsignificant impact and no mitigation would be required.

Human and Ecological Exposure to Unidentified Subsurface Hazards During Construction Activities. Construction workers, utility workers and nearby occupants or visitors could be exposed to unidentified subsurface hazards, such as unidentified USTs, UXO or buried hazardous debris, during construction activities. The Navy has completed extensive investigations and actions to identify and remove old USTs that are no longer needed. As a result, there is little potential for unidentified USTs to be present at NAS Alameda/FISC Alameda. The Navy is remediating UXO at IRP Site 1, the only area of NAS Alameda/FISC Alameda at which UXO has been found. If an unidentified UST (which could contain hazardous materials or vapors), UXO or buried hazardous debris were uncovered or disturbed through excavation or other construction activities prior to remediation, workers, visitors, or occupants of nearby buildings could experience adverse health effects. In addition, accidental discovery of an unidentified UST could result in a possible explosion or release of stored materials (e.g., fuels, solvents) that, in turn, could contaminate soil or shallow ground water.

The health risk associated with unidentified subsurface hazards cannot be quantified, because the nature and extent of potential exposure are unknown. However, the likelihood of significant adverse effects from unidentified USTs, UXO or other hazardous buried debris is minimal because risk management measures would be implemented in conjunction with construction. These measures include, but would not be limited to,

contingency monitoring procedures and RWQCB notification (as necessary), as well as a site-specific HASP. Implementing these measures would be adequate to ensure that potential adverse effects on human health and the ecological environment from unidentified subsurface hazards would be nonsignificant. No mitigation would be required.

Hazardous Materials Use. The Reuse Plan Alternative calls for a mix of land uses, all of which could involve using and storing hazardous materials. Hazardous materials likely to be used for activities in all of the proposed reuse alternatives are identified in Table 4-35. Hazardous materials use, storage, and disposal are tightly controlled under current Federal, State, and local regulations. With implementation of the Reuse Plan Alternative, separate organizations would be responsible for managing hazardous materials according to applicable regulations. Depending on types and quantities of hazardous materials used, each organization would be subject to Federal Superfund Amendments and Reauthorization Act (SARA) Title III, 42 U.S.C. § 11001, *et seq.*, RCRA, 42 U.S.C. § 6901 *et seq.*, and state hazardous materials business plans and risk management prevention programs for emergency planning review and community right-to-know inventory reporting.

Mutual aid agreements with surrounding jurisdictions may require additional training for emergency staff. In addition, the acquiring entity would be required to appropriately manage and dispose of any hazardous waste generated, in accordance with all applicable statutes and regulations. These impacts therefore would be nonsignificant and no mitigation would be required.

Hazardous Waste Generation. The Reuse Plan Alternative includes light industrial, institutional, and commercial land uses that, depending on the specific type of operation, could generate hazardous wastes. Hazardous waste management for reuse activities would be the responsibility of the acquiring entity. Depending on the types and quantities of hazardous wastes generated, the acquiring entity would be subject to RCRA and State hazardous materials business plans and risk management prevention programs for emergency planning review and community right-to-know inventory reporting. Mutual aid agreements with surrounding jurisdictions may require additional scrutiny and training of emergency staff. The acquiring entity also would be required to appropriately manage and dispose of any hazardous waste generated, in accordance with all applicable statutes and regulations. The acquiring entity also would be required to obtain its own EPA hazardous waste generator identification number as necessary. This impact therefore would be nonsignificant and no mitigation would be required.

Table 4-35
Hazardous Material Usage by Land Use Category

Land Use	Operation Process	Hazardous Materials
Industrial	Activities associated with light industry, research and development, warehousing, and manufacturing	Petroleum products, solvents, heavy metals, corrosives, catalysts, aerosols, fuels, heating oils, flammables, pesticides, paints, thinners, and potentially others
Institutional	Hospital/clinic, rehabilitation facilities, x-ray unit	Pharmaceuticals, medical biohazardous materials, chemotherapeutic drugs, nuclear medical sources, heavy metals, laboratory chemicals, corrosives, flammables, solvents, heating oils, lubricants, cleaners, pesticides, paints, thinners
	Public education, higher education, research labs, training facilities, vocational schools	Laboratory chemicals, corrosives, flammables, solvents, heating oils, lubricants, cleaners, pesticides, paints, thinners
Commercial	Activities associated with offices, light industry, research and development, and higher value warehousing, retail, service industries, restaurants	Fuels, heating oils, pesticides, dry cleaning chemicals, solvents, corrosives, flammables, paints, thinners
Residential	Use and maintenance of single-family and multifamily units, landscaping	Pesticides, fertilizers, fuels, oils, chlorine, household chemicals, paints, thinners
Recreation/open space	Maintenance of existing recreation facilities, including golf course, sports complex, swimming pools, and other recreation facilities	Pesticides, fertilizers, chlorine, heating oils, paints, thinners, cleaners, solvents, aerosols

Source: Developed by Tetra Tech

Asbestos. Under the Reuse Plan Alternative, a number of buildings and residential structures with ACM would be demolished or renovated. Such activities would be subject to all applicable Federal, State, and local regulations, including OSHA regulations and the NESHAPs, which are intended to minimize the potential for asbestos fiber releases and associated health risks. No significant impacts would result and no mitigation would be required.

Polychlorinated Biphenyls. Reuse activities could involve moving or replacing equipment containing or contaminated with PCBs. Any new releases to the environment of PCBs would be subject to the cleanup requirements of TSCA, CERCLA, and the State. No significant impacts would result and no mitigation would be required.

Storage Tanks. Reuse activities associated with the Reuse Plan Alternative may require ASTs or USTs. Reused and new tanks owned or operated by the acquiring entities would be subject to all applicable Federal, State, and local regulations. No significant impacts would result and no mitigation would be required.

Lead Hazards. Reuse of existing buildings that have LBP may require abatement of LBP hazards and protective measures for workers. The acquiring entity would be required to manage LBP on building materials in accordance with applicable Federal, OSHA, DTSC, and BAAQMD laws and regulations. This impact therefore would be nonsignificant and no mitigation would be required.

Radioactive Materials. Under the Reuse Plan Alternative, small quantities of radioactive materials could be used for medical diagnosis and treatment in medical offices or in electronic test and calibration equipment for research and development. The use and storage of such materials are tightly controlled under Federal and State regulations. Any such use would be less than historic use and storage of radioactive materials. No significant impact would be expected and no mitigation would be required.

Medical/Biohazardous Waste. Future medical office tenants may produce small quantities of medical/biohazardous wastes. Such wastes are tightly regulated by Federal and State law and any generation would be subject to medical/biohazardous materials business plans and risk management prevention programs. This impact therefore would be nonsignificant and no mitigation would be required.

4.13.2 Seaport Alternative

The total built area and combined employee and resident population under the Seaport Alternative would be somewhat less than those for the Reuse Plan Alternative. Overall hazardous materials use and hazardous waste generation would be lower for this alternative than for the Reuse Plan Alternative due to the decrease in planned light industrial facilities that may use hazardous materials and that may generate hazardous wastes. The development of a 220-acre (89 ha) port facility with 5 containerized shipping berths may involve increased hazardous materials use and hazardous waste generation in the Northwest Territories planning area. Other land uses would be similar to the Reuse Plan Alternative, except that there would be a college-level campus in the Civic Core planning area, and a higher component of single-family residential uses and a corresponding decrease in office/workspace uses in the Inner Harbor and North Waterfront planning areas.

Significant Impacts

Impact 1: Human Exposure to Unremediated Areas During Site Use Prior to Completion of Remediation. A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted at NAS Alameda/FISC Alameda. Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 1: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 2: Human and Ecological Exposure to Residual Contamination During Construction Activities. A significant and mitigable impact could result from human and ecological exposure to residual contamination during construction activities, such as utility trench excavation or foundation excavation. Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 2: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 3: Human Exposure to Residual Contamination During Routine Use. A significant and mitigable impact could result from the potential for long-term exposure of NAS Alameda/FISC Alameda site users and occupants to residual contamination in soil or ground water. Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 3: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 4: Human Exposure to Surface Emissions of Subsurface Gases During Routine Use. A significant and mitigable impact could result from the surface emission of subsurface gases during routine site use or site development. Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 4: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Human Exposure to Contamination During Remediation Activities. Workers, tenants, residents, or visitors could be exposed to contamination during remediation activities under the Seaport Alternative. Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative. Implementing the same types of measures described for the Reuse Plan Alternative would ensure that potential impacts on human receptors would be nonsignificant. No mitigation would be required.

Ecological Exposure to Contamination During Remediation Activities. Existing or new ecological receptors could be exposed to contamination during remediation activities. Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative. This impact therefore would be nonsignificant and no mitigation would be required.

Human and Ecological Exposure to Unidentified Subsurface Hazards During Construction Activities. Construction workers and nearby tenants, residents, or visitors could be exposed to previously unidentified hazards during construction activities. Impacts under the Seaport Alternative would be similar to those associated with the Reuse Plan Alternative. These impacts therefore would be nonsignificant and no mitigation would be required.

Hazardous Materials Use. Hazardous materials use, storage, and disposal are tightly controlled under current Federal, State, and local regulations that require implementation of hazardous materials business plans and risk management prevention programs. Impacts under the Seaport Alternative would be expected to be similar to those identified for the Reuse Plan Alternative. These impacts therefore would be nonsignificant under the Seaport Alternative and no mitigation would be required.

Hazardous Waste Generation. Hazardous waste generation, handling, and disposal are tightly controlled under current Federal, State, and local regulations. Impacts under the Seaport Alternative would be expected to be similar to those identified for the Reuse Plan Alternative. These impacts therefore would be nonsignificant under the Seaport Alternative and no mitigation would be required.

Asbestos. The potential for future human health risk from demolition or renovation of asbestos-containing structures would be similar under the Seaport Alternative as that described under the Reuse Plan Alternative. Any modifications to or demolition of these structures would be subject to all applicable Federal, State, and local regulations. This impact therefore would be nonsignificant under the Seaport Alternative and no mitigation would be required.

Polychlorinated Biphenyls. The potential for human health risk from making or replacing equipment containing PCBs would be similar under the Seaport Alternative as for the Reuse Plan Alternative. PCB release sites must be remediated prior to property conveyance. As with the Reuse Plan Alternative, no significant impact would be anticipated under the Seaport Alternative. No mitigation would be required.

Storage Tanks. Reuse under the Seaport Alternative would be subject to all applicable Federal, State, and local regulations pertaining to ASTs and USTs, as described under the Reuse Plan Alternative. Impacts under the Seaport Alternative would be similar to those identified for the Reuse Plan Alternative. This impact therefore would be nonsignificant under the Seaport Alternative and no mitigation would be required.

Lead Hazards. Reuse of buildings containing LBP under the Seaport Alternative would have similar impacts as those described under the Reuse Plan Alternative. Reuse activities would be subject to applicable Federal, State, and local regulations. This impact therefore would be nonsignificant under the Seaport Alternative and no mitigation would be required.

Radioactive Materials. The use and storage of radioactive materials are tightly controlled under Federal and State regulations. Any such use would be less than historic use and storage of radioactive materials. Similar to the Reuse Plan Alternative, this impact therefore would be nonsignificant under the Seaport Alternative and no mitigation would be required.

Medical/Biohazardous Waste. The storage and disposal of medical/ biohazardous wastes are tightly controlled by Federal and State law. Impacts under the Seaport Alternative would be similar to those identified for the Reuse Plan Alternative. No significant impacts would be expected under the Seaport Alternative, and no mitigation would be required.

4.13.3 Residential Alternative

This alternative would have a substantially higher number of housing units than the Reuse Plan Alternative, although additional housing would not be included in every planning area. The Inner Harbor, North Waterfront, and Northwest Territories planning areas would have fewer industrial uses than under the Reuse Plan Alternative, and lower overall hazardous materials use and hazardous waste generation therefore would be expected.

Significant Impacts

Impact 1: Human Exposure to Unremediated Areas During Site Use Prior to Completion of Remediation. A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted at NAS Alameda/FISC Alameda. Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 1: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 2: Human and Ecological Exposure to Residual Contamination During Construction Activities. A significant and mitigable impact could result from human and ecological exposure to residual contamination during construction activities, such as utility trench excavation or foundation excavation. Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 2: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 3: Human Exposure to Residual Contamination During Routine Use. A significant and mitigable impact could result from the potential for long-term exposure of NAS Alameda/FISC Alameda site users and occupants to residual contamination in soil or ground water. Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 3: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 4: Human Exposure to Surface Emissions of Subsurface Gases During Routine Use. A significant and mitigable impact could result from the surface emission of subsurface gases during routine site use or site development. Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 4: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Human Exposure to Contamination During Remediation Activities. Workers, tenants, residents, or visitors could be exposed to contamination during remediation activities under the Residential Alternative. Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative. Implementing the same types of measures described for the Reuse Plan Alternative would ensure that potential impacts on human receptors would be nonsignificant. No mitigation would be required.

Ecological Exposure to Contamination During Remediation Activities. Existing or new ecological receptors could be exposed to contamination during remediation activities. Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative. This impact therefore would be nonsignificant and no mitigation would be required.

Human and Ecological Exposure to Unidentified Subsurface Hazards During Construction Activities. Construction workers, utility workers and nearby tenants, residents, or visitors could be exposed to previously unidentified hazards during construction activities. Impacts under the Residential Alternative would be similar to those associated with the Reuse Plan Alternative. No mitigation would be required.

Hazardous Materials Use. Hazardous materials use, storage, and disposal are tightly controlled under current Federal, State, and local regulations that require implementation of hazardous materials business plans and risk management prevention programs. Impacts under the Residential Alternative would be expected to be similar to those identified for the Reuse Plan Alternative. These impacts therefore would be nonsignificant under the Residential Alternative and no mitigation would be required.

Hazardous Waste Generation. Hazardous waste generation, handling, and disposal are tightly controlled under current Federal, State, and local regulations. Impacts under the Residential Alternative would be expected to be similar to those identified for the Reuse Plan Alternative. These impacts therefore would be nonsignificant under the Residential Alternative and no mitigation would be required.

Asbestos. The potential for future human health risk from demolition or renovation of asbestos-containing structures would be similar under the Residential Alternative as that described under the Reuse Plan Alternative. Any modifications to or demolition of these structures would be subject to all applicable Federal, State, and local regulations. This impact therefore

would be nonsignificant under the Residential Alternative and no mitigation would be required.

Polychlorinated Biphenyls. The potential for human health risk from making or replacing equipment containing PCBs would be similar under the Residential Alternative as for the Reuse Plan Alternative. PCB release sites must be remediated prior to property conveyance. As with the Reuse Plan Alternative, no significant impact would be anticipated under the Residential Alternative. No mitigation would be required.

Storage Tanks. Reuse under the Residential Alternative would be subject to all applicable Federal, State, and local regulations pertaining to ASTs and USTs, as described under the Reuse Plan Alternative. Impacts under the Residential Alternative would be similar to those identified for the Reuse Plan Alternative. This impact therefore would be nonsignificant under the Residential Alternative and no mitigation would be required.

Lead Hazards. Reuse of buildings containing LBP under the Residential Alternative would have similar impacts as under the Reuse Plan Alternative. Reuse activities would be subject to applicable Federal, State, and local regulations. This impact therefore would be nonsignificant under the Residential Alternative and no mitigation would be required.

Radioactive Materials. The use and storage of radioactive materials are tightly controlled under Federal and State regulations. Any such use would be less than historic use and storage of radioactive materials. Similar to the Reuse Plan Alternative, this impact therefore would be nonsignificant under the Residential Alternative and no mitigation would be required.

Medical/Biohazardous Waste. The storage and disposal of medical/ biohazardous wastes are tightly controlled by Federal and State law. Impacts under the Residential Alternative would be similar to those identified for the Reuse Plan Alternative. No significant impacts would be expected under the Residential Alternative, and no mitigation would be required.

4.13.4 Reduced Density Alternative

The total built area and combined employee and resident population under the Reduced Density Alternative are significantly less than those for the Reuse Plan Alternative. Overall hazardous materials use and hazardous waste generation would be similar to the Reuse Plan Alternative. Reduction in planned light industrial facilities in the Inner Harbor planning area would be offset by increased research and development uses in the Civic Core

planning area that may use hazardous materials and that may generate hazardous wastes.

Significant Impacts

Impact 1: Human Exposure to Unremediated Areas During Site Use Prior to Completion of Remediation. A significant and mitigable impact could result from human exposure to unremediated areas during routine site use while the remediation is being conducted at NAS Alameda/FISC Alameda. Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 1: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 2: Human and Ecological Exposure to Residual Contamination During Construction Activities. A significant and mitigable impact could result from human and ecological exposure to residual contamination during construction activities, such as utility trench excavation or foundation excavation. Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 2: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 3: Human Exposure to Residual Contamination During Routine Use. A significant and mitigable impact could result from the potential for long-term exposure of NAS Alameda/FISC Alameda site users and occupants to residual contamination in soil or ground water. Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 3: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Impact 4: Human Exposure to Surface Emissions of Subsurface Gases During Routine Use. A significant and mitigable impact could result from the surface emission of subsurface gases during routine site use or site development. Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative.

Mitigation 4: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Human Exposure to Contamination During Remediation Activities. Workers, tenants, residents, or visitors could be exposed to contamination during remediation activities under the Reduced Density Alternative. Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative. Implementing the same types of measures described for the Reuse Plan Alternative would ensure that potential impacts on human receptors would be nonsignificant. No mitigation would be required.

Ecological Exposure to Contamination During Remediation Activities. Existing or new ecological receptors could be exposed to contamination during remediation activities. Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative. Implementing the same types of measures described for the Reuse Plan Alternative would ensure that potential impacts on ecological receptors would be nonsignificant. No mitigation would be required.

Human and Ecological Exposure to Unidentified Subsurface Hazards During Construction Activities. Construction workers, utility workers and nearby tenants, residents, or visitors could be exposed to previously unidentified hazards during construction activities. Impacts under the Reduced Density Alternative would be similar to those associated with the Reuse Plan Alternative. No mitigation would be required.

Hazardous Materials Use. Hazardous materials use, storage, and disposal are tightly controlled under current Federal, State, and local regulations that require implementation of hazardous materials business plans and risk management prevention programs. Impacts under the Reduced Density Alternative would be expected to be similar to those identified for the Reuse Plan Alternative. These impacts therefore would be nonsignificant under the Reduced Density Alternative and no mitigation would be required.

Hazardous Waste Generation. Hazardous waste generation, handling, and disposal are tightly controlled under current Federal, State, and local regulations. Impacts under the Reduced Density Alternative would be expected to be similar to those identified for the Reuse Plan Alternative. These impacts therefore would be nonsignificant under the Reduced Density Alternative and no mitigation would be required.

Asbestos. The potential for future human health risk from demolition or renovation of asbestos-containing structures would be similar under the Reduced Density Alternative as that described under the Reuse Plan Alternative. Any modifications to or demolition of these structures would

be subject to all applicable Federal, State, and local regulations. This impact therefore would be nonsignificant under the Reduced Density Alternative and no mitigation would be required.

Polychlorinated Biphenyls. The potential for human health risk from making or replacing equipment containing PCBs would be similar under the Reduced Density Alternative as for the Reuse Plan Alternative. PCB release sites must be remediated prior to property conveyance. As with the Reuse Plan Alternative, no significant impact would be anticipated under the Reduced Density Alternative. No mitigation would be required.

Storage Tanks. Reuse under the Reduced Density Alternative would be subject to all applicable Federal, State, and local regulations pertaining to ASTs and USTs, as described under the Reuse Plan Alternative. Impacts under the Reduced Density Alternative would be similar to those identified for the Reuse Plan Alternative. This impact therefore would be nonsignificant under the Reduced Density Alternative and no mitigation would be required.

Lead Hazards. Reuse of buildings containing LBP under the Reduced Density Alternative would have similar impacts as under the Reuse Plan Alternative. Reuse activities would be subject to applicable Federal, State, and local regulations. This impact therefore would be nonsignificant under the Reduced Density Alternative and no mitigation would be required.

Radioactive Materials. The use and storage of radioactive materials are tightly controlled under Federal and State regulations. Any such use would be less than historic use and storage of radioactive materials. Similar to the Reuse Plan Alternative this impact therefore would be nonsignificant under the Reduced Density Alternative and no mitigation would be required.

Medical/Biohazardous Waste. The storage and disposal of medical/ biohazardous wastes are tightly controlled by Federal and State law. Impacts under the Reduced Density Alternative would be similar to those identified for the Reuse Plan Alternative. No significant impacts would be expected under the Reduced Density Alternative, and no mitigation would be required.

4.13.5 No Project Alternative

Under the No Project Alternative, all programs related to hazardous materials and waste would proceed without disruption. Investigation and cleanup of potential and identified contaminated sites would continue. Only limited amounts of hazardous materials and pesticides would be used

to maintain the site and no demolition activities are anticipated. The Navy would continue its compliance program for hazardous materials and waste.

Under the No Project Alternative, interim leases would be phased-out at NAS Alameda/FISC Alameda and no new leases would be completed. Hence, it is assumed that little or no construction activity would take place, and that no long-term exposures would occur. Prior to the phasing-out of these interim leases, however, various tenants could utilize hazardous materials and generate hazardous wastes on properties leased by the Navy. Management of these materials or waste would continue according to current regulations and would be the responsibility of the various tenants.

Significant Impacts

Impact 1: Human Exposure to Unremediated Areas During Site Use Prior to Completion of Remediation. A significant and mitigable impact would result from human exposure to unremediated areas during routine site use while remediation is being conducted at NAS Alameda/FISC Alameda. Impacts under the No Project Alternative would be less than those associated with the Reuse Plan Alternative, although significant, because the interim leases would be gradually phased out over time, resulting in continuing but declining potential exposure.

Mitigation 1: Mitigation would be the same as that described for the Reuse Plan Alternative and would reduce the impact to a nonsignificant level.

Nonsignificant Impacts

Human Exposure to Contamination During Remediation Activities. Workers, tenants, residents or visitors could be exposed to contamination during remediation activities under the No Project Alternative. Impacts under the No Project Alternative would be less than those associated with the Reuse Plan Alternative, although significant, because the interim leases would be gradually phased out. Implementing the same types of measures described for the Reuse Plan Alternative would ensure that potential impacts on human receptors would be nonsignificant. No mitigation would be required.

Ecological Exposure to Contamination During Remediation Activities. Existing or new ecological receptors could be exposed to contamination during remediation activities. Impacts under the No Project Alternative would be less than those associated with the Reuse Plan Alternative, although significant, because the interim leases would be gradually phased out. Implementing the same types of measures described for the Reuse Plan

Alternative would ensure that potential impacts on ecological receptors would be nonsignificant. No mitigation would be required.

Hazardous Materials Use. Under the No Project Alternative, the quantity of hazardous materials used, stored, and disposed of to support caretaker operations and interim leasing would decrease significantly over operational conditions. Such uses are tightly controlled under current regulations. These impacts would be nonsignificant and no mitigation would be required. The phasing-out of interim leases would further reduce the quantity of hazardous materials used, stored, and disposed of at NAS Alameda/FISC Alameda. These impacts would be nonsignificant and no mitigation would be required.

Hazardous Waste Generation. Under the No Project Alternative, small quantities of hazardous wastes would be generated by caretaker and tenant operations. Management and disposal of these wastes are tightly controlled under current regulations. Impacts associated with hazardous waste management would be nonsignificant and no mitigation would be required. The phasing-out of interim leases would further reduce the quantity of hazardous materials used, stored, and disposed of at NAS Alameda/FISC Alameda. Impacts associated with hazardous waste management therefore would be nonsignificant and no mitigation would be required.

5. OTHER CONSIDERATIONS

5. OTHER CONSIDERATIONS

This chapter addresses specific topics that CEQA requires in an EIR. These include identifying and analyzing cumulative impacts, growth-inducing impacts, unavoidable adverse impacts, short-term versus long-term environmental goals, and any irreversible or irretrievable commitment of resources.

5.1 CUMULATIVE IMPACTS

An EIR must discuss cumulative impacts when they are cumulatively considerable. If these impacts are nonsignificant, the document should explain the basis for that conclusion. Cumulative impacts are two or more individual effects that, when considered together, are considerable or that compound other environmental impacts. Individual impacts may be changes resulting from a single project or a number of separate projects. Cumulative impacts from several projects are the changes in the environment that result from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable and probable future projects. Cumulative impacts can result from individually minor but collectively significant projects occurring over the lifetime of the project under consideration.

An analysis of cumulative impacts must consider both regional and local effects. The region considered in this analysis is the Central San Francisco Bay Area. For the purposes of analysis, it is assumed that the Reuse Plan Alternatives would be implemented concurrently with other projects that could contribute to locally and regionally cumulative impacts. Local projects include the proposed uses on property at NAS Alameda/FISC Alameda that is being transferred to the USFWS and the USCG.

The methodology used to develop the cumulative analysis included reviewing the current General Plan for the City of Alameda and compiling a list of ongoing and proposed specific projects near NAS Alameda/FISC Alameda that could reasonably contribute to cumulative impacts. Additional sources were used to identify reasonably foreseeable projects because the General Plan for the area does not include some of the most recent land use proposals in the area and does not include proposals for surrounding jurisdictions. A list of cumulative projects is presented in Table 5-1, and their location is shown in Figure 5-1.

Table 5-1
Cumulative Project List

Project	Proximity to NAS Alameda	Project Size	Historical Uses	Project Description	Completion Date of Planning Document	Projected Completion Date	Historical Population	Projected Future Population	Net Population Change
USFWS Wildlife Refuge at NAS Alameda	Adjacent	525 acres of upland/375 acres of submerged land	Military	Develop wildlife refuge managed for protection of California least tern	In progress	Not yet known	N/A	N/A	N/A
USCG Housing Area at NAS Alameda	Adjacent	69 acres	Military	Use 582 residential units of Navy housing for Coast Guard personnel and dependents	In progress	Not yet known	1,300 to 1,800	1,300 to 1,800	0
Development of Transit Nodes in West End Neighborhood	0.5 miles	Less than one acre	Civilian	Develop corner transit nodes to integrate with NAS Alameda/FISC Alameda transit proposals	January 1996	2020	N/A	N/A	N/A
Redevelopment of Alameda Encinal Terminal	2 miles	Approximately 35 acres	Civilian marine terminal	360,000 square foot research and development facility	In progress	2002	N/A	N/A	N/A
Amphibious Bus Project	0 miles	Less than one acre at FISC	Military	Development of amphibious bus routes from FISC to Jack London Square, Oakland	In progress	1999	N/A	N/A	N/A
Expansion of the Marine Reserve Center, Alameda	2 miles	25,000 square feet	Military	25,000 square foot expansion to a 47,000 square foot facility	1993	1997	N/A	N/A	N/A
Buildout of Alameda General Plan	0 to 7 miles	Mostly small developments less than 100 acres, except for up to 5.2 million square feet for the Harbor Bay Business Park	Civilian urbanized; farming; fill area on Bay Farm Island	Development and infill of existing parcels and some redevelopment of existing urban area; Harbor Bay Business Park will be a major research and development center and include a conference hotel and retail development	1991	2010	74,139 in 1990	81,400 in 2010	7,261

Table 5-1
Cumulative Project List *(continued)*

	Proximity to NAS Alameda	Project Size	Historical Uses	Project Description	Completion Date of Planning Document	Projected Completion Date	Historical Population	Projected Future Population	Net Population Change
Buildout of Oakland Comprehensive Plan	Variable		Civilian-urbanized	Infill and redevelopment of urbanized areas	May 1998	2005	356,200 in 1998	370,900 in 2005	14,700
Oakland Estuary Plan	0.25 to 1.5 miles	905 acres	Variable	Plan for future development along the Oakland Estuary.	1998	Multiple	457	1,857	1,400
City of Oakland, City Lofts and Paper Lofts	0.5 miles	<1 acre	Vacant and warehouse	Development of 126 residential loft units and retail spaces, and 10 live-work lofts.	1998	Not yet approved	0	272	272
Fruitvale Transit Village	2.5 miles	<1 acre	Parking lot	Mixed use development at Fruitvale BART station including 15 residential units, commercial space, and civic uses.	1998	June 1999	0	30	30
Allegro Project	0.5 miles	<1 acre	Vacant and industrial	Development of 312 medium density residential units	1998	Not yet approved	0	780	780
Port of Oakland Vision 2000 Program	0.25 to 1.5 miles	541 acres of FISC Oakland; additional acres for joint intermodal terminal facility	Port and rail facilities- military and civilian	Change to civilian use and provide major port and rail expansion. Site will become one of the three largest port facilities in the western United States. Possible rerouting of wastewater main between NAS Alameda to Oakland	July 1997	2000	0	0	0
Port of Oakland Site B Project	0.5 miles	9 acres	Vacant and parking lot	Develop 250 to 300 medium-density residential units along the Oakland Inner Harbor, southeast of Alice Street	November 1996	December 1999	0	600 to 700	600 to 700
Port of Oakland Jack London Square Master Development Plan Phase I	0.5 miles	<1 acre (hotel site)	KTVU-2 TV station, Gallagher's restaurant	Occupancy of vacant retail space along Water Street and ground floor of Washington Street Parking Garage along Embarcadero	1998	Unknown	0	0	0

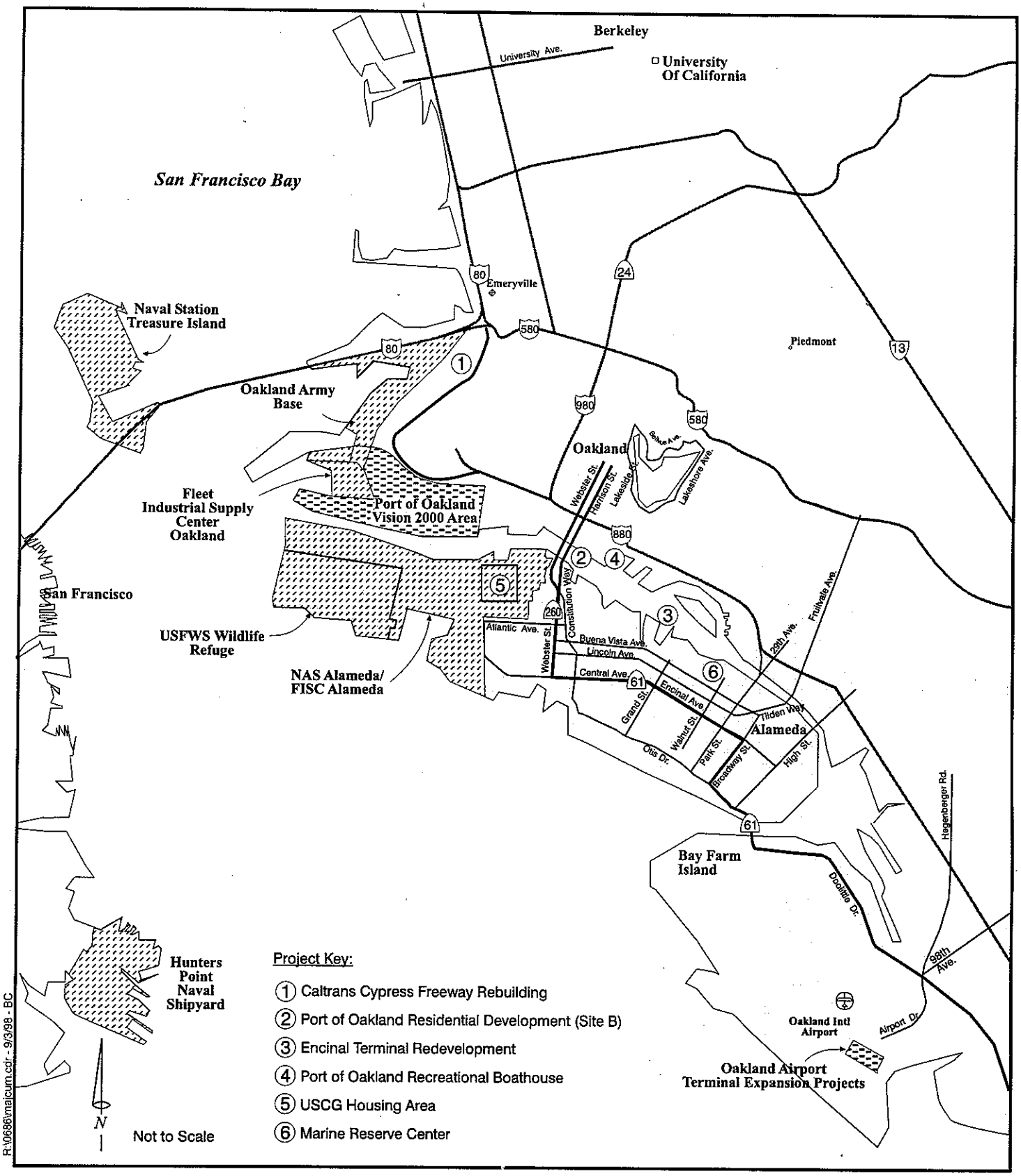
Table 5-1
Cumulative Project List *(continued)*

	Proximity to NAS Alameda	Project Size	Historical Uses	Project Description	Completion Date of Planning Document	Projected Completion Date	Historical Population	Projected Future Population	Net Population Change
Port of Oakland Jack London Square Marina	0.5 miles		Marina and public access	Moderate dredging and berth reconstruction, public access walkway between Jack London Village and Webster Street pier and new harbor master's office	January 1994	1999	0	0	0
Port of Oakland Recreational Boathouse	0.75 miles	1 acre	Recreational area at Estuary Park	Construct boathouse along Oakland Inner Harbor for storing, operating, and maintaining recreational watercraft for club and individual sports	Unknown	Unknown	0	0	0
Port of Oakland -42 Foot Dredging Project	Adjacent waters			Dredge Oakland Outer and Inner Harbor Channels from -38 feet MLLW to -42 feet MLLW	1994	1998	0	0	0
Port of Oakland -50 Foot Dredging Projects	Adjacent waters	Unknown		Dredge Oakland Outer and Inner Harbor Channels from -42 feet MLLW to -50 feet MLLW. Construct 1,500 foot turning basin near the Alameda Ferry Terminal.	In progress	2002	0	0	0
Port of Oakland Airport Terminal Expansion Projects	6 miles	2,662 acres	Airport	Construct air passenger terminals, air cargo facilities, support facilities, airside facilities, and landside access	In progress	2000-2010	0	0	0
Oakland Army Base	3 miles	422 acres	Military	Currently unknown civilian reuse of base	1998	Unknown	Unknown	Unknown	Unknown

Table 5-1
Cumulative Project List *(continued)*

	Proximity to NAS Alameda	Project Size	Historical Uses	Project Description	Completion Date of Planning Document	Projected Completion Date	Historical Population	Projected Future Population	Net Population Change
Naval Station Treasure Island	3.5 miles	558.7 acres	Military	Reuse property for residential development, publicly-oriented uses (e.g. theme park, hotel), community services, and open space/recreation	1999	2010-2020	4,509 in 1990	Unknown	Unknown
Hunters Point Naval Shipyard	3.5 miles	500 acres	Military	Reuse property for mixed-use development	1999	2025	No residential population since 1974	Unknown	Unknown
Caltrans Cypress Freeway Rebuilding	1 to 4 miles	Eight-lane freeway for approx. 2 miles	Freeway	Replace freeway destroyed by earthquake; new freeway, eight lanes	1991	1998	0	0	0

N/A: not applicable



The area around NAS Alameda/FISC Alameda will experience several large-scale redevelopment projects.

LEGEND:

- Military Sites Undergoing Reuse
- Civilian Areas Undergoing Expansion

Major Cumulative Project Sites

NAS Alameda/FISC Alameda
Alameda, California

Source: Tetra Tech 1996

Figure 5-1

Two projects in the vicinity of NAS Alameda/FISC Alameda are the most significant in terms of local cumulative impacts. The Navy is transferring land in the southwest portion of NAS Alameda to the USFWS for use as wildlife refuge and another site to the USCG for family housing. The land requested by USFWS was identified in the Reuse Plan as the Wildlife Refuge Planning Area 7. The land requested by USCG was included in the reuse planning process as part of the Main Street Neighborhoods Planning Area 2. Planned uses on both parcels are consistent with uses proposed during the reuse planning process.

NAS Alameda's runway and wetland areas provide habitat for a number of bird and animal species, including sensitive species, such as the California least tern, the Caspian tern, and the brown pelican. The USFWS has proposed to establish a wildlife refuge at the site. Land being transferred to the USFWS includes approximately 525 acres (213 ha)[1] of dry land and 375 acres (152 ha) of submerged land. The refuge will be managed for the protection and enhancement of migratory birds, endangered species, and other wildlife habitat in support of the national migratory bird program. Other uses may include compatible wildlife-oriented public uses, environmental education, and compatible economic uses (USFWS 1996b).

The USCG has requested transfer of 582 residential units in a 69-acre (28 ha) area within the North Housing/Marina Village area of NAS Alameda to support its need for family housing. The George Miller Elementary School and adjoining day care center are in the center of the USCG housing area, but would not be transferred to the USCG.

The reuse of NAS Alameda/FISC Alameda, in conjunction with other major projects in the region, would result in cumulative impacts to several resources. Some of these impacts, such as creation of housing, which are described in the population and housing section, would be beneficial. Other impacts would be fully or potentially offset through the planning process for the individual projects or by developing project-specific mitigation measures. Potential significant and not mitigable cumulative impacts have been identified for cultural resources, and air quality (traffic-related air emissions). The cumulative impacts of the projects described above and those listed in Table 5-1 are discussed under the appropriate resource areas below.

5.1.1 Land Use

Under each of the reuse alternatives, a significant and mitigable cumulative land use impact would result from construction of a turning basin proposed

[1] More recent estimates indicate that the size of the refuge would be 565 to 571 acres.

as part of the Port of Oakland's Oakland Harbor Navigation Improvement (50-foot [15 m]) Project (Port of Oakland 1998). This 1,500-foot (457 m) diameter basin within the Oakland Estuary would be used for turning large ships using the Port's facilities. As proposed, the turning basin would require relocation of an existing dry dock used for ship repair, existing piers that already have been partially removed as part of the 42-foot (13 m) dredging project, and approximately 1.29 acres (0.52 ha) of land in the North Waterfront planning area at the FISC Alameda Facility. Several siting alternatives under consideration for the turning basin would require the removal of more acreage of the FISC Alameda Facility site. This land is currently occupied by warehouse buildings (Buildings 1 and 2) that would be demolished under all proposed reuse alternatives. Although specific locations for proposed uses under the reuse alternatives have not been determined, proposed uses that could be displaced by basin development include office park, light industry, research and development, marina, hotel, commercial, and residential. The Port would compensate the landowner for any property removed. Implementation of turning basin design and property compensation would mitigate this impact to a nonsignificant level under each of the proposed reuse alternatives.

Other than the turning basin, development of the Reuse Plan Alternative, in combination with other proposed or reasonably foreseeable developments, would not result in cumulative adverse land use impacts. The major project sites identified in the San Francisco Bay Area, particularly in the West Oakland/Alameda vicinity, would result in large-scale changes to land use in this area. The projects would intensify port and industrial land uses, decrease military land uses, and introduce substantial new residential and commercial uses in the area. In general, the new uses would be compatible with plans and policies and with nearby uses. The USFWS wildlife refuge and USCG residential use of former NAS Alameda lands are not expected to result in land use conflicts or nonconformance with adopted local plans and policies. For all the alternatives except the Seaport Alternative, there would be beneficial effects from increased open space and shoreline access for the public.

Under the Seaport Alternative, the possible new crossing may present potential conflicts with existing and planned uses at the FISC Oakland site. However, proper design and location could reduce potential conflicts. If a bridge or tunnel is constructed, the USCG would require that it not adversely impact vessel traffic.

5.1.2 Visual Resources

The viewshed of the San Francisco Bay Area features a rich combination of urban development, including the cities of Alameda, San Francisco, and

Oakland, and natural landscape, dominated by San Francisco Bay. NAS Alameda/FISC Alameda represents a fraction, although a highly visible portion, of the overall visual context of this large geographic area. Projects that affect the appearance of a particular site may have little or no impact on the visual character of the larger landscape. However, the cumulative visual effect of many projects may be observed.

Combined with other, similar projects, such as the USFWS wildlife refuge, the USCG housing area, the reuse of Naval Station Treasure Island, the Naval Medical Center Oakland, and the FISC Oakland site, the reuse of NAS Alameda/FISC Alameda will result in a movement or partial movement away from the industrial/military character these sites now possess to a more diverse visual character with more open space features. In the cumulative sense, visual impacts are not expected to be adverse and generally should be positive.

5.1.3 Population and Housing

Developing the reuse alternatives, in combination with other proposed or reasonably foreseeable development projects in the region, would generate substantial additional long-term housing supply. This effect is generally considered beneficial.

5.1.4 Public Services

Implementation of any of the reuse alternatives, in combination with reasonably foreseeable projects, would result in significant cumulative impacts to City of Alameda public service agencies. The USFWS and the USCG would provide for their own public services or enter into an agreement with local providers for services. The cumulative increases in development and population within the City would increase the demand for public services. Development in communities near Alameda may increase the number of calls for mutual aid support. It is generally expected that funding sources would be identified to increase service capability as required to provide adequate levels of service. Overall, cumulative impacts would be greatest under the Residential Alternative and would be lowest under the Reduced Density Alternative, due to their respective demand levels.

The reuse alternatives would cumulatively add to the student population in the AUSD. Enrollment capacity is expected to be adequate to accommodate cumulative student populations. Over the buildout of the project, changing student demographics would be expected to result in changing uses for existing facilities, as is normal in the educational planning process. These would not be considered significant impacts.

The USFWS wildlife refuge could provide additional regional recreational opportunity on-site, depending on the amount of public access permitted under the forthcoming management plan. This would be a beneficial impact. Increased access to the waterfront would provide cumulatively beneficial recreational opportunities for the region. The sports complex and RV park under the Reuse Plan Alternative and Reduced Density Alternative, and the other recreational facilities common to all the alternatives, would have a cumulative beneficial effect on City and regional access to recreational opportunities.

5.1.5 Utilities

Implementation of any of the reuse alternatives, in combination with reasonably foreseeable projects, would cumulatively impact regional utility service providers. The regional increase in development and population would increase the demand for service. In combination with the reuse alternatives, the cumulative projects would further jeopardize the City of Alameda's compliance with State and local solid waste landfill diversion requirements, resulting in significant and mitigable impacts. The mitigation would be the same as that for the project (i.e., the development of a solid waste management plan meeting the requirements of the California Integrated Waste Management Act). The cumulative impact would therefore be mitigated to a nonsignificant level. Development under the Port of Oakland Vision 2000 Program will be designed to avoid damaging the sanitary wastewater pipeline which runs under the Estuary from NAS Alameda to FISC Oakland. The design will either involve relocation in place by deepening the existing line or may involve relocating the line to the east through NAS Alameda and FISC Alameda. If relocated in place, the City of Alameda has requested an access easement across FISC Oakland to ensure continued operation and maintenance of this pipeline. Replacement of this line alternatively could involve relocation of the facility eastward to a location near the Webster/Posey Tubes to avoid conflicts with the proposed Vision 2000 Program development at FISC Oakland. This cumulative impact would therefore be nonsignificant.

5.1.6 Cultural Resources

Development of any of the reuse alternatives, in combination with other proposed or reasonably foreseeable development, could result in a cumulative impact on cultural resources in the San Francisco Bay Area. The effect is focused particularly on historic buildings and structures associated with the military. Among the foreseeable projects near NAS Alameda/FISC Alameda are reuse of property located at Naval Station Treasure Island, Mare Island Naval Shipyard, FISC Oakland, DOD Housing Facility Novato, Naval Medical Center Oakland, and the Army's

Presidio of San Francisco and Oakland Army Base. Each base includes buildings and structures listed in or eligible for listing in the National Register and California Register, and may contain other resources that constitute "historical resources" under CEQA. Each reuse could result in demolition of some historic properties. Loss of historic military resources at these various bases proposed for reuse will result in a cumulatively significant and unavoidable impact.

5.1.7 Biological Resources

The reuse of NAS Alameda/FISC Alameda in combination with cumulative development identified in Table 5-1 would result in some significant and mitigable cumulative impacts and some nonsignificant cumulative impacts to biological resources. Most of the cumulative impacts would be related to activities at the USFWS wildlife refuge. The reuse of FISC Oakland, located 0.25 to 1.5 miles (0.4 to 2.4 km) north of the project site, and implementation of the Port of Oakland's Vision 2000 Program also would contribute to cumulative biological impacts because of their proximity to the site. Open space enhancement and wetland preservation under the Oakland Estuary Plan may provide some beneficial impacts to marine and biological resources.

Developing the Reuse Plan Alternative, in combination with establishment of the USFWS wildlife refuge and other proposed or reasonably foreseeable developments, could result in a substantial increase in the number of people with access to the wildlife refuge and NAS Alameda/FISC Alameda and who would use the site for recreation. Recreational use of the wildlife refuge could increase if a trail, as proposed by the East Bay Regional Park District, goes around its perimeter. Refer to Section 4.7.2, Impact 2, for a description of impacts to the California least tern and brown pelican from an increase in human disturbance. The number of people who visit the wetlands at the USFWS wildlife refuge could increase substantially over operational conditions and could disturb wildlife, such as the Caspian terns that nest in the West Beach Landfill wetland. The USFWS will determine the extent of public access to the new refuge areas as part of development of its management plan for the wildlife refuge. Because protecting wildlife is one of USFWS's primary missions, public access is expected to be allowed only in ways consistent with this mission. This impact would be significant and mitigable.

Because FISC Oakland already has tall cranes and is far enough away from the California least tern nesting site, additional port development proposed by the Port of Oakland would not result in a cumulatively significant impact by providing perching sites for raptors and other predators. However, additional lighting to support crane operations at the Port of

Oakland, if not properly designed, could contribute to a cumulative increase in night lighting that could adversely affect the endangered California least tern and other wildlife species on NAS Alameda/FISC Alameda.

Cumulative increased predation on the endangered California least tern is not considered to be a significant impact, provided that USFWS maintains the refuge boundary fencing and the electric fence that encloses the tern colony and increases predator management if necessary. Pre-season removal of predators contributes greatly to terns choosing to breed at a particular site and to their subsequent breeding success (US Navy 1995b). It is anticipated that USFWS would continue a California least tern monitoring program. Furthermore, the nondiscretionary measures set forth in the USFWS biological opinion (referred to as "terms and conditions" and shown in Appendix D of this EIR) would ensure protection of the least tern.

Dredging in the Oakland Inner Harbor under the Seaport Alternative, in combination with dredging under the Port of Oakland's Vision 2000 Program, is not expected to result in a cumulative significant impact. The Port of Oakland also is proposing to dredge the Oakland Inner Harbor to a depth of 50 feet (15 m) below the mean lower low water line and to fill the Oakland Middle Harbor. Even if these projects occur simultaneously, the cumulative impact on California least tern foraging in the Oakland Inner Harbor would not be expected to be significant. Cumulative dredging and construction activities in the Oakland Inner and Middle Harbors are not likely to affect California least tern foraging due to the distance of the foraging areas from the proposed construction areas and the use of best management practices to minimize turbidity. In-water activities associated with the Port of Oakland's Vision 2000 Program will require site specific COE permits, and require COE to consult with USFWS under the Endangered Species Act, Section 7, prior to implementation.

Cumulative development may lead to an increase in boat traffic in the vicinity of Breakwater Island at the USFWS wildlife refuge. This increase in boat traffic would result in a less than significant cumulative impact. Controlling access to Breakwater Island in the future would be the responsibility of USFWS, as the area would be part of its proposed wildlife refuge. It is anticipated that Navy restrictions prohibiting access to Breakwater Island would be retained and enforced by USFWS. Provided that these restrictions are implemented and enforced, this impact would be reduced to a less than significant level.

Winter-run chinook salmon are occasional visitors in the area and have access to higher quality habitat nearby. Cumulative changes in area activity

are not expected to affect these two species. Because Breakwater Island will remain unchanged, and California brown pelican make minimal use of land on the remainder of NAS Alameda, no cumulative impacts are anticipated to this species. American peregrine falcons visit the area, but this urban-adapted species would not be affected by further development of land around the project site.

5.1.8 Geology and Soils

Regionally, the reuse of NAS Alameda/FISC Alameda in combination with cumulative development identified in Table 5-1 would add to the number of people and structures subject to regional seismic hazards. This is considered a nonsignificant cumulative impact.

5.1.9 Water Resources

Development of any one of the reuse alternatives, in combination with other proposed or reasonably foreseeable development, could add to significant cumulative effects to the quality of local receiving waters. Other major projects proposed for the area include dredging associated with the Vision 2000 Program and deepening Oakland Inner Harbor from the current 43 feet (13 m) to a depth of 50 feet (15 m). Both of these projects are proposed by the Port of Oakland and have the potential to adversely affect bay water quality by increasing turbidity and resuspending sediment contaminants. Depending on timing and location, Port of Oakland dredging effects could be combined with dredging effects from the Reuse Plan Alternative.

In addition, the Vision 2000 Program in combination with the Reuse Plan Alternative could increase stormwater contaminant discharges and the potential for contaminant spills that may adversely affect water quality in Oakland Inner Harbor and San Francisco Bay. Project-specific mitigation of implementing urban runoff management plans by the cities of Oakland and Alameda could reduce this impact to a nonsignificant level.

5.1.10 Traffic and Circulation

Cumulative traffic analysis has been provided in Chapter 4 of this document. Cumulative traffic conditions are presented as the future without project scenario. A growth factor of 0.5 percent per year was added to the 1990 traffic database to create this scenario and included the development projects listed on Table 5-1. Traffic impacts resulting from the reuse alternatives were added to the cumulative background traffic conditions. Cumulative levels of service without mitigation were identified for the analysis intersections and freeway segments. In certain cases these

impacts were significant and mitigable (see Section 4.10 for a detailed analysis of cumulative reuse impacts and description of mitigation measures). The following Table 5-2 identifies cumulative traffic impacts assuming construction of the recommended mitigation measures identified in Chapter 4 for the reuse alternatives.

As indicated in the table, all intersections except Tinker Avenue/Webster Street would operate at acceptable levels of service with construction of the recommended improvements. The level of service at this intersection servicing the tubes under the Oakland Inner Harbor would be LOS E or lower, and therefore would require mitigation. Mitigation for these intersections have been identified in Chapter 4 of this document under the Reuse Plan Alternative. These mitigation measures would reduce cumulative impacts to a nonsignificant level.

Traffic generated by cumulative projects in combination with the reuse alternatives would increase traffic volumes to some nearby freeway segments and some of the local arterial streets serving NAS Alameda/FISC Alameda. The greatest increase would be in the Webster/Posey Tubes.

Significant impacts on 9 of the 18 roadway segments evaluated in the EIR would occur as identified in Chapter 4 of this document. Impacts for these segments would be mitigated through implementation of Transportation System Management (TSM) programs as described in the Reuse Plan Alternative (see Section 4.10). The Webster/Posey tubes would require the regional mitigation of a new tunnel between Alameda and the City of Oakland, or imposing a limit to the amount of development so as to not exceed the capacity of the tubes.

Development of any of the reuse alternatives would increase demand for BART, bus, and ferry transit services. The potential increase in demand could be met by expanding the existing bus routes and frequencies in addition to providing privately operated shuttle service between BART, the ferry terminal, and the project site. While cumulative transit impacts would not be expected to be significant, the need to provide operating subsidies for any expanded services on site may be required.

Table 5-2
Cumulative Condition
Intersection Level of Service Summary - 2020[1]

Analysis Intersection	AM Peak Hour LOS	AM Peak Hour Delay[2]	PM Peak Hour LOS	PM Peak Hour Delay[2]
City of Alameda				
Atlantic Avenue/Main Street	C	19.8	C	19.9
Atlantic Avenue/West Campus	B	6.2	B	11.0
Atlantic Avenue/Webster Street	D	35.5	C	21.4
Atlantic Avenue /Constitution Way	C	22.2	C	24.0
Pacific Avenue/Main Street	B	13.0	B	6.2
Lincoln Avenue/Webster Street	B	10.2	C	20.5
Lincoln Avenue/8th Avenue	C	17.1	C	18.4
Central Avenue/Webster Street	C	19.1	C	20.5
Central Avenue/8th Avenue	C	16.8	D	27.3
Constitution Way/Marina Village Pkwy.	C	18.5	C	15.4
Tinker Avenue/Webster Street	D	31.9	E	43.4[3]
City of Oakland				
Oak Street/5th I-80 on-ramp	B	9.0	D	27.9
Oak Street/6th I-80 off-ramp	B	8.4	B	11.0
Jackson Street/7th Street	C	22.1	C	20.7
Jackson Street/6th Street	B	7.6	C	24.5
Jackson Street/5th Street	C	18.5	B	14.2
Harrison Street/8th Street	B	14.4	B	12.6
Harrison Street/7th Street	B	7.6	B	11.9
Webster Street/8th Street	C	17.3	B	12.6
Webster Street/7th Street	D	28.6	B	14.9
Broadway/5th Street	C	23.1	C	23.6
Brush Street/12th Street	A	3.1	B	10.5
Brush Street/11th Street	B	6.2	B	7.8
Brush Street/5th Street	C	17.3	B	11.6

[1] Traffic projections applied full buildout of the Reuse Plan to a 2010 transportation system to be consistent with the CMA model projections.
[2] Delay in seconds.
[3] Indicates a significant and mitigable impact.

Note: Analysis assumes implementation of roadway improvements described in Chapter 2.

Source: Developed by Dowling Associates

5.1.11 Air Quality

Implementing any of the reuse alternatives along with other major developments in the region would contribute to cumulative air pollutant emissions in the Bay Area. Cumulative air quality issues in the San Francisco Bay Area are being addressed through regional air quality plans developed jointly by BAAQMD, ABAG, and MTC. These plans reflect anticipated regional land use and transportation patterns. BAAQMD regulations require most new industrial facilities to fully offset emissions that will be generated by their operations. Current plans are subject to periodic review and revision.

The 2020 cumulative air quality effects of many potential development projects were considered in the carbon monoxide dispersion modeling analysis presented in Section 4.11, Air Quality. This analysis was based on the Alameda County CMA transportation model, which included land use forecasts developed by ABAG for 2010. Additional air quality impacts could result from development plans that exceed ABAG projections and have not been included in the CMA transportation model. The potential growth in Bay Area traffic, beyond that predicted in the CMA model, could exacerbate the impact of the reuse alternatives on traffic-related air emissions. No feasible mitigation measures have been identified for this impact; therefore, this cumulative impact is significant and unavoidable.

5.1.12 Noise

Traffic noise levels will normally increase gradually with increasing volumes, but may stabilize or decline if traffic speeds drop due to increasing congestion. Traffic generated by implementing any of the reuse alternatives would increase noise levels along major access routes in the City of Alameda and the City of Oakland. The combination of NAS Alameda/FISC Alameda reuse and other regional development would not produce any significant additional traffic noise impacts on major access roadways in the City of Alameda, and would have less than significant effects on traffic noise levels in the City of Oakland.

5.1.13 Hazardous Materials and Waste

The cleanup of hazardous materials and waste at NAS Alameda/FISC Alameda and at base conversion and reuse projects through the Bay Area would have a beneficial impact on the regional environment. Although the quantity of hazardous materials used, stored, and disposed of under cumulative conditions cannot be predicted, levels are likely to decrease under any of the reuse alternatives as several military facilities in the area

are closed and converted to civilian and, in most cases, largely non-industrial uses.

5.2 GROWTH-INDUCING IMPACTS

CEQA requires that an EIR discuss the ways in which the proposed action and alternatives could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the area surrounding the project. Analysis of growth-inducing effects includes those characteristics of the action that may encourage and facilitate activities that, either individually or cumulatively, would affect the environment. Population increases, for example, may impose new burdens on existing community service facilities. Similarly, improvement of access routes may encourage growth in previously undeveloped areas. Growth may be considered beneficial, adverse, or of no significance environmentally, depending on its actual impacts to the environmental resources present.

The Reuse Plan for redeveloping NAS Alameda/FISC Alameda is to implement a coordinated environmentally sound plan of base conversion and mixed-use development that would increase revenues and result in a healthy local economy. Recreational, cultural, educational, housing, and employment opportunities for the entire region will be improved. Ultimately, the Reuse Plan would create a new neighborhood for the City of Alameda.

Each of the reuse alternatives would involve extending utilities to the Northwest Territories planning area to support proposed new land uses. However, it is not possible to further extend these utilities to additional undeveloped land because Alameda is an island. Therefore, extension of these utility systems would not induce further growth beyond that described in the reuse alternatives.

Each of the reuse alternatives would induce new economic growth in the region and would create new jobs. Demand for additional employees resulting from reuse activities would be met to a great extent by existing residents of Alameda, Oakland, and Alameda County. The increased economic activity is expected to contribute to regional economic growth and would affect such factors as housing conditions and land development. The results of any growth inducement resulting from reuse would be controlled by existing and undetermined future zoning requirements, off-site General Plan designations, and specific environmental documentation for separate development projects.

5.3 UNAVOIDABLE ADVERSE EFFECTS

An EIR must describe any significant unavoidable adverse environmental impacts for which either no mitigation or only partial mitigation is feasible and may include imposing an alternate design on the reuse alternatives if that is the only means of avoiding such impacts. For most of the identified significant impacts, feasible mitigation has been identified to reduce the impact to a nonsignificant level. Impacts for which no feasible mitigation measures have been identified are considered to be unavoidable adverse impacts. Unavoidable impacts associated with the alternatives are summarized below.

- *Visual Resources.* Development of port facilities in the Northwest Territories planning area under the Seaport Alternative would create a significant impact by imparting an industrial visual character to the south shore of Oakland Inner Harbor. It would not be possible to screen port facilities from public view, and this impact could not be mitigated to a nonsignificant level.
- *Visual Resources.* Under the Seaport Alternative, a significant and not mitigable impact would result from large loading cranes (over 200 feet [61 m] high) disrupting views to the west from portions of the Civic Core planning area as well as from some locations along the north shore of the Oakland Inner Harbor. Views to the northeast and east from the far western portion of the Northwest Territories planning area would also be blocked. It would not be possible to avoid disruption of views from some locations by loading cranes. No feasible mitigation exists.
- *Cultural Resources.* Under the Seaport Alternative, the Training Wall would be demolished, which would be a significant and not mitigable impact. While recordation of this resource assures a permanent record will be kept and therefore is considered a mitigating factor, it does not eliminate the adverse effect of demolition. Because the Training Wall would be demolished, this impact would be significant and not mitigable.
- *Biological Resources.* The Seaport Alternative and Residential Alternative would result in increased predation of the California least tern. Under the Seaport Alternative, development of cranes in excess of 200 feet (61 m) high would provide perching sites for raptors and other predators. The impact from the installation of cranes cannot be mitigated because antiperching devices are not feasible on the tall cranes. Domestic animals, landscaping, and other features of residential development would result in increased predation of California least terns. Residential development would

limit predator management to an extent that the predation impact cannot be mitigated to a nonsignificant level.

- *Biological Resources.* The Residential Alternative would result in an increase in the number of people, including children, and domestic animals, living adjacent to the USFWS wildlife refuge. Measures to protect the California least tern would not be sufficient to prevent a significant loss of individuals and disruption of breeding of California least terns.

5.4 SHORT-TERM VERSUS LONG-TERM ENVIRONMENTAL GOALS

Short-term environmental goals would be enhanced through increased public access to open space and accompanying recreational opportunities at NAS Alameda/FISC Alameda along the Oakland Inner Harbor and San Francisco Bay that were previously restricted because of Navy use. Preserving the Alameda Training Wall and rehabilitating most of the NAS Alameda Historic District represent additional short-term gains under the Reuse Plan Alternative. Long-term benefits include providing jobs and opportunities for recreational use. Maintaining public access and open space along the Oakland Inner Harbor and the San Francisco Bay shoreline represents a proactive effort to increase long-term environmental productivity.

The reuse-related environmental impacts associated proposed peak-hour traffic congestion and the concurrent increased air emissions and noise associated with this traffic congestion could be considered as decreases to the long-term productivity of the San Francisco Bay Area's vehicle traffic flow and air and noise quality.

5.5 IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES

CEQA requires that an EIR analyze the extent to which the proposed alternatives' primary and secondary effects would commit nonrenewable resources to uses that future generations probably would be unable to reverse.

Implementing any of the reuse alternatives would require committing both renewable and nonrenewable energy and material resources for demolition and commitments for constructing the structures and improving of the required infrastructure. Developing light industrial uses, a seaport in the Northwest Territories planning area, or residential uses would represent an essentially irreversible decision to change the nature of the area from an

open paved and grassy area with the potential for open space uses to a highly developed area. These developments would be a very large commitment of financial resources but would not irreversibly commit the NAS Alameda/FISC Alameda properties to the proposed uses.

6. CONSULTATION AND COORDINATION

6. CONSULTATION AND COORDINATION

This section presents the persons contacted during preparation of the EIR, as well as those who responded to the public scoping process prior to document preparation. Appendix B contains additional information regarding the public scoping process.

6.1 AGENCIES AND REPRESENTATIVES CONTACTED

The Federal, State, and local agencies and private organizations that were contacted during the course of preparing this EIR are listed below. These individuals were contacted to gather data regarding NAS Alameda/FISC Alameda.

US Navy

Engineering Field Activity West, San Bruno
John Corpos, Environmental Compliance
Jerry Hemstock, Environmental
Bill Kaktis, Lead Paint and PCB Issues
John H. Kennedy, Environmental
Ann Klimek, EBS Coordinator
Patricia McFadden, Installation Restoration Program
Douglas R. Pomeroy, Environmental
Sherm Seelinger, Dredging
Mohan Shahani, Asbestos Issues
Tom Vargo, Utilities
Louis S. Wall, Cultural Resources

Naval Air Station, Alameda
Norma Bishop, Base Transition Coordinator
Randy Cate, Environmental Office
Victor Corpuz, Medical Clinic
Rich Delgado, Fire Department
Robert Lucas, Environmental Office
Pamela Medearis, Security Department
Jim Neal, Security Department
Don Orndoff, Caretaker Site Office
John Rees, Environmental Office
Stephanie Szymanski, Environmental Office Stormwater Program Manager

Fleet Industrial Supply Center, Oakland
Ed Guldner, FISC Engineering
Tim Haffey, Director of FISC Security
Dick Hegarty, Director of FISC Engineering and Environmental Division
C'dell Johnson, DSR PAC
David Tse, Public Works and Utilities Engineering
Peter Wong, FISC Engineering

Public Works Center, San Francisco Bay
Pablo Go, Environmental Department
Dan Lent, Environmental Closure Department
John Parsons, BRAC Program Analyst

Fleet Hospital Support Office
Richard Leblanc, Facilities Manager

US Army Corps of Engineers

Herb Cheong
Mark McGovern

City of Alameda

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Cynthia Eliason, Planning Department
Barbara Frierson, Public Works Department, Waste Management Division
Robert LaGrone, Fire Department
Bill Schmitz, Police Department
Cheri Sheets, Public Works Department, Engineering Division
Laura Timothy, Public Works Department, Engineering Division

Association of Bay Area Governments (ABAG)

Patricia Perry

Alameda Historical Museum

George Gunn

Amah Tribal Band

Irene Zwierlein

Earth Island Institute, Urban Habitat Program

Martha Matsuoka

East Bay Asian Local Development Corporation

Mi Yeong Lee

East Bay Conversion and Reinvestment Commission

Lorraine Giordano

East Bay Municipal Utility District

Tom Harvey
Prab Jog
Bill McGowan
Judy Parker

Harris and Associates

Greg Ow

Hearst Museum of Anthropology, University of California, Berkeley

Fritz Stern

Indian Canyon Mustun Band of Costanoan

Ann Marie Sayer

Institute of Urban and Regional Development

Josh Kirschenbaum

Moffatt-Nichol, Engineers

Juanito Jamias

Muwekma Indian Tribe

Rosemary Cambra

Oakland Museum

Deborah Cooper

Oakland Public Library

Bill Strum

Ohlone Indian Tribe

Andrew Galvan

Oklahoma State University

Carolee Caffrey, Ph.D.

Treganza Museum of Anthropology, San Francisco State University

Miley Holman

Waste Management of Alameda County

Bill Gillmore, Altamont Landfill and Resource Recovery Facility

6.2 SCOPING – EIS/EIR

The project mailing list, including agencies, organizations, and individuals that received scoping letters, is provided in Appendix B. The following parties responded to the scoping request:

Federal Agencies

US Coast Guard
US Environmental Protection Agency, Office of Federal Activities

State Agencies

California Department of Transportation, District 4
California State Lands Commission
Department of Toxic Substances Control
Governor's Office of Planning and Research

Local/Regional Agencies

Alameda County Congestion Management Agency
Alameda County Flood Control and Water Conservation Agency
Base Reuse Advisory Group (BRAG)

Local/Regional Agencies *(continued)*

City of Alameda Bureau of Electricity
City of Oakland
Metropolitan Transportation Commission
Port of Oakland

Organizations

Alameda Head Start
Arc Ecology
Citizens Committee to Complete the Refuge
East Bay Municipal Utility District
Golden Gate Audubon Society
Good Sam Club
International Longshoremen's and Warehousing Union
Public Trust Group
Santa Clara Valley Audubon Society
Save San Francisco Bay Association

Individuals

Genevieve Chesler
Edwin A Clancy, Jr.
Laura D. Collins
Linda Courtemanche-Lowery
Debra Cramer
Tony Daysog
William Dow
Mi'Chelle Fredrick
Sergio Gerin
Lauren Helfand
Carmen & Dan Lasar
Patrick G. Lynch, Clearwater Revival Company
Gladys M. Nelson
Roberta Onem
Gary Pischke
Mrs. Emma Prentice
Lee Ann Smith
Martin W. Stohr and Lucille M. Stohr
James W. Sweeney
Michael Warburton
Sherri Watson

6.3 SCOPING – EIR

The project mailing list, including agencies, organizations, and individuals that received scoping letters, is provided in Appendix B. The following parties responded to the scoping request:

Federal Agencies

US Department of the Interior
US Navy

State Agencies

California Department of Transportation
California Department of Transportation, Aeronautics Program
California Department of Fish and Game

Local/Regional Agencies

Alameda County Community Development Agency
Alameda County Congestion Management Agency
Association of Bay Area Governments
Base Reuse Advisory Group
East Bay Municipal Utility District
Port of Oakland
Louis Lozano, Smith Smith Woliver & Behrens (AUSD)

Organizations

Arc Ecology
East Bay Asian Local Development Corporation
Golden Gate Audubon Society
Ohlone Audubon Society

Individuals

Leslie Ake
Steve Gerstle
Naomi Grunditz

7. LIST OF PREPARERS

7. LIST OF PREPARERS

The City of Alameda prepared this Environmental Impact Report (EIR) based on a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) dated October 1998 and prepared by Tetra Tech, Inc. (and its subconsultants) for the US Navy and the City of Alameda. The joint EIS/EIR was subsequently modified by the Navy in March 1999 and provided to the City of Alameda for its use as an EIR. The City and its consultants (LSA Associates, Inc.) have made revisions to the modified version provided to the City by the Navy and the result is this EIR.

Listed below are Navy preparers and members of the Tetra Tech team (and its subconsultants) who prepared the joint EIS/EIR (October 1998). followed by City staff and LSA Associates' staff who assisted the City with the preparation of this stand-alone EIR.

US Navy

John H. Kennedy, Environmental & Installations Planning Branch Manager
Jerry Hemstock, Project Manager
Douglas R. Pomeroy, Leader, Biology/BRAC Group
Louis S. Wall, Cultural Resources

Tetra Tech, Inc.

John E. King, CIH, Program Director
Karen E. Frye, AICP, Program Manager, QA/QC
Phyllis Potter, AICP, Project Director, QA/QC
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Technical Team

John Bock, Public Services, Utilities
Amy Cordle, Air Quality, Noise
Brad Hall, Hazardous Materials and Waste
Mike Hussey, Visual Resources
Elizabeth Purl, Hazardous Materials and Waste
Roy Roenbeck, Hazardous Materials and Waste
Robert Sculley, Air Quality, Noise
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Subconsultants

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John Dowden, Traffic and Circulation

Economics Research Associates

Andrea J. Morgan, Socioeconomics
Eleanor Tiglao, Socioeconomics
Steven Spickard, Socioeconomics

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Stephen Sheppard, Visual Resources

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Richard Grassetti, Water Resources, Geology

Greiner

Michael Polanski, PE, Utilities

JRP Historical Consulting

Steve Mikesell, Historical Resources

PAR Environmental

Mary L. Maniery, Cultural Resources
Blossom J. Hamusek-McGann, Cultural Resources

City of Alameda/ARRA (EIR Lead Agency)

Elizabeth G. Johnson, ARRA Review
D. Paul Tuttle, ARRA Review; Alternatives Development
Cynthia Eliason, AICP, City of Alameda, Project Manager
Cheri Sheets, City of Alameda Review
Chandler Lee, Consultant to City of Alameda

Subconsultant

LSA Associates, Inc. (Project Coordination and Technical Assistance)

David Clore, AICP, Principal-in-Charge
Lynette Stanchina, Project Manager
Ian Moore, Project Planner
Christy Herron, Project Planner
Lynne LeRoy, Document Processing

8. REFERENCES

8. REFERENCES

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Alameda Point Preliminary Report on the proposed Alameda Point Improvement Project (APIP) adopted by Community Improvement Commission Resolution No. 97-68 on May 6, 1997.

Alameda Point Report to Council approved and adopted by Community Improvement Resolution No. 98-72 on January 6, 1998.

Alameda Point Owner Participation Rules adopted by Community Improvement Commission Resolution No. 98-71 on January 6, 1998.

Alameda Point Community Improvement Plan (CIP) for the Alameda Point Improvement Project adopted by City Council Resolution No. 2754 on March 3, 1998.

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9. GLOSSARY AND INDEX

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9.1 GLOSSARY

100-year flood zone	Land area having a one percent chance of being flooded during a given year.
A-weighted decibel (dBA)	A number representing the sound level that is frequency-weighted according to a prescribed frequency response established by the American National Standards Institute (ANSI-S1.4-1971) and that accounts for the response of the human ear.
ambient air quality standards	Standards established on a Federal or State level that define the limits for airborne concentrations of designated criteria pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, lead) to protect public health with an adequate margin of safety (primary standards) and public welfare, including plant and animal life, visibility, and materials (secondary standards).
asbestos	A carcinogenic fiber formerly used widely as an insulation material by the construction industry; often found in older buildings. The route of exposure to asbestos fibers is through inhalation.
buildout	That level of urban development characterized by full occupancy of all developable sites in accordance with the City's General Plan; the maximum level of development envisioned by the General Plan. Buildout does not assume that each parcel is developed to include all floor area or housing units possible under zoning regulations.
Bay Mud	An estuarine deposit, Bay Mud is an unconsolidated, water-saturated, dark plastic and silty clay rich in organic material. Found generally in land areas below 8 feet above sea level and underlying the waters of San Francisco Bay and small coastal lagoons and estuaries.
attainment area	An area that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act or that meets State air quality standards.
California Environmental Quality Act (CEQA)	The California Environmental Quality Act (CEQA), Cal. Pub. Res. Code § 21000, *et seq.*, is the California equivalent of the National Environmental Policy Act (NEPA). It requires an environmental review of projects deemed to have significant environmental impacts and that require State or local government approval or that are publicly funded.
Clean Air Act (CAA)	The Clean Air Act (CAA), 42 U.S.C. § 7401, *et seq.*, legislates that air quality standards set by Federal, State, and county regulatory agencies establish maximum allowable emission rates and pollutant concentrations for sources of air pollution on Federal and private property. Also regulated under this law is proper removal and safe disposal of asbestos from buildings other than schools.

Clean Water Act (CWA)	The Clean Water Act (CWA), 33 U.S.C. § 1251, *et. seq.*, is the major Federal legislation concerning improvement of the nation's water resources. It provides for development of municipal and industrial wastewater treatment standards and a permitting system to control wastewater discharges to surface waters. The Act contains specific provisions for regulation of ships' wastewater and disposal of dredge spoils within navigable waters. Section 404 of the Act regulates disposal into waters of the United States, including wetlands.
Coastal Zone Management Act (CZMA)	The Federal Coastal Zone Management Act (CZMA) of 1972, as amended, 16 U.S.C. § 1451, *et. seq.*, provides protection for coastal resources. The CZMA requires that Federal projects or activities affecting the coastal zone be consistent with Federally approved State coastal plans.
community noise equivalent level (CNEL)	This is the noise compatibility standard established by California Administrative Code, Title 21, Section 5000. The CNEL is the 24-hour average, A-weighted sound level with a 5 dB penalty added to levels occurring between 10:00 PM and 7:00 AM to account for increased noise sensitivity during the night.
Community Environmental Response Facilitation Act (CERFA)	A 1992 amendment to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Community Environmental Response Facilitation Act (CERFA), 42 U.S.C.A. § 9601 note (West 1995), expedites the identification of uncontaminated real property within closing military facilities that offers the greatest opportunity for reuse and redevelopment.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601, *et seq.*, also known as Superfund, was enacted in 1980 to ensure that a source of funds is available to clean up abandoned hazardous waste dumps, compensate victims, address releases of hazardous materials, and establish liability standards for responsible parties. The Act also requires creation of a National Priorities List, which sets forth the sites considered to have the highest priority for cleanup under Superfund.
contributing resource	A resource (e.g., a building) that is considered part of a historic district and is listed in or eligible for listing in the National Register of Historic Places.
Council On Environmental Quality (CEQ)	Established by the National Environmental Policy Act (NEPA), the CEQ consists of three members appointed by the President. CEQ regulations (40 CFR Parts 1500-1508) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and timing and extent of public participation.
cultural resource	A cultural resource is any object, site, area, building, structure, or place that is archaeologically or historically significant, or that exhibits traditional cultural value (e.g., properties sacred to Native Americans or other ethnic groups). This includes assets significant in the architectural, scientific, engineering, economic, agricultural, educational, social, political, military, or cultural annals of California.

cumulative impacts	The combined impacts resulting from all past, present, and reasonably foreseeable actions occurring at a given location.
day-night average sound level (Ldn)	The 24-hour average sound level expressed in decibels, with a 10 decibel penalty added to sound levels between 10:00 PM and 7:00 AM to account for increased noise sensitivity during the night.
decibel (dB)	A unit of measure on a logarithmic scale that describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.
Defense Environmental Restoration Program (DERP)	DERP is the Department of Defense hazardous materials cleanup program. It is separate from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) but follows the same basic procedures, including the same regulatory oversight. The goals of the program are to identify, investigate, remediate, and clean up contamination from hazardous substances and pollutants. The funding for DERP is independent of Superfund.
disposal	Conveyance of Federal property to a non-Federal entity.
effect	CEQA defines effect as a change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, noise, and objects of historic or aesthetic significance. An economic or social change by itself is not considered a physical change to the environment. Effects analyzed under CEQA must relate to a physical change.
effluent	A liquid discharged as waste, such as the outflow from a sewage treatment facility or storm sewer.
emission reduction credit (ERC)	Air emission reductions that are "banked" and used to offset emissions from new sources at a later date.
endangered species	A plant or animal class with potential for extinction throughout all or a significant portion of its range. A species can be designated as endangered by the US Fish and Wildlife Service, the California Department of Fish and Game, or both.
Endangered Species Act (ESA)	The Endangered Species Act (ESA), 16 U.S.C. § 1531, *et seq.*, requires Federal agencies to determine the effects of their actions on endangered species and their critical habitats.
environmental impact report (EIR)	A detailed statement prepared under the California Environmental Quality Act (CEQA) describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the effects.
environmental impact statement (EIS)	A document required of Federal agencies by the National Environmental Policy Act (NEPA) for major projects or legislative proposals significantly affecting the environment. A tool for decision-making, the EIS describes the positive and negative effects of the proposed action and identifies alternative actions.

equivalent noise levels (Leq)	Equivalent noise levels are used to develop single-value descriptions of average noise exposure over various periods.
Estuary	Estuary, also known as the Oakland Estuary, is a generic and historic term used to describe those waters west of the Tidal Canal which used to function as a visible estuarine system with marshes and a mixture of fresh water flowing from the streams and creeks of Oakland into the tidal waters of San Francisco Bay.
feasibility study (FS)	The feasibility study identifies and evaluates all applicable contaminated-site cleanup alternatives. For most sites, a long list of alternatives is possible. A risk assessment is performed as part of the study to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Typically, the remedial investigation and feasibility study are performed concurrently.
floor area ratio (FAR)	The ratio between gross floor area of structures on a site and gross site area. Thus, a two-story building covering 50 percent of its site would have a FAR of 1.0.
general plan	A comprehensive long-term plan mandated by the State Planning Law for the physical development of a city and any land outside its boundaries which, in its judgment, bears relation to its planning. The plan shall consist of seven required elements: land use, circulation, open space, conservation, housing, safety, and noise. The plan must include a statement of development and policies and a diagram or diagrams illustrating the policies.
hazard ranking system (HRS)	This system provides a uniform method of scoring or ranking the potential risk of a facility site where a hazardous substance has been present. The US Environmental Protection Agency (EPA) developed the HRS to prioritize its cleanup efforts. The EPA evaluates the draft HRS packages and proposes any facilities scoring 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities listed on the NPL receive the highest priority for cleanup.
hazardous material	A substance or mixture of substances that poses a substantial risk or potential risk to human health or the environment. Any substance designated by the US Environmental Protection Agency to be reported if a designated quantity of the substance is spilled in the waters of the United States or if it is otherwise released into the environment.
hazardous substance	A generic term that includes both hazardous materials and hazardous wastes.
hazardous waste	A waste or combination of wastes that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness; or may pose a substantial hazard or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. These wastes are regulated under the Resource Conservation and Recovery Act (RCRA).

hazardous waste accumulation area	An area where hazardous wastes may be stored for up to 90 days.
hazardous waste storage area	An area where hazardous waste may be stored for up to one year.
impact	Effects and impacts are synonymous under CEQA. See definition of "effect".
Installation Restoration Program (IRP)	A program, established by the Department of Defense to meet requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act of 1986, that identifies, assesses, and cleans up or controls contamination from past hazardous waste disposal practices and hazardous material spills.
level of service (LOS)	In transportation analysis, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists and/or pedestrians. For public services, a measure describing the amount of public services available to community residents, generally expressed as the number of personnel providing service per 1,000 members of the population.
liquefaction	A sudden, substantial decrease in the shearing resistance of a cohesionless soil, caused by a collapse of the structure by shock or strain, and associated with a sudden but temporary increase of the pore fluid pressure. During an earthquake, areas underlain by soil with a high potential for liquefaction experience greater movement and structural damage.
McKinney Act	The McKinney Act, 42 U.S.C. § 11301, *et seq.*, gives recognized providers of assistance to the homeless a high priority in acquiring unneeded land and buildings on Federal properties. Homeless providers must be able to finance upgrades of facilities, pay a proportionate share of municipal service costs, and fund its program operations.
Measure A	A 1973 amendment of the Alameda City Charter prohibiting construction of multiple-dwelling units except replacement of low-cost housing units by the Alameda Housing Authority.
Migratory Bird Treaty Act	The Migratory Bird Treaty Act, 16 U.S.C. § 703, prohibits the taking or harming of a migratory bird, its eggs, nests, or young without the appropriate permit.
mitigation	A method or action to reduce or eliminate adverse effects of a proposed action.
mole	A bermed railroad track.

National Environmental Policy Act (NEPA)	The National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, *et seq.*, Public Law 91-190, passed by Congress in 1969, established a national policy designed to encourage consideration of the influence of human activities on the natural environment. NEPA procedures require that environmental information be made available to the public before decisions are made. When referred to as NEPA in this report, NEPA includes the current law and the implementing guidelines (the Council on Environmental Quality [CEQ] regulations on implementing NEPA, 40 CFR Parts 1500-1508).
National Historic Preservation Act (NHPA)	Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470, *et seq.*, requires a Federal agency to take into account the potential effect of a proposed action on properties listed on or eligible for listing on the National Register of Historic Places.
National Pollution Discharge Elimination System (NPDES)	The NPDES is a provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the US Environmental Protection Agency or by the State.
National Priorities List (NPL)	A list of sites (Federal and State) where releases of hazardous materials may have occurred and may cause an unreasonable risk to the health and safety of individuals, property, or the environment.
National Register of Historic Places	A Federally-maintained register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under the authority of Section 2(b) of the Historic Sites Act of 1935 and Section 101(a)(1) of the National Historic Preservation Act of 1966, as amended.
National Register resources	Properties listed on the National Register of Historic Places, properties formally determined to be eligible for listing on the National Register, and those properties appearing to qualify for listing on the National Register.
Native American Graves Protection and Repatriation Act (NAGPRA)	The Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. § 3001, *et seq.*, defines the ownership and control of Native American human remains and associated funerary objects discovered or recovered from Federal or tribal land.
native vegetation	Plant life that occurs naturally in an area without cultivation or other agricultural efforts. It does not include species that have been introduced from other geographical areas and have become naturalized.
natural gas	A natural fuel containing primarily methane and ethane that occurs in certain geologic formations.
nitrogen oxides (NO_x)	Gases formed primarily by the combustion of petroleum fuels. Nitrogen oxides are primary pollutants that combine with hydrocarbons to form ozone, a major component of smog.

noncontributing resource	A resource (e.g., a building) that is located within the boundaries of a historic district but that does not contribute to the significance of the district. A "noncontributing" building or structure is not eligible for listing in the National Register of Historic Places.
nonnative species	A plant or animal class that has invaded or that has been introduced into an area.
organotin	A family of alkyl tin compounds widely used as stabilizers for plastics, especially rigid vinyl polymers used as piping, construction aids, and cellular structures. Some have catalytic properties. They include butyl tin trichloride, dibutyltin oxide, and various methyltin compounds. They occur as both liquids and solids and all are highly toxic.
ozone	A major component of smog. Ozone is produced from reactions of hydrocarbons and nitrogen oxides in the presence of sunlight and heat.
PCB equipment	Equipment that contains fluid with a concentration of polychlorinated biphenyls (PCBs) of 500 parts per million (ppm) or greater. Disposal and removal are regulated by the US Environmental Protection Agency.
PCB-contaminated equipment	Equipment that contains fluid with a concentration of polychlorinated biphenyls (PCBs) from 50 to 499 parts per million (ppm). Disposal and removal are regulated by the US Environmental Protection Agency.
particulate matter (PM_{10})	PM_{10} is a fractional sampling of particle sizes that approximate the extent to which particles with aerodynamic equivalent diameters smaller than fifty (50) microns penetrate to the lower respiratory tract. The "10" in PM_{10} refers to a 50 percent collection efficiency size range, not an upper size limit.
peak hour	The hour of highest traffic volume on a given section of roadway between 7:00 AM and 9:00 AM or between 4:00 PM and 6:00 PM.
polychlorinated biphenyls (PCBs)	Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as environmental pollutants that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. PCBs decompose very slowly.
preliminary assessment (PA)	The preliminary assessment identifies areas of potential contamination and evaluates each area to determine if a threat to human health or the environment exists. A preliminary assessment report is developed from readily available information, such as past inventory records, aerial photographs, employee interviews, existing analytical data, and a site visit. A preliminary assessment may recommend no further action, additional work, or a removal action.
radon	A colorless, naturally-occurring, radioactive, inert gaseous element formed by radioactive decay of radium in soil or rocks.

region of influence (ROI)	For each resource, the region potentially affected by the proposed action or alternatives and used for analysis in the affected environment and impact discussion.
remedial action (RA)	The action taken to remove or reduce the presence of contamination. During a remedial action, selected cleanup technology is implemented. A remedial action can be as simple as soil excavation or as complicated as a complete ground water treatment system that may operate for many years. Remedial action work plans for long-term remediation will include operation and maintenance (O&M) plans. O&M efforts continue until the cleanup is complete.
remedial action plan (RAP)	The plan prepared for approval by the State government that formally identifies the selected remedial action and documents the reasoning behind the selection of that particular cleanup alternative.
remedial design (RD)	After the remedial action plan (RAP)/record of decision (ROD) is signed, remedial design can begin. During the remedial design phase, specific construction parameters and equipment specifications are prepared for the selected cleanup alternative.
remedial investigation (RI)	This investigation is performed to more fully define the nature and extent of the contamination at a site and to evaluate possible methods of cleaning up the site. During the investigation, ground water, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of contamination.
removal actions	In the event of an immediate threat or potential threat to human health or the environment, a short-term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spot and its source from all biological receptors. Usually, removal actions do not completely clean up a site, and additional remediation steps are required.
Resource Conservation and Recovery Act (RCRA)	The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901, *et seq.*, was enacted in 1976 as the first step in regulating the potential health and environmental problems associated with hazardous waste disposal. RCRA and the regulations developed by the US Environmental Protection Agency (EPA) to implement its provisions provide the general framework of the national hazardous waste management system, including the determination of whether hazardous wastes are being generated, techniques for tracking wastes to eventual disposal, and the design and permitting of hazardous waste management facilities.
Safe Drinking Water Act (SDWA)	The Safe Drinking Water Act (SDWA), 42 U.S.C. § 300f, *et seq.*, establishes the amount of concentrated contaminants allowable in public drinking water. The SDWA also requires the review of Federal agencies that maintain public water supplies or contribute to ground water contamination. Reviews must follow all applicable requirements issued by the State.

site discovery (SD)	A site is an area that has or has had the potential for a hazardous substance release. A single facility may contain several sites to be studied. Potential sites are occasionally discovered by searching through records or during construction projects.
site inspection (SI)	An inspection conducted after a preliminary assessment when additional information is needed to evaluate the site. The collection and analysis of soil, sediment, and surface or ground water samples may help determine the need for further study. The SI collects any information needed for hazard ranking. The SI may recommend a site for no action, further study, or an immediate removal action.
State Historic Preservation Officer (SHPO)	The official within each State, authorized by the State at the request of the Secretary of the Interior, to implement the National Historic Preservation Act.
Superfund Amendments And Reauthorization Act (SARA)	The Superfund Amendments And Reauthorization Act (SARA), 42 U.S.C.A. § 9601 note (West 1995), was enacted in 1986 to increase the Superfund to $8.5 billion, to modify contaminated site cleanup criteria scheduling, and to revise settlement procedures. It also provides a fund for leaking underground storage tank cleanups and a broad new emergency planning and community right to know program.
threatened species	Plant and wildlife classes likely to become endangered in the foreseeable future. A species can be designated as threatened by the US Fish and Wildlife Service, the California Department of Fish and Game, or both.
Toxic Substances Control Act (TSCA)	The Toxic Substances Control Act (TSCA), 15 U.S.C. § 2601, *et seq.*, provides authority to test and regulate chemicals to protect human health. Substances regulated under TSCA include asbestos and polychlorinated biphenyls (PCBs).
wetlands	Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil. This classification includes swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are those wetlands that meet the vegetation, soils, and hydrology criteria under normal circumstances (or that meet the special circumstances as described in the US Army Corps of Engineers, 1987 wetland delineation manual where one or more of these criteria may be absent) and are a subset of "waters of the United States."

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10. DISTRIBUTION LIST

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NAS Alameda/FISC Alameda Draft EIR Distribution List

Organization	Branch	Title	First Name	Last Name
Federal Elected Officials				
US House of Representatives	9th Congressional District	Congresswoman		
US House of Representatives	9th Congressional District	Congresswoman		
US Senate		Senator	Barbara	Boxer
US Senate		Senator	Dianne	Feinstein
State Elected Officials				
California State Assembly	District 14	Assemblyman	Tom	Bates
California State Assembly	District 16	Assemblywoman	Barbara	Lee
California State Senate	District 9	Senator	Nicholas	Petris
Local Elected Officials				
City of Alameda	Office of the Mayor	Mayor	Ralph	Appeizzato
City of Albany	Office of the Mayor	Mayor	Bruce	Mast
City of Berkeley	Office of the Mayor	Mayor	Shirley	Dean
City of Emeryville	Office of the Mayor	Mayor	Ken	Bukowski
City of Oakland	City Council District 3	Councilmember	Natalie	Bayton
City of Oakland	City Council Office	Councilmember	Henry	Chang
City of Oakland	City Council District 5	Councilmember	Ignacio	De La Fuente
City of Oakland	Office of the Mayor	Mayor	Elihu	Harris
City of Oakland	City Council District 1	Councilmember	Shelia	Jordan
City of Oakland	City Council District 6	Councilmember	Nate	Miley
City of Oakland	City Council District 2	Councilmember	John	Russon
City of Oakland	City Council District 4	Councilmember	Dick	Spees
City of Oakland	City Council District 7	Councilmember	Dezie	Woods-Jones
City of Piedmont	Office of the Mayor	Mayor	Patty	White
City of San Francisco	Office of the Mayor	Mayor	Willie	Brown
Federal Agencies				
Advisory Council on Historic Preservation	Western Division, Project Review	Ms.	Lee	Keatinge

Organization	Branch	Title	First Name	Last Name
Federal Emergency Management Agency	Region 9 Director			
National Marine Fisheries Service	Environmental Assessment Branch			
National Park Service	Golden Gate National Recreation Area			
Oakland Army Base	Military Traffic Management	Mr.	Tom	Galvin
Oakland Army Base		Mr.	Ed	Keller
Oakland Army Base			Steve	Leite
Oakland Army Base		Col.	Susan S.	Halter
US Department of Defense	Office of Economic Adjustment	Mr.	Paul	Ryeff
US Coast Guard	Code MLCP	LCDR	Rod	Smith
US Army Corps of Engineers	San Francisco District	Mr.	Rod	Chisolm
US Army Corps of Engineers	Sacramento District (CESPK PD-R)	Dr.	Robert	Koenig
US Army Corps of Engineers	San Francisco District	Dr.	Richard	Lerner
US Army Corps of Engineers	Sacramento District (CESPK PM-M)	Mr.	Bob	Taylor
US Department of Commerce	National Oceanic & Atmospheric Administration			
US Department of Commerce	Office of the Secretary Western Region		Michael	Liikala
US Department of Defense	Defense Technical Information Center, DTIC Customer Help Desk (DTIC-BLS)			
US Department of Defense	Office of Economic Adjustment	Mr.	Paul	Dempsey
US Department of Education	Federal Real Property Assistance Program Director		David	Hakola
US Department of Education	Federal Real Property Assistance Program	Mr.	George	Hoops
US Department of Energy	EC&E Environmental Program Division 3G-092			
US Department of Housing and Urban Development	Community Planning & Development 9ADE			
US Department of Housing and Urban Development	Headquarters Library			
US Department of Housing and Urban Development	Office of Community Viability	Mr.	Richard	Brown
US Department of State	Environmental Affairs Office			

Organization	Branch	Title	First Name	Last Name
US Department of the Interior	Office of Environmental Affairs, Regional Officer			
US Department of the Interior	Bureau of Indian Affairs, Environmental Section Chief			
US Department of the Interior	Office of Environmental Affairs			
US Department of the Interior	Office of Environmental Project Review			
US Department of the Interior	Office of the Secretary			
US Department of the Interior	National Park Service, Pacific West Region Field Director		Stanley	Albright
US Department of the Interior	Bureau of Land Management	Mr.	Ed	Hestey
US Department of the Interior	Office of Environmental Policy and Compliance		Pat	Port
US Department of the Interior, USGS	Director's Representative			
US Department of the Interior, USGS	Regional Hydrologist, Water Resources Division			
US Department of Transportation				
US Department of Transportation	Federal Highway Administration Regional Administrator		Julie	Cirillo
US Department of Transportation	Federal Highway Administration	Mr.	Dan	Harris
US Department of Transportation	Region IX Secretary		Laurie	Kahele
US Department of Transportation	Federal Highway Administration, California Division	Mr.	Bill	Wong
US Environmental Protection Agency	Public Information Center			
US Environmental Protection Agency	Region 9 (E-3-1)		David	Farrel
US Environmental Protection Agency	Region 9 (A-1) Oakland Environmental Justice		Kathleen	Goforth
US Environmental Protection Agency	Region 9 (Code H-9-2)	Ms.	Esther	Hill
US Environmental Protection Agency	Dredging Project		Erika	Hoffman
US Environmental Protection Agency	Office of Federal Affairs	Mr.	Ken	Mittlehotz

Organization	Branch	Title	First Name	Last Name
US Environmental Protection Agency	Region 9		Carla	Moore
US Environmental Protection Agency	Region 9	Mr.	Philip	Ramsey
US Environmental Protection Agency	Region 9 Office of External Affairs	Mr.	David	Tomsovic
US Fish & Wildlife Service	Sacramento Field Office			
US Fish & Wildlife Service	San Francisco Bay National Wildlife Refuge	Ms.	Marge	Kolar
US Fish & Wildlife Service	Ecological Services	Mr.	Joel	Medlin
US General Services Administration	Sansome Street Field Office			
US General Services Administration	Property Disposal Division (9PR)	Supervisor	Carol	Arnold
US Maritime Administration				
US National Marine Fisheries Service	Southwest Region HCB		James	Bybee
US National Trust for Historic Preservation		Ms.	Courtney	Damkroger
US Navy				
	EFA West, Code 1852	Env. Planning Manager	Jerry	Hemstock
	EFA West, Code 18	Mr.	Lou	Ocampo
COMNAVBASE San Diego	Environmental Office	Mr.	Joe	Ruzicska
Defense Reutilization and Marketing Office		Chief	Chris	Johnson
Department of Navy	Office of Chief of Naval Operations	Ms.	Kim	DePaul
Department of Navy	OGC/AGC (I&E)	Mr.	Ron	Borro
Fleet and Industrial Supply Center	Public Affairs Office (Code 91.3)	Ms.	Jo	Avalos
Fleet and Industrial Supply Center	Code 70	Lt.	Steve	Wolfe
Fleet and Industrial Supply Center	Code 71	Mr.	Ed	Guldner
Fleet and Industrial Supply Center	BRAC Office (Code 04)	LCDR	Richard	Iannicca
Naval Facilities Engineering Command	Code 60SFB Base Closure Office	Mr.	Mike	Henson
Naval Facilities Engineering Command	Planning and Engineering Department	Mr.	Get	Moy
Naval Fleet Hospital Support Office		CDR	J.	Watson
State Agencies				
CA Air Resources Board		Mr.	Bob	Fletcher

Organization	Branch	Title	First Name	Last Name
CA Board of Equalization	District 1	Honorable	Johan	Klehs
CA Coastal Commission				
CA Department of Boating & Waterways				
CA Department of Conservation	Division of Mines & Geology			
CA Department of Conservation	Program Coordinator		Dennis	O'Bryant
CA Department of Fish & Game	NW Region 3	Mr.	Brian	Hunter
CA Department of Fish & Game	Environmental Services Division	Mr.	Pete	Phillips
CA Department of Forestry		Mr.	Douglas	Wickizer
CA Department of Health Services				
CA Department of Health Services	Director			
CA Department of Health Services	Office of Noise Control	Mr.	Jerome	Lucas
CA Department of Parks & Recreation	Resource Management Division	Mr.	Ken	Pierce
CA Department of Parks & Recreation	State Historic Preservation Officer	Mr.	Daniel	Abeyta
CA Department of Trade and Commerce		Mr.	Robert	Berry
CA Department of Transportation				
CA Department of Transportation	District 4 CEQA Coordinator		Philip	Badal
CA Department of Transportation	Transportation Planning		Terry	Barrie
CA Department of Transportation	District 4		Beth	Krase
CA Department of Water Resources		Mr.	Walt	Pettit
CA Environmental Protection Agency				
CA Environmental Protection Agency	Dept. of Toxic Substance Control	Ms.	Susan	Jun
CA Environmental Protection Agency	Dept. of Toxic Substance Control, Office of Military Facilities	Mr.	Chein	Kao
CA Environmental Protection Agency	Dept. of Toxic Substance Control, site Mitigation Program		Theresa	McGarry
CA Environmental Protection Agency	Office of Military Facilities - Reuse Rep.	Ms.	Diana	Peebler
CA Environmental Trust				
CA Highway Patrol	Golden Gate Division			

Organization	Branch	Title	First Name	Last Name
CA Highway Patrol	Long Range Planning Section			
CA Integrated Waste Management Board				
CA Office of Emergency Services				
CA Office of Planning & Research		Mr.	Mike	Chiaritti
CA Public Utilities Commission	Safety and Enforcement Division, Railroad Operations Safety Section	Mr.	Ernie	von Ibsch
CA Regional Water Quality Control Board	Land Disposal Section		John	Adams
CA Regional Water Quality Control Board		Mr.	Vincent	Christian
CA Resources Agency			Douglas	Wheeler
CA State Clearinghouse				
CA State Lands Commission	Environmental Planning & Management			
CA State Lands Commission	Division of Research & Planning	Mr.	Dave	Plummer
CA State Lands Commission	Division of Land Management Chief		Robert	Lynch
California State Assembly	Office of Research	Ms.	Wendy	Umino
California State Senate	Base Closure Committee	Mr.	Steve	Macola
Sonoma State University	CA Archaeological Survey		Leigh	Jordan
State of California	PUC Railroad Operations & Safety Branch			
Regional Agencies				
AC Transit			Sharon	Banks
AC Transit	General Manager	Mr.	Mike	Mills
Alameda County	Flood Control & Water Conservation Dpmt.			
Alameda County	Health and Social Services Director			
Alameda County	Mosquito Abatement District			
Alameda County	Social Services Economic Services	Ms.	Kathy	Archuleta
Alameda County	Board of Supervisors	Mr.	Edward	Campbell
Alameda County	Board of Supervisors	Mr.	Keith	Carson
Alameda County	Planning Department		William	Fraley

Organization	Branch	Title	First Name	Last Name
Alameda County	Transportation Authority	Mr.	A.J.	Gallardo
Alameda County	Congestion Management Agency	Ms.	Jean	Hart
Alameda County	Hazardous Materials Program	Mr.	Edgar	Howell
Alameda County	Health Care Services Agency		Edward	Howell
Alameda County	Economic Development Director	Mr.	Bruce	Kern
Alameda County	Board of Supervisors	Ms.	Mary	King
Alameda County	Public Works Agency Director	Mr.	Donald	LaBelle
Alameda County	Social Services Agency Director	Mr.	Rodger	Lum
Alameda County	Planning Department Director	Mr.	Adolph	Martinelli
Alameda County	County Fire Department Chief		William	McCammon
Alameda County	Reuse and Redevelopment Authority	Ms.	Kay	Miller
Alameda County	Board of Supervisors	Mr.	Don	Perata
Alameda County	Sheriff's Department	Sheriff	Charles	Plummer
Alameda County	Planning Department Zoning Administration	Mr.	Steve	Richards
Alameda County	Division of Hazardous Materials		Rafat	Shahid
Alameda County	Planning Department Housing/Community Dev.	Mr.	Jack	Shepherd
Alameda County	General Services Agency		Darlene	Smith
Alameda County	Social Services Employment & Community Services	Mr.	Mario	Solis
Alameda County	Planning Department Development Planning	Mr.	James	Sorenson
Alameda County	Board of Supervisors		Gail	Steele
Alameda County	Planning Department Policy Planning	Ms.	Deborah	Stein
Alameda County	County Administrator	Mr.	Steven	Szalay
Association of Bay Area Governments	Planning Director	Mr.	Gary	Binger
Association of Bay Area Governments	Executive Director	Mr.	Eugene	Leong
Association of Bay Area Governments		Ms.	Patricia	Perry
Association of Bay Area Governments	S.F. Bay Trail Project	Mr.	Brian	Wiese

Organization	Branch	Title	First Name	Last Name
Association of Bay Area Governments		Ms.	Suzan	Ryder
Bay Area Air Quality Management District		Ms.	Katherine	Fourtney
Bay Area Air Quality Management District			Niko	Letunic
Bay Area Rapid Transit	Vice President, Board of Directors	Ms.	Margaret	Pryor
Bay Area Rapid Transit	General Manager	Mr.	Richard	White
East Bay Regional Park District	Finance and Legislation		Susan	Smartt
Metropolitan Transportation Commission	Metro Center, Planning Department	Mr.	Marc	Roddin
SF Bay Conservation & Development Commission		Executive Director	William	Travis
Local Agencies				
Alameda Chamber of Commerce				
City of Alameda	Community Development Department	Mr.	Bruce	Knopf
City of Alameda	Planning Department	Ms.	Colette	Meunier
City of Berkeley	Planning Department	Ms.	Gail	Kelly
City of Emeryville	Planning Department		Gaye	Quinn
City of Oakland	Development Services Department Director			
City of Oakland	Fire Department			
City of Oakland	Planning Director			
City of Oakland	Public Works Director			
City of Oakland	Water Superintendent			
City of Oakland	Office of the Mayor	Ms.	Zennie	Abraham
City of Oakland	Office of Planning & Building Services	Mr.	Andy	Altman
City of Oakland	Office of General Services	Mr.	James	Ashley
City of Oakland	Fire Chief	Mr.	John K.	Baker
City of Oakland	City Council Office	Ms.	Jayne	Becker
City of Oakland	Office of Economic Development & Employment	Mr.	Mark	Beratra
City of Oakland	Planning Commission	Ms.	Jean	Blackaher
City of Oakland	Public Health Department	Mr.	Carl	Bobino
City of Oakland	Office of Planning & Building Services	Ms.	Kofi	Bonner
City of Oakland	Office of Marketing & Public Information	Mr.	Michael	Bridges
City of Oakland	Office of Retirement & Risk Administration	Mr.	Jim	Brown

Organization	Branch	Title	First Name	Last Name
City of Oakland	Planning Department		Chris	Buckley
City of Oakland	Planning Commission	Ms.	Linda	Bytof
City of Oakland	West Oakland Development Program	Ms.	Aletha	Cannon
City of Oakland	Office of Housing & Neighborhood Development	Mr.	Lonnie	Carter
City of Oakland		Mr.	Andrew	Clark-Clough
City of Oakland	City Council Office	Ms.	Frances	David
City of Oakland	Planning Commission	Mr.	Joseph	DeLuca
City of Oakland	Real Estate		Frank	Fanelli
City of Oakland	Office of Economic Development & Employment	Ms.	Stephanie	Floyd-Johnson
City of Oakland	City Clerk		Ceda	Ford
City of Oakland	Office of the Mayor		Viola	Gonzales
City of Oakland	Senior Transportation Planner	Ms.	Surlene	Grant
City of Oakland	Fire Prevention Bureau		Steven	Hallert
City of Oakland	Office of Housing & Neighborhood Development	Ms.	Antoinette	Hewlett
City of Oakland	Planning Commission	Ms.	Dolores	Jaquez
City of Oakland	City Manager	Mr.	Craig	Kocian
City of Oakland	City Council Office 2nd Floor	Mr.	Jay	Leonhardy
City of Oakland	Public Works & Environmental Affairs	Ms.	Brooke	Levin
City of Oakland	Pres. Advisory Board	Mr.	Richard	Lloyd
City of Oakland	Oakland Construction Employment Referral Program	Mr.	Dennis	Lockett
City of Oakland	Office of Marketing & Public Information	Ms.	Mona	Lombard
City of Oakland	City Council Office 2nd Floor	Ms.	Michele	Molotsky
City of Oakland	Planning Commission	Mr.	Anthony	Pegram
City of Oakland	Public Works Transportation Services	Mr.	Mike	Pickering
City of Oakland	City Manager	Mr.	Ezra	Rapport
City of Oakland	Planning & Building Department	Ms.	Anu	Raud
City of Oakland	Chief of Staff		Larry	Reid
City of Oakland	Chief of Projects, Office of Economic Development & Employment	Mr.	Roy	Schweyer
City of Oakland	Planning Commission	Mr.	Vincent	Reyes
City of Oakland	Office of Public Works		Terry	Roberts

Organization	Branch	Title	First Name	Last Name
City of Oakland	Planning Commission	Ms.	Judy	Rowe
City of Oakland	Police Chief	Mr.	Joseph	Samuels
City of Oakland	Planning Commission	Mr.	Harold	Smith
City of Oakland	Office of Planning and Building		Iris	Starr
City of Oakland	Planning Commission	Mr.	Phil	Tagami
City of Oakland	Planning Department		Eloise	Thornton
City of Oakland	Coalition for West Oakland Revitalization	Chair	Queen	Thurston
City of Oakland	City Attorney	Mr.	Ralph	Wheeler
City of Oakland	Office of Parks and Recreation	Mr.	Cleve	Williams
City of Oakland	Comprehensive Planning	Mr.	Willie	Yee
City of Richmond	Office of Port Director	Mr.	Mike	Powers
City of San Leandro	Office of the Mayor	Mayor	Ellen	Corbett
Oakland Base Reuse Authority	Executive Director		Paul	Nahm
Oakland Base Reuse Authority		Mr.	Mel	Blair
Oakland Chamber of Commerce	Executive Vice President			
Oakland Chamber of Commerce		Mr.	John	Christenson
Oakland Community Development Districts	OCD-West, Office of Housing and Neighborhood Development	Mr.	Danny	Wong
Oakland Unified School District		Mr.	Bob	Long
Oakland Unified School District			Jean	Quan
Port of Oakland		Ms.	Diane	Heinz
Native American Groups				
Amah Tribal Band			Irene	Zwierlein
Indian Canyon Mutsun Band of Costanoan			Ann Marie	Sayer
Muwekma Indian Tribe			Rosemary	Cambra
Ohlone/Costanoan		Mr.	Andrew	Galvan
Ohlone/Costanoan			Jakki	Kehl
Ohlone/Costanoan			Kenneth	Marquis
Ohlone/Costanoan			Patrick	Orozco
Ohlone/Costanoan			Alex	Ramirez
Ohlone/Costanoan			Ella Mae	Rodriguez
Ohlone/Costanoan			Linda	Yamane
Ohlone/Costanoan; Chumash; Salinian			Jenny	Mousseaux
United Indian Nations, Inc.		Mr.	Otis	Parrish

Organization	Branch	Title	First Name	Last Name
Community and Business Organizations				
26th Avenue Neighborhood Association		Ms.	Tina	Combs
2900 Block California Street			Jai Jai	Noire
42nd Street Martin Luther King Jr. Way		Ms.	Anne	Schuermann
44th Street Neighborhood Development Club		Mr.	Armando	Accunero
ACORN			Arthalia	Ray
Acumen Building Enterprise		Ms.	Andrea M.	Dawson
Adams Point Merchants Association		Ms.	Jeanne	Silverman
Adams Point Preservation Society		Mr.	Ron	Morra
African-American Development Association				
Allendale District Improvement Association		Mr.	Nathaniel	Arnold
Alpine Terrace Neighborhood Association		Mr.	Carl	Kuhnert
ANEW			Lisa	Jones
Apricot Street Home Alert		Ms.	Lavern	Holmes
Asian Immigrant Women's Advocates				
Asian Pacific Environmental Network				
Assets Senior Employment Opportunities		Ms.	Joann	Yoshioka
Associated Residents of Sequoyah Highlands		Dr.	Rodger	Shepherd
Atchison Topeka & Santa Fe	Railroad Operations	Mr.	Carlos	Brewer
Atchison Topeka & Santa Fe	International Sales & Service		Jack	Fields
Bancroft/Fairfax Merchants			Arvi	Dorsey
Bay Area Bioscience Center		Ms.	Joan	Waranoff
Bay Area Council	President	Mr.	Angelo	Siracusa
Bay Area Economic Forum	Bay Area Defense Conversion Action Team	Ms.	Louise	Aiello

Organization	Branch	Title	First Name	Last Name
Bay Area Economic Forum	President/CEO	Ms.	Sunne	Wright McPeak
Bay Area Urban League			Walter	Brame
Bay Dredging Action Coalition				
Bay Planning Coalition		Ms.	Ellen	Johnck
Bella Vista Area Neighborhood Group		Ms.	Frances	Farmer
Beth Eden Housing		Ms.	Robin	Walker
Black Business Listings		Ms.	Diane	Howell,
Broadway Macarthur Neighbors		Ms.	Mary	Sanichas
Broadway Terrace Homeowners Association			Millicent	Reguzzoni
Broadway-Manila Neighborhood Committee		Miss	Delores	Booth
Brookfield Home Improvement Association		Mr.	Frank	Gilbert
Brooklyn Neighborhood Preservation Association		Ms.	Jane	Spangler
Business Development, Inc.		Ms.	Michelle	Brown
California Cartage Company			Luke	Lynch
CA Council for Environmental & Economic Balance				
California Hotel				
California Labor Foundation		Mr.	Mike	White
California Native Plant Society	East Bay Chapter			
California Networks for a New Economy				
California Research Bureau		Ms.	Karen	Crit
Catholic Charities Senior Employment Program		Mr.	James	Chin
Center for Economic Conversion				
Center for Marine Conservation				
Chipman Freight Service			Mike	Tieman
Citizens Emergency Relief Team	Bethlehem Lutheran Church		Jack	Atkin

Organization	Branch	Title	First Name	Last Name
Cleveland/China Hill Neighborhood Association		Mr.	Randall	Hong
Coalition for West Oakland Revitalization			Willa	Bruce
Coalition for West Oakland Revitalization			Bill	Chorneau
Coalition for West Oakland Revitilization		Dr.	Ralbert	Brooks
Coalition for West Oakland Revitilization			Wjeta	Milele
Coalition for West Oakland Revitilization		Ms.	Barbara	Montgomery
Coalition for West Oakland Revitilization			Arthur	O'Neal
Coalition for West Oakland Revitilization			Waheed	Zafar
Coastal Advocates				
College Avenue Merchants Association		Ms.	Jenny	Palmer
Committee for a Better Environment		Mr.	Denny	Larson
Concerned Citizens of Elmhurst Neighborhood			Altha	Washington
Concerned Citizens of South Eastmont		Ms.	Ethel	Oliver
Consortium of United Indian Nations		Ms.	Julia	Nichols
Conway Intermodal			Dick	Horn
Crest Avenue Homeowners Association		Mr.	Alfred	Blunt
Citizens for a Better Environment				
Diamond Improvement Association		Ms.	Janet	Broughton
Dimond Business & Professional Association		Mr.	Glenn	Bigelow
Don Dommer Associates		Mr.	Don	Dommer
Downtown Gateway Association			Nicolas	Sakkis
Durant Neighborhood Group			W.	Mitchell

Organization	Branch	Title	First Name	Last Name
Durant Park Highlands			Winifred	Walsh
Eagle Marine Services			Bob	Fairbanks
Earth Island Institute	Urban Habitat Program		Martha	Matsuoka
East Bay Asian Business & Building Professionals		Mr.	Randall	Fong
East Bay Conservation Corps			Michael	Rosevelt
East Bay Conver. & Reinvestment Comm.			Michael	Torrey
East Bay Municipal Utility District	Manager, Source Control Division	Mr.	Joe	Damas
East Bay Municipal Utility District	Division of Water Distribution Planning, M/S 701	Mr.	William	Kirkpatrick
East Bay Municipal Utility District	Environmental Compliance Specialist	Mr.	Robert	Newman
East Oakland Sports Complex Committee		Mr.	Ira	Jinkins
Eastmont Mall			Henry	Hempbill
EBCRC		Mr.	David	Wilson
Ecology Center			Michael	Warburton
Economic Development & Construction, Inc.				
Elmhurst Merchant Association		Mr.	Charles	Hill
Environmental Defense Fund			Pam	Franz
Environmental Defense Fund		Mr.	David	Roe
ERCI		Mr.	John	Rosengard
Father Divine Apostleship of the Sea				
Filipinos for Affirmative Action		Mr.	Eduardo	Valladares
First United Services Credit Union		President	John S.	Salle
Gateway Trucking Services	c/o California Crating Co.			
Glen Oaks Way Neighborhood Associates			Gwin	Richards
Glenarms Neighborhood Coalition		Mr.	Dennis	Fong
Glenview Neighborhood Associates		Mr.	Michael	Gabriel
Gold Coast Property Owners & Managers Assoc.		Mr.	John	Seymour

Organization	Branch	Title	First Name	Last Name
Gold Coast Property Owners & Managers Assoc.		Mr.	Phillip	Tagami
Golden Gate Audubon Society			Arthur	Feinstein
Golden Gate University	Director, Environmental Law & Justice Clinic	Mr.	Alan	Ramo
Gravatt Homeowners Association		Ms.	Diana	Yonkouski
Greenpeace				
Gulf of Far. Nat. Mar. Sanc.			Edward	Ueber
H. Robinson Baker Y.M.C.A.			Sandra	Harson
H. Robinson Baker Y.M.C.A.			Anthony	McNeal
Haddon Hill Neighborhood Association		Mr.	William	Moore
Half Moon Bay Fisherman's Assoc.			Pietro	Parravano
Hawk Pacific Corporation			Dennis	Van Wagner
High Street Neighborhood Coalition		Mr.	Dave	Pelto
Hill Area Coalition Homeowners Association		Mr.	Jeffrey	Franzen
Hispanic Chamber Of Alameda County		Mr.	Ron	Silva
IAM&AW, Lodge 1584		Mr.	Larry	Kinslow
Intertribal Friendship House	Office of the Executive Director			
Irwin Court Neighbors Association			Marti	Mogensen
Joaquin Miller 'Heights' Association		Mr.	Bill	Fritzsche
Jubilee West, Inc.	Liberty Hall	Mr.	Ken	Jones
Jubilee West, Inc.		Ms.	Patricia	Nelson-Doyle
Korean Community Center		Ms.	Ann	Park
Lake Merritt Community Association			Awele	Makeba
Lakeshore Homes Association		Ms.	Carol	Ellis
Lakeshore Homes Association		Ms.	Claudia	Skapik
Lakeshore Merchants Association		Ms.	Marlene	Oehler

Organization	Branch	Title	First Name	Last Name
Landmarks Preservation Advisory Board		Ms.	Helaine	Prentice
League of Women Voters		Ms.	Katherine	Gueldner
League of Women Voters			Virginia	Hamrick
League of Women Voters	Bay Area		Jean	Matsuura
League of Women Voters			Barbara	Rufner
League of Women Voters of Oakland			Mary	Strauss
Lincoln-Charleston Street Organization		Ms.	Joan	Cannelli
Local 250			Shirley	Wars
Macarthur Coalition		Mr.	Richard	Cowan
Maersk Pacific Ltd.			Glenn	Eddy
Margarido Drive/Oceanview Neighborhood		Mr.	Craig	Lyall
MAWPAO			Darrell	Ford
Merriewood-Forest Park Homeowners Assoc.		Mr.	Jerry	Rose
Metropolitan Homeowners Association		Mr.	Bruce	Thompson
Metropolitan Transportation Commission	Metro Center, Technical Services	Ms.	Kim	Krohr
Military Toxics Projects				
Montebello Terrace Homeowners Association			Gil	Jung
Montebello Terrace Homeowners Association		Mr.	Bill	Posonen
National Heritage Institute			Cynthia	Koehler
Native American Heritage Commission	Executive Secretary		Larry	Myers
Natural Resources Defense Council		Mr.	Hal	Candee
Nature Conservancy				
Neptune Orient Lines		Capt.	Philip	Ezekiel
Northern California Marine Terminals Corp.			David	Adam
Northern California Matson Terminals Inc.			Jon	Roselle
Oak Center AC Transit			Clinton	Killian

Organization	Branch	Title	First Name	Last Name
Oak Center/Lowell Park Community Organization		Mr.	John	Younger
Oakland-Alameda Ferry Service		Mr.	Ernie	Sanchez
Oakland Black Chamber		Mr.	Oscar	Coffey
Oakland Convention & Visitors Bureau			Robert	Toney
Oakland Design Advocates			Chris	Parillo
Oakland Design Advocates		Mr.	Ken	Ryan
Oakland Heritage Alliance		Mr.	William	Coburn
Oakland Private Industry Council		Ms.	Marilyn	Handis
The Oakland Terminal Railway			Phillip	Copple
OCCUR			David	Glover
OER	Planning Department		Sharon	Rodgers
OISC			Donald	Clark
OPC		Mr.	Hans	Reuvekamp
Organized People of Elmhurst			Leola	Terry
Oscar Niemeth Towing			Oscar	Niemeth
P.R.T.I. Trucking			Matt	Hilton
Pacific Builder			Marvis	Daily
Pacific Coast Container			Mike	McDonnell
Pacific Coast Fed. of Fish Association			Zeke	Grader
Pacific Gas & Electric		Mr.	John	Cupp
Pacific Gas & Electric	East Bay Region		Geoffrey	Jue
Pacific Gas & Electric			Michael	Schonberr
Pacific Gas & Electric		Ms.	Jane	Yura
Pacific System			C.A.	Gerstner
Parker Warehouses, Inc.			Larry	Parker
Parkridge Estates Improvement Association		Mr.	Donald	Binggeli
Patrick Media	Public Affairs Representative	Ms.	Cass	Caulfield
Greenbelt Alliance			Owen	Byrd
Phoenix Neighborhood Group			Carolyn	Howard
Point Reyes Bird Observatory				
Poplar Advisory Council		Mr.	John	Walker
Riteway Construction Company			Bruce	Porter

Organization	Branch	Title	First Name	Last Name
Robbin & Associates			Larry	Robbins
Rockridge Community Planning Council		Ms.	Mary	MacDonald
Save San Francisco Bay Association				
Scott's, Inc.			Raymond	Gallagher
Sea Land Service Inc.			Meredith	Nizer
Sierra Club	San Francisco Bay Chapter			
Sierra Club	Conservation Department	Mr.		
Skyline Boulevard Neighborhood Association		Mr.	Steven	Renten
Small Business Development Center		Ms.	Selma	Taylor
Society of Alameda County			Michael	Rawson
South of the Nimitz Improvement Council		Mr.	Mort	Howard
Southern Pacific Transportation			Ken	Derr
Southern Pacific Transportation			Justin	Fox
Southern Pacific Transportation			Daryl	Maxey
Southern Pacific Transportation			Mike	Ongerth
Spanish Speaking Citizens' Foundation	Office of the Executive Director	Mr.	Jose	Arrendondo
St. Andrew's Catholic Church				
St. Leo's Church		Fr.	Timothy	Johnson
St. Luke Church		Rev.	Claude	Mason
St. Patrick's Prescott Community Organization		Ms.	Ruby	Baker
St. Patrick's Catholic Church		Father	Charles	Smith
Stevedoring Services of America			Ray	Holbrock
Stonehurst Homeowners & Renters Association		Mr.	Oscar	Montgomery
Teamsters Local 7		Mr.	Marty	Frates
Telegraph Area Neighborhood Group		Mr.	Walter	Miles
Telegraph Avenue Business Association		Dr.	Patricia	Wolf
Temescal Neighbors Together		Mr.	Thad	Shaffer

Organization	Branch	Title	First Name	Last Name
Thirty-Eight Street Neighborhood Association		Mr.	Spencer	Chen
TransBay Container Terminal		Mr.	Robert	Bergmann
TransBay Container Terminal		Capt.	S.	Murokuma
Transpacific Container Service Corp.			Michael	Porte
Tuxedo Addition Neighborhood Association		Ms.	Annie	Walker
Union Pacific			Michael	King
Union Pacific Railroad			Mike	Chapman
United Anglers of America			John	Beuttler
United Way			Carol	Watson
Upper Zodiak Neighborhood Association			Ellie	Kinczel
Urban Ecology		Mr.	Andy	Young
Veske Land Surveying		Mr.	Tiit	Veske
Vietnamese Fishermen Association of America		Ms.	Anita	Hall
Waste Management of Alameda County		Mr.	David	MacDonald
Webster Track Neighbors		Ms.	Jacquee	Castain
West Oakland Commerce Association			George	Burtt
West Oakland Commerce Association		Mr.	Roger	Schmidt
West Oakland Commerce Association		Mr.	Bob	Tuck
West Oakland District Board			Bob	Williams
West Oakland Homeowners	Christian American Church			
West Oakland Mental Health Center			Thomas	Joiner
West Oakland Neighbors			Silva	Harr
West Oakland Neighbors			Lular	Logan
West Oakland Neighbors			Jodie	McGraw
West Oakland Neighbors			Nancy	Nadel

Organization	Branch	Title	First Name	Last Name
West Oakland Redevelopoment			Ray	Kidd
Western States Legal Foundation		Ms.	Jackie	Cabasso
Westwood Gardens Residents Council		Ms.	Gloria	Taylor
WOCA		Mr.	Mike	Bullio
Yandell's Truckaway		Mr.	John	Yandell
Yusen Terminals Inc.			Ed	Stellin
Individuals				
		Ms.	Frances	Abram
		Ms.	Inez	Aldridge
		Mr.	Wallace	Alexander
		Mr.	Frank	Allen
			Walter	Allen
		Ms.	Celeste	Andrews
		Mr.	James	Anthony
			Thordie	Ashley
			Jesse	Bagwell
			O.	Barner
		Mr.	Bruce	Beasley
		Ms.	Salome	Becerra
		Ms.	Cornelia	Bell
		Mr.	Mike	Blumenberg
		Mr.	David	Boatwright
		Mrs.	Sarah	Bowden
		Mr.	Leo	Brie
		Mr.	Ryan	Brooks
		Ms.	Marzetta	Brown
			W.	Buchanan
		Mr.	Charles	Buckley
			P.J.	Calihan
		Mr.	Horacio	Cardenas
		Ms.	Regina	Carrie
			Dashinaye	Carter
			Lloyd	Chaney
			Siu Man	Cheung
			Phaly	Chuon
			B.	Coates
			Bill	Coburn
		Ms.	De Weena	Coleman
		Mrs.	Aniece	Daniel
		Mr.	Clifton	Davenport
		Ms.	Bertha	Dean
		Mr.	Michael	Della-Rocco
			Connie	Dennis
		Ms.	Jane	Dittman
		Mr.	Otis	Dixon
		Mr.	Mark	Dockum
		Mr.	Edwin	Dreux
		Ms.	Orinda	Edwards
		Ms.	Patricia	Elliott

Organization	Branch	Title	First Name	Last Name
		Mr.	Alberto	Escovedo
			Joan	Fitzlinger
		Mr.	Derrill	Floyd
		Mr.	Art	Fong
		Mr.	Lawrence	Fontenette
		Mr.	Bobby	Frantz
		Mr.	Artemio	Garcia
		Mr.	John	Geddie
		Mr.	Noel	Gillett
			J.C.	Gomes
			Octaviano	Gomez
		Ms.	Margaret	Gordon
		Mr.	Dan	Gottsegen
		Mr.	Manuel	Granillo
		Mr.	Leroy	Griffin
			Tekle Kinfu	Hadera
			Mitzine	Halcrombe
		Mr.	Andrew	Harris
			Otilia	Hernandez
		Mr.	Hayward	Hill
			W.	Hodge
		Ms.	Mattie	Holiday
		Ms.	Majorie	Holloway
		Ms.	Bernadette	Howard
		Mr.	Jerrue	Huffen
		Mr.	Charles	Hunter
		Mr.	Ed	Johnson
			Berish	Jones
			Genner	Jones
		Mr.	Herman	Jones
			J.D.	Jones
		Ms.	Mary	Jones
		Ms.	Danielle	Joseph
			Hashim	Kamau
		Mr.	James	Kay
		Ms.	Patty	Kinane
			T.	Lattanaphom
		Mr.	Oscar	Lehnus
		Mr.	Julio	Leto
		Mr.	Raymond	Lewis
		Mr.	Bill	Little
		Mr.	Harold	Logwood
		Ms.	Esther	Mabrey
		Mr.	Geo	Mack
			Kim	Mak
		Mr.	Charles	Marshall
		Mr.	Buck	Marshall
		Mr.	Douglas	Marshall
		Mr.	Anthony	Mason, Sr
		Ms.	Vivian	Massingale
		Ms.	Lola	McKinney
			J.	McMahon
			Rin	Meas

Organization	Branch	Title	First Name	Last Name
			N.	Mendoza
		Mr.	Daryl	Meshack
		Mrs.	Earl	Metcalf
			Dahn	Midora
		Ms.	Erika	Mora
		Ms.	Ann	Morris
			Shomari	Mustafa
		Mr.	David	Nesmith
			Phorn	Ngor
		Mr.	King	Ngor
			LaJeane	Onic
		Ms.	Mabel	Peoples
		Mr.	Chanh	Phuong
		Ms.	Dorothy	Pierre
		Mr.	Eddie	Pines
		Ms.	Carola	Polakov
			Kathryn	Porter
		Mr.	Henry	Renteria
		Mr.	Lonnie	Robinson
		Mr.	Jesus	Rodriguez
		Mr.	Manuel	Rodriguez
		Ms.	Christine	Saed
			Fuey Chiang	Saephan
		Mr.	Javier	Sanchez
			T.	Sanchez
		Mr.	Peter	Sasaki
		Mr.	Jerry	Sasse
		Mr.	Edwin	Schenderlein
		Mr.	Greg	Scott
			J.	Sikand
		Mr.	Cleothas	Simmons
		Ms.	Lillian	Simril
		Mr.	George	Skinner
		Ms.	Bea	Slater
			Kha	Sok
			Sen	Som
		Mr.	John	Spikula
			Mary Elizabeth	Steiner
		Mr.	Lewis	Stills
		Ms.	Rubie Lee	Taylor
		Mr.	Stephen	Telesmanic
			Sokhom	Tep
			Yem	Tho
		Mr.	Claud	Thomas
		Mr.	Claud	Thomas
		Ms.	Donna	Thomas
		Mr.	Metzger	Thomas
		Mr.	James	Tolan
		Mr.	Joe	Tolbert
		Mr.	Rogelio	Torres
		Mr.	Willie	Tramble
			Dieu	Tran
		Ms.	Barbara	Turner

Organization	Branch	Title	First Name	Last Name
		Mr.	Myrl	Vairy
			Theodosia	Valrey
		Ms.	Hillery	Vaughn
		Mr.	Rufus	Washington
			Audry D.	Horace
			Arie	Wells
		Mr.	Craig	Williams
			Henry	Williams
		Ms.	Mary	Williams
			Ralph	Williams
		Mr.	Walter	Williams
		Ms.	Ruthie	Worsham
			Debra	Wright
			Yue Kang	Zhang
			A.	Aguilar
		Ms.	Judy	Bloom
		Ms.	Florence	Fox
Library				
Alameda Public Library	Main Library			
Colorado State University Libraries	Monographs Acquisition Service		Fred C.	Schmidt
Oakland Public Library	Main Library			
Oakland Public Library	West Oakland Branch			
Media				
Alameda Times Star		Ms.	Kathleen	Kirkwood
The Montclarion	News Room			
Oakland Post				
Oakland Tribune	City Desk			
San Francisco Chronicle	News Room			
		Mr.	Guy	Bryant