

Disposal and Reuse of Naval Station Treasure Island

Final Environmental Impact Statement



June 2003

Southwest Division
Naval Facilities Engineering Command
San Diego, California

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

1 ES.1 INTRODUCTION

2 The Defense Base Closure and Realignment Act (DBCRA) (10 United States Code [U.S.C.] §
3 2687 note) directed the Department of Defense (DoD) to reduce and realign United States (US)
4 military operations. The 1993 Defense Base Realignment and Closure Commission (BRAC '93
5 Commission) recommended the closure of Naval Station Treasure Island (NSTI). President
6 Clinton approved this recommendation and the 103rd Congress accepted it on September 27,
7 1993. NSTI closed on September 30, 1997, and US Department of the Navy (Navy) is in the
8 process of disposing of the property in accordance with applicable laws and regulations,
9 including the DBCRA.

10 This environmental impact statement (EIS) evaluates the potential impacts on the natural and
11 human environment that could result from Navy disposal of surplus federal properties within
12 NSTI and subsequent reuse of those federal properties. NSTI is made up of dry and submerged
13 lands of both Treasure Island and portions of Yerba Buena Island in San Francisco, California.
14 The location of NSTI is shown on Figure ES-1.

15 This document has been prepared by Navy in accordance with the National Environmental
16 Policy Act of 1969 (NEPA) (Public Law [Pub. L.] 91-190, 42 U.S.C. §§ 4321-4370f); the Council on
17 Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations
18 [C.F.R.] Parts 1500-1508); Navy regulations implementing NEPA (32 C.F.R. Part 775); and Navy
19 guidelines (Chief of Naval Operations Instruction [OPNAVINST] 5090.1B [2002]).

20 This EIS was originally prepared as a joint document to fulfill the requirements of both NEPA
21 and the California Environmental Quality Act of 1970 (CEQA) (California Public Resources
22 Code [Cal. Pub. Res. Code] § 21000 et seq., as amended). In 2000 the City and County of San
23 Francisco (San Francisco) elected to prepare a separate environmental impact report (EIR) to
24 analyze the impacts from the reuse of NSTI. The EIR will undergo a separate public review
25 process.

26 ES.2 PURPOSE AND NEED

27 The purpose of and need for the proposed federal action is to dispose of surplus federal
28 property at NSTI for subsequent reuse. Navy considered the Local Redevelopment Authority's
29 (LRA) stated purpose and need in developing reasonable reuse alternatives. This purpose and
30 need focused on reusing NSTI property to support the local economic base, enhance the local
31 image and identity, expand the range of recreational and entertainment opportunities available
32 to the community, and enhance the overall livability of the local area and region.

33 ES.3 DISPOSAL AND REUSE PROCESS

34 On October 15, 1993, Navy issued a Notice of Availability (NOA) for NSTI (Treasure Island
35 proper) to DoD and other federal agencies indicating that the property was excess to the needs
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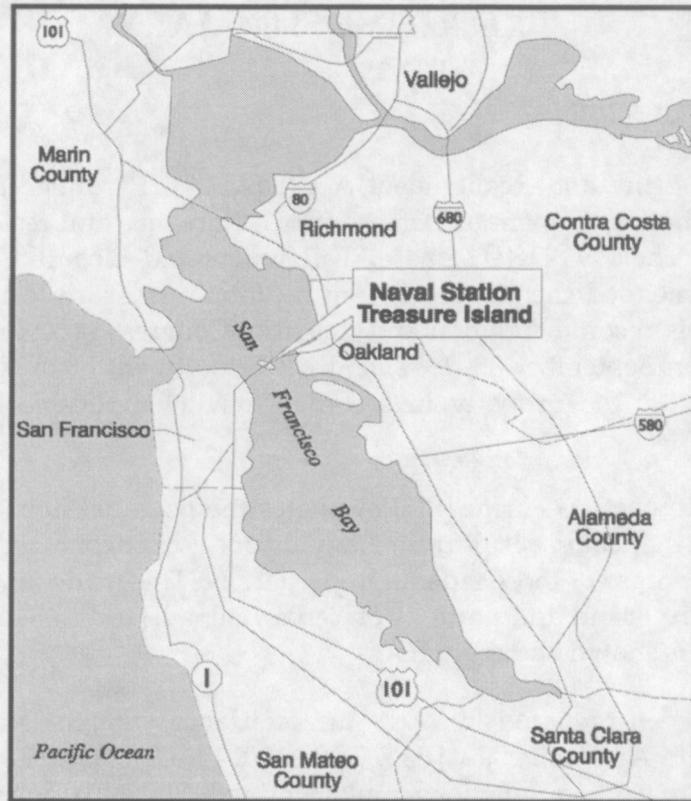


Figure ES-1. Regional Location

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of Navy. Between October 1993 and October 1995, nine federal agencies expressed interest in excess property at NSTI. Five of the agencies submitted formal requests for property transfer. Three of these agencies withdrew their requests in 1995 and early 1996. The transfer requests for the remaining two agencies, US Department of Labor and the US Coast Guard, were approved. The US Department of Labor requested approximately 36 acres (15 hectares [ha]) of property and associated facilities on Treasure Island for its Job Corps program, and the Navy authorized the requested property transfer on April 17, 1998. The US Coast Guard requested approximately 22 acres (9 ha), including land, facilities, and submerged areas of Yerba Buena Island. Navy authorized transferring 11 acres (4.5 ha) of dry land on March 3, 1998, and the remaining 11-acre (4.5 ha) parcel of submerged land was transferred on November 27, 2002. These properties are not part of the proposed disposal and subsequent reuse action evaluated in this EIS.

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On October 26, 2000, the Federal Highways Administration (FHWA), pursuant to its authority under 23 U.S.C. § 107(d), conveyed 98 acres (40 ha) of dry and submerged Navy land on Yerba Buena Island that was previously declared to be surplus to the needs of the federal government and was considered in the NSTI Draft Reuse Plan (Draft Reuse Plan) (San Francisco 1996e) to the California Department of Transportation (Caltrans). Caltrans sought the property held by the Navy for right-of-way purposes in connection with the construction, operation, and maintenance of the SFOBB east spans retrofit project. Land conveyed to Caltrans includes lands permanently conveyed in fee, temporary construction easements (TCEs) over a substantial part of Yerba Buena Island, and permanent aerial easements over two parcels of land. While the lands conveyed in fee to Caltrans are no longer part of NSTI and are not part of the Navy

1 disposal considered in this EIS, TCEs and aerial easements are available for disposal and are
2 considered in this EIS. Figure ES-2 illustrates the boundaries of NSTI and the reuse plan area.

3 The DoD Office of Economic Adjustment (OEA) designated San Francisco as the LRA for NSTI
4 in May 1994. As part of the NSTI reuse planning process, numerous alternatives were proposed
5 and then evaluated using goals established by the LRA. The city's Office of Military Base
6 Conversion, a partnership of San Francisco's Planning Department and Redevelopment Agency
7 and the Port of San Francisco, directed the reuse planning process. On July 22, 1996, the San
8 Francisco Board of Supervisors endorsed the Draft Reuse Plan. The Draft Reuse Plan proposes
9 to maximize a range of public benefits within the major constraints of the site. The plan
10 emphasizes publicly oriented recreational, entertainment, and hospitality uses that maximize
11 the island's central location and outstanding views. The Draft Reuse Plan also incorporates
12 specific users and types of uses from the second homeless screening process.

13 In 1997 the California State Legislature created a special reuse authority for Treasure Island,
14 transferring the LRA status from San Francisco to the Treasure Island Development Authority
15 (TIDA). TIDA is a state agency staffed by the San Francisco mayor's office and is the entity
16 responsible for planning the reuse of Treasure Island. In March 1998, DoD OEA recognized
17 TIDA as the implementing LRA for NSTI. TIDA submitted an *Economic Development Conveyance*
18 *(EDC) Application and Business Plan for Naval Station Treasure Island in June 2000* for land to be
19 used and redeveloped in accordance with the Draft Reuse Plan.

20 ES.4 PUBLIC INVOLVEMENT PROCESS

21 The EIS process is designed to involve the public in federal decision-making. Opportunities to
22 comment on, and participate in, the process are provided during preparation of this EIS.
23 Comments from agencies and the public are solicited to help identify the primary issues
24 associated with the federal disposal and proposed reuse of NSTI. San Francisco conducted
25 public meetings and workshops as part of the reuse planning process, and the public was
26 encouraged to comment on the various reuse alternatives. The public's input, as well as
27 feedback from applicable resources and permitting agencies, will be used to evaluate the
28 alternatives and environmental impacts before final decisions are made.

29 Scoping Process

30 Scoping is the process used to identify potential significant environmental issues and concerns
31 related to the proposed action. The scoping period was from September 24, 1996, to October 28,
32 1996. The scoping process was conducted jointly by Navy and San Francisco.

33 On September 24, 1996, in accordance with NEPA requirements, a Notice of Intent (NOI) to
34 prepare an EIS was published in the *Federal Register*. A copy of the NOI is presented in
35 Appendix D of this document. The NOI was mailed to regulatory agencies, local jurisdictions,
36 elected officials, public service providers, and organizations.

37 As part of the scoping process, Navy and San Francisco held a public meeting to inform the
38 public about disposal and reuse alternatives and to solicit the public's participation and
39 comments. The scoping meeting was held on October 9, 1996, at the San Francisco Ferry
40 Building. Six individuals from the public provided oral comments at the scoping meeting. Oral

1 comments addressed alternate land uses on the site related primarily to residential, marine, and
2 wildlife observation uses. Commentors also were concerned with addressing the needs of
3 veterans in the reuse plan and concerns about public notification during the comment period.
4 Additionally, twelve comment letters were received in response to the 1996 NOI. These written
5 comments addressed a variety of concerns, including impacts to traffic, geology and
6 seismology, historic architectural resources, hazardous and waste material, and archeological
7 resources. All issues raised during the scoping period regarding environmental and
8 socioeconomic topics have been addressed in this EIS.

9 **Public Review of the Draft EIS**

10 The public was invited to review and comment on the Draft EIS. An NOA was published in the
11 *Federal Register* on May 10, 2002 and notices were published in the *San Francisco Chronicle* and
12 *Oakland Tribune* on May 25 and 26, 2002. A copy of the NOA is presented in Appendix D of
13 this document. Copies of the Draft EIS and NOA were mailed to those on the mailing list
14 (Chapter 10 of the Draft EIS), beginning a 45-day public comment period. A public hearing on
15 the Draft EIS was also held at Building 140 on Treasure Island on June 11, 2002.

16 During the public comment period, 22 comment letters on the Draft EIS were received from
17 agencies or individuals. In addition, four persons provided oral comments on the Draft EIS at
18 the public hearing. Comments on the Draft EIS and responses to those comments are provided
19 in Chapter 11, Responses to Comments. The Final EIS has been revised, as appropriate, in
20 response to public comments.

21 **Final EIS**

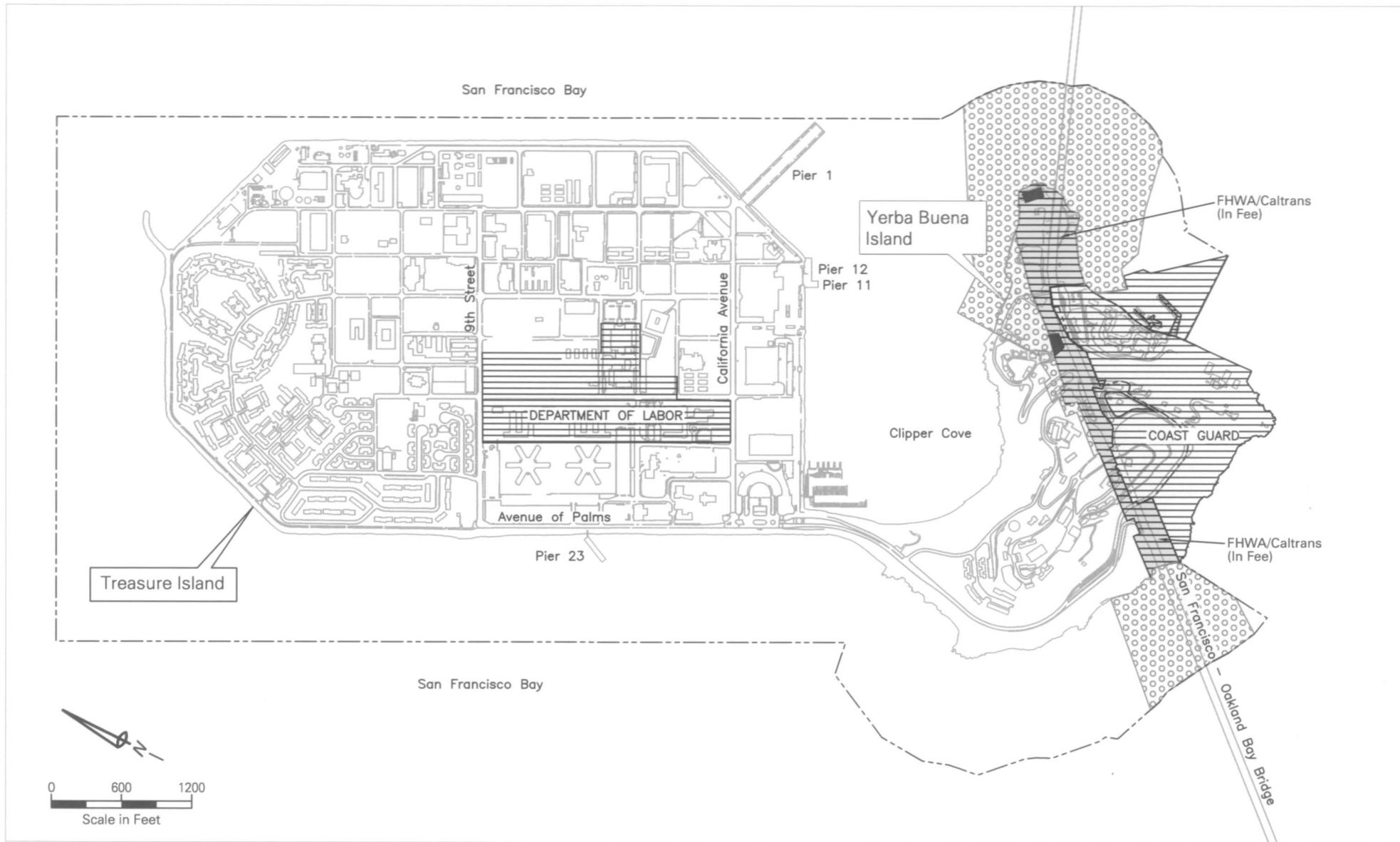
22 Chapter 11 of the Final EIS incorporates and responds to comments received on the Draft EIS.
23 An NOA of the Final EIS was published in the *Federal Register* on June 27, 2003. As required
24 under NEPA, there will be a 30-day review period after publication of the Final EIS. During
25 this period, the public may comment on the adequacy of responses to comments and the Final
26 EIS. After the 30-day review period, Navy can issue a NEPA Record of Decision (ROD).

27 **ES.5 ALTERNATIVES CONSIDERED**

28 Navy can either retain NSTI surplus property in federal ownership (No Action Alternative) or
29 dispose of the property for subsequent reuse (Disposal Alternative). Navy disposal of surplus
30 property at NSTI is the federal action evaluated in this EIS for potential environmental and
31 socioeconomic impacts. Under the federal action, approximately 997 acres (403 ha) of federal
32 property at NSTI would be conveyed to non-federal entities. Navy disposal is assumed as part
33 of each of the three reuse alternatives.

34 **Reuse Alternatives**

35 This section presents a detailed description of the three reuse alternatives developed and
36 evaluated in this EIS: Alternatives 1, 2, and 3. Alternative 1 represents full implementation of
37 the development scenario described in the Draft Reuse Plan developed by the LRA. Alternative
38 2 is based on comments received during the scoping process, including the recommendations of



The area proposed for Navy disposal includes submerged lands and upland areas within NSTI. Parcels that were transferred to other Federal agencies are excluded from the proposed disposal.

Legend:

-  Areas Excluded from Proposed Navy Disposal
-  Naval Station Treasure Island Property Boundary/Reuse Plan Area
-  FHWA/Caltrans TCEs (Included in Proposed Navy Disposal)
-  FHWA/Caltrans Aerial Eastments (Included in Proposed Navy Disposal)
-  FHWA/Caltrans Land Permanently Conveyed in Fee (Excluded From Proposed Navy Disposal)

Reuse Plan Area

Naval Station Treasure Island, California

Figure ES-2

1 an advisory panel convened by the Urban Land Institute. Alternative 3 represents a lower level
2 of redevelopment than proposed in the Draft Reuse Plan.

3 Each reuse alternative is a broad conceptual plan characterized by a general land use concept
4 and a development scenario. As such, each has general land use planning designations
5 (residential, publicly oriented, institutional and community, and open space and recreation)
6 that allow for a range of different types of land use. These four land use categories represent
7 slightly revised versions of the land use categories discussed in the Draft Reuse Plan. The
8 proposed land use configurations of the three reuse alternatives are provided on Figures ES-3,
9 ES-4, and ES-5, respectively. Table ES-1 provides a summary comparison of land use
10 development of the three alternatives. The table and figures are intended to help the reader
11 identify specific differences among the three alternatives.

12 *Alternative 1 (Preferred Alternative)*

13 Alternative 1 features a combination of publicly oriented development, open space and
14 recreation, and extensive residential development at full buildout, such as envisioned in the
15 Draft Reuse Plan. Under this alternative, the NSTI project acreage would be occupied in the
16 following manner: publicly oriented land uses, approximately 35 percent; residential, 30
17 percent; open space and recreation, 26 percent; and institutional and community services, 9
18 percent. The four land use alternatives initially considered by the LRA were used to develop
19 and further refine a "preferred reuse concept" that formed the basis of the Draft Reuse Plan,
20 represented by Alternative 1. Seismic upgrades would include dike improvements to the entire
21 Treasure Island perimeter. A new underground utility corridor would run along the perimeter
22 of the island, carrying storm and sanitary sewer mains, water mains, reclaimed water mains,
23 and electricity, gas, and telecommunications lines.

24 *Alternative 2*

25 Alternative 2 is a less intensive but similar development compared to Alternative 1. This
26 alternative emphasizes open space and recreation and publicly oriented uses but on a smaller
27 scale. Under Alternative 2, open space and recreation land uses would occupy 58 percent of
28 NSTI acreage, publicly oriented 33 percent, residential 5 percent, and institutional and
29 community services 4 percent. The existing housing would be reused initially. No new
30 housing would be built on Treasure Island. An 18-hole golf course would occupy the present
31 housing area on the northern part of the island. Regarding seismic upgrade, except for the golf
32 course area, full-scale perimeter dike improvements would be implemented around Treasure
33 Island. The utility corridor would be constructed around the perimeter of Treasure Island, but
34 it would not extend along the perimeter adjacent to the proposed golf course.

35 *Alternative 3*

36 Alternative 3 represents the scenario where little new development would occur, and existing
37 facilities would be reused. Under Alternative 3, open space and recreation land uses would
38 occupy 31 percent of NSTI acreage, residential 32 percent, publicly oriented 27 percent, and
39 institutional and community services 10 percent. Seismic upgrade dike improvements would
40 occur along those areas of Treasure Island subject to rotational dike failure.

1 *No Action Alternative*

2 Under the No Action Alternative, Navy would retain ownership of NSTI. Except for existing
3 building leases, all buildings would remain vacant, and all other facilities would remain but
4 would be unused. No new leases would be entered into under the No Action Alternative, and
5 existing leases would continue until they expire or are terminated.

6 The property would be held in an inactive or caretaker status, as discussed in Chapter 1. Navy
7 and San Francisco executed a cooperative agreement in April 1997 and amended it in
8 September 1997. Under this agreement, San Francisco is responsible for providing those
9 caretaker services. Site environmental cleanup would continue until completed. No
10 construction would occur under this alternative, except as allowed by existing lease
11 authorization.

12 *Preferred Alternative*

13 Navy has selected Alternative 1 as the preferred alternative because it best reflects the Draft
14 Reuse Plan, and would result in no significant unavoidable adverse effects.

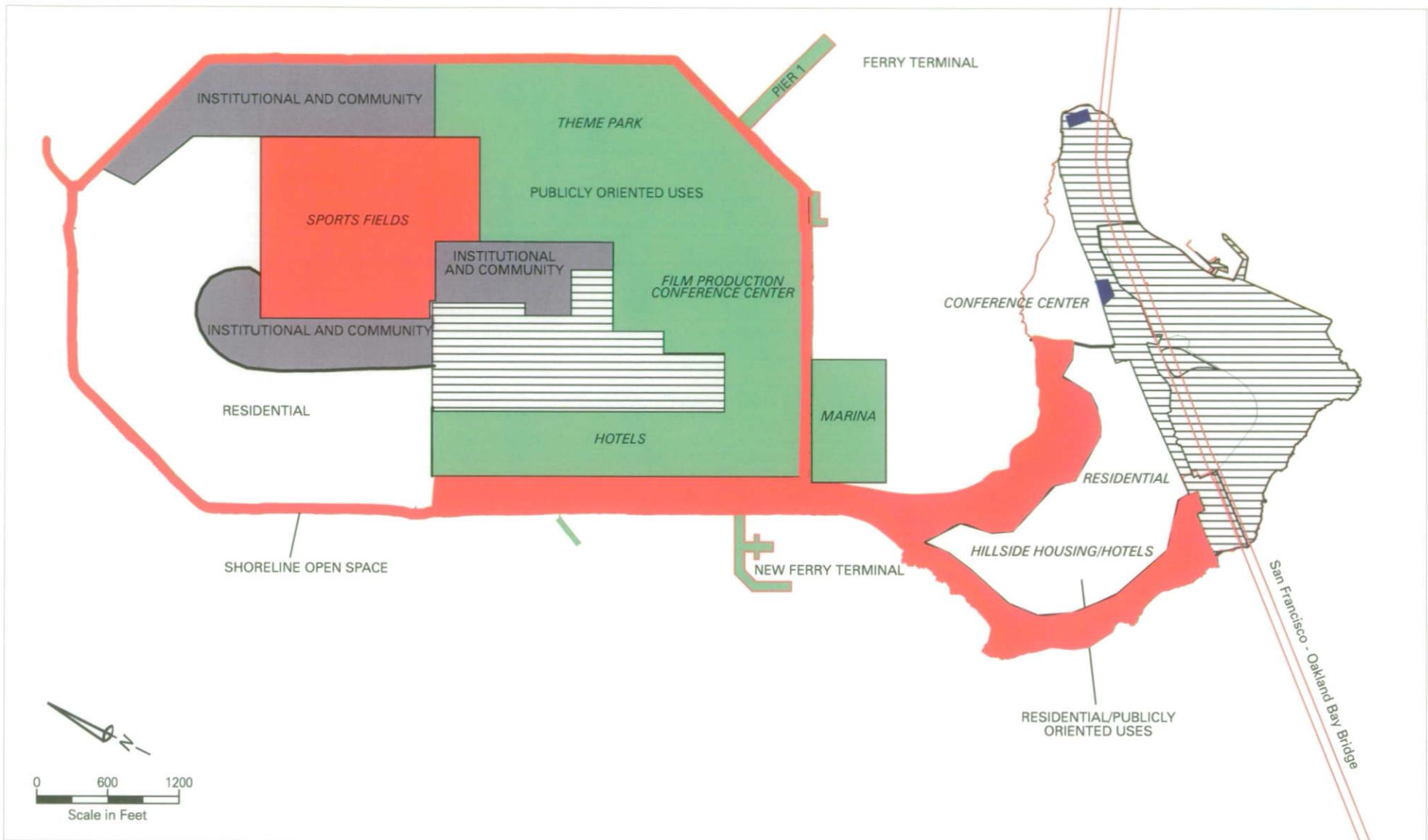
15 NEPA also requires that an environmentally preferable alternative be identified. The No Action
16 Alternative would have no significant impacts, and for NEPA purposes it would be the
17 environmentally preferable alternative. However, the No Action Alternative would not meet
18 the Navy's goals of property disposal and rapid economic recovery consistent with DBCRA
19 1990 and the DoD Rule on Revitalizing Base Closure Communities-Base Closure Community
20 Assistance (32 C.F.R. Part 175 [1998]). It also would not be consistent with former President
21 Clinton's Five-Part Plan for Revitalizing Base Closure Communities, which emphasizes local
22 economic redevelopment of closing military facilities and creation of new jobs as the means to
23 revitalize these communities (32 C.F.R. Part 174 [1998]). The No Action Alternative would
24 result in continued caretaker activities; therefore, socioeconomic gains in terms of new jobs and
25 increased revenue in the region would not be realized.

26 **ES.6 ENVIRONMENTAL CONSEQUENCES**

27 Potential significant impacts and mitigation measures of each alternative are summarized in
28 Table ES-2. Measures that can be taken to reduce impacts to a level below significant are
29 suggested for each alternative, as appropriate. Navy would be responsible for mitigation
30 measures identified in its ROD for the proposed disposal action. Mitigation for impacts
31 associated with reuse are not the responsibility of Navy.

32 Implementation of suggested mitigation measures would reduce all impacts to a level below
33 significant except for impacts on cultural resources under Alternative 2. Implementation of
34 Alternative 2 would require demolition of two buildings on Treasure Island that are eligible for
35 listing on the National Register of Historic Places (NRHP). This would result in the loss of
36 significant historic resources. This adverse effect can be lessened or reduced by recording the
37 affected resources to the standards of Historic American Buildings Survey (HABS)/Historic
38 American Engineering Record (HAER), but recordation would not eliminate the adverse effect
39 caused by the demolition of NRHP-eligible resources.

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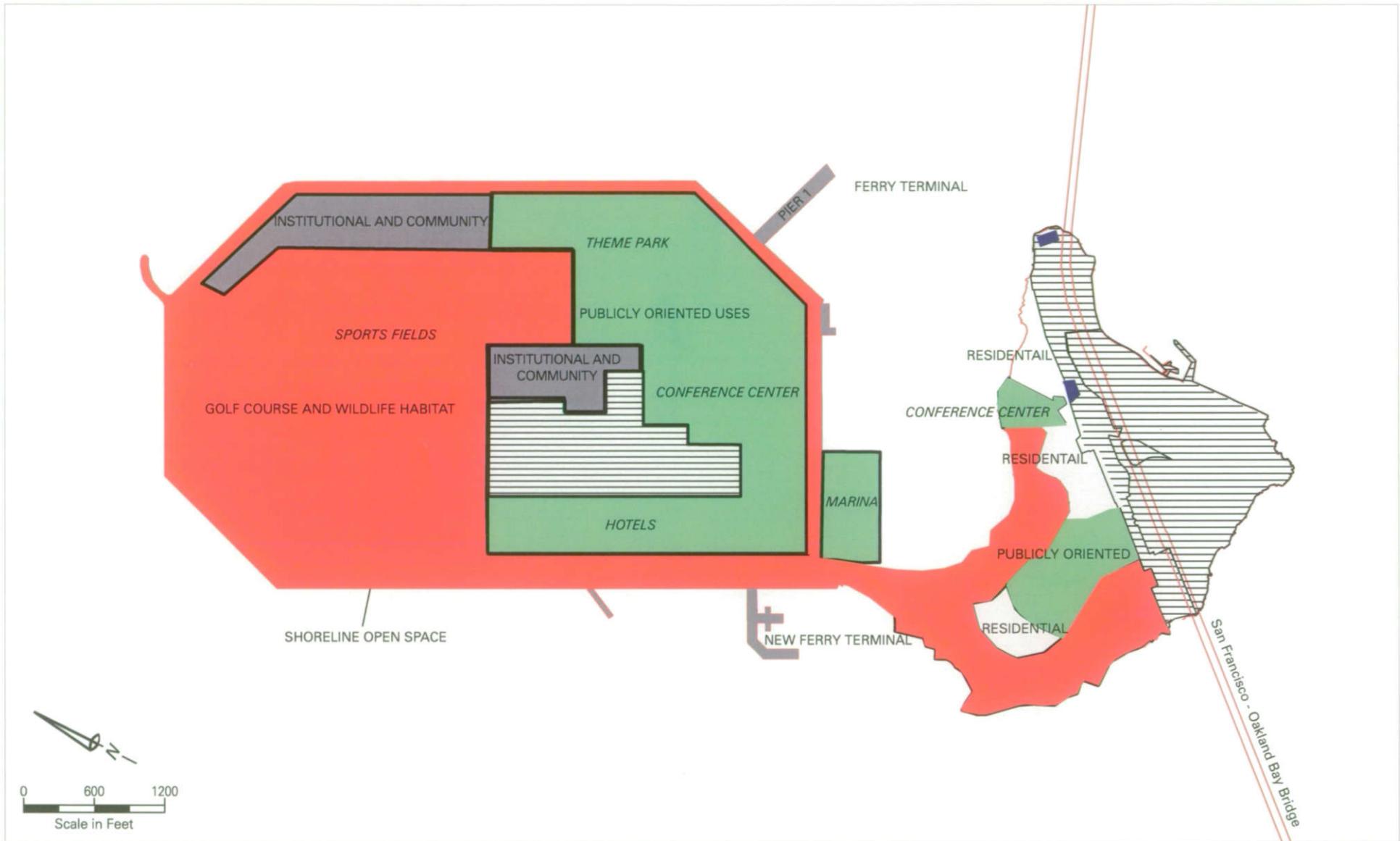


Alternative 1 is similar to the development scenario described in the Draft Reuse Plan.

Legend:

- | | | | |
|---|-----------------------------|---|--|
|  | Publicly Oriented |  | Areas Excluded from Proposed Navy Disposal |
|  | Open Space and Recreation |  | Residential |
|  | Institutional and Community |  | FHWA/Caltrans Aerial Easement |

Alternative 1 Land Uses
Naval Station Treasure Island, California



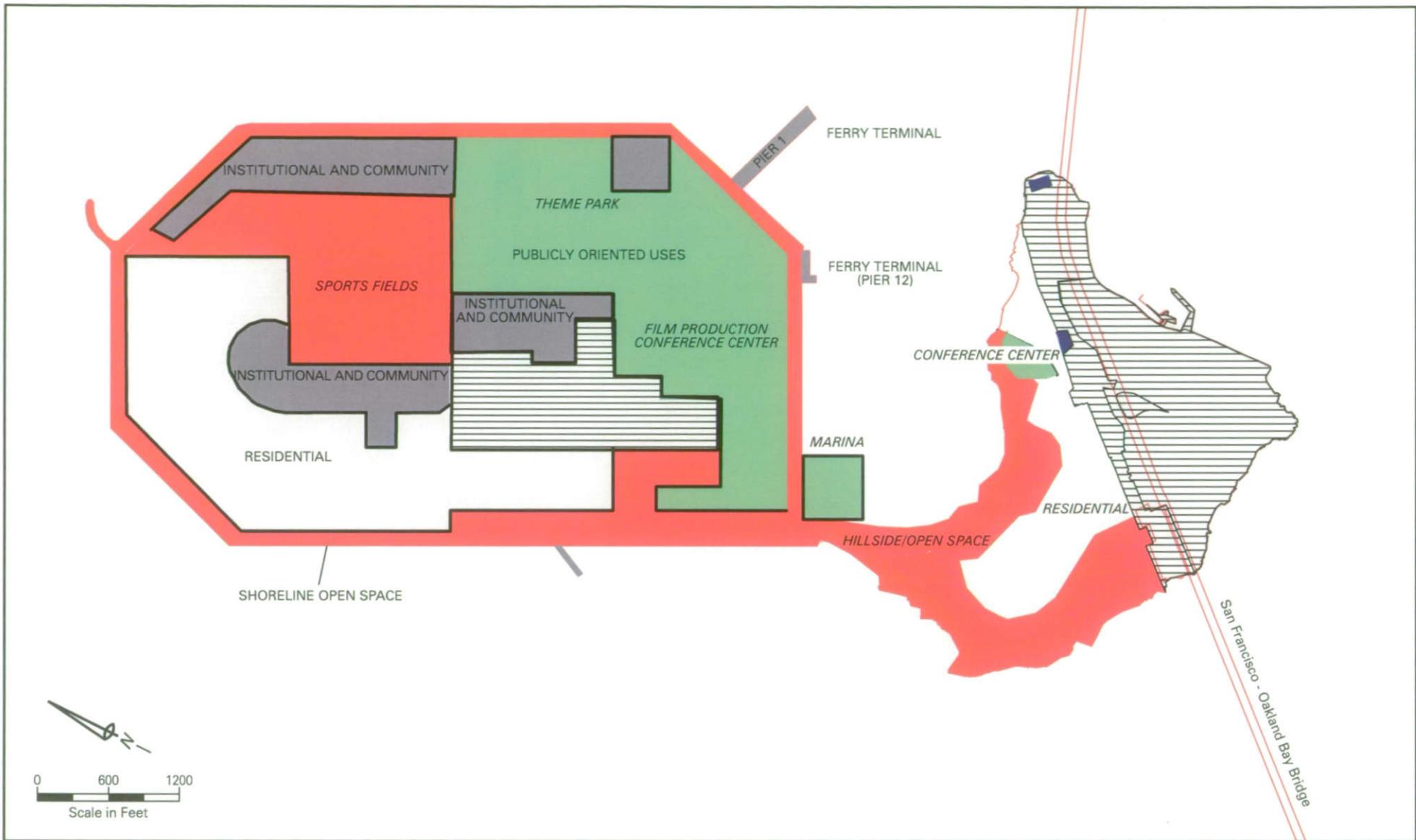
Alternative 2 emphasizes open space/recreation and publicly oriented land uses.

Legend:

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|---|-----------------------------|--|--|
|  | Publicly Oriented |  | Areas Excluded from Proposed Navy Disposal |
|  | Open Space and Recreation |  | Residential |
|  | Institutional and Community |  | FHWA/Caltrans Aerial Easements |

Alternative 2 Land Uses

Naval Station Treasure Island, California



Alternative 3 would reuse existing facilities and would involve little new development.

- Legend:**
- Publicly Oriented
 - Open Space and Recreation
 - Institutional and Community
 - Residential
 - Areas Excluded from Proposed Navy Disposal
 - FHWA/Caltrans Aerial Easement

Alternative 3 Land Uses
 Naval Station Treasure Island, California

Table ES-1
Summary Comparison of Land Development Characteristics of Reuse Alternatives

<i>Characteristic</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>
Residential	Dwelling Units	Dwelling Units	Dwelling Units
Existing residential	290	50	995 ¹
New residential	2,550	200	70
Total dwelling units	2,840	250	1,065
Publicly Oriented	Acreage	Acreage	Acreage
Themed attraction	59	74	39
Hotel/conference/lodging	25	45	14
Retail/specialty/restaurant	10	1	2
Entertainment center	0	6	0
Amphitheater	0	7	0
Wedding chapel	0	1	2
Museum	3	4	4
Mixed use/office	11	0	6
Film production	31	0	33
Marina (yacht club)	2	0	2
Other publicly oriented uses	14	14	20
Subtotal Acres	155	152	122
Institutional and Community			
Elementary school	9	0	9
Child development center	4	0	4
Fire training school	5	5	5
Warehouse/storage	0	0	4
Wastewater treatment plant	10	5	3
Brig	5	4	5
Fire station	4	2	2
Police station	3	2	3
Other institutional facilities	0	0	8
Subtotal Acres	40	18	43
Open Space and Recreation			
Golf course	0	147	0
Sports fields/complex	47	18	40
Shoreline promenade/open space ²	71	76	102
Wildlife habitat	0	18	0
Subtotal Acres	118	259	142
Land Use Categories³			
Public Oriented	155	152	122
Residential	137	21	143
Institutional and Community	40	18	43
Open Space and Recreation	118	259	142
Total Acres	450	450	450
Marina	Expansion	Expansion	Existing only
Ferry Terminals	New (west side) Retrofit (Pier 1)	New (west side) Retrofit (Pier 1)	Retrofit (Pier 12) Retrofit (Pier 1)
Approximate On-site Population	6,895	710	3,510
Approximate Employment	4,920	2,820	2,195
Approximate Average Daily Vehicle Trips	18,100	13,085	6,700
<i>Source: Draft Reuse Plan (San Francisco 1996e).</i>			
¹ Does not include 75 beds in barracks on Treasure Island.			
² Open space on Yerba Buena Island includes small areas of native habitat.			
³ The land use categories represent slightly revised versions of the land use categories discussed in the Draft Reuse Plan.			
<i>Note.</i> The numbers provided in this table are estimates only since discussions are on-going between Navy and San Francisco. Estimates in the text and the tables are included for discussion purposes.			

Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

(Page 1 of 16)

Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Land Use	<i>Impact: Land use policy.</i> The zone classifications that would be required for Alternative 1 would be inconsistent with the existing San Francisco General Plan designation and zoning classification.	<i>Impact: Land use policy.</i> Similar to that described for Alternative 1.	<i>Impact: Land use policy.</i> Similar to that described for Alternative 1.	No impacts are expected.
	<i>Mitigation:</i> To achieve consistency between the selected reuse alternative and city policies, it will be necessary to amend the San Francisco General Plan to include land use designations for surplus property on Treasure Island and Yerba Buena Island prior to approving future land use actions.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	
Visual Resources	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Socioeconomics	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Cultural Resources	No significant impacts are expected.	<i>Impact: Alteration or demolition of historic resources.</i> Alternative 2 involves the demolition of Building 2 and Building 3 on Treasure Island, both of which are eligible for listing on the NRIIP.	No significant impacts are expected.	No impacts are expected.

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Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Cultural Resources (continued)		<i>Mitigation:</i> The irreversible loss of significant historic resources cannot be fully mitigated. HABS/HAER recordation would reduce but would not eliminate significant impacts caused by demolition.		
Transportation	<i>Impact: Increased volumes and queuing on SFOBB/I-80 Yerba Buena Island westbound on-ramp (west side).</i> Alternative 1 would result in peak-hour traffic volumes on the SFOBB/I-80 Yerba Buena Island westbound on-ramp on the west side of Yerba Buena Island that would exceed the current ramp capacity of 330 vph. The projected demand would result in a queue ranging from 7 vehicles (during the AM peak hour) to 239 vehicles (during the weekend midday peak hour). This queue would constrain vehicular circulation on the island.	No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island westbound on-ramp (west side).	No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island westbound on-ramp (west side).	No impacts are expected.
	<i>Mitigation.</i> SFOBB/I-80 Yerba Buena Island on-ramps are substandard by current Caltrans standards, primarily in acceleration/deceleration lengths, ramp radii, and sight distances.			

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Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

(Page 3 of 16)

<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Transportation (continued)	<p>Upgrading the on-ramps would increase ramp capacity and level of operation and decrease queuing impacts. However, upgrades to the on-ramps may be constrained by the geology of the site (elevation change and bedrock) and structural limitations due to the viaduct.</p> <p>Implement measures, including signage and notices to residents, to encourage residents and visitors to use the second westbound on-ramp east of the Yerba Buena Island tunnel.</p> <p>Redirecting traffic during the weekend midday peak hour to the second on-ramp east of the Yerba Buena Island tunnel would reduce the queue at the first westbound on-ramp.</p>			

Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

(Page 4 of 16)

<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Transportation (continued)	<p>Implement a Travel Demand Management (TDM) program to further reduce traffic generation during peak hours, especially during the weekend.</p> <p>Implement additional or enhanced TDM measures, such as discounted ferry passes, flex-time, public relations campaigns, and giving employees working on Treasure Island or Yerba Buena Island preferential access to housing on NSTI, to encourage ferry use or to encourage vehicle-trips during the nonpeak period to reduce queues on both westbound on-ramps to tolerable levels.</p> <p>Monitor NSTI ramp traffic volumes to ensure that the transportation goals and objectives established by the Draft Reuse Plan are successfully implemented.</p> <p>Monitor NSTI bus transit demand on an annual basis (or at each phase of development) and ensure that planned services are implemented to meet or exceed demand. Implement a similar monitoring program for ferry demand.</p>			

Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

(Page 5 of 16)

Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Transportation (continued)	Restripe the portion of Treasure Island Road between the Main Gate and the westbound on-ramp on the west side of the Yerba Buena Island tunnel from two lanes to accommodate three traffic lanes.			
	<p><i>Impact: Increased volumes and queuing on SFOBB/I-80 Yerba Buena Island eastbound off-ramp (west side).</i> Alternative 1 would result in a substantial increase in traffic volumes on the eastbound off-ramp on the west side of Yerba Buena Island that would exceed the practical capacity of the off-ramp (500 vph), resulting in a maximum queue of 36 vehicles, or about 700 feet (219 m) on the SFOBB.</p>	No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island eastbound off-ramp (west side).	No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island eastbound off-ramp (west side).	No impacts are expected.
	<p><i>Mitigation.</i> Use traffic control measures, such as signage, to encourage eastbound motorists to use the second Yerba Buena off-ramp (the off-ramp on the east side of Yerba Buena Island).</p> <p>Implement TDM and monitoring measures to reduce traffic volumes on this off-ramp.</p>			

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Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Transportation (continued)	<p><u>Impact: Increased volumes on SFOBB/I-80 Yerba Buena Island eastbound on-ramp (east side).</u> Alternative 1 would result in substantial increases in traffic volumes during the weekend midday peak hour on the eastbound on-ramp on the east side of Yerba Buena Island. While the increased volumes would be accommodated by the upgrade of this ramp as part of the SFOBB East Span project, it may create a secondary impact on potential traffic delays on SFOBB.</p>	<p>No significant impacts are expected for increased volumes on SFOBB/I-80 Yerba Buena Island eastbound on-ramp (east side).</p>	<p>No significant impacts are expected for increased volumes on SFOBB/I-80 Yerba Buena Island eastbound on-ramp (east side).</p>	<p>No impacts are expected.</p>
	<p><u>Mitigation:</u> Caltrans should consider the installation of a ramp metering device in the future if the added traffic onto this on-ramp would cause significant traffic delay on SFOBB mainline.</p>			
	<p><u>Impact: Increased peak spreading on SFOBB/I-80.</u> Under Alternative 1, increased traffic onto and off of the SFOBB during the AM peak period (6:30 to 9:30) and PM peak period (3:30 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from LOS D to LOS F during the last hour of the AM peak period (8:30 to 9:30) and to deteriorate from LOS B to LOS E</p>	<p><u>Impact: Increased peak spreading on SFOBB/I-80.</u> Under Alternative 2, increased traffic onto and off of the SFOBB during the AM peak period (6:30 to 9:30) and PM peak period (3:30 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from LOS D to LOS E or LOS F</p>	<p><u>Impact: Increased peak spreading on SFOBB/I-80.</u> Under Alternative 3, increased traffic onto and off of the SFOBB during the AM peak period (6:30 to 9:30) and PM peak period (3:30 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from LOS D to LOS F during the last hour of the AM peak</p>	<p>No impacts are expected.</p>

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Transportation (continued)	or LOS F during the first hour of the PM peak period (3:30 to 4:30).	during the last hour of the AM peak period (8:30 to 9:30) and to deteriorate from LOS B to LOS E or LOS F during the first hour of the PM peak period (3:30 to 4:30).	period (8:30 to 9:30) and to deteriorate from LOS B to LOS E or LOS F during the first hour of the PM peak period (3:30 to 4:30).	
	<i>Mitigation.</i> Monitor traffic volumes at each phase of development and if it is determined that traffic from NSTI is constraining the capacity of the SFOBB, either more aggressive TDM and transit improvements must be implemented or additional developments should be delayed until such improvements are implemented.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	
	<i>Impact: Transit operations – bus service to East Bay.</i> Lack of direct bus service between NSTI and the East Bay is a significant and mitigable impact.	<i>Impact: Transit operations – bus service to East Bay.</i> The impact would be similar to that described under Alternative 1.	<i>Impact: Transit operations – bus service to East Bay.</i> The impact would be less than that described under Alternative 1 but would remain significant but mitigable.	No impacts are expected.

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Transportation (continued)	<p><i>Mitigation:</i> Establishing direct transit service between NSTI and the East Bay would mitigate this impact to a not significant level. Bus service would need to be at 10-minute headways (the interval between the trips of 2 successive vehicles) throughout the day during the weekday and at 15-minute headways throughout the day during the weekend.</p> <p>Monitor NSTI bus transit demand on an annual basis (or at each phase of development) and ensure that planned services are implemented to meet or exceed demand.</p> <p>Implement TDM measures to encourage transit rather than auto use.</p>	<p><i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1. However, at build-out, bus service would need to be at 15-minute headways throughout the day during both weekdays and weekends.</p>	<p><i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1. However, at build-out, bus service would need to be at 20-minute headways throughout the day during weekdays and 15-minute headways throughout the day during weekends.</p>	
Air Quality	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.
Noise	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.

Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Biological Resources	<p><u>Impact: Mudflat Habitat Disturbance.</u> Significant impacts to mudflat habitat, including eelgrass beds, may occur as a result of increased pedestrian and boating activity around Clipper Cove. Expanding the marina or constructing a yacht harbor, new docks, or other structures that would cover the surface of the water would impact Waters of the United States but would require a permit from the BCDC and the COE.</p> <p><u>Mitigation:</u> Minimize disturbance to sensitive habitats during construction. Prepare and implement a plan to minimize disturbance of sensitive habitats due to recreational activity. Permittee could be required to post signs along the shore adjacent to the mudflats and at the marina to inform pedestrians and recreational boaters that the mudflats are a protected sensitive area and that trespassing is not permitted. Buoys could be placed in the bay to identify the restricted mudflat area. A 5-mph (8 kph) zone could be established in Clipper Cove to minimize shoreline and mudflat</p>	<p><u>Impact: Disturbance to sensitive mudflat habitat.</u> The impacts on mudflat habitat associated with pedestrians and boating activity would be similar, but reduced, from that described for Alternative 1. Pedestrian impacts would be approximately half of Alternative 1 while boating traffic impacts would be approximately 20 percent higher than Alternative 1.</p> <p><u>Mitigation.</u> Mitigation measures would be the same as described for Alternative 1.</p>	<p><u>Impact: Mudflat Habitat Disturbance.</u> The impacts on mudflat habitat associated with pedestrians and boating activity would be reduced from that described for Alternative 1 but would remain significant but mitigable.</p> <p><u>Mitigation:</u> Mitigation measures would be the same as described for Alternative 1.</p>	No impacts are expected.

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Biological Resources (continued)	erosion. Any impacts related to construction or fill would be addressed during the COE Section 404 permitting process.			
	<u>Impact: Pedestrian and Boating Impacts on Migratory Birds.</u> Increased pedestrian and boating activity around Clipper Cove could have a significant impact on shorebirds by affecting mudflats and eelgrass beds where shorebirds forage.	<u>Impact: Pedestrian and Boating Impacts on Wading Shorebirds.</u> Increased pedestrian and boating activity around Clipper Cove could have a significant impact on shorebirds by affecting mudflats and eelgrass beds where shorebirds forage. Pedestrian impacts would be approximately half of Alternative 1 while boating traffic impacts would be approximately 20 percent higher than Alternative 1.	<u>Impact: Pedestrian and Boating Impacts on Wading Shorebirds.</u> Increased pedestrian and boating activity around Clipper Cove could have a significant impact on shorebirds by affecting mudflats and eelgrass beds where shorebirds forage. These impacts are likely to be reduced under Alternative 3 as there would be less of an increase in boating traffic compared with Alternative 1.	No impacts are expected.

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Biological Resources (continued)	<i>Mitigation.</i> In conjunction with permitting by COE and BCDC, permittee could be required to post signs along the shore adjacent to the mudflats and at the marina, informing pedestrians and boaters that the mudflats are a protected and sensitive area. Placing buoys in the bay, identifying the mudflat area as restricted, and establishing a five-mph (8 kph) zone in Clipper Cove could also reduce impacts.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	
	<i>Impact: Pedestrian and Boating Impacts on EFH.</i> Increased boat and pedestrian activity around Clipper Cove could have an indirect significant impact on EFH by degrading eelgrass vegetated areas and shallow water and mudflat areas that provide important fish spawning, rearing, and foraging habitat.	<i>Impact: Pedestrian and Boating Impacts on EFH.</i> Increased pedestrian and boating activity around Clipper Cove and along the perimeter of the islands could have a significant impact on EFH, as described under Alternative 1.	<i>Impact: Pedestrian and Boating Impacts on EFH.</i> Increased pedestrian and boating activity around Clipper Cove and along the perimeter of the islands could have a significant impact on EFH, as described under Alternative 1.	No impacts are expected.
	<i>Mitigation.</i> Proposed mitigation measures are the same as those discussed under impacts to mudflat habitat above.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	

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Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Geology and Soils	<p><u>Impact: Exposure of individuals and property to liquefaction.</u> Seismically induced liquefaction could result in ground disturbances associated with lateral spreading and differential settlement.</p>	<p><u>Impact: Exposure of individuals and property to liquefaction.</u> Seismically induced liquefaction could result in ground disturbances associated with lateral spreading and differential settlement.</p>	<p><u>Impact: Exposure of individuals and property to liquefaction.</u> Seismically induced liquefaction could result in ground disturbances associated with lateral spreading and differential settlement.</p>	No impacts are expected.
	<p><u>Mitigation.</u> A zone of "improved ground" would be created around the perimeter of the island to reduce lateral spreading. Interior island areas shall be similarly improved to reduce large differential settlement. All sensitive structures (e.g., buildings greater than three stories, buildings intended for public occupancy, structures supporting essential services, and buildings housing schools, medical, police, and fire facilities) shall be supported on pile systems or other specially designed foundations. Detailed geotechnical studies shall be completed in accordance with San Francisco requirements for individual development sites.</p>	<p><u>Mitigation:</u> Mitigation measures would be the same as described for Alternative 1.</p>	<p><u>Mitigation:</u> Mitigation measures would be the same as described for Alternative 1.</p>	

Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Water Resources	<p><u>Impact: Exposure of individuals and property to ponding from high tides.</u> The installation of residential development in low-lying areas on Treasure Island would result in increased exposure of occupants, visitors, and property to ponding hazards due to seepage through the dike during some high tide events.</p>	<p>No significant impacts are expected from exposure of individuals and property to ponding from high tides.</p>	<p><u>Impact: Exposure of individuals and property to ponding from high tides.</u> The impact would be similar to that described for Alternative 1.</p>	<p>No impacts are expected.</p>
	<p><u>Mitigation:</u> Filling low-lying portions of the residential area to at least 9 feet (3 m) National Geodetic Vertical Datum (NGVD) prior to development would mitigate this impact. In addition, other low-lying areas within 500 feet (152 m) of the Treasure Island perimeter should be similarly filled before development is allowed.</p>		<p><u>Mitigation:</u> Mitigation measures would be the same as described for Alternative 1.</p>	

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Table ES-2. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Water Resources (continued)	<i>Impact: Exposure of individuals and property to flooding.</i> Developing and reusing Treasure Island under Alternative 1 could expose occupants, visitors, and property to flooding hazards caused by dike overtopping during storms.	<i>Impact: Exposure of individuals and property to flooding.</i> This alternative would subject residents and daily visitors on the northern half of Treasure Island, where a golf course is proposed, to existing flood hazards. Flood hazards on the southern portion of the site would be similar to those described for Alternative 1.	<i>Impact: Exposure of individuals and property to flooding.</i> Alternative 3 could subject occupants, visitors, and property to substantial flooding hazards throughout Treasure Island.	No impacts are expected.
	<i>Mitigation:</i> Set back development inboard of the perimeter dike to allow room for periodic dike raising without substantially increasing Bay fill. Raise the dike as necessary to account for site settlement, changes in maximum tidal heights, and rises in sea levels. In addition, inspect the dike after each major storm to identify repair needs, and repair the dike promptly.	<i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1.	
Utilities	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.
Public Services	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Hazardous Materials and Waste	<p><u>Impact: Installation Restoration Program (IRP).</u> Construction activities at NSTI associated with future development of the housing unit area, including demolition of existing structures, may interfere with remedial actions under CERCLA.</p>	<p><u>Impact: Installation Restoration Program (IRP).</u> Development of a golf course in the northern part of the island would involve demolition of existing structures and the grading and reconfiguring of the soil, which may interfere with remedial actions under CERCLA.</p>	<p><u>Impact: Installation Restoration Program (IRP).</u> If subsequent redevelopment of the housing area involving demolition of existing structures and the grading and reconfiguring of the soil were to occur, it may interfere with remedial actions conducted under CERCLA.</p>	No impacts are expected.
	<p><u>Mitigation.</u> The Navy is in the process of implementing various remedial actions at NSTI pursuant to and in accordance with the requirements of CERCLA and the NCP that will remove, manage, or isolate any potentially hazardous substances present on the property prior to conveyance. These remedial actions will ensure that human health and the environment will be protected based on the land uses specified in the Draft Reuse Plan. If the CERCLA remedy for a particular site includes land use controls, the acquiring entity or entities will be required to comply with the land use controls during construction or operations to ensure continued protection of human health and the environment.</p>	<p><u>Mitigation.</u> Mitigation measures would be the same as described for Alternative 1.</p>	<p><u>Mitigation.</u> Mitigation measures would be the same as described for Alternative 1.</p>	

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Hazardous Materials and Waste (continued)	Subsequent redevelopment of the housing area which would involve demolition of existing structures and the grading and reconfiguring of the soil would likely be subject to land use controls on the property, including compliance with a City-administered soil management plan that would require soil and groundwater disturbance be permitted subject to proper characterization and management.			
	In addition, deeds conveying the affected property will contain a notice that areas of the property not subject to remediation efforts (such as areas beneath existing foundations) may require additional characterization and possible response actions subject to appropriate regulatory oversight. Adherence to land use controls and regulatory requirements would mitigate potentially significant impacts to an acceptable level.			

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ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
3D	three dimensional
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit District
A CHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ADT	average daily traffic
AST	aboveground storage tank
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
BCP	BRAC cleanup plan
BCT	BRAC cleanup team
BMP	best management practices
BOD	biological oxygen demand
BRAC	Base Realignment and Closure
$\text{C}_2\text{H}_3\text{Cl}$	vinyl chloride
CAD	computer aided design
Cal. Code Regs.	California Code of Regulations
Cal. Pub. Res. Code	California Public Resources Code
Cal EPA	California Environmental Protection Agency
Cal. Stat.	California Statute
Caltrain	California Train
Caltrans	California Department of Transportation
CAP	corrective action plan
CARB	California Air Resources Board
CATS	consolidated area telephone system
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
C.F.R.	Code of Federal Regulations
cm	centimeter
CMP	congestion management program

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CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
COE	US Army Corps of Engineers
CPOEC	chemicals of potential ecological concern
CRC	Citizens Reuse Committee
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted decibel
DBCRA	Defense Base Closure and Realignment Act
DBI	Department of Building Inspection
DDT	dichlorodiphenyltrichloroethane
DoD	Department of Defense
DON	Department of the Navy
Draft Reuse Plan	Naval Station Treasure Island Draft Reuse Plan (San Francisco 1996e)
DRMO	Defense Reutilization and Marketing Office
DTSC	Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EBS	environmental baseline survey
EDD	California Economic Development Department
EFH	Essential fish habitat
EIS	Environmental Impact Statement
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EMTs	emergency medical technicians
ESU	Evolutionarily Significant Unit
exposition	Golden Gate International Exposition
°F	degrees Fahrenheit
Fed. Reg.	Federal Register
FEMA	Federal Emergency Management Agency
FFSRA	Federal facility site remediation agreement
FHWA	Federal Highways Administration
FISC	Fleet and Industrial Supply Center
FISCO	Fleet and Industrial Supply Center, Oakland
FMP	Fishery management plan
FPMR	federal property management regulations
FS	feasibility study
FY	fiscal year
g	Gravity

GGNRA	Golden Gate National Recreation Area
H ₂ S	hydrogen sulfide
ha	Hectare
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HAP	Hazardous air pollutant
HOV	high occupancy vehicle
HUD	US Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
I-80	Interstate 80
IEP	Interagency Ecological Program
IR	installation restoration
IRP	Installation Restoration Program
kg	kilograms
km	kilometer
kV	Kilovolts
LBP	lead-based paint
Ldn	day-night average sound level
Leq	equivalent noise level
LOS	level of service
LRA	local redevelopment authority
LTMS	long term management strategy
m	meter
m ²	Square meter
m ³	Cubic meter
MARAD	Maritime Administration
MCLs	maximum contaminant levels
mg/l	milligrams per liter
MGD	million gallons per day
ml/1-hour	settleable matter
MLLW	mean lower low waterline
MOA	memorandum of agreement
mph	miles per hour
MSA	Magnuson-Stevens Fishery Conservation and Management Act
Msl	mean sea level
MTC	Metropolitan Transportation Commission
MTL	Mean tide level
MUNI	San Francisco Municipal Railway
NAGPRA	Native American Graves Protection and Repatriation Act
Navy	Department of the Navy

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NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollution
NGVD	National Geodetic Vertical Datum
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMFS NWR	National Marine Fisheries Service, Northwest Region
NMFS SWR	National Marine Fisheries Service, Southwest Region
No.	number
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NOA	Notice of availability
NOI	Notice of intent
NOP	Notice of preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRHP	National Register of Historic Places
NSTI	Naval Station Treasure Island
NWIC	Northwest Information Center
O ₃	ozone
O&M	operation and maintenance
OEA	Office of Economic Adjustment
OES	Office of Emergency Services
OMBC	Office of Military Base Conversion
OPNAVINST	Chief of Naval Operations instruction
OSHA	Occupational Safety and Health Administration
OWS	Oil/water separator
PA	preliminary assessment
PAH	polychlorinated aromatic hydrocarbon
Pb	lead particles
PCBs	polychlorinated biphenyls
pCi/L	picocuries per liter
PFMC	Pacific Fishery Management Council
PG&E	Pacific Gas & Electric Company
PM _{2.5}	fine particulate matter
PM ₁₀	inhalable particulate matter
ppm	parts per million

PRC	Public Resources Code
PSMFC	Pacific States Marine Fisheries Commission
psi	pounds per square inch
Pub. L.	Public Law
PUC	Public Utilities Commission
PVC	polyvinyl chloride
RA	remedial action
RAB	Restoration advisory board
RAP	Remedial Action Plan
RBHSS	Richmond Bridge Harbor Seal Survey
RCRA	Resource Conservation and Recovery Act
RD	remedial design
Redevelopment Act	Base Closure Community Redevelopment and Homeless Assistance Act
RI	remedial investigation
ROD	record of decision
ROG	reactive organic compounds
RWQCB	Regional Water Quality Control Board
RONA	Record of Non-Applicability
SamTrans	San Mateo County Transit District
San Francisco	City and County of San Francisco
SD	site discovery
sf	square feet
SFEP	San Francisco Estuary Project
SFOBB	San Francisco-Oakland Bay Bridge
SFTA	San Francisco Transit Authority
SFUSD	San Francisco Unified School District
SFWD	San Francisco Water Department
SHL	State Historic Landmark
SHPO	State Historic Preservation Officer
SHSZ	Seismic Hazards Studies Zone
SI	site inspection
SMP	site mitigation plan
SO ₂	sulfur dioxide
SO ₄	sulfate particles
SPCC	Spill Prevention Control and Countermeasure
SVOC	semivolatile organic compound
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCE	temporary construction easement

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TCM	transportation control measure
TDM	transportation demand management
TICA	Treasure Island Conversion Act
TIDA	Treasure Island Development Authority
TIHDI	Treasure Island Homeless Development Initiative
tit.	title
TPH	total petroleum hydrocarbon
TSCA	Toxic Substances Control Act
TSS	total suspended solids
UBC	Uniform building code
ULI	Urban Land Institute
US	United States
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound
vph	vehicles per hour
VTS	vehicle tracking system
WAPA	Western Area Power Administration

CHAPTER 1.0

Purpose and Need

1.0 PURPOSE AND NEED

1 This environmental impact statement (EIS) evaluates the potential impacts on the natural and
2 human environment that could result from United States Department of the Navy (Navy)
3 disposal of surplus federal properties within Naval Station Treasure Island (NSTI) and
4 subsequent reuse of those federal properties. NSTI is made up of dry and submerged lands of
5 both Treasure Island and portions of Yerba Buena Island in San Francisco, California.

6 This document has been prepared by Navy in accordance with the National Environmental
7 Policy Act of 1969 (NEPA) (Public Law [Pub. L.] 91-190, 42 United States Code [U.S.C.] §§ 4321-
8 4370f); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code
9 of Federal Regulations [C.F.R.] Parts 1500-1508); Navy regulations implementing NEPA (32
10 C.F.R. Part 775); and Navy guidelines (Chief of Naval Operations Instruction [OPNAVINST]
11 5090.1B [2002]).

12 This EIS was originally prepared as a joint document to fulfill the requirements of both NEPA
13 and the California Environmental Quality Act of 1970 (CEQA) (California Public Resources
14 Code [Cal. Pub. Res. Code] § 21000 et seq., as amended). In 2000, the City and County of San
15 Francisco (San Francisco) elected to prepare a separate environmental impact report (EIR) to
16 analyze the impacts from the reuse of NSTI. The EIR will undergo a separate public review
17 process.

18 1.1 PURPOSE AND NEED

19 The purpose of and need for the proposed federal action is to dispose of surplus federal
20 property at NSTI for subsequent reuse. The Defense Base Closure and Realignment Act
21 (DBCRA) (10 U.S.C. § 2687 note) directed the Department of Defense (DoD) to reduce and
22 realign United States (US) military operations. The 1993 Defense Base Realignment and Closure
23 Commission (BRAC '93 Commission) recommended the closure of NSTI. President Clinton
24 approved this recommendation and the 103rd Congress accepted it on September 27, 1993. NSTI
25 closed on September 30, 1997, and Navy is in the process of disposing of the property in
26 accordance with applicable laws and regulations, including the DBCRA. DBCRA requirements
27 related to disposal of surplus property include the following:

- 28 • Compliance with NEPA;
- 29 • Environmental restoration of the property;
- 30 • Consideration of the local community's reuse plan before Navy disposes of the property;
31 and
- 32 • Compliance with specific federal property disposal laws and regulations.

33 Under the DBCRA the decision to close, relocate, or realign bases is exempt from NEPA
34 documentation requirements. However, once the decision has been made to close, relocate, or
35 realign a specified base, the cognizant military service is required to prepare appropriate NEPA
36 documentation evaluating the environmental effects of the disposal and subsequent reuse of the
37 property.

1.0 Purpose and Need

1 Navy considered the stated purpose and need of the Local Redevelopment Authority (LRA) in
2 developing reasonable reuse alternatives (the LRA is discussed further in section 2.2, Reuse
3 Planning Process). This purpose and need focused on reusing NSTI property to support the
4 local economic base, enhance the local image and identity, expand the range of recreational and
5 entertainment opportunities available to the community, and enhance the overall livability of
6 the local area and region. To meet these overall objectives, reuse alternatives must provide
7 employment and housing opportunities and generate sufficient revenue (e.g., property tax) to
8 support the investment necessary to upgrade the Treasure Island perimeter dike and to
9 undertake facility ground improvements for seismic safety of the site (San Francisco 1996e). In
10 addition, reuse alternatives must consider current access constraints (e.g., limited access via the
11 San Francisco-Oakland Bay Bridge [SFOBB], inadequate on-ramp and off-ramp design, and
12 traffic congestion during peak hours) and must propose alternative access options, such as ferry
13 service, to solve existing vehicular access deficiencies.

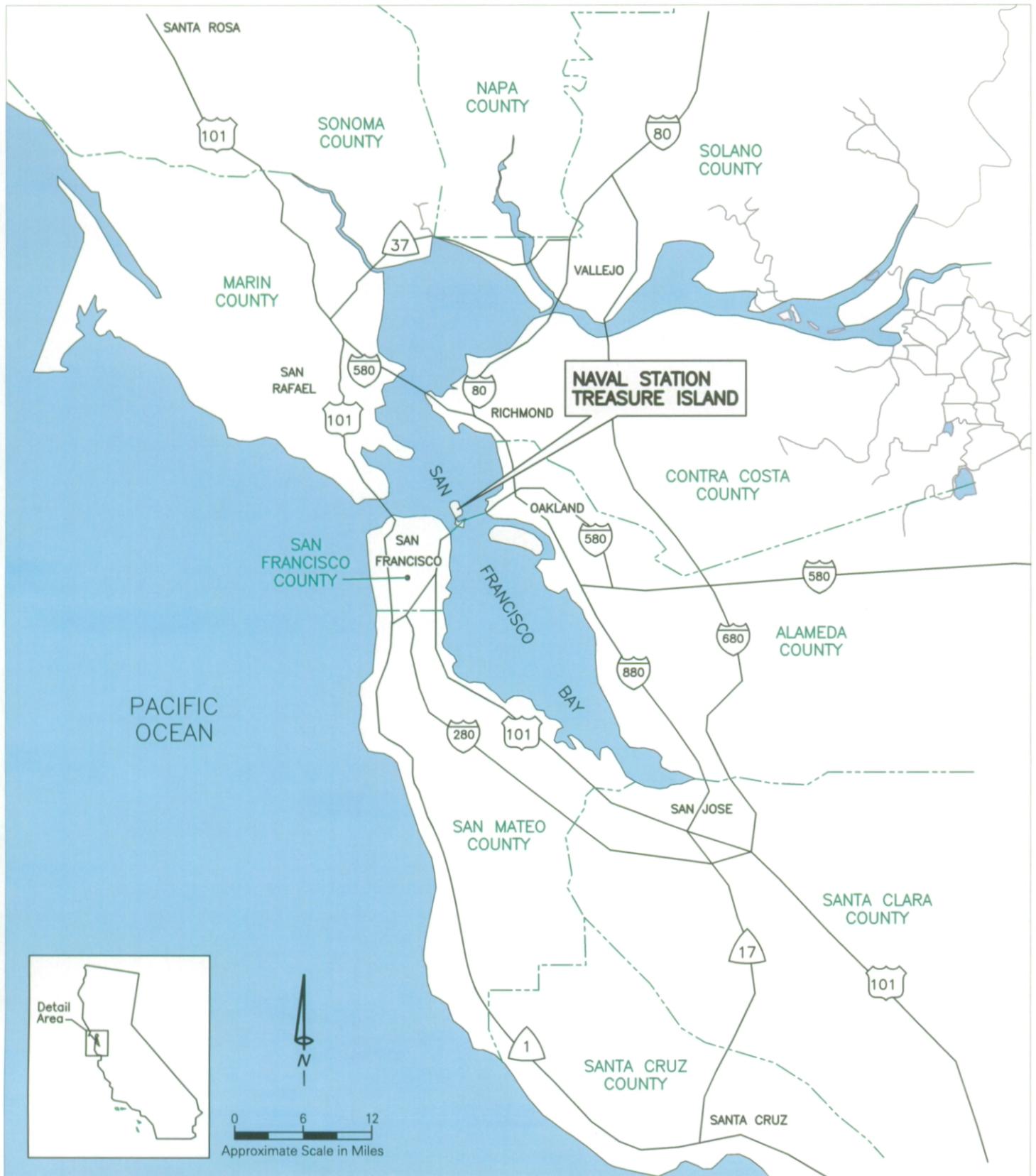
14 On October 26, 2000, the Federal Highways Administration (FHWA), pursuant to its authority
15 under 23 U.S.C. § 107(d), conveyed 98 acres (40 hectare [ha]) of dry and submerged Navy land
16 on Yerba Buena Island that was previously declared to be surplus to the needs of the federal
17 government and was considered in the NSTI Draft Reuse Plan (Draft Reuse Plan) (San Francisco
18 1996e) to the California Department of Transportation (Caltrans). Caltrans sought the property
19 held by the Navy for right-of-way purposes in connection with the construction, operation, and
20 maintenance of the SFOBB east spans retrofit project. Land conveyed to Caltrans includes lands
21 permanently conveyed in fee, temporary construction easements (TCEs) over a substantial part
22 of Yerba Buena Island, and permanent aerial easements over two parcels of land. While the
23 lands conveyed in fee to Caltrans are no longer part of NSTI and are not part of the Navy
24 disposal considered in this EIS, TCEs and aerial easements are available for disposal and are
25 considered in this EIS.

26 Navy will use this EIS to make disposal decisions concerning the surplus federal property at
27 NSTI suitable for conveyance. Following the completion of the Final EIS, Navy will issue its
28 Record of Decision (ROD) that will identify the significant impacts that would occur as a result
29 of disposal and reuse. Following disposal, no additional NEPA review by Navy will be
30 required.

31 **1.2 OVERVIEW OF NSTI**

32 At the time of operational closure (September 1997), NSTI totaled approximately 1,075 acres
33 (435 ha) of dry and submerged land within San Francisco. NSTI is on two islands in San
34 Francisco Bay about midway between the shores of the cities of San Francisco and Oakland
35 (Figure 1-1). The larger island, called Treasure Island, consists of 402 acres (160 ha) of dry land
36 created with artificial fill in the 1930s. Yerba Buena Island, a natural island of approximately
37 150 acres (60 ha), is connected to Treasure Island by a causeway that also forms part of Clipper
38 Cove. Vehicular access to NSTI is via the SFOBB on Yerba Buena Island. The SFOBB is part of
39 the Interstate-80 (I-80) freeway system and provides an east-west link between the cities of San
40 Francisco and Oakland. The reuse plan area is shown in Figure 1-2.

41



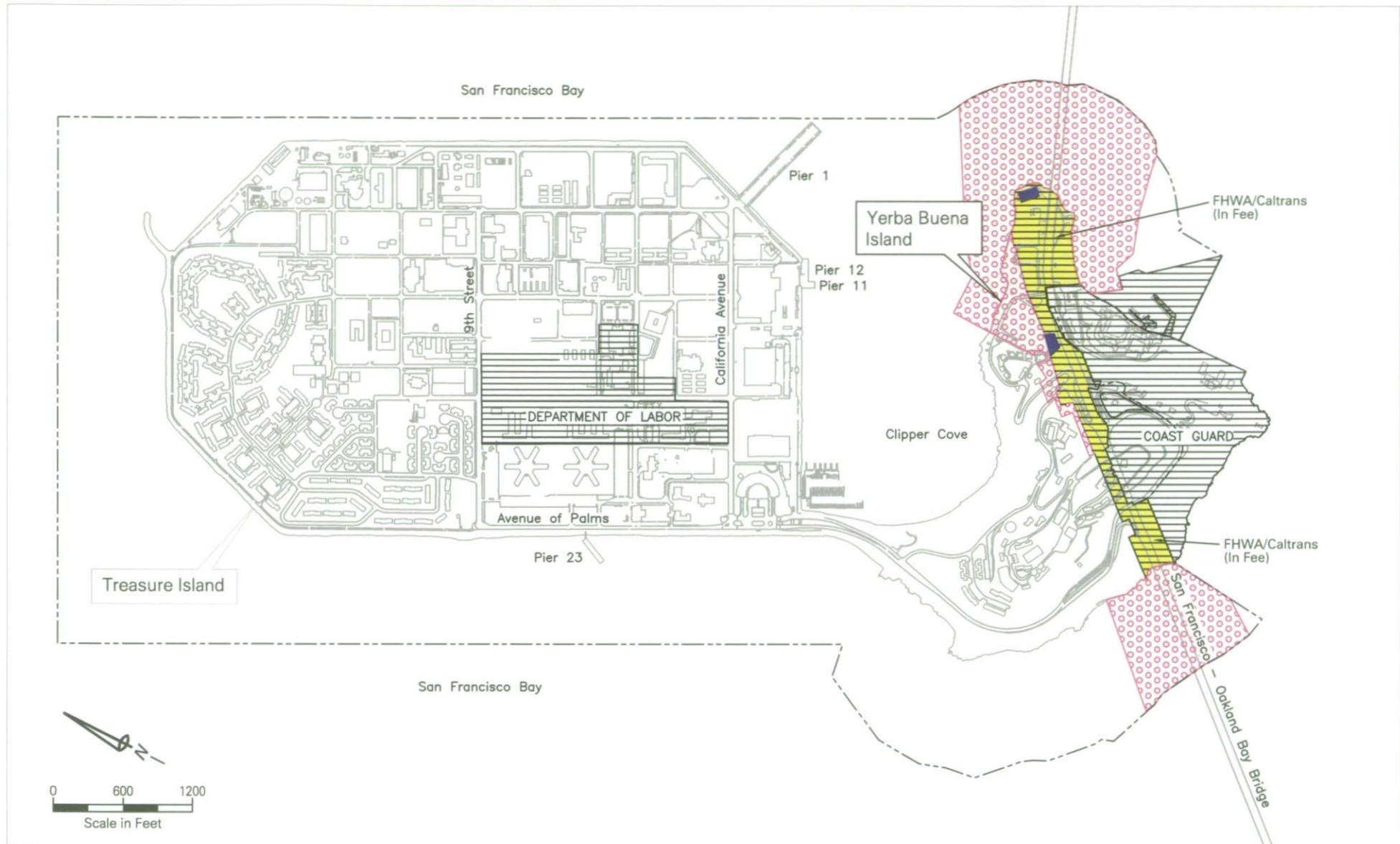
NSTI is located in San Francisco, about midway between the East Bay and West Bay shores.

- Legend:**
- County Lines
 - Federal and State Highways

Regional Site Map

Bay Area, California

Figure 1-1



The area proposed for Navy disposal includes submerged lands and upland areas within NSTI. Some parcels that were transferred to other Federal Agencies are excluded from the proposed disposal.

Legend:

-  Areas Excluded from Proposed Navy Disposal
-  Naval Station Treasure Island Property Boundary/Reuse Plan Area
-  FHWA/Caltrans TCEs (Included in Proposed Navy Disposal)
-  FHWA/Caltrans Aerial Eastments (Included in Proposed Navy Disposal)
-  FHWA/Caltrans Land Permanently Conveyed in Fee (Excluded From Proposed Navy Disposal)

Reuse Plan Area

Naval Station Treasure Island, California

Figure 1-2

1 Treasure Island

2 Treasure Island is an artificial island built in the mid-1930s on shoals immediately north of and
3 adjacent to Yerba Buena Island. The site is an area of tidal and submerged lands granted to San
4 Francisco in 1933 by the State of California for constructing a public airport, for wharf and dock
5 facilities, and for use as an airfield (California Statutes [Cal. Stat.] 1933, Chapter 912, August 21,
6 1933). In 1935, this legislative grant was amended to allow the site to be used for a fair. The
7 legislative grant contained a restriction that prevented San Francisco from selling the property
8 to private parties. Treasure Island was constructed over 19 months in 1936 and 1937 by San
9 Francisco and the US Army Corps of Engineers (COE) as a project of the New Deal-era Works
10 Progress Administration. The initial purpose of the island was to host the Golden Gate
11 International Exposition (Exposition). The Exposition ran from February 1939 to September
12 1940 and was held to celebrate the engineering marvels of the just completed Golden Gate
13 Bridge and SFOBB.

14 After the Exposition the island was to be converted to an international airport, but during the
15 final months of the Exposition, and with increasing expectations of American involvement in
16 World War II, plans were made to convert the island to a Navy base.

17 The federal government initiated a condemnation action in 1942 to acquire ownership of all
18 lands that now make up Treasure Island. This condemnation action eventually was settled in
19 conjunction with another condemnation action concerning San Francisco Airport property. The
20 settlement of these two condemnation actions gave the federal government fee title to Treasure
21 Island.

22 During the war years the island served as a center for receiving, training, and dispatching
23 service personnel. After World War II, the Navy used the installation primarily as a training
24 and administrative center. Treasure Island has approximately 150 nonresidential buildings,
25 totaling about 2.5 million square feet (232,257 square meters [m²]), and approximately 900
26 housing units. The housing units are mostly in four-, six-, and eight-unit two-story buildings,
27 as well as in barracks for service personnel. The nonresidential buildings include an
28 administration building, several classroom buildings used for training schools, former aircraft
29 hangars, a fire training facility, a brig, offices, a conference center, restaurants, a school, a
30 chapel, and storage and equipment buildings. Recreation facilities on the island include a
31 marina, ball fields, a gym, a theater, a bowling alley, a fitness center, tennis courts, a picnic area,
32 and open space.

33 Yerba Buena Island

34 Yerba Buena Island was used periodically by Native Americans before Europeans settled in the
35 San Francisco Bay Area around 1835. In 1867, the US Army established a post on the
36 northeastern side of the island adjacent to present day Clipper Cove. The post was established
37 as an artillery base and quartermaster depot at the eastern end of the island. The Army was
38 active there from 1868 through 1879. In the 1890s, the Army built a small torpedo station
39 complex on the island, one building of which, the Torpedo Depot (Building 262), remains.

40 In 1898, Navy acquired the East Cove area of Yerba Buena Island from the Army. This area
41 became the site for a Naval training station, which was active at the site between 1900 and 1923.

1.0 Purpose and Need

1 During this period, several prominent buildings were constructed. The Commander's Quarters,
2 or Quarters 1 (also referred to as "Nimitz House"), was completed in 1900, and seven other
3 Senior Officers' Quarters (Quarters 2 through 8) were completed between 1901 and 1905.
4 Quarters 1 through 7, referred to as the "Great Whites" because of their exterior color and
5 distinct architectural character, are clustered in a neighborhood on the north side of the SFOBB.
6 Quarters 1 was listed individually on the National Register of Historic Places (NRHP) in 1991,
7 and Quarters 1 through 7, which form the Senior Officers Quarters Historic District, along with
8 associated buildings and landscaping elements, are eligible for listing on the NRHP.

9 In 1946, Yerba Buena Island became primarily a residential facility and home to the US Coast
10 Guard; these functions have continued to the present (San Francisco 1996e). The Navy
11 transferred ownership of approximately 30 acres (12.1 ha) of Yerba Buena Island to the US
12 Coast Guard in 1973; this US Coast Guard facility is on the southeast side of Yerba Buena Island
13 (DON 1995a). An additional 11 acres (4.5 ha) of dry land was transferred in 1998, and another
14 11 acres (4.5 ha) of submerged land was transferred in 2002. The US Coast Guard will continue
15 to operate on its property at Yerba Buena Island after the Navy disposes of NSTI.

16 Navy owns approximately 100 housing units and about ten other buildings used for storage,
17 communications, fire safety, and administration on Yerba Buena Island.

18 1.3 DISPOSAL OF NSTI PROPERTY

19 1.3.1 Dispositional Actions

20 The disposal process encompasses several sequential actions, further described below. The
21 federal government is responsible for environmental cleanup and disposal of the property.

22 *Caretaker Activities*

23 NSTI is in caretaker status (inactive status under Navy control). On-site activities are limited to
24 security, maintenance cleanup, and other caretaker actions. Navy and San Francisco executed a
25 cooperative agreement in 1997 in which San Francisco is responsible for providing caretaker
26 services on NSTI. Approximately 50 persons are assigned to perform caretaker activities.

27 *Contaminated Sites Cleanup*

28 Navy is in the process of completing environmental cleanup of past releases of hazardous
29 substances that pose a threat to human health and the environment. Navy cleanup efforts are
30 being carried out in accordance with the Comprehensive Environmental Response,
31 Compensation, and Liability Act (CERCLA) (Pub. L. 96-510, 42 U.S.C. §§ 9601-9675).

32 *Interim Lease Activities*

33 Navy currently leases approximately 160 acres (65 ha) on NSTI to the LRA for a variety of uses,
34 including film production facilities, residential housing, a marina, a fire-fighting school, special
35 events and meeting center, warehouses, and multipurpose office space. In addition, space on
36 NSTI is currently leased for reuse planning and stewardship, as well as for housing and other
37 services supporting homeless persons.

1.3.2 Disposal Process Requirements

This section briefly highlights some of the key laws and regulations that guide BRAC disposal and reuse. An expanded discussion is provided in Appendix B.

The Federal Property and Administrative Services Act of 1949 (40 U.S.C. §§ 471 et seq.) establishes methods for the disposal of federal property and is implemented by the Federal Property Management Regulations (FPMR) (41 C.F.R. Part 101-47). The FPMR requires Navy to notify other military departments and DoD entities, as well as other federal agencies, that a property or facility is "excess." Any DoD or other federal agency that expresses an interest in the site during the process is given consideration before the property is determined to be "surplus." Once the property has been transferred, federal restrictions on reuse can only be imposed where it is authorized by statute.

Under the Stewart B. McKinney Homeless Assistance Act of 1987 (Pub. L. 100-77, codified as amended, at 42 U.S.C. §§ 11341-11448) (McKinney Act), a homeless services provider can prepare and submit an application to acquire surplus federal property to assist the homeless (see Appendix B). The homeless component of the Draft Reuse Plan was developed through negotiation with Treasure Island Homeless Development Initiative (TIHDI), an association formed in June 1994 and composed of 14 nonprofit homeless and social service organizations. Section 2.2 describes the details of this process.

On October 15, 1993, Navy issued a Notice of Availability (NOA) for NSTI (Treasure Island proper) to DoD and other federal agencies indicating that the property was excess to the needs of Navy. After the property had been screened to federal agencies, Navy declared the property at Treasure Island surplus to the needs of the US on July 11, 1994.

In March 1995, the Bureau of Land Management, as the former managing agency of Yerba Buena Island (prior to Navy), determined that the property on Yerba Buena Island was not suitable for return as Bureau of Land Management lands and concurred that Yerba Buena Island should be disposed pursuant to base closure law (Bureau of Land Management 1995). Therefore, a separate NOA for NSTI (Yerba Buena Island proper) was issued on July 6, 1995. DoD declared this property surplus in May 1996.

No DoD agency requested transfer of excess NSTI properties. Between October 1993 and October 1995, nine federal agencies expressed interest in excess property at NSTI. Five of the agencies submitted formal requests for property transfer. Three of these agencies withdrew their requests in 1995 and early 1996. The transfer requests for the remaining two agencies, US Department of Labor and the US Coast Guard, were approved. The US Department of Labor requested approximately 36 acres (15 ha) of property and associated facilities on Treasure Island for its Job Corps program, and the Navy authorized the requested property transfer on April 17, 1998. The US Coast Guard requested approximately 22 acres (9 ha), including land, facilities, and submerged areas of Yerba Buena Island (see Figure 1-2). Navy authorized transferring 11 acres (4.5 ha) of dry land on March 3, 1998, and the remaining 11-acre (4.5 ha) parcel of submerged land was transferred on November 27, 2002. These properties are not part of the proposed disposal and subsequent reuse action evaluated in this EIS.

1.0 Purpose and Need

1 Subsequent to completion of the federal screening process, the FHWA, pursuant to its authority
2 under 23 U.S.C. § 107(d), conveyed 98 acres (40 ha) on Yerba Buena Island held by Navy to
3 Caltrans for construction of the east span of the SFOBB. Approximately 20 acres (8 ha) of dry
4 land were permanently conveyed in fee and are not part of the disposal action evaluated in this
5 EIS. The remaining 78 acres (32 ha) comprises five separate easements: 51 acre (21 ha) and 18
6 acre (7 ha) TCEs over submerged land, an 8 acre (3 ha) TCE over dry land, and two 0.3 acre (0.1
7 ha) permanent aerial easements over dry land. (Permanent aerial easements are defined over
8 certain historic structures and are discussed further in section 3.4, Cultural Resources.) The
9 TCEs and aerial easements are available for disposal and are considered in this EIS. See Figure
10 1-2 for the location of lands excluded from disposal, TCEs, and aerial easements.

11 Table 1-1 provides a categorized description of the historic acreage of NSTI on Treasure Island
12 and Yerba Buena Island, which includes the areas previously transferred to US Department of
13 Labor, US Coast Guard, and FHWA. The remaining NSTI property proposed for Navy disposal
14 includes 681 acres (276 ha) at Treasure Island and 316 acres (127 ha) at Yerba Buena Island, for a
15 total of approximately 997 acres (403 ha).

16 1.4 RELATED STUDIES

17 Several project-related studies have been undertaken or are ongoing at NSTI. The major
18 planning and restoration programs are the Environmental Baseline Survey (EBS), the CERCLA
19 Installation Restoration Program (IRP) and the Compliance Program.

20 The EBS, completed in May 1995, is a broad evaluation and summary of all known and
21 suspected areas where hazardous materials or petroleum products have been handled, stored,
22 disposed of, or released within the boundaries of NSTI and adjacent areas (DON 1995c). A
23 Supplemental EBS was prepared in 2003. Two major restoration programs (IRP and the
24 Compliance Program) have been established in response to releases of hazardous substances,
25 pollutants, contaminants, petroleum hydrocarbons, and hazardous and solid waste. The IRP
26 identifies, assesses, characterizes, and cleans up or controls contaminants from past hazardous
27 waste disposal operations and hazardous materials spills. The Compliance Program addresses
28 solid waste management, underground storage tanks (USTs) and fuel lines, aboveground
29 storage tanks (ASTs), oil/water separators (OWS), asbestos-containing materials,
30 polychlorinated biphenyls (PCBs), radon, lead-based paint, lead in drinking water, septic tanks,
31 and indoor and outdoor small arms ranges.

32 1.5 PUBLIC INVOLVEMENT PROCESS

33 The EIS process is designed to involve the public in federal decision-making. Opportunities to
34 comment on, and participate in, the process are provided during preparation of this EIS as
35 outlined in the following sections. Comments from agencies and the public are solicited to help
36 identify the primary issues associated with the federal disposal and proposed reuse of NSTI.
37 San Francisco conducted public meetings and workshops as part of the reuse planning process,
38 and the public was encouraged to comment on the various reuse alternatives. The public's
39 input, as well as feedback from applicable resources and permitting agencies, will be used to
40 evaluate the alternatives and environmental impacts before final decisions are made. Chapter 7
41 includes a brief discussion of the public involvement process, and Chapter 10 contains the
42 mailing list for this EIS.

1

Table 1-1. NSTI Acreage on Treasure Island and Yerba Buena Island

	Acres
Treasure Island	
NSTI Acreage Proposed for Disposal	
Dry	366
Submerged	315
<i>NSTI Treasure Island Disposal Subtotal</i>	681
NSTI land transferred to US Department of Labor ¹	36
<i>Treasure Island Subtotal</i>	717
Yerba Buena Island	
NSTI Acreage Proposed for Disposal	
Dry	84
Submerged	232
<i>NSTI Yerba Buena Island Disposal Subtotal</i>	316
NSTI land transferred to US Coast Guard ²	22
NSTI land transferred to FHWA/Caltrans ³	20
<i>Yerba Buena Island Subtotal</i>	358
Total NSTI Acreage (including transferred land)⁴	1,075
Total NSTI Acreage Proposed For Disposal⁵	997
Total Dry Acreage Proposed For Disposal	450
Total Submerged Acreage Proposed For Disposal	547
¹ Approximately 36 acres was transferred from Navy to the US Department of Labor in 1998. ² Approximately 11 acres of dry land was transferred to the US Coast Guard in 1998. An additional 11 acres of submerged land was transferred to US Coast Guard in 2002. ³ Approximately 98 acres of dry and submerged land was transferred to FHWA on October 26, 2000, which then conveyed it to Caltrans for the construction of the east span of the SFOBB. All but 20 acres of this land will revert to the federal government upon completion of the SFOBB and is part of the disposal action evaluated in this EIS. ⁴ Total NSTI acreage = Treasure Island Subtotal + Yerba Buena Island Subtotal (this equals the total acreage of NSTI at the time of operational closure). ⁵ Total NSTI acreage proposed for disposal = NSTI Treasure Island Disposal Subtotal + NSTI Yerba Buena Island Disposal Subtotal. Total does not include property transferred in fee to the US Department of Labor, US Coast Guard, and FHWA/Caltrans.	

2 1.5.1 Scoping Process

3 Scoping is the process used to identify potential significant environmental issues and concerns
4 related to the proposed action. The scoping period was from September 24, 1996, to October 28,
5 1996. The scoping process was conducted jointly by Navy and San Francisco.

6 On September 24, 1996, in accordance with NEPA requirements, a Notice of Intent (NOI) to
7 prepare an EIS was published in the *Federal Register*. A copy of the NOI is presented in
8 Appendix D of this document. The NOI was mailed to regulatory agencies, local jurisdictions,
9 elected officials, public service providers, and organizations.

1.0 Purpose and Need

1 As part of the scoping process, Navy and San Francisco held a public meeting to inform the
2 public about disposal and reuse alternatives and to solicit the public's participation and
3 comments. The scoping meeting was held on October 9, 1996, at the San Francisco Ferry
4 Building. The meeting was advertised in the *San Francisco Chronicle*, *Marin Independent Journal*,
5 *San Jose Mercury News*, and *Oakland Tribune* on Sunday, September 29, 1996, and Tuesday,
6 October 1, 1996. At the meeting, Navy and local representatives presented an overview of the
7 proposed action and the environmental review process. This presentation was followed by an
8 opportunity for public oral or written comment. Six individuals from the public provided oral
9 comments at the scoping meeting. Oral comments addressed alternate land uses on the site
10 related primarily to residential, marine, and wildlife observation uses. Commentors also were
11 concerned with addressing the needs of veterans in the reuse plan and concerns about public
12 notification during the comment period.

13 Additionally, twelve comment letters were received in response to the 1996 NOI. These written
14 comments addressed a variety of concerns, including impacts to traffic, geology and
15 seismology, historic architectural resources, hazardous and waste material, and archeological
16 resources. All issues raised during the scoping period regarding environmental and
17 socioeconomic topics have been addressed in this EIS. A more detailed summary of the scoping
18 comments is included in Chapter 7.

19 1.5.2 Public Review of the Draft EIS

20 The public was invited to review and comment on the Draft EIS. An NOA was published in the
21 *Federal Register* on May 10, 2002 and notices were published in the *San Francisco Chronicle* and
22 *Oakland Tribune* on May 25 and 26, 2002. A copy of the NOA is presented in Appendix D of this
23 document. Copies of the Draft EIS and NOA were mailed to those on the mailing list (Chapter
24 10 of the Draft EIS), beginning a 45-day public comment period. A public hearing on the Draft
25 EIS was also held at Building 140 on Treasure Island on June 11, 2002.

26 During the public comment period, 22 comment letters on the Draft EIS were received from
27 agencies or individuals. In addition, four persons provided oral comments on the Draft EIS at
28 the public hearing. Comments on the Draft EIS and responses to those comments are provided
29 in Chapter 11, Responses to Comments. The Final EIS has been revised, as appropriate, in
30 response to public comments.

31 1.5.3 Final EIS

32 The Final EIS incorporates and responds to comments received on the Draft EIS and has been
33 provided to all agencies or individuals that officially commented on the document or otherwise
34 requested a copy (see Chapter 10, EIS Distribution List). An NOA of the Final EIS was
35 published in the *Federal Register* on June 27, 2003.

36 As required under NEPA, there will be a 30-day review period after publication of the Final EIS.
37 During this period, the public may comment on the adequacy of responses to comments and the
38 Final EIS. After the 30-day review period, Navy can issue a NEPA ROD.

CHAPTER 2.0

Proposed Action and Alternatives

2.0 PROPOSED ACTION AND ALTERNATIVES

1 This chapter describes alternatives for the proposed action and considers Navy *disposal*
2 alternatives and subsequent *reuse* alternatives. NEPA requires that an EIS objectively evaluate a
3 "reasonable" range of alternatives. Under NEPA, reasonable alternatives are those that are
4 practical or feasible from a technical and economic perspective and that are based on common
5 sense (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act
6 Regulations [CEQ 40 Most Asked Questions], 46 Fed. Reg. 18026, March 23, 1981; as amended,
7 51 Fed. Reg. 15618, April 25, 1986).

8 This chapter of the EIS is organized into seven primary sections. Section 2.1 discusses Navy
9 disposal alternatives. Section 2.2 describes the generation of reuse alternatives. Alternatives
10 eliminated from review in this EIS, and the reasons for their elimination, are addressed in
11 section 2.3. Section 2.4 provides detailed descriptions of the reuse alternatives evaluated in this
12 EIS. Section 2.5 identifies Navy's preferred alternative and the environmentally preferable
13 alternative, and section 2.6 provides a list of permits and approvals required for disposal and
14 subsequent reuse of NSTI. Finally, section 2.7 provides a summary comparison of the potential
15 impacts and corresponding mitigation for each alternative.

2.1 NAVY DISPOSAL

16 Navy can either retain NSTI surplus property in federal ownership (No Action Alternative) or
17 dispose of the property for subsequent reuse (Disposal Alternative). The description of
18 retaining NSTI in federal ownership is included in the No Action Alternative (section 2.4.5).
19 Navy disposal of surplus property at NSTI is the federal action evaluated in this EIS for
20 potential environmental and socioeconomic impacts. Under the federal action, approximately
21 997 acres (403 ha) of federal property at NSTI would be conveyed to non-federal entities.
22

23 Although it will not retain control of the properties after their disposal, Navy is required, in
24 accordance with DBCRA, to evaluate the reasonably foreseeable impacts arising from reuse.
25 Consequently, this EIS evaluates the potential environmental and socioeconomic impacts
26 associated with the reuse of NSTI property. The Federal Action, Navy disposal, is assumed as
27 part of each reuse alternative.

2.2 REUSE PLANNING PROCESS

28 DoD Office of Economic Adjustment (OEA) designated San Francisco as the LRA for NSTI in
29 May 1994. In late June 1994, the Mayor of San Francisco appointed the Treasure Island Citizens
30 Reuse Committee (CRC) to make recommendations for the consideration of the Planning and
31 Redevelopment Commissions and the San Francisco Board of Supervisors. The CRC consisted
32 of a diverse group of community professionals and activists represented by environmentalists,
33 architects, labor union members, educators, municipal finance experts, developers, homeless
34 service providers, real estate analysts, neighborhood and cultural leaders, planners, and
35 lawyers. The CRC convened its first public workshop in June 1994 and met regularly until it
36 had completed its work in 1996.
37

2.0 Proposed Action and Alternatives

1 As part of the NSTI reuse planning process, numerous alternatives were proposed and then
2 evaluated using goals established by the LRA. The city's Office of Military Base Conversion
3 (OMBC), a partnership of San Francisco's Planning Department and Redevelopment Agency
4 and the Port of San Francisco, directed the reuse planning process. This process, described in
5 detail in the Draft Reuse Plan (San Francisco 1996e), included substantial public input and
6 technical direction from city departments, as summarized below.

7 Before, during, and after the approval of the Draft Reuse Plan, a continued effort was sustained
8 in soliciting meaningful public involvement by the OMBC and the CRC. CRC meetings were
9 open to the public, and public comment was invited and considered. CRC meeting minutes
10 were made available to the public and were regularly distributed to more than 100
11 organizations and individuals in the Bay Area.

12 The public also was informed about the progress of reuse planning through a regular
13 newsletter, *Treasure of the Bay*, the first issue of which was published in Spring 1994. Several
14 issues of the newsletter were published thereafter and mailed to over 2,400 community leaders,
15 neighborhood organizations, and citizens of San Francisco and the Bay Area. Newsletter issues
16 focused on important aspects of the reuse planning process, informed the public about other
17 ways to get information, and advertised the availability of reuse planning reports, which
18 present a more detailed account of NSTI reuse planning.

19 The OMBC and CRC, through their consultants, conducted public workshops and prepared a
20 number of publicly available documents to assist in formulating a reuse plan for NSTI. Two
21 widely publicized public planning workshops on the reuse planning process (including bus
22 tours of the islands) were held in June 1994 and August 1995. In July 1995, the CRC prepared
23 exhibits for public display at the Treasure Island Museum and the San Francisco Main Library,
24 accompanied by newsletters and questionnaires soliciting public input on the proposed reuse
25 plan. A draft set of reuse planning goals and objectives was produced as a result of these
26 workshops, and the goals and objectives were subsequently refined and approved by the CRC
27 on December 1, 1995.

28 Documents prepared include a two-volume Existing Conditions Report in August 1995 (San
29 Francisco 1995a; 1995b), with findings summarized in the August 1995 Issues and
30 Opportunities Report (San Francisco 1995d) and the January 1996 Alternatives Report (San
31 Francisco 1996a). The adopted goals and objectives address six specific topics—economics,
32 community, character, transportation, environment, and safety. For a detailed listing and
33 discussion of the goals and objectives envisioned by the CRC, refer to the Draft Reuse Plan (San
34 Francisco 1996e).

35 From information in these documents and based on public input, a concept plan, entitled
36 *Conceptual Planning Framework, Treasure Island - Yerba Buena Island* (San Francisco 1996d),
37 was developed and approved by the CRC in February 1996; this plan led to the publication of
38 the Draft Reuse Plan (San Francisco 1996e). Recommendations for the "preferred reuse
39 concept" included an emphasis on visitor-oriented recreational, commercial, and entertainment
40 uses to serve as a major jobs and revenue generator to support needed improvements and
41 services. Due to the instability of fill material on Treasure Island, phased implementation of
42 seismic upgrades to structures and utilities was also recommended to reduce the risk of failure
43 during an earthquake. The earlier phases of improvements focus on accommodating major

1 visitor-oriented uses. Another recommendation was that the reuse plan be developed to allow
2 substantial flexibility to adapt to market conditions and emerging information.

3 On July 22, 1996, the San Francisco Board of Supervisors endorsed the Draft Reuse Plan. In
4 September 1996, the San Francisco Redevelopment Agency contracted the Urban Land Institute
5 (ULI), a non-government organization (NGO), to convene an advisory panel to evaluate the
6 feasibility of the Draft Reuse Plan. The resulting report, entitled *Treasure Island Naval Station*
7 *San Francisco, California: An Evaluation of Reuse Opportunities and a Strategy for*
8 *Development and Implementation (ULI 1996)*, suggested changes and revisions that were
9 considered in the development of the reuse alternatives. Alternative 2 incorporates many of the
10 changes suggested by the ULI study.

11 The Draft Reuse Plan proposes to maximize a range of public benefits within the major
12 constraints of the site. The plan emphasizes publicly oriented recreational, entertainment, and
13 hospitality uses that recall the spirit of the 1939 Golden Gate International Exposition
14 (Exposition). These uses maximize the island's central location and outstanding views, and the
15 plan links NSTI to San Francisco and the Bay Area by ferry. The Draft Reuse Plan also
16 incorporates specific users and types of uses from the second homeless screening process. The
17 Draft Reuse Plan was approved by the Department of Housing and Urban Development (HUD)
18 on November 26, 1996 (see Appendix C). The Draft Reuse Plan is described in section 2.4.2
19 (Alternative 1), along with two other reuse scenarios, Alternative 2 and Alternative 3 (sections
20 2.4.3 and 2.4.4, respectively).

21 In 1997, the California State Legislature created a special reuse authority for Treasure Island,
22 transferring the LRA status from San Francisco to the Treasure Island Development Authority
23 (TIDA). TIDA is a state agency staffed by the San Francisco mayor's office and is the entity
24 responsible for planning the reuse of Treasure Island. In March 1998, DoD OEA recognized
25 TIDA as the implementing LRA for NSTI. TIDA submitted an *Economic Development Conveyance*
26 *(EDC) Application and Business Plan for Naval Station Treasure Island* in June 2000 for land to be
27 used and redeveloped in accordance with the Draft Reuse Plan.

28 2.2.1 Homeless Assistance Planning Process

29 Federal base closure law and regulations were changed during the period of reuse planning for
30 NSTI. The Stewart B. McKinney Homeless Assistance Act of 1987 (McKinney Act) (Pub. L. 100-
31 77, codified as amended, at 42 U.S.C. §§ 11341-11448) requires DoD and other federal agencies
32 to give priority consideration for homeless assistance over other uses for property considered
33 excess, surplus, or underutilized by federal agencies. HUD screens properties in these
34 categories for suitability for homeless assistance (42 U.S.C. § 11411). Because NSTI was closed
35 in 1993 under the '93 round of BRAC, homeless assistance screening was originally initiated
36 under this law. In October 1994, the Treasure Island Homeless Development Initiative (TIHDI),
37 a coalition of 14 nonprofit social service and homeless service organizations, submitted a
38 revised plan to the San Francisco Department of Health and Human Services under the
39 McKinney Act for providing homeless services.

40 The first TIHDI plan submitted to the San Francisco Department of Health and Human Services
41 in October 1994 was building-specific. In the fall of 1994, the Base Closure Community
42 Redevelopment and Homeless Assistance Act of 1994 (Redevelopment Act) (Pub. L. 103-421, 10

2.0 Proposed Action and Alternatives

1 U.S.C. § 2687) modified the federal process for accommodating the needs of the homeless in
2 connection with disposal of military installations. This act provided the affected local
3 community greater opportunity to participate in the decision regarding disposal of military
4 properties by requiring homeless providers to work through LRAs. In 1995, the LRA notified
5 Navy of its intent to conduct a second homeless screening process under this act. DoD
6 approved this action on May 9, 1995.

7 TIHDI conducted an extensive solicitation process throughout 1995. TIHDI submitted a
8 comprehensive Notice of Interest for surplus property at NSTI to the LRA on November 1, 1995,
9 for incorporation into the LRA's reuse plan. The TIHDI Notice of Interest includes homeless
10 housing, support services, employment, and economic development programs and services.

11 The 1995 plan provides economic development opportunities and employment for homeless
12 individuals. TIHDI organizations may provide contract services, such as landscaping and
13 grounds maintenance, and operate businesses, such as restaurants and convenience stores, at a
14 level that is proportionate to overall development on the islands. These businesses would
15 provide employment and job training and would be an important part of the ongoing transition
16 of NSTI to civilian use.

17 According to the Draft Reuse Plan, up to 375 existing housing units will be leased to TIHDI to
18 provide shelter for individuals and families, including 90 housing units on Yerba Buena Island
19 and 285 housing units on Treasure Island. Discussions regarding the number of homeless
20 housing to be leased are on-going, and they are currently proposed at approximately 218 units
21 on Treasure Island, and none at Yerba Buena Island. If substantial new residential development
22 occurs on NSTI in the future, TIHDI will be offered sites for constructing additional affordable
23 housing.

24 The plan sets goals for providing long-term jobs for homeless persons and the working poor as
25 a part of new uses on NSTI. The overall employment goals for NSTI include offering 25 percent
26 of permanent jobs to homeless or other economically disadvantaged persons within a larger
27 goal of setting aside 50 percent of all new jobs for San Francisco residents.

28 2.3 ALTERNATIVES ELIMINATED FROM DETAILED REVIEW

29 In determining the scope of alternatives to be considered under NEPA, the emphasis is on what
30 is "reasonable." The term "reasonable" is used primarily to insure that federal agencies
31 preparing NEPA documents make the effort to explore a number of common sense-based
32 alternatives that meet the purpose and need of the project. Reasonable alternatives include
33 those that are practical or feasible from a technical and economic standpoint (Question 2a, CEQ
34 40 Most Asked Questions, 46 Fed. Reg. 18026 [March 23, 1981]). An alternative can be
35 eliminated from further discussion if it does not meet the purpose and need of the project.

36 During the reuse planning process, the LRA developed a purpose and need statement that
37 served as the basis for evaluating reuse alternatives and for refining the Draft Reuse Plan. This
38 purpose and need focused on reuse of NSTI property to support the local economic base,
39 enhance the local image and identity, expand the range of recreational and entertainment
40 opportunities available to the community, and enhance the overall livability of the local area
41 and region. To meet these overall objectives, the proposed reuse alternatives must have

1 provided employment and housing opportunities and generated sufficient revenue (e.g.,
2 property tax) to support the investment necessary to upgrade the Treasure Island perimeter
3 dike and to undertake other facility ground improvements that would improve the seismic
4 safety of the site (San Francisco 1996e). In addition, reuse alternatives must have considered
5 current access constraints (e.g., limited access via the SFOBB, inadequate on- and off-ramp
6 design, and traffic congestion during peak hours) and proposed alternative access options, such
7 as ferry service, to solve existing vehicular access deficiencies.

8 The Alternatives Report (San Francisco 1996a) that preceded the Draft Reuse Plan identified
9 four preliminary land use alternatives. These four alternatives evolved in an iterative process
10 with a series of meetings and discussions with the CRC. Table 2-1 lists the land use
11 requirements of the four preliminary reuse alternatives that were considered by the LRA in
12 1995 to meet their reuse objectives. From these alternatives, a screening process was initiated
13 by the LRA to determine if these alternatives would 1) attain the objectives of the LRA; 2) avoid
14 or substantially lessen environmental effects of the project; 3) be technically feasible; and 4) be
15 economically feasible. Although these four alternatives were eliminated from analysis by the
16 LRA as a single plan to guide the redevelopment of NSTI, elements of each were included in the
17 Draft Reuse Plan.

18 Navy reviewed the Draft Reuse Plan (San Francisco 1996e), the ULI report (ULI 1996), the
19 Alternatives Report (San Francisco 1996a), scoping comments and letters, and newspaper
20 articles related to reuse of NSTI to identify a range of reasonable alternatives and to determine
21 which alternatives would be eliminated from detailed review in the EIS. While many reuse
22 scenarios have been suggested, most major elements of the alternatives eliminated from review
23 have been incorporated into one of the three reuse alternatives evaluated. For instance, some
24 reuse suggestions, such as a public park or a sports center, were not feasible as a single use;
25 however, they have been incorporated as elements in the three reuse alternatives evaluated.
26 The four reuse alternatives that were eliminated by the Navy mirror the four preliminary
27 alternatives studied in the Alternatives Report (San Francisco 1996a). Table 2-1 and subsequent
28 discussions (sections 2.3.1 through 2.3.4) provide a description of those alternatives that were
29 eliminated from further review.

30 **2.3.1 Harbor-oriented Themed Attraction Alternative**

31 This alternative envisioned Treasure Island as a major visitor destination. A large themed
32 attraction occupying approximately 86 acres (35 ha) on the scale of Disneyland would be built
33 primarily on Treasure Island, but it also would include Clipper Cove and the eastern tip of
34 Yerba Buena Island. Visitors to the Treasure Island themed attraction would arrive by ferry to a
35 new terminal on the west side of the island. Pier 1 would be incorporated into the themed
36 attraction.

37 Under this alternative, the west side of Treasure Island would be devoted to visitor-serving
38 uses, primarily hotels and supporting retail and entertainment uses, which would complement
39 and support the new themed attraction. The remainder of the island would be unprotected by
40 shoreline improvements and held in open space. The center of the island, which is more
41 geologically stable, could be used for active recreational uses, such as a sports complex

2.0 Proposed Action and Alternatives

1

Table 2-1. NSTI Land Development Program for Alternatives Initially Considered by the LRA in 1995

Land Use	Alternatives							
	Harbor-oriented Themed Attraction		Destination Entertainment District		Residential Neighborhood		Major Themed Attraction	
	Acres	Program	Acres	Program	Acres	Program	Acres	Program
Treasure Island								
Themed Attraction	86.0	1 million s.f.						
Hotel/Entertainment	30.0	1,200 rooms 500,000 s.f.					30.0	2,000 rooms
Sports Complex	80.0							
Public Promenade	6.0		4.0		7.0		7.0	
Destination Entertainment			23.0	500,000 s.f.				
Film/Institutional			11.0	300,000 s.f.	14.0	300,000 s.f.		
Resort Hotel			18.0	600 rooms				
Business Hotel			13.0	400 rooms				
Golf Course			144.0	18 holes				
Marina				500 slips		500 slips		500 slips
Residential					88.0	3,520 units		
Residential/Mixed Use					37.0	1,480 units 200,000 s.f.		
Hotel/Conference					8.0	400 rooms		
School/Child Care/Gym					22.0			
Park/Open Space					125.0			
Roads					13.0			
Themed Attraction/Entertainment							263.0	
Film Production								300,000 s.f.
Job Corps	36.0		36.0		36.5		36.0	
Open Space	165.0		154.0		52.5		67.0	
Subtotal Acres	403		403		403		403	
Yerba Buena Island								
Themed Attraction	7.0	200 rooms 100,000 s.f.						
Hotel/Conference			7.0	200 rooms			7.0	200 rooms
Residential (new)					7.0	140 units		
Existing Housing	36.0	95 units	36.0	95 units	36.0	95 units	36.0	95 units
Open Space	72.0		72.0		72.0		72.0	
Subtotal Acres	115		115		115		115	

Source: Draft Reuse Plan (San Francisco 1996a).

Notes for all alternatives:

Improved land acreage includes stabilized land area within a footprint defined by an improved perimeter dike, including the Job Corps site. Land within the core is excluded for the Harbor-oriented Themed Attraction and Destination Entertainment District alternatives.

Initial alternatives include 39 acres (16 ha) of dry land on Yerba Buena Island that was subsequently transferred to the U.S. Coast Guard and FHWA.

s.f. = square feet

1 consisting of amateur athletic fields. New uses on Treasure Island would be focused around a
2 central roadway and utility corridor that provides access and services to each of the uses.

3 On Yerba Buena Island, it is assumed that one small 200-room hotel could be part of
4 development on the flatter, eastern area. The Senior Officers Quarters would be preserved and
5 incorporated into the themed attraction, either as lodging or as an attraction. The remainder of
6 Yerba Buena Island would be primarily devoted to housing and open space uses.

7 Major elements of this alternative were incorporated into two of the reuse alternatives that are
8 already included in this EIS. For example, the major themed attraction and use of the west side
9 of Treasure Island for visitor-serving uses, such as hotels, is part of Alternative 1. Providing
10 shoreline improvements only to portions of Treasure Island and dedicating the less reinforced
11 part to open space and recreation is similar to Alternative 2. In addition, this alternative was
12 found to be marginally economically feasible due to the single source of revenue and the
13 reliance on supplemental funding from tax increment financing (San Francisco 1996a).
14 Therefore, this alternative was eliminated from further review.

15 2.3.2 Destination Entertainment District Alternative

16 This alternative would include developing a resort hotel and a visitor-serving entertainment
17 district along the Clipper Cove shoreline of Treasure Island. For illustrative purposes, this
18 alternative envisions a fairly large facility similar in scale to the Inn at Spanish Bay in Pebble
19 Beach. Another hotel and conference center would be established on the western side of the
20 island. The area between the two hotels and along the Clipper Cove shoreline would be a
21 visitor-oriented entertainment zone, similar in concept to Citywalk in Universal City in Los
22 Angeles, incorporating themed attractions, along with clubs, restaurants, and shops oriented to
23 the waterfront promenade. This alternative also provides an area for existing film production
24 or a similar employment use, such as recording or multimedia studios, which could be related
25 to the entertainment themes of the island.

26 Open space on Treasure Island would be developed as an 18-hole golf course to complement
27 the hotels. Similar to the Harbor-oriented Themed Attraction Alternative, the outer perimeter
28 of the island would be set aside as natural open space with limited public access. This
29 alternative also envisions a small hotel and conference center on the eastern tip of Yerba Buena
30 Island, with reuse of existing residential units and potentially up to 90 infill units.

31 This alternative was eliminated from further consideration due to economic factors. The
32 principal source of revenue to support development of NSTI is the value that private
33 development can pay for the land. Compared to the other three preliminary alternatives, the
34 Destination Entertainment District Alternative would result in the lowest residual land values,
35 which would not be sufficient to cover all costs even with supplemental tax revenues (San
36 Francisco 1996a), therefore, this alternative was eliminated from further review. However,
37 elements of this alternative have been integrated into the EIS reuse alternatives. For example,
38 the golf course is represented in Alternative 2.

1 **2.3.3 Residential Neighborhood Alternative**

2 Under this alternative, both Treasure Island and Yerba Buena Island would be devoted
3 primarily to residential uses; up to 4,000 new housing units would be added to the existing
4 approximately 1,000 units at NSTI (approximately 900 units on Treasure Island and
5 approximately 100 units on Yerba Buena Island). New residential uses on Treasure Island
6 would be oriented around shoreline open space areas and a central park. A commercial
7 residential mixed-use center would be established along the Clipper Cove shoreline. A new
8 marina would be established on Treasure Island at Clipper Cove for recreational uses. On the
9 west side of the island, a small business hotel and conference center would be located to take
10 advantage of views and ferry access to downtown San Francisco. Redevelopment on Yerba
11 Buena Island would include new housing units developed at townhouse densities (i.e., up to 20
12 units per acre for the level portion of the island and 10 units per acre for sloping and
13 redeveloped areas). Up to 230 new dwelling units could be established on Yerba Buena Island
14 in addition to rehabilitating existing housing units.

15 This alternative was eliminated from further consideration because of both economic and
16 environmental factors. Economic feasibility studies during the master planning process
17 revealed that given the high dike reinforcement, infrastructure, and service costs and the
18 expected rate of absorption for residential uses, an alternative that relied primarily on
19 residential uses would be economically infeasible. For example, it was estimated to take 25
20 years for this alternative to be built out. Even with the inclusion of tax increment financing, the
21 revenues generated, primarily consisting of land sales, were found to be insufficient to cover the
22 high costs associated with this alternative (San Francisco 1996a). It was also questionable
23 whether a suitably amenable residential environment could be established in the early phases to
24 establish new market-rate housing on Treasure Island.

25 This alternative also would be expected to generate unacceptably high traffic volumes on the
26 SFOBB, based on a likely greater reliance on the private automobile for transportation and
27 access to and from NSTI. Based on a residential trip generation rate of ten trips per day, this
28 alternative would generate approximately 49,950 vehicle trips per day. Vehicle use would have
29 to be stringently curtailed for this alternative to be feasible from a transportation standpoint,
30 and the anticipated level of non-auto use (e.g., ferry and shuttle systems) that would be
31 required of new residents would be generally unprecedented in the U.S. This alternative would
32 not meet the LRA's purpose and need to enhance the overall livability of the local area and
33 region because it would worsen existing vehicular access deficiencies on the SFOBB. For these
34 reasons, this alternative was eliminated from further consideration.

35 **2.3.4 Major Themed Attraction Alternative**

36 This alternative would develop an extensive themed attraction on Treasure Island. The themed
37 attraction would occupy approximately 260 acres (105 ha), on the scale of Universal Studios in
38 Los Angeles and would include film production. The western portion of Treasure Island
39 would be developed primarily as hotels and visitor-serving uses. In this alternative, Clipper
40 Cove and the associated shoreline would be for public use and would not be included within
41 the themed attraction. Public access to the themed attraction would be through the west side
42 ferry terminal and through Building 1. Pier 1 would serve as a ferry terminal and a second
43 entrance to the themed attraction. This alternative also would include construction of a new

1 200-room hotel on the eastern tip of Yerba Buena Island. The existing housing would be reused
2 and infilled, as feasible.

3 This alternative would meet the basic project purpose and need to enhance local image and
4 identity and to expand the range of recreational and entertainment opportunities available to
5 the community. However, this alternative was regarded as too narrowly drawn, relying too
6 much on a very large themed attraction. The marketability of this alternative is questionable
7 due to the unlikelihood that a developer or corporation would purchase such a large area of
8 land for themed attraction purposes, particularly given the costs associated with land
9 improvements and that the intensive use area is generally around 60 to 80 acres (24 to 32 ha)
10 (San Francisco 1996a). For these reasons, this alternative was eliminated from consideration as
11 a single development plan. However, the major themed attraction elements were incorporated
12 in all three of the EIS reuse alternatives at a reduced scale.

13 2.4 DETAILED DESCRIPTION OF REUSE ALTERNATIVES

14 This section presents a detailed description of the three reuse alternatives developed and
15 evaluated in this EIS— Alternatives 1, 2, and 3. Navy disposal is assumed as part of each of the
16 three reuse alternatives. Alternative 1 represents full implementation of the development
17 scenario described in the Draft Reuse Plan (San Francisco 1996e) developed by the LRA.
18 Whereas the Draft Reuse Plan envisions buildout by 2030, this EIS alternative assumes buildout
19 by 2015. Year 2015 was used as the EIS buildout year because it was the year for which there
20 was the most representative data concerning projected population and economic growth at the
21 time of the analysis. Alternative 2 is based on comments received during the scoping process,
22 including the recommendations of an advisory panel convened by the ULI (ULI 1996).
23 Alternative 3 represents a lower level of redevelopment than proposed in the Draft Reuse Plan.

24 Each reuse alternative is a broad conceptual plan characterized by a general land use concept
25 and a development scenario. For example, residential uses for the three alternatives range from
26 250 to 2,840 dwelling units, while open space and recreation uses range from a combination of
27 shoreline promenades and sports fields on 118 acres (47.8 ha) to a combination of these uses
28 plus an 18-hole golf course on approximately 259 acres (104.8 ha). Alternative 1 proposes the
29 largest population (employees, residents, and visitors). Alternative 3 proposes approximately
30 half as much employment and resident population compared to Alternative 1. Alternative 2
31 provides more jobs than Alternative 3 and the fewest residents of all the reuse alternatives.
32 Alternatives 1, 2, and 3 have different perimeter dike improvements to seismically upgrade
33 Treasure Island. Alternative 3 includes a lower level of development, and many existing
34 buildings are reused.

35 Each reuse alternative has general land use planning designations (residential, publicly
36 oriented, institutional and community, and open space and recreation) that allow for a range of
37 different types of land use. These four land use categories represent slightly revised versions of
38 the land use categories discussed in the Draft Reuse Plan. The publicly oriented and
39 institutional and community categories are composites and would include a range of land uses.
40 For example, the publicly oriented category would include such uses as a themed attraction,
41 hotels, and an expanded marina. The institutional and community category would include
42 such uses as police and fire stations, schools, and the wastewater treatment plant. The
43 residential land use category would include a range of housing options on both Treasure Island

2.0 Proposed Action and Alternatives

1 and Yerba Buena Island. The open space and recreation land use category would include
2 shoreline open space at Treasure Island and hillside open space on Yerba Buena Island. Figure
3 2-1 compares land use development proposed for each of the three alternatives.

4 Table 2-2 provides a summary comparison of land use development of the three alternatives.
5 This table is intended to help the reader identify specific differences among the three
6 alternatives. The resulting combination of the use categories provides a level of reuse intensity
7 that is analyzed and compared as part of this EIS. Analyses of the three reuse alternatives,
8 which include a range of possible uses, provide a basis for decision-makers and the public to
9 consider the environmental impacts of reuse.

10 The reuse alternatives are general, representative, and appropriate for the level of
11 environmental analysis needed to make a disposal decision. Use categories, such as a themed
12 attraction, sports fields, or residential developments, are representative of but are not the only
13 specific uses for a parcel or building. The use categories analyzed provide a basis for estimating
14 the potential numbers of future residents, employees, and visitors for environmental impact
15 analysis purposes. The numbers provided in Table 2-2 are estimates only since discussions are
16 on-going between Navy and San Francisco, and most uses depend on future conditions and
17 circumstances.

18 This section describes reuse alternative assumptions, followed by a more detailed description of
19 land use development for each alternative. The discussion of each alternative is organized by
20 the four general land use planning categories. For reference, Figure E-1 in Appendix E
21 identifies NSTI building numbers used in the following discussion.

22 2.4.1 Assumptions for Reuse Alternatives

23 *Construction and Demolition*

24 Development is expected to occur in phases in accordance with infrastructure improvements.
25 Phasing in the Draft Reuse Plan is illustrative and is expected to vary depending on actual
26 market conditions, funding, and policy decision. Each phase would include some demolition
27 and construction activities and would lead to additional employment and housing development
28 (San Francisco 1996e).

29 *Facility Improvements*

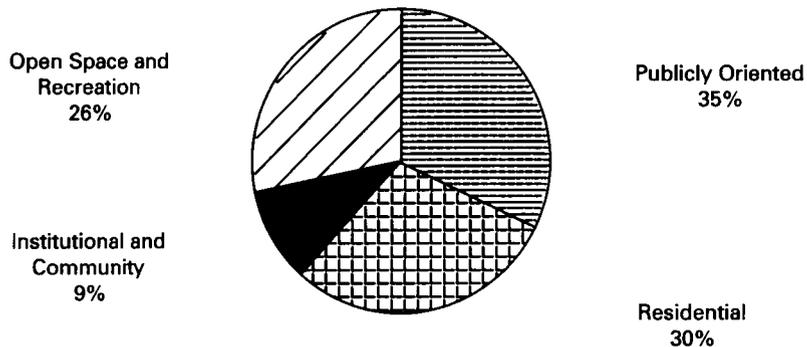
30 The extent of perimeter dike improvements and other seismic improvements on Treasure Island
31 would vary with each reuse alternative, as indicated in the alternative descriptions in sections
32 2.4.2, 2.4.3, and 2.4.4, and as shown on Figure 2-2.

33 Existing utility systems would be improved to provide better service and upgrades needed to
34 meet applicable codes. Water system upgrades, for example, would include improving the
35 chlorinating system, installing new water pumps, and replacing existing pipes and valves,
36 meters, back-flow preventers, and air valves, as needed. Sanitary sewer system upgrades
37 would include replacing sewage pipes or lining them for low-flow use. Storm drainage
38 improvements would include inspecting and replacing selected storm drains, rebuilding or

Table 2-2
Summary Comparison of Land Development Characteristics of Reuse Alternatives

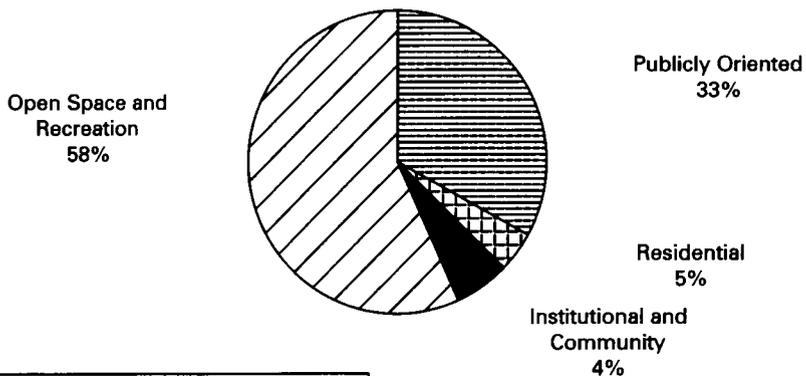
<i>Characteristic</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>
Residential	Dwelling Units	Dwelling Units	Dwelling Units
Existing residential	290	50	995 ¹
New residential	2,550	200	70
Total dwelling units	2,840	250	1,065
Publicly Oriented	Acreage	Acreage	Acreage
Themed attraction	59	74	39
Hotel/conference/lodging	25	45	14
Retail/specialty/restaurant	10	1	2
Entertainment center	0	6	0
Amphitheater	0	7	0
Wedding chapel	0	1	2
Museum	3	4	4
Mixed use/office	11	0	6
Film production	31	0	33
Marina (yacht club)	2	0	2
Other publicly oriented uses	14	14	20
Subtotal Acres	155	152	122
Institutional and Community			
Elementary school	9	0	9
Child development center	4	0	4
Fire training school	5	5	5
Warehouse/storage	0	0	4
Wastewater treatment plant	10	5	3
Brig	5	4	5
Fire station	4	2	2
Police station	3	2	3
Other institutional facilities	0	0	8
Subtotal Acres	40	18	43
Open Space and Recreation			
Golf course	0	147	0
Sports fields/complex	47	18	40
Shoreline promenade/open space ²	71	76	102
Wildlife habitat	0	18	0
Subtotal Acres	118	259	142
Land Use Categories³			
Public Oriented	155	152	122
Residential	137	21	143
Institutional and Community	40	18	43
Open Space and Recreation	118	259	142
Total Acres	450	450	450
Marina	Expansion	Expansion	Existing only
Ferry Terminals	New (west side) Retrofit (Pier 1)	New (west side) Retrofit (Pier 1)	Retrofit (Pier 12) Retrofit (Pier 1)
Approximate On-site Population	6,895	710	3,510
Approximate Employment	4,920	2,820	2,195
Approximate Average Daily Vehicle Trips	18,100	13,085	6,700
<i>Source: Draft Reuse Plan (San Francisco 1996e).</i>			
¹ Does not include 75 beds in barracks on Treasure Island.			
² Open space on Yerba Buena Island includes small areas of native habitat.			
³ The land use categories represent slightly revised versions of the land use categories discussed in the Draft Reuse Plan.			
<i>Note: The numbers provided in this table are estimates only since discussions are on-going between Navy and San Francisco. Estimates in the text and the tables are included for discussion purposes.</i>			

Alternative 1 Land Uses



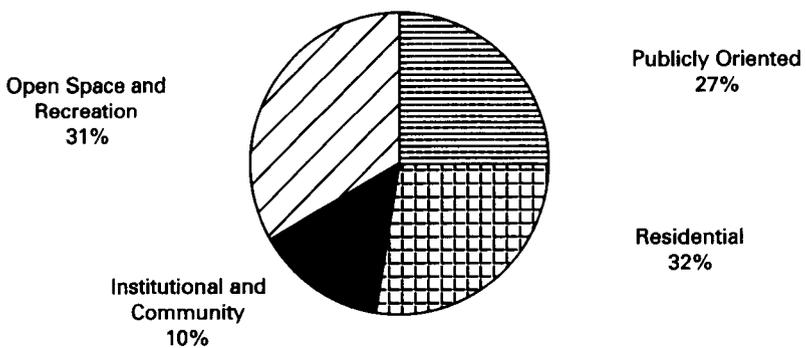
Employment: 4,920; Residents: 6,895

Alternative 2 Land Uses



Employment: 2,820; Residents: 710

Alternative 3 Land Uses



Employment: 2,195; Residents: 3,510

Percentages of land uses may vary somewhat within each alternative, especially in the area of residential and open space/recreation use.

Comparison of Reuse Alternatives

Naval Station Treasure Island, California

1 replacing pump stations, and repairing and replacing outfalls. Alternative technologies,
2 including establishing wetlands, may be considered as part of required improvements.

3 *Ferry Service*

4 Ferries would be an important mode of transportation to the islands under all of the reuse
5 alternatives. Under Alternatives 1 and 2, a new ferry terminal would be built on the west side
6 of Treasure Island. In all alternatives, Pier 1 would be retrofitted to serve as a ferry landing on
7 the east side of the island. Under Alternative 3, Pier 12 would be adapted to accommodate ferry
8 service rather than constructing a new ferry terminal.

9 Under all three reuse alternatives, ferry service would be provided between NSTI and San
10 Francisco and the East Bay, with service to and from the Ferry Building in San Francisco at the
11 foot of Market Street and Jack London Square in the Oakland/Main Street terminal in Alameda.
12 Additional ferry service under Alternatives 1 and 2 would be provided between NSTI and
13 Candlestick Point in San Francisco and Golden Gate Fields on the Berkeley and Albany border
14 in the East Bay.

15 *Dredging*

16 Dredging may be associated with modifications necessary for ferry service (new ferry terminal
17 and retrofitted piers). Dredging also may be necessary for maintenance of the marina under all
18 alternatives and expansion of the marina under Alternatives 1 and 2. The exact location and
19 amount of potential dredging is not known at present and therefore, this EIS can necessarily
20 evaluate potential impacts from dredging in only a general way. All dredging activities would
21 require permits and approvals from Bay Conservation and Development Commission (BCDC),
22 San Francisco Bay Regional Water Quality Control Board (RWQCB), and the COE, which would
23 require measures to minimize potential environmental impacts. (Disposal of dredge material is
24 discussed in section 4.10, Water Resources.)

25 **2.4.2 Alternative 1 (Preferred Alternative)**

26 Alternative 1 features a combination of publicly oriented development, open space and
27 recreation, and extensive residential development at full buildout, such as envisioned in the
28 Draft Reuse Plan. Under this alternative, the NSTI project acreage would be occupied in the
29 following manner: publicly oriented land uses, approximately 35 percent; residential, 30
30 percent; open space and recreation, 26 percent; and institutional and community services, 9
31 percent (see Figure 2-1 and Table 2-2). The four land use alternatives initially considered by the
32 LRA (see section 2.3) were used to develop and further refine a "preferred reuse concept" that
33 formed the basis of the Draft Reuse Plan, represented by Alternative 1. Figure 2-3 shows
34 proposed land uses for Alternative 1. Table E-2 in Appendix E provides detailed assumptions
35 for this alternative.

36 Seismic upgrades would include dike improvements to the entire Treasure Island perimeter,
37 using soil cement columns in areas subject to rotational dike failure and stone columns in the
38 other areas (see Figure 2-2). A new underground utility corridor would run along the perimeter
39 of the island, carrying storm and sanitary sewer mains, water mains, reclaimed water mains,

2.0 Proposed Action and Alternatives

1 and electricity, gas, and telecommunications lines. The utility corridor also would cross
2 Treasure Island along 9th Street.

3 *Publicly Oriented Uses*

4 Alternative 1 proposes 155 acres (63 ha) of publicly oriented uses. Unlike the preliminary
5 alternative, Harbor-oriented Themed Attraction, Alternative 1 has a broader diversification of
6 uses, while still proposing a Disneyland-like attraction. The major publicly oriented
7 development on Treasure Island would be a themed attraction with the potential to attract an
8 average of approximately 13,700 daily visitors and to employ up to approximately 3,500
9 seasonal and permanent workers (1,750 full-time equivalent jobs). This themed attraction
10 would be similar to Disneyland, with lighting displays, some tall structures, such as a roller
11 coaster, and at least one landmark structure assumed to be up to 100 feet (305 meters [m]) tall.
12 Maximum building density at the themed attraction would be similar to existing conditions.
13 Development also would include a 300-room and a 1,000-room hotel with three restaurants and
14 offices. Existing film production uses would be expanded by an additional 100,000 square feet
15 (9,290 m²). The total number of jobs expected to be generated by publicly oriented uses on
16 Treasure Island is 4,482.

17 Publicly oriented uses on Yerba Buena Island would include a 150-room hotel, conference
18 facilities, and a restaurant, and would generate approximately 168 new jobs. The
19 approximately 100-slip Clipper Cove Marina would be expanded to 300 slips and 100 tie-up
20 buoys, and a new 20,000 square-foot (1,858 square-meter [m²]) yacht club would be developed.
21 Existing structures also would be reused for publicly oriented activities, such as a conference
22 and reception center, and these buildings would be seismically upgraded.

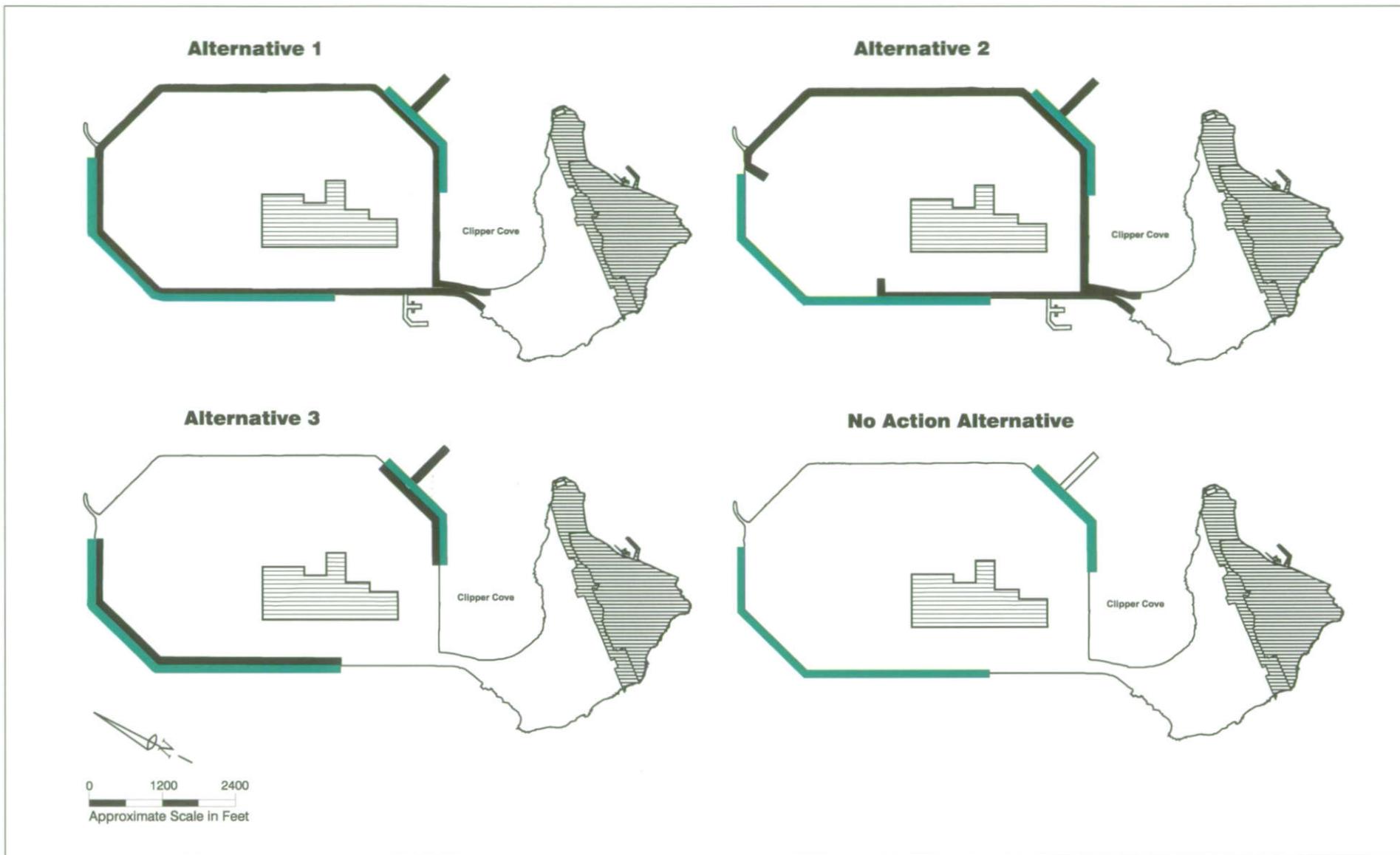
23 *Residential Uses*

24 Alternative 1 proposes 137 acres (55 ha) of residential uses. Unlike the rejected Residential
25 Neighborhood Alternative, this alternative has mixed uses including the themed attraction
26 discussed above. On Treasure Island, about 200 of the approximately 900 existing housing units
27 would be reused, and about 2,300 units would be built. On Yerba Buena Island, approximately
28 100 units of existing housing would remain in use, and 250 units would be built. The Torpedo
29 building (Building 262) would be reused as live-work units. The total number of housing units
30 associated with this reuse alternative would be about 2,850. TIHDI initially would manage the
31 leasing of 375 units from the existing housing stock on the two islands, with promise of
32 additional land for TIHDI housing if new housing is developed.

33 *Institutional*

34 Alternative 1 proposes 40 acres (16 ha) of institutional and community uses on Treasure Island,
35 generating an estimated 200 jobs. A new wastewater treatment plant would be built to replace
36 the existing plant. A new police station and a new fire station also would replace those existing
37 on Treasure Island; these facilities and an existing fire station on Yerba Buena Island would be
38 staffed with fire, paramedic, and police personnel. The elementary school, child development
39 center, fire training school, and brig would be retained and reused, for their original uses, with
40 some modifications.

41



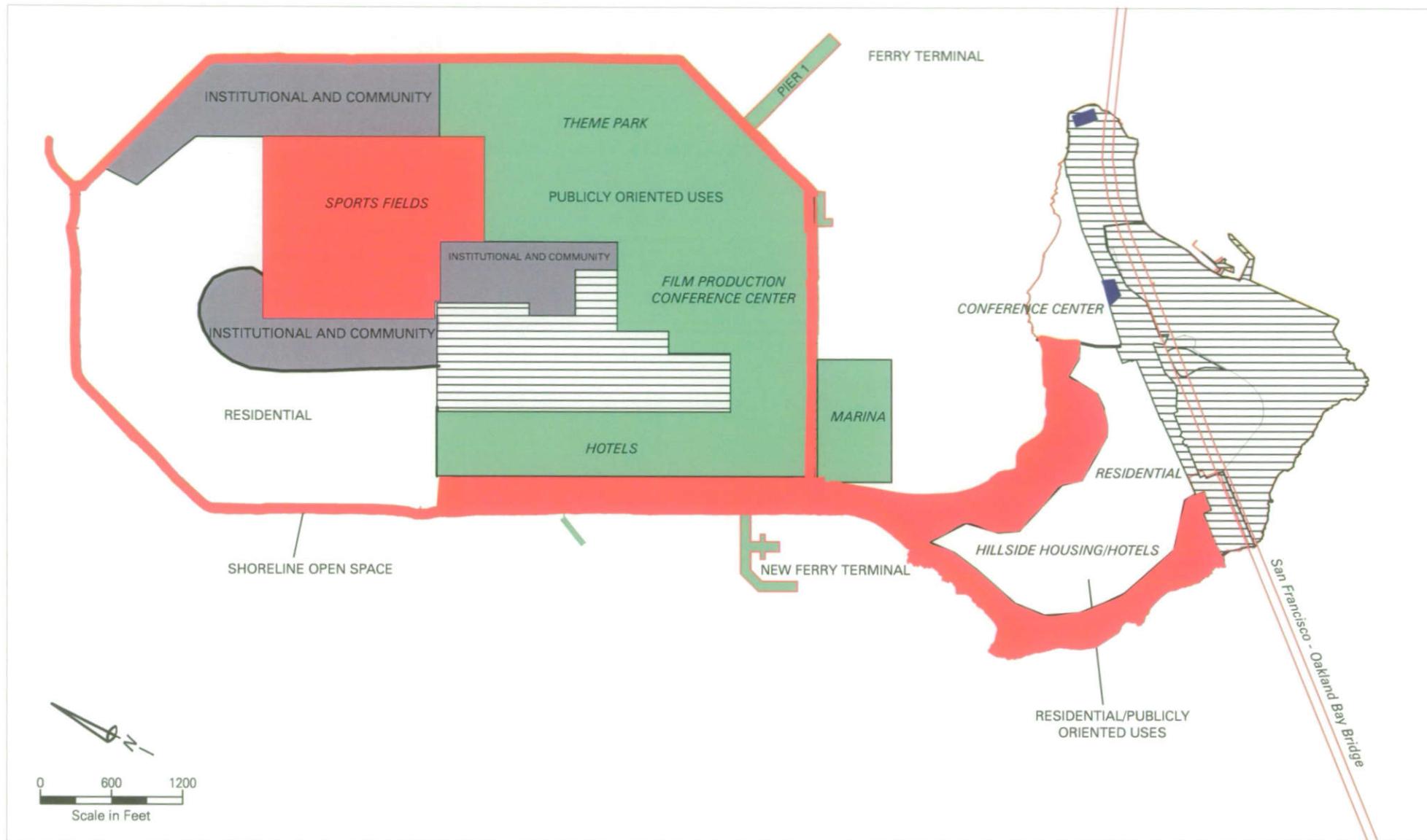
Stabilizing the Treasure Island causeway shoreline to reduce earthquake-induced lateral spreading would vary under each alternative. Full scale stabilization under Alternative 1 would be achieved by sinking rows of stone columns within 50-foot wide band along the shoreline and soil cement columns in the 6,700 linear feet of shoreline that is subject to rotational dike failure. There would be no stabilization under the No Action Alternative.

- Legend:**
-  Areas Excluded from Proposed Navy Disposal
 -  Shoreline Subject to Rotational Dike Failure
 -  Seismic Stabilization Improvements

Extent of Perimeter and Seismic Stabilization

Naval Station Treasure Island, California

Figure 2-2



Alternative 1 is similar to the development scenario described in the Draft Reuse Plan.

Legend:

- | | | | |
|---|-----------------------------|---|--|
|  | Publicly Oriented |  | Areas Excluded from Proposed Navy Disposal |
|  | Open Space and Recreation |  | Residential |
|  | Institutional and Community |  | FHWA/Caltrans Aerial Easement |

Alternative 1 Land Uses
 Naval Station Treasure Island, California

1 *Open Space and Recreation Uses*

2 Alternative 1 proposes 118 acres (48 ha) of open space and recreation uses on NSTI. The
3 existing Treasure Island shoreline open space would be widened from 25 to 50 feet (7.5 to 15 m)
4 to approximately 100 feet (30 m) and would feature a bikeway and pedestrian path. The
5 proposed perimeter band would surround Treasure Island and would be linked to a series of
6 parks, plazas, greens, and overlooks. The existing fitness center and gym would be retained,
7 and there would be new spectator and competitive sports facilities. The majority of this area
8 would consist of open playing fields for soccer, basketball courts, and tennis courts expected to
9 generate 7 new jobs. Beach areas and picnic grounds at the foot of the cove would be retained,
10 and existing mudflats would remain for shorebird forage and habitat. The hillside open space
11 extending to the water on Yerba Buena Island's steep side, including interspersed native
12 habitat, would remain as open space.

13 **2.4.3 Alternative 2**

14 Redevelopment under Alternative 2 is similar to Alternative 1, but less extensive. This
15 alternative emphasizes open space and recreation and publicly oriented uses but on a smaller
16 scale. Figure 2-4 identifies proposed land uses for Alternative 2. Table E-3 in Appendix E
17 provides detailed assumptions for this alternative.

18 Under Alternative 2, open space and recreation land uses would occupy 58 percent of NSTI
19 acreage, publicly oriented 33 percent, residential 5 percent, and institutional and community
20 services 4 percent (see Figure 2-1 and Table 2-2). The existing housing would be reused
21 initially. No new housing would be built on Treasure Island. An 18-hole golf course would
22 occupy the present housing area on the northern part of the island.

23 Regarding seismic upgrade, except for the golf course area, full-scale perimeter dike
24 improvements would be implemented around Treasure Island (see Figure 2-2). Extending a
25 stone column dike reinforcement on the east to beyond Building 461 and on the west to 9th
26 Street would reduce damage to structures, such as the brig and fire training center, in the event
27 of an earthquake. Where dike improvements would end, an approximately 500-foot (152-m)
28 soil cement column would be extended into the island (see Figure 2-2). The utility corridor
29 would be constructed around the perimeter of Treasure Island, but it would not extend along
30 the perimeter adjacent to the proposed golf course.

31 *Publicly Oriented Uses*

32 Alternative 2 proposes 152 acres (62 ha) of publicly oriented uses. A themed attraction would
33 draw up to approximately 5,500 daily visitors and would employ approximately 1,400 seasonal
34 and permanent employees (700 full-time equivalent jobs). As with Alternative 1, this themed
35 attraction would be similar to Disneyland, with lighting displays, some tall structures, such as a
36 roller coaster, and at least one landmark structure assumed to be up to 100 feet (305 m) tall.
37 However, maximum building density at the themed attraction would be less dense and would
38 include more open space and landscaping. Development would include a 700-room and 500-
39 room hotel, a 5,000-seat amphitheater, and an entertainment and retail center. The total number
40 of jobs expected to be generated by publicly oriented uses on Treasure Island is 2,513.

2.0 Proposed Action and Alternatives

1 The Clipper Cove Marina would be expanded to have 500 to 675 slips and tie-up buoys.
2 Existing facilities (e.g., Senior Officers Quarters 1 through 7) would be reused for publicly
3 oriented uses, such as a 100,000 square-foot (9,290 m²) conference and reception center or bed
4 and breakfast facilities. The Torpedo building (Building 262) would be reused as a restaurant.
5 The number of jobs expected to be generated by publicly oriented uses on Yerba Buena Island is
6 180.

7 *Residential Uses*

8 Alternative 2 proposes 21 acres (8 ha) of residential uses. On Treasure Island, all housing
9 would eventually be demolished. There may be replacement homeless housing for TIHDI to
10 manage and lease elsewhere off-island. On Yerba Buena Island, approximately 50 existing
11 housing units would remain and approximately 200 new units would be added, for a total of
12 about 250 units.

13 *Institutional and Community Uses*

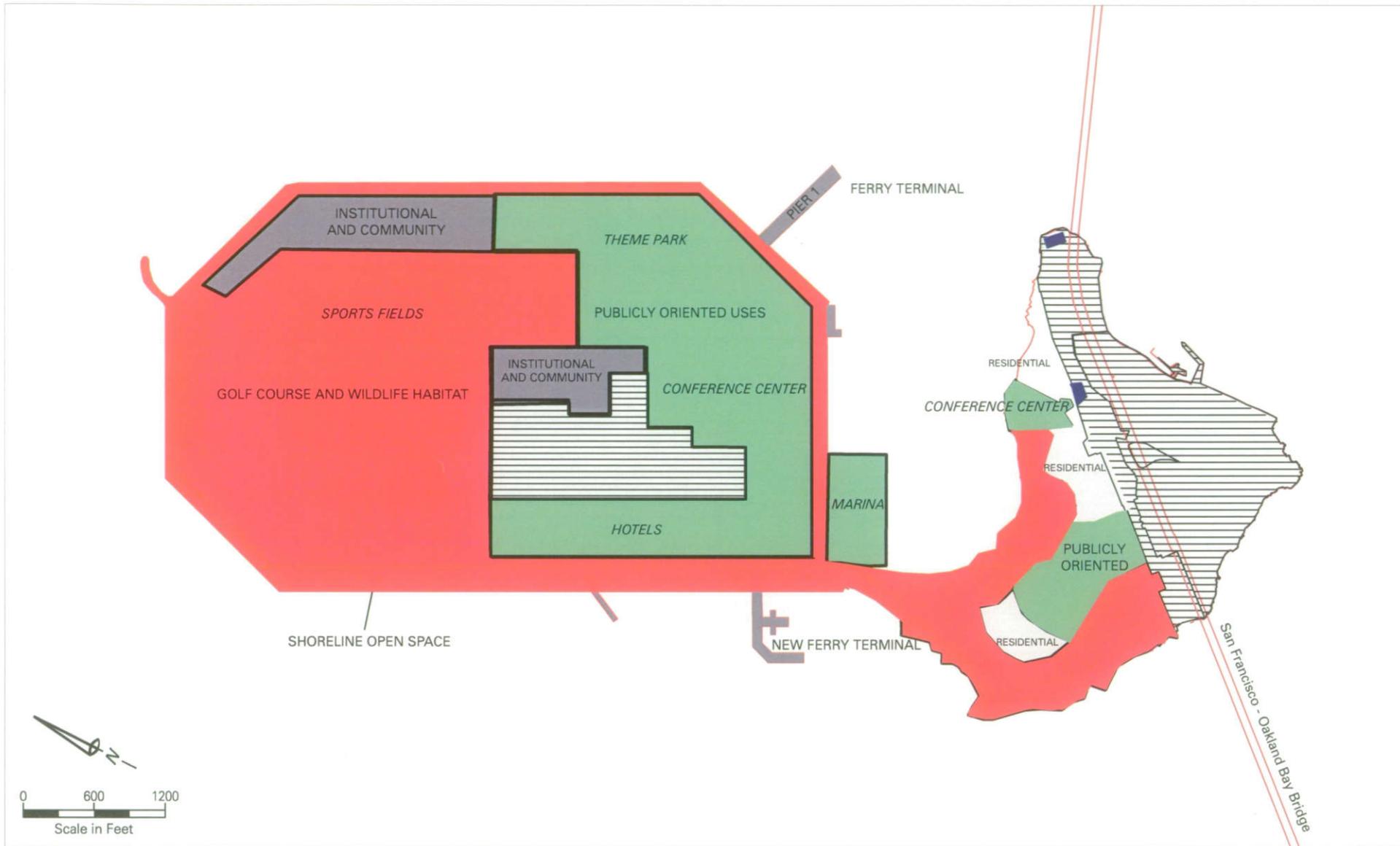
14 Alternative 2 proposes 18 acres (7 ha) of institutional and community uses on Treasure Island,
15 generating an estimated 103 jobs. A new wastewater treatment plant would be built to replace
16 the existing plant. Wetlands also could be constructed for treating stormwater runoff (see
17 description below under Open Space and Recreation Uses). The elementary school and the
18 child development center would ultimately be removed. A new fire station and police station
19 would be built; these facilities and an existing fire station on Yerba Buena Island would be
20 staffed with fire, paramedic, and police personnel. The brig and the fire training school would
21 remain and be reused, for their original uses, with some modifications. The fire training school
22 would be modified to include passenger aircraft fire-fighting training.

23 *Open Space and Recreation Uses*

24 Alternative 2 proposes 259 acres (104 ha) of open space and recreation uses. Similar to
25 Alternative 1, the shoreline open space would be widened to approximately 100 feet (30 m) and
26 would feature a bikeway and pedestrian path. An 18-hole golf course would be developed on
27 the northern half of Treasure Island. An approximately 20-acre (8-ha) area near the proposed
28 golf course would be set aside for wildlife habitat, for wildlife observation, and possibly for
29 wetlands. There are no wetlands on NSTI. If wetlands were proposed, the type of wetlands
30 would need to be defined and further studies conducted as part of site-specific environmental
31 documentation. Wetlands could be introduced and analyzed as part of proposed infrastructure
32 (e.g., stormwater system) improvements. The hillside open space extending to the water on
33 Yerba Buena Island's steep side, including interspersed native habitat, would remain as open
34 space.

35 **4.4 Alternative 3**

36 Alternative 3 represents the scenario where little new development would occur, and existing
37 facilities would be reused. The wastewater treatment facility would be retained, and the
38 existing housing and other structures would be reused. Building upgrades would include
39 rehabilitation to meet life safety requirements recommended by the Federal Emergency



Alternative 2 emphasizes open space/recreation and publicly oriented land uses.

Legend:

- | | | | |
|---|-----------------------------|--|--|
|  | Publicly Oriented |  | Areas Excluded from Proposed Navy Disposal |
|  | Open Space and Recreation |  | Residential |
|  | Institutional and Community |  | FHWA/Caltrans Aerial Easements |

Alternative 2 Land Uses

Naval Station Treasure Island, California

Figure 2-4

1 Management Agency (FEMA)-178 evaluations and other code requirements. Minimal
2 development would occur.

3 Figure 2-5 identifies proposed land uses for Alternative 3. Table E-4 in Appendix E provides
4 detailed assumptions for this alternative. Under Alternative 3, open space and recreation land
5 uses would occupy 31 percent of NSTI acreage, residential 32 percent, publicly oriented 27
6 percent, and institutional and community services 10 percent (see Figure 2-1 and Table 2-2).
7 Reuse under this alternative could include uses similar to those under existing leasing actions,
8 such as film production, the conference center, fire-fighting school, marina, and elementary
9 school. These uses would continue through 2015 under this alternative.

10 Seismic upgrade dike improvements would occur along those areas of Treasure Island subject
11 to rotational dike failure (Figure 2-2).

12 ***Publicly Oriented Uses***

13 Alternative 3 proposes 122 acres (49 ha) of publicly oriented uses. A themed attraction would
14 reuse existing facilities and draw up to an average of approximately 2,740 daily visitors and
15 employ up to approximately 700 seasonal and permanent workers (350 full-time equivalent
16 jobs). Compared to Alternatives 1 and 2, the themed attraction would be much smaller in size
17 with less extensive development. It would include at least one landmark structure assumed to
18 be up to 100 feet (305 m) tall, and other new buildings would be similar in height to existing
19 conditions.

20 On Yerba Buena Island, the Nimitz Conference Center (Building 140) would be reused, and the
21 Torpedo building (Building 262) would be reused as a restaurant (building numbers are shown
22 on Figure E-1 in Appendix E). On Treasure Island, the Fogwatch Restaurant (Building 227)
23 would continue to be a restaurant and the existing film production uses would be expanded.
24 Building 450 would be reused either for film production or for other publicly oriented uses,
25 such as mixed use or office space. The existing marina would be retained but would not be
26 expanded, and a new 20,000 square-foot (1,858 m²) yacht club would be developed. The
27 number of jobs expected to be generated by publicly oriented uses on Treasure Island is 1,736.

28 On Yerba Buena Island, Quarters 1-7 would be reused for conference and reception and
29 lodging. The number of jobs expected to be generated by publicly oriented uses on Yerba
30 Buena Island is 180.

31 ***Residential Uses***

32 Alternative 3 proposes 143 acres (58 ha) of residential uses. On Treasure Island, approximately
33 900 existing housing units (as well as approximately 75 beds in barracks) would be reused, but
34 no new units would be constructed. Approximately 200 units of the existing housing units
35 would be made available to TIHDI for leasing. On Yerba Buena Island, approximately 100 units
36 would be reused, and about 70 housing units would be constructed by 2015. The number of
37 housing units associated with this alternative would be approximately 1,100.

1 ***Institutional and Community Uses***

2 Alternative 3 proposes 43 acres (17 ha) of institutional and community uses on Treasure Island,
3 generating an estimated 276 jobs. Some of the same institutional and community facilities
4 identified under Alternative 1 would be retained under this alternative, such as the school, the
5 brig, the fire-fighting training school, and the fire station. A new police station would be
6 constructed on Treasure Island. The fire and police facilities, including an existing fire station
7 on Yerba Buena Island, would be staffed with fire, paramedic, and police personnel. The
8 existing wastewater treatment plant would continue to be used. This alternative would include
9 4 acres (1.5 ha) of warehouse use.

10 ***Open Space and Recreation Uses***

11 Alternative 3 proposes 142 acres (57 ha) of open space and recreation uses. Similar to
12 Alternative 1, the shoreline open space would be widened to approximately 100 feet (30 m) and
13 would feature a bikeway and pedestrian path. Existing indoor recreation facilities, such as the
14 gym and fitness center, would become part of a larger sports facility. A series of open spaces
15 would be created north of Building 1. The hillside open space extending to the water on Yerba
16 Buena Island's steep side, including interspersed native habitat, would remain as open space.

17 **2.4.5 No Action Alternative**

18 No action may be defined as the continuation of an existing plan, policy, or procedure or as
19 failure to implement an action. The No Action Alternative provides a benchmark to compare
20 the magnitude of the environmental effects of the various alternatives.

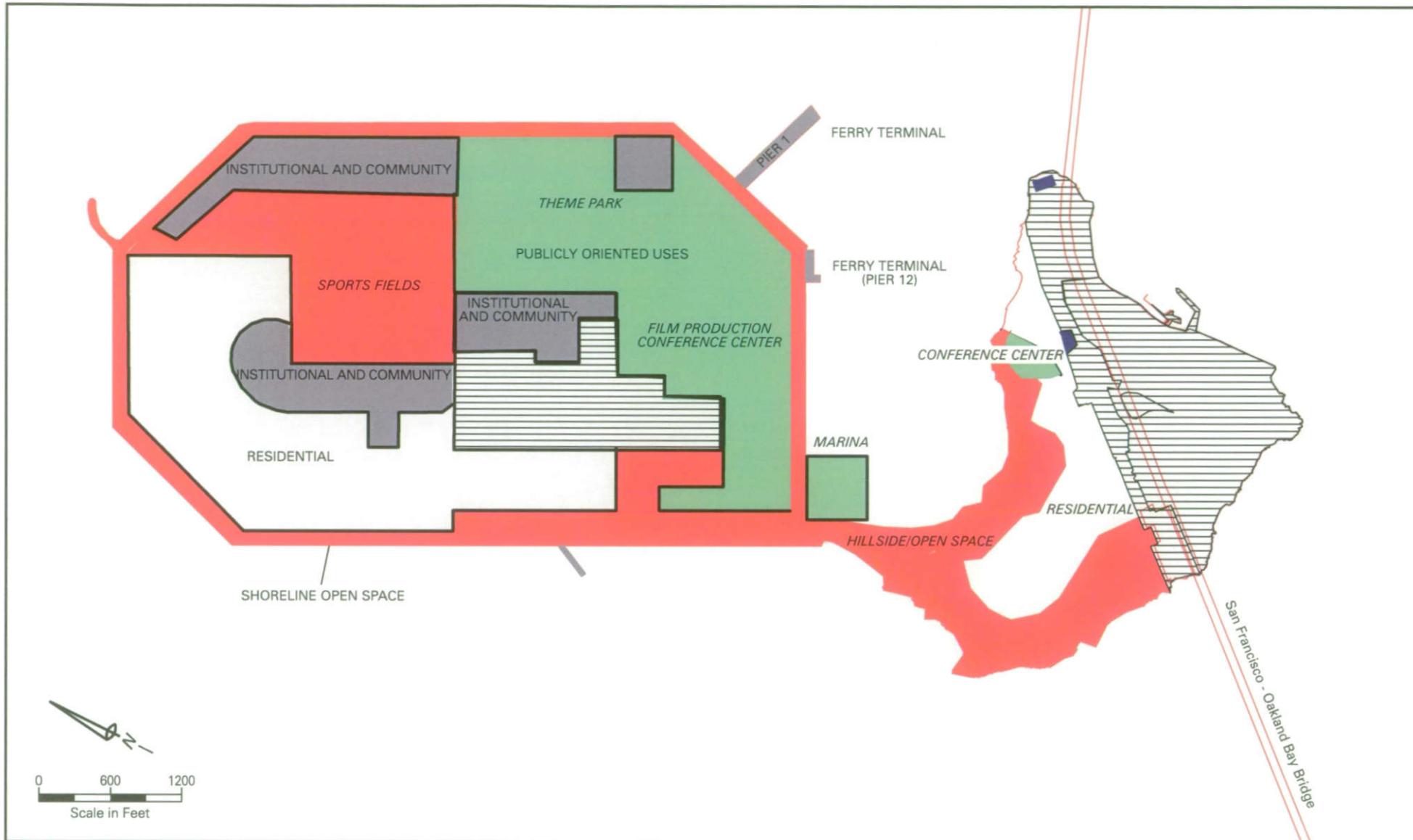
21 Under the No Action Alternative, Navy would retain ownership of NSTI. Except for existing
22 building leases, all buildings would remain vacant, and all other facilities would remain but
23 would be unused. Existing interim uses on NSTI include film production facilities, residential
24 housing, a marina, a fire-fighting school, special events and meeting center, warehouses, and
25 multipurpose office space. No new leases would be entered into under the No Action
26 Alternative, and existing leases would continue until they expire or are terminated.

27 The property would be held in an inactive or caretaker status, as discussed in Chapter 1. Navy
28 and San Francisco executed a cooperative agreement in April 1997 and amended it in
29 September 1997. Under this agreement, San Francisco is responsible for providing those
30 caretaker services. Site environmental cleanup would continue until completed. No
31 construction would occur under this alternative, except as allowed by existing lease
32 authorization. Approximately 50 persons are assigned to perform caretaker activities.

33 **2.5 PREFERRED ALTERNATIVE**

34 Navy has selected Alternative 1 as the preferred alternative because it best reflects the Draft
35 Reuse Plan, and would result in no significant unavoidable adverse effects.

36 NEPA also requires that an environmentally preferable alternative be identified. The No Action
37 Alternative would have no significant impacts, and for NEPA purposes it would be the
38 environmentally preferable alternative. However, the No Action Alternative would not meet



Alternative 3 would reuse existing facilities and would involve little new development.

Legend:

- | | | | |
|---|-----------------------------|--|--|
|  | Publicly Oriented |  | Areas Excluded from Proposed Navy Disposal |
|  | Open Space and Recreation |  | Residential |
|  | Institutional and Community |  | FHWA/Caltrans Aerial Easement |

Alternative 3 Land Uses
Naval Station Treasure Island, California

1 the Navy's goals of property disposal and rapid economic recovery consistent with DBCRA
2 1990 and the Department of Defense Rule on Revitalizing Base Closure Communities-Base
3 Closure Community Assistance (DoD Rule) (32 C.F.R. Part 175 [1998]). It also would not be
4 consistent with former President Clinton's Five-Part Plan for Revitalizing Base Closure
5 Communities, which emphasizes local economic redevelopment of closing military facilities
6 and creation of new jobs as the means to revitalize these communities (32 C.F.R. Part 174
7 [1998]). The No Action Alternative would result in continued caretaker activities; therefore,
8 socioeconomic gains in terms of new jobs and increased revenue in the region would not be
9 realized.

10 2.6 PERMIT REQUIREMENTS AND RELATED COORDINATION

11 Approvals and permits would be required for disposal and subsequent reuse of NSTI. Table
12 2-3 lists the federal, state, and local permits, policies, and actions that may be required and lists
13 the agencies that may use the information presented in the EIS to make decisions regarding
14 issuance of permits or approvals.

15 2.7 COMPARISON OF ALTERNATIVES, INCLUDING IMPACTS AND 16 MITIGATION

17 NEPA requires that the EIS include a presentation of the alternatives in comparative form, to
18 define the issues and to provide a clear basis for choice among options by the decision-makers
19 and the public. Table 2-4 lists potential significant impacts and corresponding mitigation
20 measures for each alternative. Impacts that are not significant are described in Chapter 4 but
21 are not included on this table.

22 Navy cannot control reuse after the property is conveyed from federal ownership; therefore,
23 implementation of mitigation measures for reuse-related environmental impacts would be the
24 responsibility of the LRA and not the responsibility of Navy.

25 Implementation of suggested mitigation measures would reduce all impacts to a level below
26 significant except for impacts on cultural resources under Alternative 2. Implementation of
27 Alternative 2 would require demolition of Building 2 and Building 3 on Treasure Island,
28 buildings eligible for listing on the National Register of Historic Places (NRHP). This would
29 result in the loss of significant historic resources. This adverse effect can be lessened or reduced
30 by recording the affected resources to the standards of Historic American Buildings Survey
31 (HABS)/Historic American Engineering Record (HAER), but recordation would not eliminate
32 the adverse effect caused by the demolition of NRHP-eligible resources.
33

Table 2-3. Permits or Actions Potentially Required

<i>Issuing Agency</i>	<i>Permit or Action</i>	<i>Requirement</i>
Permits Required Prior to Disposal		
U.S. Environmental Protection Agency; California Department of Toxic Substances Control	CERCLA, 42 U.S.C. §§ 9601-9675	Requires deed that contains hazardous substance information and covenant warranting necessary remedial action has been taken or, in an early transfer, deferral with governor's approval.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB)	Porter-Cologne Water Quality Control Act (Cal. Water Code §§ 13000-13999.19)	Compliance with remedial action plans relative to groundwater.
State Historic Preservation Officer/ Advisory Council on History Preservation	National Historic Preservation Act, Section 106 Compliance, 16 U.S.C. § 470f (West 1985 & Supp. 1998)	Requires a memorandum of agreement to mitigate impacts to NSTI historic buildings.
Permits Related to Reuse/Responsibility of Local Reuse Authority		
San Francisco Bay Conservation and Development Commission	McAteer-Petris Act, Cal. Gov't Code §§ 66600-66682 (West 1997 & Supp. 1999) and San Francisco Bay Plan	Permit for fill, dredging, and construction in shoreline band.
U.S. Environmental Protection Agency; U.S. Army Corps of Engineers	Clean Water Act, Section 404, 33 U.S.C. § 1344 River and Harbors Act, Sections 9 and 10, 33 U.S.C. §§ 401, 403	Permit required for discharging dredged material, placing fill and pilings in waters of the U.S. Permit required for construction in navigable waters of the U.S.
Bay Area Air Quality Management District	Permit to Construct and Permit to Operate	Depends on specific future construction/operation activities
U.S. Environmental Protection Agency; San Francisco Bay Regional Water Quality Control Board	National Pollutant Discharge Elimination System (NPDES) Permit under Clean Water Act Section 402, 33 U.S.C. § 1342	Required for discharge of pollutants from any point source in waters of the U.S. and for stormwater discharges associated with industrial activity and from large and medium municipal storm sewer systems. US EPA must endorse NPDES permits issued by the RWQCB.
US Coast Guard	Aid to Navigation Permit	Permit required for navigational hazards.
City and County of San Francisco	EIR certification Adopt mitigation monitoring program General plan amendments Consistency with Priority Policies Building and demolition permits Redevelopment Plan adoption	Various permits and approvals required to accommodate proposed reuse development.

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

(Page 1 of 16)

Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Land Use	<i>Impact: Land use policy.</i> The zone classifications that would be required for Alternative 1 would be inconsistent with the existing San Francisco General Plan designation and zoning classification.	<i>Impact: Land use policy.</i> Similar to that described for Alternative 1.	<i>Impact: Land use policy.</i> Similar to that described for Alternative 1.	No impacts are expected.
	<i>Mitigation:</i> To achieve consistency between the selected reuse alternative and city policies, it will be necessary to amend the San Francisco General Plan to include land use designations for surplus property on Treasure Island and Yerba Buena Island prior to approving future land use actions.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	
Visual Resources	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Socioeconomics	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.
Cultural Resources	No significant impacts are expected.	<i>Impact: Alteration or demolition of historic resources.</i> Alternative 2 involves the demolition of Building 2 and Building 3 on Treasure Island, both of which are eligible for listing on the NRHP.	No significant impacts are expected.	No impacts are expected.

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

(Page 2 of 16)

Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Cultural Resources (continued)		<p><i>Mitigation:</i> The irreversible loss of significant historic resources cannot be fully mitigated. HABS/HIAER recordation would reduce but would not eliminate significant impacts caused by demolition.</p>		
Transportation	<p><i>Impact:</i> Increased volumes and queuing on SFOBB/I-80 Yerba Buena Island westbound on-ramp (west side). Alternative 1 would result in peak-hour traffic volumes on the SFOBB/I-80 Yerba Buena Island westbound on-ramp on the west side of Yerba Buena Island that would exceed the current ramp capacity of 330 vph. The projected demand would result in a queue ranging from 7 vehicles (during the AM peak hour) to 239 vehicles (during the weekend midday peak hour). This queue would constrain vehicular circulation on the island.</p>	<p>No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island westbound on-ramp (west side).</p>	<p>No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island westbound on-ramp (west side).</p>	<p>No impacts are expected.</p>
	<p><i>Mitigation.</i> SFOBB/I-80 Yerba Buena Island on-ramps are substandard by current Caltrans standards, primarily in acceleration/deceleration lengths, ramp radii, and sight distances.</p>			

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
<p>Transportation (continued)</p>	<p>Upgrading the on-ramps would increase ramp capacity and level of operation and decrease queuing impacts. However, upgrades to the on-ramps may be constrained by the geology of the site (elevation change and bedrock) and structural limitations due to the viaduct.</p> <p>Implement measures, including signage and notices to residents, to encourage residents and visitors to use the second westbound on-ramp east of the Yerba Buena Island tunnel.</p> <p>Redirecting traffic during the weekend midday peak hour to the second on-ramp east of the Yerba Buena Island tunnel would reduce the queue at the first westbound on-ramp.</p>			

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Transportation (continued)	<p>Implement a Travel Demand Management (TDM) program to further reduce traffic generation during peak hours, especially during the weekend.</p> <p>Implement additional or enhanced TDM measures, such as discounted ferry passes, flex-time, public relations campaigns, and giving employees working on Treasure Island or Yerba Buena Island preferential access to housing on NSTI, to encourage ferry use or to encourage vehicle-trips during the nonpeak period to reduce queues on both westbound on-ramps to tolerable levels.</p> <p>Monitor NSTI ramp traffic volumes to ensure that the transportation goals and objectives established by the Draft Reuse Plan are successfully implemented.</p> <p>Monitor NSTI bus transit demand on an annual basis (or at each phase of development) and ensure that planned services are implemented to meet or exceed demand. Implement a similar monitoring program for ferry demand.</p>			

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Transportation (continued)	Restripe the portion of Treasure Island Road between the Main Gate and the westbound on-ramp on the west side of the Yerba Buena Island tunnel from two lanes to accommodate three traffic lanes.			
	<u>Impact: Increased volumes and queuing on SFOBB/I-80 Yerba Buena Island eastbound off-ramp (west side).</u> Alternative 1 would result in a substantial increase in traffic volumes on the eastbound off-ramp on the west side of Yerba Buena Island that would exceed the practical capacity of the off-ramp (500 vph), resulting in a maximum queue of 36 vehicles, or about 700 feet (219 m) on the SFOBB.	No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island eastbound off-ramp (west side).	No significant impacts are expected for increased volumes and queuing on SFOBB/I-80 Yerba Buena Island eastbound off-ramp (west side).	No impacts are expected.
	<u>Mitigation.</u> Use traffic control measures, such as signage, to encourage eastbound motorists to use the second Yerba Buena off-ramp (the off-ramp on the east side of Yerba Buena Island). Implement TDM and monitoring measures to reduce traffic volumes on this off-ramp.			

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Transportation (continued)	<p><u>Impact: Increased volumes on SFOBB/I-80 Yerba Buena Island eastbound on-ramp (east side).</u> Alternative 1 would result in substantial increases in traffic volumes during the weekend midday peak hour on the eastbound on-ramp on the east side of Yerba Buena Island. While the increased volumes would be accommodated by the upgrade of this ramp as part of the SFOBB East Span project, it may create a secondary impact on potential traffic delays on SFOBB.</p>	<p>No significant impacts are expected for increased volumes on SFOBB/I-80 Yerba Buena Island eastbound on-ramp (east side).</p>	<p>No significant impacts are expected for increased volumes on SFOBB/I-80 Yerba Buena Island eastbound on-ramp (east side).</p>	<p>No impacts are expected.</p>
	<p><u>Mitigation:</u> Caltrans should consider the installation of a ramp metering device in the future if the added traffic onto this on-ramp would cause significant traffic delay on SFOBB mainline.</p>			
	<p><u>Impact: Increased peak spreading on SFOBB/I-80.</u> Under Alternative 1, increased traffic onto and off of the SFOBB during the AM peak period (6:30 to 9:30) and PM peak period (3:30 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from LOS D to LOS F during the last hour of the AM peak period (8:30 to 9:30) and to deteriorate from LOS B to LOS E</p>	<p><u>Impact: Increased peak spreading on SFOBB/I-80.</u> Under Alternative 2, increased traffic onto and off of the SFOBB during the AM peak period (6:30 to 9:30) and PM peak period (3:30 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from LOS D to LOS E or LOS F</p>	<p><u>Impact: Increased peak spreading on SFOBB/I-80.</u> Under Alternative 3, increased traffic onto and off of the SFOBB during the AM peak period (6:30 to 9:30) and PM peak period (3:30 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from LOS D to LOS F during the last hour of the AM peak</p>	<p>No impacts are expected.</p>

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Transportation (continued)	or LOS F during the first hour of the PM peak period (3:30 to 4:30).	during the last hour of the AM peak period (8:30 to 9:30) and to deteriorate from LOS B to LOS E or LOS F during the first hour of the PM peak period (3:30 to 4:30).	period (8:30 to 9:30) and to deteriorate from LOS B to LOS E or LOS F during the first hour of the PM peak period (3:30 to 4:30).	
	<i>Mitigation.</i> Monitor traffic volumes at each phase of development and if it is determined that traffic from NSTI is constraining the capacity of the SFOBB, either more aggressive TDM and transit improvements must be implemented or additional developments should be delayed until such improvements are implemented.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	
	<u>Impact: Transit operations – bus service to East Bay.</u> Lack of direct bus service between NSTI and the East Bay is a significant and mitigable impact.	<u>Impact: Transit operations – bus service to East Bay.</u> The impact would be similar to that described under Alternative 1.	<u>Impact: Transit operations – bus service to East Bay.</u> The impact would be less than that described under Alternative 1 but would remain significant but mitigable.	No impacts are expected.

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Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Transportation (continued)	<p><i>Mitigation:</i> Establishing direct transit service between NSTI and the East Bay would mitigate this impact to a not significant level. Bus service would need to be at 10-minute headways (the interval between the trips of 2 successive vehicles) throughout the day during the weekday and at 15-minute headways throughout the day during the weekend.</p> <p>Monitor NSTI bus transit demand on an annual basis (or at each phase of development) and ensure that planned services are implemented to meet or exceed demand.</p> <p>Implement TDM measures to encourage transit rather than auto use.</p>	<p><i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1. However, at build-out, bus service would need to be at 15-minute headways throughout the day during both weekdays and weekends.</p>	<p><i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1. However, at build-out, bus service would need to be at 20-minute headways throughout the day during weekdays and 15-minute headways throughout the day during weekends.</p>	
Air Quality	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.
Noise	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Biological Resources	<p><u>Impact: Mudflat Habitat Disturbance.</u> Significant impacts to mudflat habitat, including eelgrass beds, may occur as a result of increased pedestrian and boating activity around Clipper Cove. Expanding the marina or constructing a yacht harbor, new docks, or other structures that would cover the surface of the water would impact Waters of the United States but would require a permit from the BCDC and the COE.</p>	<p><u>Impact: Disturbance to sensitive mudflat habitat.</u> The impacts on mudflat habitat associated with pedestrians and boating activity would be similar, but reduced, from that described for Alternative 1. Pedestrian impacts would be approximately half of Alternative 1 while boating traffic impacts would be approximately 20 percent higher than Alternative 1.</p>	<p><u>Impact: Mudflat Habitat Disturbance.</u> The impacts on mudflat habitat associated with pedestrians and boating activity would be reduced from that described for Alternative 1 but would remain significant but mitigable.</p>	No impacts are expected.
	<p><u>Mitigation:</u> Minimize disturbance to sensitive habitats during construction. Prepare and implement a plan to minimize disturbance of sensitive habitats due to recreational activity. Permittee could be required to post signs along the shore adjacent to the mudflats and at the marina to inform pedestrians and recreational boaters that the mudflats are a protected sensitive area and that trespassing is not permitted. Buoys could be placed in the bay to identify the restricted mudflat area. A 5-mph (8 kph) zone could be established in Clipper Cove to minimize shoreline and mudflat</p>	<p><u>Mitigation.</u> Mitigation measures would be the same as described for Alternative 1.</p>	<p><u>Mitigation:</u> Mitigation measures would be the same as described for Alternative 1.</p>	

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Biological Resources (continued)	erosion. Any impacts related to construction or fill would be addressed during the COE Section 404 permitting process.			
	<p><u>Impact: Pedestrian and Boating Impacts on Migratory Birds.</u> Increased pedestrian and boating activity around Clipper Cove could have a significant impact on shorebirds by affecting mudflats and eelgrass beds where shorebirds forage.</p>	<p><u>Impact: Pedestrian and Boating Impacts on Wading Shorebirds.</u> Increased pedestrian and boating activity around Clipper Cove could have a significant impact on shorebirds by affecting mudflats and eelgrass beds where shorebirds forage. Pedestrian impacts would be approximately half of Alternative 1 while boating traffic impacts would be approximately 20 percent higher than Alternative 1.</p>	<p><u>Impact: Pedestrian and Boating Impacts on Wading Shorebirds.</u> Increased pedestrian and boating activity around Clipper Cove could have a significant impact on shorebirds by affecting mudflats and eelgrass beds where shorebirds forage. These impacts are likely to be reduced under Alternative 3 as there would be less of an increase in boating traffic compared with Alternative 1.</p>	No impacts are expected.

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Biological Resources (continued)	<i>Mitigation.</i> In conjunction with permitting by COE and BCDC, permittee could be required to post signs along the shore adjacent to the mudflats and at the marina, informing pedestrians and boaters that the mudflats are a protected and sensitive area. Placing buoys in the bay, identifying the mudflat area as restricted, and establishing a five-mph (8 kph) zone in Clipper Cove could also reduce impacts.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	
	<i>Impact: Pedestrian and Boating Impacts on EFH.</i> Increased boat and pedestrian activity around Clipper Cove could have an indirect significant impact on EFH by degrading eelgrass vegetated areas and shallow water and mudflat areas that provide important fish spawning, rearing, and foraging habitat.	<i>Impact: Pedestrian and Boating Impacts on EFH.</i> Increased pedestrian and boating activity around Clipper Cove and along the perimeter of the islands could have a significant impact on EFH, as described under Alternative 1.	<i>Impact: Pedestrian and Boating Impacts on EFH.</i> Increased pedestrian and boating activity around Clipper Cove and along the perimeter of the islands could have a significant impact on EFH, as described under Alternative 1.	No impacts are expected.
	<i>Mitigation.</i> Proposed mitigation measures are the same as those discussed under impacts to mudflat habitat above.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation.</i> Mitigation measures would be the same as described for Alternative 1.	

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Geology and Soils	<p><u>Impact: Exposure of individuals and property to liquefaction.</u> Seismically induced liquefaction could result in ground disturbances associated with lateral spreading and differential settlement.</p>	<p><u>Impact: Exposure of individuals and property to liquefaction.</u> Seismically induced liquefaction could result in ground disturbances associated with lateral spreading and differential settlement.</p>	<p><u>Impact: Exposure of individuals and property to liquefaction.</u> Seismically induced liquefaction could result in ground disturbances associated with lateral spreading and differential settlement.</p>	No impacts are expected.
	<p><u>Mitigation.</u> A zone of "improved ground" would be created around the perimeter of the island to reduce lateral spreading. Interior island areas shall be similarly improved to reduce large differential settlement. All sensitive structures (e.g., buildings greater than three stories, buildings intended for public occupancy, structures supporting essential services, and buildings housing schools, medical, police, and fire facilities) shall be supported on pile systems or other specially designed foundations. Detailed geotechnical studies shall be completed in accordance with San Francisco requirements for individual development sites.</p>	<p><u>Mitigation:</u> Mitigation measures would be the same as described for Alternative 1.</p>	<p><u>Mitigation:</u> Mitigation measures would be the same as described for Alternative 1.</p>	

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Water Resources	<p><i>Impact: Exposure of individuals and property to ponding from high tides.</i> The installation of residential development in low-lying areas on Treasure Island would result in increased exposure of occupants, visitors, and property to ponding hazards due to seepage through the dike during some high tide events.</p>	<p>No significant impacts are expected from exposure of individuals and property to ponding from high tides.</p>	<p><i>Impact: Exposure of individuals and property to ponding from high tides.</i> The impact would be similar to that described for Alternative 1.</p>	<p>No impacts are expected.</p>
	<p><i>Mitigation:</i> Filling low-lying portions of the residential area to at least 9 feet (3 m) National Geodetic Vertical Datum (NGVD) prior to development would mitigate this impact. In addition, other low-lying areas within 500 feet (152 m) of the Treasure Island perimeter should be similarly filled before development is allowed.</p>		<p><i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1.</p>	

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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Resource Area	Alternative 1	Alternative 2	Alternative 3	No Action Alternative
Water Resources (continued)	<i>Impact: Exposure of individuals and property to flooding.</i> Developing and reusing Treasure Island under Alternative 1 could expose occupants, visitors, and property to flooding hazards caused by dike overtopping during storms.	<i>Impact: Exposure of individuals and property to flooding.</i> This alternative would subject residents and daily visitors on the northern half of Treasure Island, where a golf course is proposed, to existing flood hazards. Flood hazards on the southern portion of the site would be similar to those described for Alternative 1.	<i>Impact: Exposure of individuals and property to flooding.</i> Alternative 3 could subject occupants, visitors, and property to substantial flooding hazards throughout Treasure Island.	No impacts are expected.
	<i>Mitigation:</i> Set back development inboard of the perimeter dike to allow room for periodic dike raising without substantially increasing Bay fill. Raise the dike as necessary to account for site settlement, changes in maximum tidal heights, and rises in sea levels. In addition, inspect the dike after each major storm to identify repair needs, and repair the dike promptly.	<i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1.	<i>Mitigation:</i> Mitigation measures would be the same as described for Alternative 1.	No impacts are expected.
Utilities	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.
Public Services	No significant impacts are expected.	No significant impacts are expected.	No significant impacts are expected.	No impacts are expected.

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

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<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Hazardous Materials and Waste	<p><u>Impact: Installation Restoration Program (IRP).</u> Construction activities at NSTI associated with future development of the housing unit area, including demolition of existing structures, may interfere with remedial actions under CERCLA.</p>	<p><u>Impact: Installation Restoration Program (IRP).</u> Development of a golf course in the northern part of the island would involve demolition of existing structures and the grading and reconfiguring of the soil, which may interfere with remedial actions under CERCLA.</p>	<p><u>Impact: Installation Restoration Program (IRP).</u> If subsequent redevelopment of the housing area involving demolition of existing structures and the grading and reconfiguring of the soil were to occur, it may interfere with remedial actions conducted under CERCLA.</p>	No impacts are expected.
	<p><u>Mitigation.</u> The Navy is in the process of implementing various remedial actions at NSTI pursuant to and in accordance with the requirements of CERCLA and the NCP that will remove, manage, or isolate any potentially hazardous substances present on the property prior to conveyance. These remedial actions will ensure that human health and the environment will be protected based on the land uses specified in the Draft Reuse Plan. If the CERCLA remedy for a particular site includes land use controls, the acquiring entity or entities will be required to comply with the land use controls during construction or operations to ensure continued protection of human health and the environment.</p>	<p><u>Mitigation.</u> Mitigation measures would be the same as described for Alternative 1.</p>	<p><u>Mitigation.</u> Mitigation measures would be the same as described for Alternative 1.</p>	

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2.0 Proposed Action and Alternatives

Table 2-4. Summary of Potential Significant Environmental Consequences and Mitigation Measures

(Page 16 of 16)

<i>Resource Area</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	<i>No Action Alternative</i>
Hazardous Materials and Waste (continued)	Subsequent redevelopment of the housing area which would involve demolition of existing structures and the grading and reconfiguring of the soil would likely be subject to land use controls on the property, including compliance with a City-administered soil management plan that would require soil and groundwater disturbance be permitted subject to proper characterization and management.			
	In addition, deeds conveying the affected property will contain a notice that areas of the property not subject to remediation efforts (such as areas beneath existing foundations) may require additional characterization and possible response actions subject to appropriate regulatory oversight. Adherence to land use controls and regulatory requirements would mitigate potentially significant impacts to an acceptable level.			

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Disposal and Reuse of Naval Station Treasure Island FEIS
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2.0 Proposed Action and Alternatives

CHAPTER 3.0

Affected Environment

3.0 AFFECTED ENVIRONMENT

1 Chapter 3 sets forth the affected environment of the proposed action. The affected environment
 2 describes the present physical conditions within the area of the proposed action. The area, or
 3 region of influence, is defined for each environmental issue based upon the aerial extent of
 4 physical resources that may be affected directly or indirectly by the proposed action and
 5 appropriate guidelines of regulatory agencies or common professional practice. Table 3.1-1
 6 summarizes the environmental issues and associated region of influence described in the
 7 affected environment sections of this EIS.

Table 3.1-1. Environmental Issues and Region of Influence

<i>Environmental Issue</i>	<i>Region of Influence</i>
Land Use	Reuse plan area
Visual Resources	Reuse plan area and viewshed
Socioeconomics	San Francisco and Alameda Counties
Cultural Resources	Reuse plan area
Transportation	Reuse plan area, SFOBB/I-80 freeway system, and areas adjacent to ferry terminals in San Francisco and Oakland
Air Quality	San Francisco Bay Area air basin
Noise	Reuse plan area
Biological Resources	Reuse plan area and surrounding aquatic habitat within 2-mile radius
Geology and Soils	Geology: San Francisco Bay Area Soils: Reuse plan area
Water Resources	Reuse plan area and receiving waters of Central San Francisco Bay
Utilities	San Francisco and regional utility service areas
Public Services	San Francisco
Hazardous Materials and Waste	Reuse plan area

8 This section of the EIS describes the baseline conditions for each environmental resource against
 9 which the potential impacts of the proposed action will be compared. Generally, the baseline
 10 used for the analysis of environmental impacts under NEPA reflects the conditions present at or
 11 about the time the EIS is initiated. However, in the case of closures of military installations, EIS
 12 documents often are initiated in the trough between full-scale military operations at the former
 13 military installation and commencement of the civilian redevelopment project being studied.
 14 The trough is temporary, constantly changing, and a wholly artificial situation that cannot
 15 provide a stable and meaningful basis for measuring the environmental impact of subsequent
 16 redevelopment. It is more appropriate to use the pre-closure conditions during full operations
 17 as a baseline to realistically reflect the environmental impact of reuse. The State of California
 18 also specifically has recognized that the last operating year of military bases is the most
 19 appropriate baseline for EIRs prepared pursuant to the CEQA (Cal. Pub. Res. Code § 21083.1.8,
 20 Cal. Code Regs. tit. 14, § 15229).

1 The environmental baseline year for the EIS is 1993, which reflects conditions before NSTI was
2 designated for closure. This follows Navy BRAC policy, which recommends using the last year
3 the installation was in full operational use as the baseline year instead of a baseline year
4 portrayed as the property under caretaker status. Since data from 1993 was not available for
5 some resource areas, the baseline for those resources relies on data from the closest year that is
6 representative of 1993 conditions. The analysis of hazardous materials and waste is unique in
7 that, because hazardous materials remediation is ongoing, it is based on current conditions at
8 NSTI. The physical conditions present in 1993 are the same as the physical conditions present
9 in later years; the entire infrastructure for NSTI is still physically present on the property and
10 has not been significantly altered since 1993.

11 3.1 LAND USE

12 This section describes regulatory considerations (section 3.1.1) and land uses in the reuse plan
13 area (section 3.1.2) and in the surrounding community (section 3.1.3). Land uses in the reuse
14 plan area reflect baseline (1993) conditions.

15 3.1.1 Regulatory Considerations

16 The following subsections discuss the public plans, policies, and regulatory agencies that affect
17 disposal and reuse of NSTI. Planning and regulatory control over NSTI will be exercised by
18 many government agencies, including the City and County of San Francisco, and regional, state,
19 and federal agencies. Agencies that will have jurisdiction over NSTI and a description of the
20 responsibilities of each agency with respect to approval and implementation of the alternatives
21 are discussed below.

22 *City and County of San Francisco*

23 NSTI is within the jurisdictional boundaries of the City and County of San Francisco. As
24 discussed below, upon transfer NSTI will be controlled primarily by San Francisco policies,
25 plans, and regulations, while portions of the islands also will be subject to additional
26 regulations and policies of other agencies. The San Francisco Planning Commission and/or San
27 Francisco Planning Department and TIDA will determine future reuse conformance with city
28 policies and plans. The San Francisco Board of Supervisors must adopt General Plan
29 amendments and approve zoning ordinances incorporating the selected development plan for
30 the islands.

31 *San Francisco General Plan*

32 The San Francisco General Plan is relevant to the reuse of NSTI, which is located within San
33 Francisco. The San Francisco General Plan is the comprehensive, long-term plan that contains
34 the land use policies for San Francisco. Elements of the General Plan that provide broad policy
35 guidance to reuse planning include Recreation and Open Space, Urban Design, Transportation,
36 Environmental Protection, Community Safety, Community Facilities, Commerce and Industry,
37 and the Residence Element.

38 Following conveyance of NSTI to San Francisco or other non-federal entities, future
39 development of most portions of the islands would be under city jurisdiction. San Francisco's

1 existing General Plan land use designation for NSTI (*Military*) does not encompass all the
2 proposed reuse land uses and does not define development opportunities and constraints for
3 the land use designations.

4 To achieve consistency between the selected reuse alternative and San Francisco policies, it will
5 be necessary to amend the San Francisco General Plan to include land use designations for
6 surplus property on Treasure Island and Yerba Buena Island prior to approving future land use
7 actions. The amendments would need to be based on the goals and policies of the selected
8 reuse alternative while maintaining consistency with the goals, policies, and land use
9 designations in the General Plan.

10 The San Francisco Planning Department is preparing an Area Plan and amendments to the
11 General Plan to ensure consistency with the final reuse plan. Following certification of San
12 Francisco's EIR for reuse, the city would amend its General Plan and would adopt a
13 Redevelopment Plan to provide land use designations consistent with the reuse plan for NSTI
14 lands conveyed out of federal control. These plans would incorporate policies from the Draft
15 Reuse Plan and would guide future development on NSTI.

16 *Planning Code*

17 The San Francisco Planning Code (ordinances enacted through Ordinance 241-01, Approved
18 December 7, 2001) sets forth specific objective standards that define the range of allowable
19 physical characteristics of proposed development, such as the floor area ratio, the height and
20 bulk of buildings, and the land uses permitted within zoning districts. The San Francisco
21 agency responsible for implementing the Planning Code is the Planning Department. NSTI is
22 currently zoned "P" (Public) and would not be rezoned until the reuse plan is adopted, at which
23 time the San Francisco Planning Code would be amended. Upon receiving a zoning
24 designation, the area would be subject to the land use and height and bulk regulations
25 established by the zoning designation. These controls would be subject to the Redevelopment
26 Plan and its design for development standards.

27 *The Sustainability Plan for the City of San Francisco*

28 The Sustainability Plan for the City of San Francisco (San Francisco 1997) was endorsed by the
29 Board of Supervisors on July 21, 1997 (Resolution No. 692-97), as a non-binding guideline for
30 policy and practice in San Francisco. The goal of the Sustainability Plan is to enable the city and
31 its people to meet their present needs without sacrificing the ability of future generations to
32 meet their own needs.

33 *Treasure Island Development Authority*

34 TIDA is a nonprofit public benefit corporation established by the City and County of San
35 Francisco and the State of California. It has redevelopment authority to implement the final
36 reuse plan, related General Plan amendments, and any other adopted plans, such as an Area
37 Plan or Redevelopment Plan, via appropriate implementing ordinances subject to final
38 approvals by the San Francisco Board of Supervisors.

1 *San Francisco Bay Conservation and Development Commission*

2 The federal Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. §§ 1451-1465), as
3 amended, grants coastal states with the authority to evaluate projects that could affect the
4 coastline. The Bay Conservation and Development Commission (BCDC), created by the
5 McAteer-Petris Act (Cal. Gov't. Code § 66600 et seq.), functions as the state coastal management
6 agency for the San Francisco Bay, having jurisdiction over all areas subject to tidal action up to
7 the mean high tide line and including all sloughs, tidelands, submerged lands, and marshlands
8 lying between the mean high tide and 5 feet (1.5 m) above mean sea level for the nine Bay Area
9 counties with Bay frontage (BCDC 1969). Its jurisdiction in shoreline areas includes a band
10 measured 100 feet (30.5 m) landward of and parallel to the shoreline of the Bay.

11 In accordance with its role in implementing CZMA, BCDC reviews federal projects affecting the
12 coastal zone to ensure that they are, to the maximum extent practicable, consistent with the
13 provisions of the approved coastal plans. The Bay Area Seaport Plan and the San Francisco Bay
14 Plan, discussed below, are the approved local coastal plans in the portion of San Francisco Bay
15 around NSTI and, in conjunction with other BCDC laws, Special Area Plans, and other
16 guidance, form BCDC's management program for complying with CZMA. Federal property is
17 considered to be outside the state coastal zone, as defined under the CZMA. Under the
18 provisions of 15 C.F.R Part 930, Federal Consistency with Approved Coastal Management
19 Programs, the Navy has determined that neither a consistency determination, nor a negative
20 determination is required for the proposed disposal action. The proposed disposal of surplus
21 federal property at NSTI for subsequent reuse is not an action that has been identified by a State
22 agency as an action likely to directly affect the coastal zone, is not an action similar to other
23 actions for which consistency determinations have been prepared in the past, and is not an
24 action for which the Navy developed initial findings on any effects on the coastal zone.
25 Consequently, Navy has determined that no state notification (or negative determination) is
26 required. (Consistency of reuse with the approved coastal plans is discussed further in the
27 sections on the Bay Plan and the Seaport Plan.)

28 BCDC activities also include the following:

- 29 • Regulating all filling, dredging, and changes in use in San Francisco Bay;
- 30 • Regulating new development within the first 100 feet (30.5 m) inland from the shoreline
31 of the Bay to ensure that maximum feasible public access to the Bay is provided;
- 32 • Ensuring that the limited amount of available shoreline property suitable for regional
33 high priority water-oriented uses is reserved for these purposes. Priority use areas
34 include ports, water-related industry, water-oriented recreation, airports, and wildlife
35 areas;
- 36 • Pursuing an active planning program to study all aspects of the Bay; and
- 37 • Participating in the region-wide state and federal program to prepare the Long-term
38 Management Strategy (LTMS), as discussed in section 3.10 Water Resources, for
39 dredging and disposing of material dredged from the Bay.

1 *San Francisco Bay Plan*

2 The San Francisco Bay Plan, adopted by BCDC in January 1969 and amended through 2002,
3 includes policies that protect the Bay's economic and natural resources, including the
4 designation of shoreline regional priority use areas. BCDC priority designated areas include
5 ports, airports, waterfront parks and beaches, wildlife areas, tidal areas, marinas, fishing piers,
6 recreational ferries, boat-launching ramps, commercial recreation, and vista points. Areas
7 without priority designation in the Bay Plan are subject to the plan's policies detailed under
8 "Other Uses of the Bay and Shoreline"; these policies call for areas without priority designation
9 to be used for any purpose that uses the bay as an asset and that in no way affects the bay
10 adversely.

11 Although Treasure Island and Yerba Buena Island are federal property and outside the defined
12 coastal zone addressed in the Bay Plan, the Bay Plan does state that, if and when Navy no
13 longer needs Treasure Island, it should be redeveloped for public use and continuous access to
14 San Francisco Bay should be provided. The Bay Plan also states that if and when Navy or US
15 Coast Guard no longer needs Yerba Buena Island, it should be redeveloped for recreational use
16 (BCDC 1996, revised 1997). After property is conveyed out of federal ownership, reuse
17 activities undertaken by nonfederal entities would be subject to BCDC permitting authority and
18 review as to the final determination of proposed reuse consistency with the Bay Plan. Where
19 proposed land uses are not consistent, the Bay Plan could be amended to be consistent with
20 proposed land uses, or these uses could not be developed. BCDC has indicated preliminary
21 support of reuse planning efforts at NSTI because the reuse plan "denotes a perimeter public
22 promenade around Treasure Island, including a small park at the proposed ferry dock, and
23 considerable open space on Yerba Buena Island at the connection to the Treasure Island
24 causeway" (BCDC 1996, revised 1997).

25 BCDC would also require a permit for any fill, materials extraction, or substantial changes in
26 use of any water, land, or structure in the bay. Permits for priority use and water-related
27 industry areas within the 100-foot (30.5-m) shoreline would be granted or denied based on the
28 appropriate Bay Plan policies for ports, water-related industry, water-oriented recreation,
29 airports, and wildlife areas.

30 *San Francisco Bay Area Seaport Plan*

31 The San Francisco Bay Area Seaport Plan was jointly developed by BCDC and the Metropolitan
32 Transportation Commission (MTC) in response to a state law that requires the addition of a
33 maritime element to MTC's regional transportation plan and BCDC's Bay Plan. The Seaport
34 Plan was adopted in 1982, was revised in 1988, and was comprehensively updated in April
35 1996. The Seaport Plan designates sites for port priority uses, such as marine terminals and
36 water-related industry. The port priority use designation is intended to reserve adequate
37 waterfront areas for future port and water-related development and to prevent unnecessary
38 filling of the Bay. Other shoreline uses, such as public access and public and commercial
39 recreational development may be permitted as long as they do not substantially impair the
40 efficient utilization of the port areas. Treasure Island and Yerba Buena Island, as federal
41 property, are not addressed in the Seaport Plan. Furthermore, these islands do not offer
42 adequate terminal backland or rail and road access and therefore are geographically unsuitable
43 for port development.

1 *State Lands Commission and Public Trust*

2 California received title to tide and submerged lands and the beds of navigable waters within
3 its boundaries upon its admission to the Union in 1850. Under the state constitution, such land
4 is held in trust for the people of California for particular uses of public benefit; these lands
5 commonly are referred to as tidelands trust or public trust lands. In general, if the public trust
6 applies, land subject to it must be used for commerce, navigation, fisheries, water-oriented
7 recreation, preserved in its natural condition for wildlife habitat and study, or other recognized
8 public trust uses. The purpose of the trust is to assure that trust land remains committed to
9 water-oriented uses benefiting the greatest number of people. The public trust generally
10 applies to land that is or was submerged or that is subject to tidal action, including land created
11 by filling tidelands or submerged lands.

12 Portions of NSTI were constructed on submerged land and tideland located within the City and
13 County of San Francisco. In 1933, the State of California granted to the City and County of San
14 Francisco a parcel of land in San Francisco Bay for construction of a public airport, wharfage
15 and dock facilities, and for use as an airfield. The parcel of land to be filled by dredged material
16 was a rectangular area measuring 4,500 feet by 8,000 feet (1,370 m by 2,438 m) located adjacent
17 to Yerba Buena Island. The City was authorized to reclaim fill and raise the submerged land.
18 The City of San Francisco also received the right to construct a toll free bridge or causeway
19 between the lands to be filled and Yerba Buena Island. The grant contained a restriction that
20 prevented the City of San Francisco from selling the property to private parties. In 1935, the
21 State granted to the City and County of San Francisco the right to use Treasure Island for
22 exposition and fair purposes. The City and County of San Francisco then created Treasure
23 Island by dredging adjacent submerged land.

24 Subsequent to the Naval Appropriations Act of 1942 (Pub. L. 441) in which Congress
25 appropriated funds for the acquisition of Treasure Island, the government pursued the
26 condemnation process for the property now known as NSTI in the US District Court of San
27 Francisco. The declaration of taking was filed on April 17, 1942. The parties reached a joint
28 settlement of the condemnation case on April 3, 1944. As compensation for the taking, the
29 Government completed construction of \$10 million of permanent improvements at San
30 Francisco Airport. Chapter 3 of the California Statutes of 1942 authorized the transfer of
31 Treasure Island to the government including all tide and submerged lands and further stated
32 that the transfer "shall be free and clear of all conditions and reservations respecting the title to
33 or use of said lands..." The State made no provisions for the reservation of a tideland trust or
34 public trust easement over tidelands or submerged land nor was there any reversion rights
35 contained in the statute. Therefore, the Navy's position is that the United States acquired full
36 fee simple absolute title to all the property, including the tidelands and submerged lands, and
37 that the property would not be subject to the public trust upon disposal by the Navy.

38 The State of California believes, however, that all former and existing tide and submerged lands
39 on Treasure Island would be subject to the public trust in the event of a transfer of the property
40 from the Navy. In 1997, the Treasure Island Conversion Act (TICA) (1997 Cal. Stat. 898, AB 699)
41 authorized the City and County of San Francisco to establish TIDA as the redevelopment
42 agency responsible for redeveloping NSTI. The Act also granted TIDA power to administer and
43 control property at NSTI, which was identified by the State of California as land that will be
44 subject to the public trust upon its release from federal ownership. Thus, the City and County

1 of San Francisco's reuse planning process assumes the public trust applies, despite the Navy's
2 contention that it does not.

3 3.1.2 Reuse Plan Area

4 Former Navy land use at NSTI consists of residential facilities, recreation and open space areas,
5 institutional and community facilities, commissary and office facilities, industrial and support
6 facilities, and parking and roads. Figure 3-1 illustrates these land uses at NSTI.

7 *Treasure Island*

8 Table 3.1-2 identifies former Navy land uses at Treasure Island. In 1993, residential, recreation
9 and open space, and institutional and community uses made up the largest percentage of land
10 uses at NSTI; parking and roadways accounted for almost a quarter of the island. Retail and
11 office and industrial and support land comprised the remaining uses.

12 **Table 3.1-2. Treasure Island 1993 Navy Land Uses**

<i>Land Use</i>	<i>Area (approximate acres)</i>
Residential	110
Recreation and Open Space	90
Institutional and Community	30
Retail and Office	20
Industrial and Support	20
Parking and Roads	95
Total	365
<i>Source: DON 1988b.</i>	
<i>Note: Does not include approximately 36-acre (14-ha) parcel transferred to the Job Corps.</i>	

13 *Residential*

14 Housing is a prominent land use at Treasure Island, occupying approximately 110 acres (44.5
15 ha). The housing area includes family housing and bachelor enlisted quarters (barracks).
16 Family housing occupies the northwest corner of the island, with the barracks located in the
17 center-west part of the island. Approximately 900 family units in 8-unit, 6-unit, and 4-unit
18 buildings are arranged around curving streets and cul-de-sacs with large driveways and lawns.
19 Uses and other features surrounding the family housing area include the Bay to the north and
20 west and open space, institutional, and industrial uses to the south and east. The barracks are
21 star-shaped structures constructed in the late 1960s.

22 *Recreation and Open Space*

23 Recreation and open space uses at Treasure Island include water-related recreation and boating
24 facilities, indoor and outdoor recreation facilities, and a variety of walking and bike trails and
25 picnic areas.

3.1 Land Use

1 Outdoor marine facilities include an approximate 100-slip recreation marina in Clipper Cove
2 between Treasure Island and Yerba Buena Island. There also are two piers (Piers 11 and 12) on
3 the southern edge of Treasure Island used for small military craft and a fishing pier (Pier 23) on
4 the west side of Treasure Island. Pier 1, on the southeastern side of Treasure Island, was used
5 to moor large military ships.

6 Indoor recreation facilities include the Shipshape Fitness Center, a gymnasium, a skating rink, a
7 1,000-seat movie theater, and a 12-lane bowling alley, all on the eastern side of Treasure Island.
8 A youth center and pizzeria are also on the east side of Treasure Island.

9 Outdoor recreation facilities include baseball fields, a pitching green, a miniature golf course,
10 two tennis courts, basketball courts, and two playgrounds. The outdoor recreation facilities are
11 concentrated in the interior of Treasure Island. Open space areas include four parks and picnic
12 areas and walking and bike trails. The dike around Treasure Island also is used as a jogging
13 trail (San Francisco 1994a; San Francisco 1995a).

14 *Institutional and Community*

15 Institutional uses at Treasure Island include public service, educational, public works facilities,
16 and a chapel. Navy headquarters occupied Building 1, a historic structure built originally for
17 the Exposition. This building presently is occupied by city offices, including a San Francisco
18 Police Department substation, and Navy caretaker site office.

19 Public service and government facilities include a fire station, a police station, the former brig,
20 the new brig built in 1991, and a post office. Educational facilities include an auto and hobby
21 shop, an elementary school, and a child development center. These facilities are all in the
22 interior of the island in the northwestern quadrant. Public services include the emergency
23 power generator, wastewater treatment plant, steam plant substations, reservoirs, and other
24 utilities.

25 *Retail and Office*

26 Retail and administrative uses comprise a relatively small portion of land use on Treasure
27 Island and include administrative, commissary, conference facilities, food service facilities, and
28 a medical and dental facility.

29 *Industrial and Support*

30 Industrial uses are distributed in buildings in the northeastern and southeastern quadrants of
31 Treasure Island. These include a former tear gas training building, a government printing
32 office, fuel storage facilities, a storm lift station, two hangars, warehouses, a maintenance
33 building, and training facilities.

34 *Parking and Roads*

35 The Treasure Island road system is laid out in a grid with parking areas located throughout the
36 island (Figure 3-1). The only vehicle access to the island is from the on- and off-ramps from the
37 SFOBB. The main access road to Treasure Island is Avenue of Palms. There are a number of on-
38 and off-street parking areas.



Land uses in 1993 primarily included recreation/open space, residential, and industrial. Land uses presented are generalized such that, within the areas indicated, there may be small areas of a different use.

Legend:

- Administrative/Industrial
- Open Space and Recreation
- Residential
- US Coast Guard

1993 Land Use

Naval Station Treasure Island, California

1 *Yerba Buena Island*

2 Former Navy land uses at Yerba Buena Island are identified in Table 3.1-3. Yerba Buena Island
 3 primarily is comprised of open space, utilities facilities and military housing, as well as about
 4 ten buildings used by Navy in 1993 for storage, communications, fire safety, and
 5 administration. The SFOBB crosses the island. Non-Navy land uses on Yerba Buena Island
 6 include the US Coast Guard Station.

7 **Table 3.1-3. Yerba Buena Island 1993 Navy Land Uses**

<i>Land Use</i>	<i>Area (approximate dry acres)</i>
Open Space and Utilities	75
Residential	30
SFOBB	10
Total	115
<i>Source: DON 1988b.</i>	
<i>Note: Total acreage includes approximately 11-acres (4-ha) that was transferred to US Coast Guard in 1998 and approximately 20-acres (8-ha), inclusive of previous 10 acres (4 ha), that was transferred to FHWA in 2000.</i>	

8 *Open Space and Utilities*

9 The steep slopes (up to 75 percent) at Yerba Buena Island preclude development along the
 10 northeastern and southwestern edges of the island. These areas are predominantly open space
 11 but also included ten acres to support SFOBB utilities.

12 *Residential*

13 There are approximately 100 existing housing units at Yerba Buena Island, ten of which are
 14 large single-family residences with the remainder being 2-, 4-, and 8-unit buildings, generally
 15 single-story, although there are some 2-story buildings. Housing is concentrated in the interior
 16 of the island, north of the SFOBB and southeast of Treasure Island Road. Historic officers
 17 quarters (Quarters 1-7), including the Nimitz House (Quarters 1), are located on the northern
 18 part of the island.

19 **3.1.3 Surrounding Land Uses**

20 San Francisco Bay waters surround NSTI. Alameda County is approximately 2 miles (3 km) to
 21 the east and San Francisco is approximately 2 miles (3 km) to the west. NSTI is within the
 22 municipal boundaries of San Francisco. A discussion of non-Navy land uses on NSTI and land
 23 uses at the ferry terminals potentially affected by the proposed increase in ferry service at NSTI
 24 is presented below.

1 *Non-Navy Land Uses*

2 *US Department of Labor*

3 As a result of the DoD and federal agency screening process for NSTI, approximately 36 acres
4 (15 ha) of land on Treasure Island and approximately 12 buildings and structures were
5 provided to the US Department of Labor for developing a Job Corps facility. The parcel
6 includes former barracks for officers, constructed in 1958, barracks for Chief Petty Officers,
7 constructed in 1975, a medical and dental clinic on the southern end of the island, and a dining
8 facility. The Job Corps facility trains underprivileged youth to serve local communities. It will
9 provide resident employment training to approximately 850 persons, approximately 750 of
10 which would reside on Treasure Island.

11 *US Coast Guard*

12 An active US Coast Guard Station occupies approximately 30 acres (12 ha) of dry, upland area
13 on the southeast side of Yerba Buena Island. The US Coast Guard is responsible for water
14 vessel traffic in and out of the Bay using the vehicle tracking system (VTS) facility on the
15 northwest hillside of the island. The US Coast Guard Station includes Coast Guard Group San
16 Francisco facilities, including housing, administrative, open storage and docks, and buoy
17 maintenance facilities. The station also includes a lighthouse built by the US Lighthouse Service
18 in 1872 on the southeastern side of Yerba Buena Island. Following the DoD and federal agency
19 screening process, approximately 11 acres (5 ha) in the central portion of Yerba Buena Island
20 were granted to the US Coast Guard in 1998, and another 11 acres of submerged land were
21 transferred in 2002.

22 *SFOBB*

23 The FHWA conveyed 98 acres (40 ha) on Yerba Buena Island held by Navy to Caltrans for right-
24 of-way purposes in connection with the construction, operation, and maintenance of the SFOBB
25 east spans retrofit project. Approximately 20 acres (8 ha) of dry land were permanently
26 conveyed in fee and are not part of the disposal action evaluated in this EIS. The remaining 78
27 acres (32 ha) comprises TCE or permanent aerial easements of dry and submerged land on
28 Yerba Buena Island. Land within the TCEs and aerial easements are available for disposal and
29 are part of the proposed disposal action evaluated in this EIS.

30 *Existing Off-island Ferry Terminal Land Uses*

31 Future transportation to NSTI may be provided through increased ferry service at the existing
32 San Francisco Ferry Building, Main Street terminal in Alameda, Jack London Square in
33 Oakland, and at two proposed new terminals—Candlestick Point in San Francisco and Golden
34 Gate Fields on the Berkeley and Albany border. A general land use description of existing ferry
35 terminals is provided here. Ferry service from these terminals is described in section 3.5,
36 Transportation.

37 *San Francisco Ferry Building*

38 The San Francisco Ferry Building, including its ferry terminals, is located at the terminus of
39 Market Street at The Embarcadero. The Ferry Building is used mostly for offices, including the

1 Port of San Francisco administrative headquarters (San Francisco 1996d). It is one of the few
2 remaining water-dependent land uses in the immediate area. The Ferry Building, a San
3 Francisco landmark listed on the National Register of Historic Places (NRHP), is being
4 expanded and renovated by the Port of San Francisco. A waterfront promenade parallels The
5 Embarcadero and adjoins the Ferry Building.

6 The Ferry Building is adjoined by commercial and institutional facilities and parking areas.
7 None of the parking areas include spaces designated for ferry users. The San Francisco
8 downtown core is across The Embarcadero to the west and comprises offices, hotels,
9 restaurants, and other retail and commercial uses. The Ferry Building is a transit hub, with
10 service from Bay Area Rapid Transit (BART), San Francisco Municipal Railway (Muni), and
11 several ferry lines nearby. An Amtrak bus connection is provided at the Ferry Building to and
12 from Amtrak's Emeryville and Jack London Square stations.

13 *Alameda Main Street*

14 The Alameda ferry terminal is in the City of Alameda in Alameda County. The ferry pier is at
15 the foot of Main Street adjacent to the former Alameda Naval Air Station. Adjacent land uses
16 include a parking lot, winemaking and storage facilities, warehouses, a commercial self-storage
17 facility, offices, and ship repair facilities.

18 *Jack London Square*

19 The Jack London Square ferry terminal is in the City of Oakland in Alameda County. The ferry
20 pier is in the Alameda Harbor at the terminus of Clay Street. Jack London Square is a
21 destination for entertainment, retail, and waterfront recreation.

22 Adjacent land uses include a recreational marina with a parking lot and lawn area to the
23 southeast, the Waterfront Plaza Hotel south of the parking lot, a multi-story mixed-use facility
24 to the northeast, and the Franklin D. Roosevelt Pier to the north. The pier provides
25 opportunities for fishing and scenic viewing.

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1 **3.2 VISUAL RESOURCES**

2 Visual resources address the appearance of the landscape and the factors influencing how the
3 landscape is perceived by the viewing public. Landscape includes both natural and engineered
4 features. Treasure Island and Yerba Buena Island are two of the Bay Area's prominent scenic
5 resources, seen by millions of residents, commuters, and visitors every year. Prominent visual
6 features and viewpoints of and from NSTI are shown on Figure 3-2.

7 **3.2.1 Visual Character of Reuse Plan Area**

8 The visual character of NSTI, including features and visual characteristics of Treasure Island
9 and Yerba Buena Island, is discussed below.

10 *Treasure Island*

11 Treasure Island has a geometric form with straight edges along its shores that produces a seven-
12 sided shape in plan view. Topographic relief is low and flat. Existing Treasure Island
13 development is characterized by various military support facilities, including housing,
14 institutional, commissary, administrative, and industrial facilities of a generally functional
15 appearance without a strong design theme. Buildings are generally two to four stories high
16 (Photos 1 and 3 in Appendix F). Approximately 25 percent of the island is in open space, much of
17 which is dedicated to recreation uses. The extent and distribution of this open space, along with
18 wide streets and generous building setbacks, give the island a feeling of spaciousness.

19 Treasure Island's approximately 3 miles (5 km) of shoreline is protected by a rock-filled seawall.
20 The seawall height limits ground-based views of the surrounding bay from many Treasure
21 Island locations. Pier 23, a public-access fishing and sightseeing pier, is on the west side of the
22 island across from the northern San Francisco waterfront. Public access is restricted at Piers 1,
23 11, and 12 on the island's southeast corner, where mooring and maintenance for former Navy
24 vessels was provided. Pier 2 is a floating structure at the Clipper Cove marina and is used by
25 recreational watercraft.

26 Entering NSTI from the Treasure Island causeway, views include the bay and San Francisco
27 skyline to the left, Building 1 to the right, and Avenue of Palms ahead. Building 1 is a large,
28 striking, Art Deco building with a curved façade that was constructed as the headquarters
29 building for the 1939-1940 Exposition. Painted with light pastel colors, it is visible from points
30 along the San Francisco waterfront.

31 The west side of Treasure Island is distinguished by the regularly spaced row of palm trees with
32 landscape shrubs and ground cover along the bay side of Avenue of Palms, originally
33 developed as part of the Exposition. Spectacular panoramic views of the bay, the San Francisco
34 waterfront and skyline, the west span of the SFOBB, and the Golden Gate Bridge are available
35 here. East of Building 1, the two largest buildings on Treasure Island, originally constructed as
36 aircraft hangars, dominate the landscape (Photo 5, Appendix F). The similar style and color of
37 Building 1 and the hangars ties the three buildings together visually.

38 Clipper Cove is in a protected area of the San Francisco Bay on the east side of the causeway
39 connecting Treasure Island with Yerba Buena Island (Photos 1 and 6, Appendix F). Densely

1 wooded Yerba Buena Island slopes rise steeply on the cove's south side, with a steep wooden
2 staircase leading down to a narrow sandy beach. From Treasure Island looking toward Yerba
3 Buena Island, the scene appears mostly natural except for glimpses of buildings on the upper
4 slopes of Yerba Buena Island, Building 262, an historic torpedo assembly building on the
5 eastern tip of this island, and the high span of the SFOBB to the east. On the Treasure Island
6 side of the cove are Pier 2 and the marina, where about 100 pleasure craft are moored.

7 ***Yerba Buena Island***

8 In contrast to Treasure Island, Yerba Buena Island is a natural island with high topographic
9 relief. Most of the island is steeply sloped with a few low-lying fill areas along the eastern side.
10 Dense vegetation covers much of the island. Considerable soil erosion and disturbance is
11 visible as strong color contrasts in the vicinity of the ramps and causeway on the steep
12 west-facing slopes of the island.

13 ***Light and Glare***

14 Light sources in the reuse plan area include street lights, building lighting for safety and
15 security, and parking lot lighting. Glare is reflective light that can be visually unpleasant or
16 possibly unsafe due to the potential for temporary "blindness." Glare is created by light
17 (usually from the sun) reflecting off smooth surfaces such as glass, metal, or polished stone. As
18 a military facility, the buildings and structures at NSTI were primarily designed and
19 constructed for utility rather than aesthetics. There is generally a lack of decorative surfaces,
20 including those that could cause glare. The majority of buildings have nonreflective surfaces.

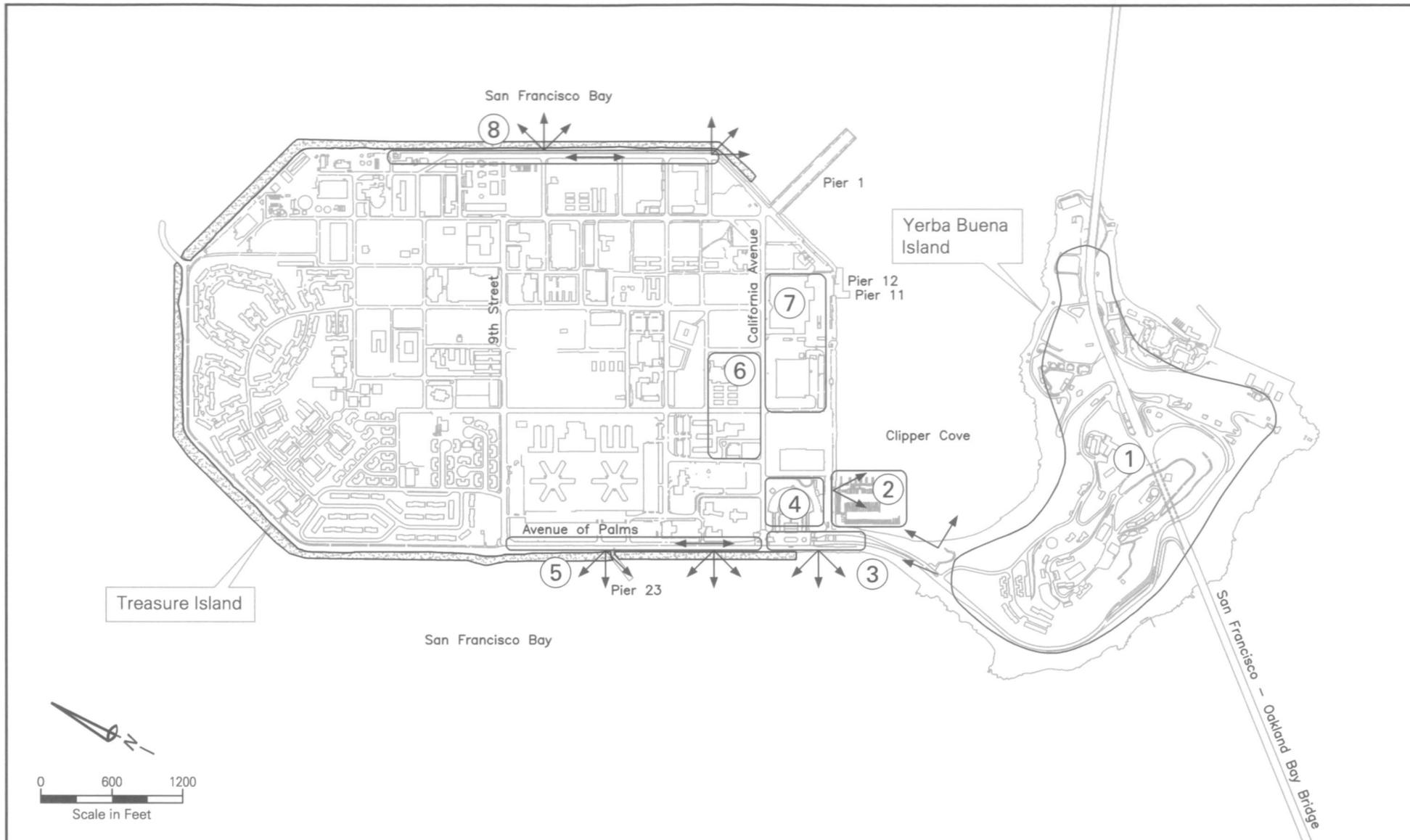
21 **3.2.2 Visual Characteristics of Surrounding Area**

22 Treasure Island and Yerba Buena Island lie near the center of San Francisco Bay between
23 downtown San Francisco and Oakland. The bay is about 50 miles (80 km) long and from 3 to 12
24 miles (5 to 19 km) wide. The topography around the bay features prominent hills, such as those
25 to the northwest in Marin County and to the east in Alameda County. These ridges and other
26 hills in the area afford distinctive panoramic views that often include Treasure Island and Yerba
27 Buena Island. The surrounding region features a mixture of dense urban development and
28 relatively extensive natural open space area, dominated by San Francisco Bay. Bay waterfront
29 uses include industrial, commercial, and recreation and open space.

30 **3.2.3 Key Views and Visibility of NSTI**

31 Available views onto a site are affected by distance, viewing angle, and the number or type of
32 visual obstacles, both natural and manmade. Views can be from stationary sources, such as
33 homes and businesses, or from mobile sources, predominantly from motor vehicles. The
34 visibility of an object depends, to a great extent, on the distance from the observer—the further
35 the building is from the viewer, the less distinct the building becomes, and there is a greater
36 possibility of intervening objects blocking some or all of the view of that building. With
37 distance, more objects enter into the viewing panorama and specific features become visually
38 "lost."

39



Situated in San Francisco Bay, NSTI provides panoramic views.

Prominent Visual Features:

- | | |
|---------------------------------------|--------------------------------------|
| ① Wooded Slopes of Yerba Buena Island | ⑤ Avenue of Palms |
| ② Clipper Cove Marina | ⑥ Conference Center Complex |
| ③ Entry to Treasure Island | ⑦ Hangar Buildings |
| ④ Museum | ⑧ East Side Frontage Road and Shores |

← Major Views

Prominent Visual Features and Major Views

Naval Station Treasure Island, California

Figure 3-2

1 For this analysis, viewing distances have been characterized as foreground views (0 to 0.5 miles [0
2 to 0.8 km]), middleground views (0.5 to 3 miles [0.8 to 5 km]), and background views (greater than
3 3 miles [5 km]). Foreground viewing distances permit perception of detail on individual
4 small-scale landscape features. Middleground viewing distances permit relationships between
5 large and moderately sized objects to be perceived, with some perception of colors, textures,
6 individual forms, and details visible. Background viewing distances generally permit only the
7 broad perception of large features, such as land masses and large-scale landscape patterns, with
8 little distinction of color, texture, and detail.

9 *Foreground Views*

10 The only available close range views of NSTI are from the SFOBB (I-80) and from the
11 immediately surrounding waters. Yerba Buena Island is clearly visible from both the eastbound
12 and westbound directions, but Treasure Island is much less so. The bridge guardrails block
13 views of Treasure Island from most passenger cars. From taller vehicles, such as buses, vans, or
14 trucks, Treasure Island is visible, especially to westbound traffic in the right-hand lane (Photo
15 11, Appendix F). Several passenger ferry routes provide views of NSTI, and some pass within a
16 mile (1.5 km). Boaters also experience close up foreground views of NSTI.

17 *Middleground Views*

18 Public middleground views of NSTI are available from many San Francisco locations, most
19 notably from The Embarcadero and from the Northern and Central Waterfront areas of the city
20 (from the SFOBB to the Pier 39 area). Other viewing locations include waterfront restaurants,
21 recreational piers (Photo 7, Appendix F), ferry terminals, the San Francisco Ferry Plaza, and the
22 future Rincon Point Park at The Embarcadero near Folsom Street. Coit Tower is a well-known
23 landmark, which provides a panoramic view of NSTI and Yerba Buena Island at a distance of
24 over 2 miles (3 km) (Photo 8, Appendix F).

25 Public scenic views of Treasure Island from Alcatraz Island, at a distance of just over 2 miles (3
26 km), are some of the closest ground-based views available. Angel Island, a state park, provides
27 middleground views of NSTI from the north. The distinctive buildings on Treasure Island,
28 which are found on its south side, are not clearly seen from this viewing point.

29 *Background Views*

30 The Golden Gate National Recreation Area (GGNRA), including the Presidio of San Francisco,
31 and Golden Gate Bridge represent intensively used viewing points. However, NSTI is in the
32 background of these views (over 5 miles [8 km] from Fort Point), which are dominated by more
33 noticeable landscape features, such as the bridge, Alcatraz Island, the Presidio, and the
34 Transamerica Pyramid.

35 The East Bay shore, extending from the City of Richmond on the north to the City of Oakland
36 on the south, contains a series of parks and open space areas with views to NSTI from distances
37 of approximately 3 to 6 miles (5 to 9.5 km). Under certain lighting conditions, such as morning
38 sunshine, the larger NSTI buildings become quite conspicuous, most notably the former hangar
39 buildings (similar to conditions shown in Photo 9, Appendix F). NSTI is also a prominent
40 landmark in background views from the East Bay hills.

3.2 Visual Resources

1 The Emeryville waterfront, about 3 miles (5 km) from NSTI, represents one of the closer East
2 Bay views (Photo 10, Appendix F). The northern half of Treasure Island is seen against the
3 horizon of the Golden Gate.

4 Background views of NSTI also are available from several major Bay Area highways, including
5 I-80, I-580, I-280, and US 101. In most cases, Yerba Buena Island is readily visible, while
6 Treasure Island, with its low flat profile, is less visible.

7 A variety of viewers obtain background views of NSTI from urban areas around the bay. The
8 most notable views are obtained from high-rise buildings in San Francisco and Emeryville and
9 from streets within San Francisco that provide view corridors towards the bay (Photo 12,
10 Appendix F). These view corridors, some of which focus viewer attention toward Yerba Buena
11 Island or Treasure Island, are recognized and addressed in the San Francisco General Plan's
12 goals, objectives, and policies.

13 3.2.4 Views from NSTI

14 *Treasure Island*

15 Public scenic views within NSTI are found at the entrance to Treasure Island (from the
16 northbound direction on Treasure Island Road when leaving Yerba Buena Island), along
17 Avenue of Palms, in the vicinity of the Convention Center and the former hangar buildings, and
18 in the Clipper Cove area. The most scenic views from the site are of the surrounding waters
19 and Bay Area. From Treasure Island these occur from perimeter areas, although at the north
20 end of the island the height of the seawall blocks views of the water. The most distinctive views
21 occur from Avenue of Palms towards the Golden Gate and San Francisco waterfront and
22 skyline. These viewing points are unique within the Bay Area for their panoramic aspect (Photo
23 13, Appendix F) and proximity to San Francisco. Distinctive views toward the east occur from
24 Avenue N.

25 *Yerba Buena Island*

26 On Yerba Buena Island, public scenic views include views of the steep hillsides and beach at
27 Clipper Cove, and the view of Treasure Island from Macalla Road. From several locations at
28 the higher elevations on Yerba Buena Island, there are sweeping panoramas of the Bay Area.

29 3.2.5 Viewer Group/Sensitivity

30 Visual sensitivity is dependent upon viewer attitudes, the types of activities in which people are
31 engaged when viewing the site, and the distance from which the site will be seen. Overall,
32 higher degrees of visual sensitivity are correlated with areas where people live, are engaged in
33 recreational outdoor pursuits, or participate in scenic or pleasure driving. Conversely, visual
34 sensitivity is considered low to moderate in industrial or commercial areas where the scenic
35 quality of the environment does not affect the value of the activity.

36 There are a number of viewing opportunities onto the site from the surrounding area. These
37 opportunities are available from the SFOBB, from bay waterfront uses, including industrial,
38 commercial, and recreation and open space, from intensively used regional public areas,
39 including Alcatraz Island, the GGNRA, and Angel Island, and from boats on the bay. The

1 waterfront views toward NSTI are important both to tourists and to area residents. Given the
2 unique and distinct character of NSTI and its central location in San Francisco Bay, viewer
3 sensitivity from all of these areas is considered high.

4

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1 **3.3 SOCIOECONOMICS**

2 This section describes the regional socioeconomic setting. Socioeconomics includes
3 employment, population, housing, and schools. Data are presented for San Francisco and
4 Alameda counties, as well as for NSTI. It is expected that most future workers at NSTI would
5 commute from these two counties, which are connected to the site by the SFOBB.

6 **3.3.1 Plans and Policies**

7 Socioeconomic considerations that are applicable to NSTI closure and reuse are addressed in
8 Section 2903(c) of the National Defense Authorization Act for Fiscal Year 1994 (Pub. L. 103-160),
9 and amendments, and in the Report of the California Military Base Reuse Task Force to
10 Governor Pete Wilson: A Strategic Response to Base Reuse Opportunities (Task Force Report)
11 (California Military Base Reuse Task Force January 1994). Generally, the intent is to provide
12 economic stimulus and consider local areas in base disposal. These two aspects are discussed
13 briefly below.

14 *National Defense Authorization Act (Pub. L. 103-160)*

15 Consideration of Economic Needs with Respect to Revitalization and Redevelopment of Closed
16 Military Installations (Pub. L. 103-160 § 2903[c], Nov. 30, 1993, 107 Stat. 1547, 1915) states that
17 economic needs must be considered with regard to reutilization and redevelopment of closed
18 military installations. It goes on to state:

19 In order to maximize the local and regional benefit from the reutilization and
20 redevelopment of military installations that are closed, or approved for closure,
21 pursuant to the operation of a base closure law, the Secretary of Defense shall
22 consider locally and regionally delineated economic development needs and
23 priorities into the process by which the Secretary disposes of real property and
24 personal property as part of the closure of a military installation under a base
25 closure law.

26 *California Military Base Reuse Task Force*

27 In the Task Force Report, the task force developed six principles to be considered in the closure
28 and reuse of military bases in the state. These include the following:

- 29 • Treat closing military bases as economic engines for job creation.
- 30 • The state should assist local officials in the process of base reuse and evaluating
31 potential uses that may have overriding state or regional importance.
- 32 • Provide a variety of financing for base reuse.
- 33 • Streamline regulatory processes so that the state is not in danger of stifling local efforts
34 to devise workable reuse plans.
- 35 • The federal government must clean up closed bases as soon as possible to a level
36 appropriate to the reuse and consistent with long-term protection goals.

- The federal government must assume responsibility for a smooth transfer of military base property to local control.

3.3.2 Economic Trends and Conditions

Economic growth trends and projections for the nine-county Bay Area, and for San Francisco and Alameda counties in particular, provide a context for understanding changes in jobs and employment at NSTI from implementing any of the reuse alternatives under consideration. Economic trend information, provided for 1980 and 1990, is based primarily on U.S. census data. The year 1990 is the closest to the 1993 baseline for which comprehensive socioeconomic data are available that are comparable on a local, regional, and national basis. NSTI census data is from Census Tract 179.02, which encompasses both Treasure Island and Yerba Buena Island. Although this data captures both NSTI and US Coast Guard operations, it is representative of Navy baseline conditions in 1993. Projections, by geographic area, for the number of jobs by sector and the number of employed residents in 2015 are from the Association of Bay Area Governments (ABAG) *Projections 2002* (ABAG 2001). The 1990 annual average unemployment rate by area was obtained from the California Employment Development Department (EDD) and is indicated for each area.

Bay Area

The nine Bay Area counties share a diversified and interconnected regional economy. In general, San Francisco has served as the major financial and commercial center, and East Bay counties have become the industrial and manufacturing center. Silicon Valley in the South Bay has emerged as a world center for computer and electronic technology.

In the context of the past several decades, regional economic growth rates were substantial until the mid-1970s, but have been slower since. Through the 1970s, the regional economy was strong and robust. Since that time, growth has been moderated, at times, by recessions. Regional economic recessions or slowdowns occurred in 1975-1976, 1982-1983, and during the first half of the 1990s. While the recession of the early 1990s was no deeper than the previous ones, its duration was longer and its effect broader in terms of weaknesses across economic sectors. Regional job loss during this recent recession was greater than during the recession of the early 1980s.

Regional economic recovery began in the mid-1990s. The next decade was one of economic growth, fueled principally by the technological innovation of the Internet, particularly in the Bay Area. The limits on the value of this technology, along with the terrorist attacks of September 11, 2001, caused an economic downturn in late 2001 and 2002. Although short-term (2000 to 2005) job growth in the region is expected to be limited, long-term economic prospects in the Bay Area continue to grow due to existing technological infrastructure and economic diversity. Between 1990 and 2015, the total number of Bay Area jobs is projected to increase from approximately 3.2 million to approximately 4.5 million, an increase of 39.9 percent over the 25-year period (ABAG 2001).

1 *Jobs by Sector*

2 Between 1980 and 1990, the number of jobs in the Bay Area increased by 23 percent, which was
 3 less than half the job growth experienced during the prior decade. In 1990, there were 3,073,000
 4 jobs in the region. Approximately 33 percent of all jobs in 1990 were in services. Manufacturing
 5 and wholesale trade represented 22 percent of all jobs, and retail trade accounted for 17 percent
 6 of all jobs. Jobs in other sectors represented 27 percent of all Bay Area jobs. Agriculture,
 7 forestry, mining, and fisheries accounted for only one percent of Bay Area jobs (ABAG 1995b).
 8 Table 3.3-1 presents census data on the breakdown of Bay Area jobs by sector.

Table 3.3-1. *Jobs by Sector, 1990*

<i>Location</i>	<i>Agriculture, Forestry, Mining, Fisheries</i>	<i>Manufacturing & Wholesale Trade</i>	<i>Retail Trade</i>	<i>Services</i>	<i>Other*</i>	<i>Total</i>
Bay Area	35,220 (1%)	678,800 (22%)	514,920 (17%)	1,019,190 (33%)	824,870 (27%)	3,073,000
San Francisco	2,250 (<1%)	68,820 (12%)	78,380 (14%)	224,510 (40%)	192,680 (34%)	566,640
Alameda County	3,760 (1%)	127,080 (21%)	107,560 (17%)	207,650 (33%)	174,930 (28%)	620,980

* Other includes construction, transportation, communications, public utilities, finance, insurance, real estate, and government jobs.
 Source: ABAG 1995b.

9 Between 1980 and 1990, the percentage of regional jobs in the services, wholesale, and retail
 10 trade sectors increased, while the percentage of jobs in manufacturing and government
 11 decreased. During the 25-year forecast period, only the proportion of jobs in the services sector
 12 is expected to increase substantially. By 2015, approximately 39 percent of all Bay Area jobs
 13 will be in the services sector, compared to 33 percent in 1990. The percentages of jobs in the
 14 retail and wholesale sectors are projected to remain relatively constant over the forecast
 15 period—approximately 15.5 and 5.0 percent, respectively. The proportions of manufacturing
 16 and government jobs are expected to decline slightly between 1990 and 2015 (ABAG 2001).

17 *Employed Residents*

18 Table 3.3-2 presents information on the total numbers of employed Bay Area residents in 1980
 19 and 1990, as well as employment projections for 2015. The number of employed residents
 20 increased from 2,553,002 in 1980 to 3,151,942 in 1990, an increase of 23 percent. In comparison,
 21 according to ABAG projections, during the 25-year forecast period, the number of employed
 22 residents in the region is expected to increase from 3,151,942 in 1990 to 4,258,200 in 2015, an
 23 increase of 35 percent. According to ABAG projections, the rate of growth in employed
 24 residents during the 25-year forecast period is projected to be 12 percent higher than the growth
 25 rate (23 percent) that took place during the decade between 1980 and 1990 (ABAG 2001).

26 *Unemployment*

27 The civilian unemployment rate in the nine Bay Area counties in 1990 ranged from 2.7 percent
 28 in Marin County to 5.6 percent in Solano County. The statewide unemployment rate in 1990
 29 was 5.6 percent.

**Table 3.3-2. Region of Influence Employment Trends and Projections,
1980, 1990, and 2015**

<i>Location</i>	<i>1980</i>	<i>1990</i>	<i>Percent Change 1980-1990</i>	<i>2015</i>	<i>Percent Change 1990-2015</i>
Bay Area	2,553,002	3,151,942	23%	4,258,200	35%
San Francisco	347,091	391,292	13%	468,500	20%
Alameda County	522,069	648,461	24%	833,800	29%
NSTI	2,202	2,482	13%	N/A	N/A
<i>Note:</i> 1980 and 1990 figures are actual; 2015 figure is projected. N/A = not applicable <i>Sources:</i> U.S. Department of Commerce 1980; 1990; ABAG 2001.					

1 *Jobs-Housing Balance*

2 When the number of jobs and the number of available housing units are roughly equal within a
 3 certain subregion, people will have an opportunity to live close to where they work. Given
 4 proximity, people would not have to commute as far and accordingly, traffic and congestion
 5 would be reduced, and air quality would be improved.

6 To measure the jobs-housing balance, a simple ratio has been formulated, where the number of
 7 jobs in a region is divided by the number of households in a region. The result of this process is
 8 a number called the jobs-housing ratio. For the entire nine-county Bay Area region, the ratio
 9 was 1.36 in 1990 (ABAG 1995b) and was projected to increase to 1.60 by 2015 (ABAG 2001).

10 *San Francisco*

11 The regional economic trends described above also are reflected in San Francisco's economy.
 12 San Francisco's economy was affected by the recession of the early 1990s but was recovering
 13 steadily during that decade. Employment increased by roughly 1,000 jobs per year between
 14 1993 and 1995, and revenues from retail sales also began to grow by roughly six percent per
 15 year during this same period. Construction activity also increased, although as of August 1996,
 16 it had not reached pre-recession levels (San Francisco 1996f).

17 ABAG *Projections 2002* states that long-term economic growth in the future is unlikely to match
 18 the economic pace of the mid- to late 1990s, and the economy is more likely to grow at the pace
 19 of one to two percent per year. The cost of living in the Bay Area, the changing demographics of
 20 the population, and the continued growth in worker productivity are factors expected to limit
 21 growth. The limited space for development in the city and local policies were thought to be
 22 limiting factors for population growth in San Francisco; however, *Projections 2002* anticipates
 23 sustained moderate population growth for the city due to recent housing construction and a
 24 renewed interest in urban living. The Mission Bay redevelopment project will provide
 25 substantial residential and commercial property. Santa Clara and Alameda counties are
 26 expected to generate the greatest job increases; and among the Bay Area cities, San Jose and San
 27 Francisco will experience the greatest job increases (200,190 and 140,630, respectively) by 2015
 28 (ABAG 2001).

1 San Francisco recently developed a 2015 Cumulative Update to the ABAG *Projections '96* land
2 use database. Such data is useful when a project is broadly physically integrated into the larger
3 region. NSTI is connected to the region by one route—the SFOBB/I-80. Since the SFOBB/I-80
4 is already operating at capacity, the new data would not change the conclusions in this
5 socioeconomics analysis.

6 *Jobs by Sector*

7 Table 3.3-1 presents data on the number of jobs by sector in San Francisco in 1990. The largest
8 sector at that time was services, with approximately 40 percent of all jobs. An additional 34
9 percent of jobs were in the category “other,” which includes 63,490 government jobs (11 percent
10 of all jobs). Manufacturing and wholesale trade represented 12 percent of all jobs, and less than
11 one percent of San Francisco’s jobs were in agriculture, forestry, mining, and fisheries. ABAG
12 projects that retail, services, and “other jobs” will experience growth in San Francisco over the
13 next two decades. By 2015, jobs in the services sector are expected to make up almost 45
14 percent of all jobs in San Francisco (ABAG 2001).

15 Between 1990 and 2015, San Francisco’s overall share of the region’s jobs is expected to decline
16 from 18.4 percent to 16.0 percent. Major development projects, such as Mission Bay, and reuse
17 of former military facilities could slow the flow of jobs away from San Francisco, but a reversal
18 of the trend toward job decentralization is not anticipated, given regional economic and policy
19 trends (ABAG 2001).

20 *Employed Residents*

21 Table 3.3-2 presents data on trends and projections of the number of employed residents in San
22 Francisco. The number of employed residents increased 13 percent between 1980 and 1990.
23 Between 1990 and 2015, the number of employed residents is projected to increase by 20 percent
24 (ABAG 2001).

25 San Francisco shares the regional imbalance between the number of jobs and employed
26 residents; however, the imbalance between jobs and employed residents is greater in San
27 Francisco than in any other county in the region. This imbalance is expected to continue
28 throughout the 25-year forecast period. Between 1990 and 2015, approximately 140,630 new
29 jobs are expected to be created in San Francisco. During this same period, however, ABAG
30 projects an increase of only 77,208 employed residents, indicating that San Francisco will
31 continue to be an important job center for the region (ABAG 2001).

32 *Unemployment*

33 The civilian unemployment rate for San Francisco was 4.2 percent in 1990, compared with a rate
34 of 5.6 percent statewide. Unemployment is particularly a problem among San Francisco’s
35 homeless population, which is the second largest homeless population of any city in the nation
36 (TIHDI 1995).

37 *Jobs-Housing Balance*

38 Similar to the regional ratio, a jobs-housing ratio for a subregion also can be formulated. A
39 subregional ratio greater than the regional ratio would indicate that a subregion is, in relative

1 terms, "jobs rich," which is typical of employment centers, such as traditional business districts.
2 Anything less than the regional ratio would indicate that a subregion is relatively "housing
3 rich," which is typical of more suburban bedroom communities.

4 San Francisco is an important job center in the regional economy. The jobs-housing ratio for the
5 City and County of San Francisco in 1990 was 1.85 and is projected to increase to 2.08 by 2015
6 (ABAG 2001).

7 Job growth in San Francisco is supplied by the labor force of the regional labor market. In 1990,
8 considering only those San Francisco jobs held by people living in the Bay Area, San Francisco
9 residents held 55 percent of the jobs and people living in other parts of the Bay Area held the
10 remaining 45 percent of the jobs (MTC undated in San Francisco 1998b; Keyser Marston
11 Associates and Gabriel Roche 1997 in San Francisco 1998b). ABAG and the MTC project that
12 the percentage of San Francisco employed residents working in San Francisco will stay at about
13 the 1990 level (MTC undated in San Francisco 1998b).

14 *Alameda County*

15 In recent years, Alameda County has experienced a period of continued economic
16 diversification, as well as job growth. The southern portion of the county has attracted
17 numerous high technology industries, while the eastern section has become a center for office
18 employment, communications-related industries, and high technology industries. In the
19 northern portion of the county, the economy has shifted from one dominated by manufacturing
20 industries to a mixture of office employment, government service centers, transportation, and
21 biotechnology.

22 *Jobs by Sector*

23 Table 3.3-1 shows the breakdown of jobs by sector in Alameda County in 1990. As with San
24 Francisco, Alameda County's services sector was strongest, representing about 33 percent of all
25 jobs at that time. Another 21 percent of the county's jobs were in the manufacturing and
26 wholesale trade sectors, and 28 percent were in other sectors, including 66,280 government jobs
27 (11 percent of all jobs in the county). Between 1990 and 1995, Alameda County experienced
28 negative job growth, due in part to the statewide economic slowdown in California and also to
29 military base closures. The greatest job losses occurred in the cities of Oakland and Alameda
30 (ABAG 1995b).

31 Job growth in Alameda County between 1990 and 2015 is expected to exceed the regional
32 average, with an addition of 270,690 jobs (an increase of 42 percent). ABAG projects that
33 between 1990 and 2015, the economic sectors experiencing growth in Alameda County will be
34 services (increasing from 33 percent to 37 percent of all jobs) and manufacturing and wholesale
35 (increasing from 20 percent to 21 percent) (ABAG 1995b, 2001).

36 *Employed Residents*

37 Table 3.3-2 summarizes trends and projections for employment in Alameda County. Between
38 1980 and 1990, the number of employed Alameda County residents increased by 24 percent.
39 Employment growth for residents is expected to slow considerably between 1990 and 2015,

1 however, with a projected increase of 29 percent over the 25-year period (ABAG 2001). Cities in
2 Alameda County that are expected to experience the greatest increase of employed residents
3 during these two decades are Oakland, Livermore, Dublin, and Pleasanton (ABAG 1995b).

4 *Unemployment*

5 Alameda County's unemployment rate in 1990 was 4.2 percent, compared with a 5.6 percent
6 rate statewide.

7 *Jobs-Housing Balance*

8 According to ABAG *Projections '96*, the jobs-housing ratio for Alameda County in 1990 was 1.31
9 (ABAG 1995b). This number is expected to increase to 1.58 by 2015 (ABAG 2001). The jobs-
10 housing ratio is slightly lower in Alameda County than the region as a whole.

11 *NSTI*

12 During the 1980s, NSTI remained relatively isolated from the rest of San Francisco—not only
13 physically, but also economically and socially. Virtually all employment on the islands was
14 military-related in 1990. Workers were employed either by various branches of DoD or by a
15 small number of nonmilitary organizations providing services to residents, such as banks, the
16 school, and the post office. In 1990, the largest nonmilitary employer at NSTI was the San
17 Francisco Unified School District (SFUSD).

18 *Jobs by Sector*

19 The U.S. census only provides data for civilian (nonmilitary) jobs. The 1988 NSTI Master Plan
20 Update indicates that the following military personnel were employed: 200 officers, 1,215
21 enlisted, 495 transient, and 975 reserve shipmen, for a total of 2,885 persons (DON 1988b).
22 There were approximately 750 nonmilitary jobs at NSTI in 1990, of which 19 were in
23 manufacturing and wholesale trade, 150 were in retail trade, 31 were in services, and 550 were
24 in various other sectors, including construction, transportation, communications, public
25 utilities, finance, insurance, real estate, and government jobs. The total Navy civilian and
26 military personnel at NSTI was about 3,635 employees.

27 *Employed Residents*

28 Military personnel employed at NSTI did not all necessarily live at NSTI in 1990, as military
29 housing there was available to military personnel from other Bay Area facilities. Census data
30 indicate that in 1990, 40 percent of the workers with jobs at NSTI lived on-site. Another 11
31 percent lived in other parts of San Francisco and 14 percent lived in Alameda County.
32 Seventeen percent lived in the seven other Bay Area counties, while 18 percent lived outside the
33 Bay Area (San Francisco 1995a). There were 2,202 NSTI employed residents in 1980 and 2,482 in
34 1990, an increase of 13 percent over the decade.

35 *Unemployment*

36 Census Tract 179.02, which encompasses both Treasure Island and Yerba Buena Island, had a
37 civilian unemployment rate of 7.4 percent in 1990. This rate is based on 56 persons reported to

1 be unemployed out of a civilian labor force of 750. Using a denominator that includes military
 2 personnel and civilians, the unemployment rate would have been 1.5 percent, compared with 4
 3 percent citywide and 5.6 percent statewide (U.S. Department of Commerce 1990).

4 **3.3.3 Population Trends and Projections**

5 This subsection describes population growth trends and projections for the nine-county Bay
 6 Area, San Francisco, Alameda County, and NSTI. The information provided below includes
 7 population size and distribution, age, household size, and income. Demographic data are not
 8 available for 1993. For consistency with other sections of this report, population estimates and
 9 projections are provided for each geographic area for the years 1980, 1990, and 2015. Two
 10 summary tables are referenced throughout this section. Table 3.3-3 presents data on regional
 11 population trends and projections and Table 3.3-4 presents information on regional household
 12 characteristics. The main sources used to obtain the information presented in this section are
 13 census data (U.S. Department of Commerce 1980, 1990) and *ABAG Projections 2002* (ABAG
 14 2001). Racial composition and poverty are discussed in section 6.4, Environmental Justice.

15 **Bay Area**

16 *Population Growth*

17 Table 3.3-3 presents data on regional population trends and projections. The population of the
 18 nine-county region increased from 5,179,759 in 1980 to 6,020,147 in 1990, an increase of 16
 19 percent.

20 Over the 25-year forecast period (1990 to 2015), ABAG projects that regional population growth
 21 will slow slightly, with 1,752,053 people added by 2015. This would represent a 29 percent
 22 increase over the 25-year period. Population distribution within the Bay Area also has
 23 undergone substantial change over the past decades, reflecting the decentralization of both
 24 population and employment that has occurred within the region.

25 *Household Characteristics*

26 Table 3.3-4 presents information on household characteristics in the region. The total number of
 27 households in the region increased 14 percent between 1980 and 1990. The average household
 28 size in the region increased slightly between 1980 and 1990—from 2.57 to 2.61 persons. The
 29 median household income in the region increased by 102 percent during the decade, from
 30 \$20,607 in 1980 to \$41,595 in 1990.

**Table 3.3-3. Region of Influence Population Trends and Projections,
 1980, 1990, and 2015**

<i>Location</i>	<i>1980</i>	<i>1990</i>	<i>Percent Change 1980- 1990</i>	<i>2015</i>	<i>Percent Change 1990-2015</i>
Bay Area	5,179,759	6,020,147	16%	7,772,200	29%
San Francisco	678,974	723,959	7%	810,500	12%
Alameda County	1,105,379	1,276,702	15%	1,628,800	28%
NSTI	3,935	4,500	14%	N/A	N/A

Notes: 1980 and 1990 figures are actual; 2015 figure is projected.
 N/A = not applicable.
Sources: U.S. Department of Commerce 1980, 1990; ABAG 1995b.

1

Table 3.3-4. Region of Influence Household Characteristics, 1980 and 1990

Location	Number of Households			Average Household Size		Median Household Income		
	1980	1990	Percent Change	1980	1990	1980	1990	Percent Change
Bay Area	1,970,551	2,246,242	14%	2.57	2.61	\$20,607	\$41,595	102%
San Francisco	298,956	305,584	2%	2.19	2.29	\$15,866	\$33,414	111%
Alameda County	426,093	479,518	13%	2.53	2.59	\$18,700	\$37,544	101%
NSTI	801	962	20%	3.76	3.71	\$14,712	\$27,909	90%

Sources: U.S. Department of Commerce 1980, 1990.

2 *San Francisco*3 *Population Growth*

4 San Francisco's population increased by about seven percent between 1980 and 1990, from
5 678,974 to 723,959 persons (Table 3.3-3). This was the second slowest rate of growth of any
6 county in the Bay Area and only a fraction of California's growth rate of 26 percent (EDD 1994).
7 ABAG projects that San Francisco's population growth will be sustained and moderate over the
8 next 25 years, increasing by only 12 percent during the forecast period (ABAG 2001).

9 *Household Characteristics*

10 The number of San Francisco households increased by only two percent between 1980 and 1990
11 (Table 3.3-4). Although the average household size in San Francisco rose from 2.19 to 2.29
12 during this decade, the citywide average was still substantially smaller in 1990 than the regional
13 average of 2.61. The median household income in San Francisco increased by 111 percent
14 between 1980 and 1990, from \$15,866 in 1980 to \$33,414 in 1990.

15 *Alameda County*16 *Population Growth*

17 In 1990, Alameda County had a total population of 1,276,702, making it the most populous
18 county in the Bay Area after Santa Clara County. Alameda County was the only county in the
19 nine-county region to have four cities with 1990 populations of more than 100,000 residents—
20 Oakland, Fremont, Hayward, and Berkeley.

21 Alameda County's population grew 15 percent between 1980 and 1990, and it is projected to
22 increase by an additional 28 percent between 1990 and 2015 (Table 3.3-3). Most of this growth is
23 expected in the eastern portion of the county, especially in the communities of Dublin,
24 Livermore, and Pleasanton. Growth in the western portion of the county, with the exception of
25 Emeryville, is expected to be slow during this period, as the communities bordering San
26 Francisco Bay approach full buildout (ABAG 2001).

1 *Household Characteristics*

2 The number of households in Alameda County increased by 13 percent between 1980 and 1990
 3 (Table 3.3-4). The average household size in Alameda County was 2.59 persons in 1990, slightly
 4 higher than the 1980 average of 2.53 persons but still below the regional average of 2.61 persons.
 5 Similar to the region and to San Francisco, the median household income in Alameda County
 6 increased by 101 percent between 1980 and 1990, from \$18,700 to \$37,544.

7 *NSTI*

8 While still an active military base, the resident population at NSTI was approximately 3,935 in
 9 1980. By 1990, the resident population at NSTI had increased to approximately 4,500 (Table 3.3-
 10 3). Between 1980 and 1990, the number of NSTI households increased 20 percent, while the
 11 median household income increased by approximately 90 percent during this same period
 12 (compared with more than 100 percent in most of the rest of the region) (Table 3.3-4).

13 **3.3.4 Housing Characteristics**

14 This subsection presents information about the housing stock in the Bay Area, San Francisco,
 15 and Alameda County. Because housing affordability is a critical issue in the region and because
 16 reuse could affect the local supply of (and demand for) affordable housing, housing supply and
 17 housing costs are described for each geographic location. The data source used is the U.S.
 18 Department of Commerce census data. Table 3.3-5 summarizes housing information that is
 19 referenced throughout this section.

20 *Bay Area*

21 Census data indicate that the region's housing stock increased by 15 percent between 1980 and
 22 1990. The housing vacancy rate in the region was five percent in 1990. The region's housing
 23 stock in 1990 included single-family units (61 percent), multi-family units (35 percent), mobile
 24 homes (3 percent), and other types of residences, such as houseboats (1 percent). Of the
 25 occupied housing units in the region in 1990, 56 percent were owner-occupied, and 44 percent
 26 were renter-occupied.

Table 3.3-5. Region of Influence Housing Characteristics, 1980 and 1990

Location	Number of Housing Units			Percentage of Single-family Units			Vacancy Rate	
	1980	1990	Percent Change	1980	1990	Percent Change	1980	1990
Bay Area	2,061,343	2,365,323	15%	56	61	9%	4.2	5.0
San Francisco	316,608	328,471	4%	46	32	-30%	5.7	7.0
Alameda County	444,607	504,109	13%	51	59	16%	4.1	4.9
NSTI	809	1,045	29%	N/A	N/A	N/A	0.9	7.9

Note: N/A = not applicable.
 Sources: U.S. Department of Commerce 1980; 1990.

1 At the time of the 1990 census, housing costs in the Bay Area were among the highest in the
2 nation. In 1990, the median value for an owner-occupied unit in the Bay Area was \$255,476.
3 Housing prices in the region increased by more than 160 percent from 1980, when the median
4 value for an owner-occupied unit was \$98,100.

5 *San Francisco*

6 San Francisco had 328,471 housing units in 1990 (Table 3.3-5), or approximately 14 percent of
7 the region's housing supply. San Francisco's housing stock increased by approximately four
8 percent between 1980 and 1990. The vacancy rate in San Francisco in 1990 was 7.0 percent, up
9 from 5.7 percent in 1980.

10 In 1990, 32 percent of San Francisco's housing stock was single-family units—about half the
11 percentage of single-family units in the region. Single-family units are relatively scarce in San
12 Francisco due to the relatively high cost and limited supply of land available for residential
13 development. Two-thirds of San Francisco's housing stock in 1990 was composed of multi-
14 family units. Less than one percent of all units were mobile homes, and two percent were other
15 types of housing units.

16 In 1990, approximately 35 percent of the housing units were owner-occupied—considerably
17 lower than the regional figure of 56 percent. The median value for an owner-occupied dwelling
18 in San Francisco was \$298,900 in 1990, which was 17 percent higher than the regional median
19 value. This is consistent with information published by the San Francisco Planning Department
20 that states the median value for a three-bedroom home in San Francisco in 1990 was \$290,250
21 (San Francisco 1995c). While the median household income increased by 111 percent between
22 1980 and 1990, the median housing price increased by 188 percent, exacerbating San Francisco's
23 housing affordability problems.

24 *Alameda County*

25 Alameda County had 504,109 housing units in 1990 (Table 3.3-5), approximately 21 percent of
26 the Bay Area's housing supply. The county's housing stock had increased by 13 percent since
27 1980, when there were 444,607 housing units. In 1990, 4.9 percent of the housing units were
28 vacant, similar to the regional vacancy rate of 5.0 percent.

29 The composition of Alameda County's housing stock is similar to that of the region as a whole.
30 In 1990, 59 percent of the housing units in Alameda County were single-family units, 38 percent
31 were multi-family units, and the remainder were mobile homes and other types of housing
32 units, such as houseboats. The rate of owner-occupancy in Alameda County in 1990 was 53
33 percent, similar to the regionwide rate. The median home value in Alameda County was
34 \$225,300, which was also similar to the regional median value. Home values in Alameda
35 County increased by more than 165 percent from 1980, when the median home value was
36 \$84,900.

1 *NSTI*

2 In 1990, while still an active military base, there were 1,045 housing units at NSTI (Table 3.3-5).
3 The 1990 housing vacancy rate was 7.9 percent, a substantial increase from the vacancy rate of
4 0.9 percent reported in 1980.

5 **3.3.5 Schools**

6 The information presented in this section is based on interviews with SFUSD personnel.

7 *San Francisco*

8 NSTI is within the boundaries of the SFUSD, where enrollment has remained constant since
9 1990, averaging approximately 63,000 to 64,000 students. Enrollment at elementary schools
10 throughout the school district is at or near capacity (SFUSD 1996b). At the middle school and
11 high school levels, some schools are at capacity or are experiencing overcrowding, while others
12 are underenrolled. Overcrowding at the middle school and high school level is primarily a
13 problem in schools in the western portion of San Francisco.

14 The San Francisco school system receives annual funding from the federal government under
15 the provisions of Public Law 101-874. The amount of funding is determined annually by the
16 U.S. Department of Education, then appropriated by the Senate for allocation to schools
17 attended by the children of military personnel who reside on federal property. Receipt of such
18 funds does not alter the per capita funding contributed by California to the school district. In
19 the 1990-1991 school year, money was allocated for the 1,470 eligible students who attended San
20 Francisco public schools and resided either at NSTI or the Presidio. (Roughly two-thirds of the
21 eligible students were from NSTI and one-third were from the Presidio.)

22 *NSTI*

23 Elementary school-aged children that lived at NSTI attended the Treasure Island Elementary
24 School. The school property was leased from Navy by the school district, and the school was
25 staffed by district employees. While most Treasure Island Elementary School students lived at
26 NSTI, some other San Francisco children were taken by bus to the school to achieve court-
27 mandated racial balance.

28 In 1990, there were 1,134 school-aged children (5 to 19 years of age) at NSTI, representing 25
29 percent of the NSTI population, about double the citywide ratio. Enrollment projections for the
30 elementary school were not available because the school district's annual enrollment projections
31 are district-wide only. Individual school enrollments are not projected (SFUSD 1996c).

32 Enrollment at Treasure Island Elementary School was 852 in October 1990. Approximately two-
33 thirds of the enrolled students were children from military families living at NSTI, and one-
34 third were students who were bussed from other parts of San Francisco (Treasure Island
35 Elementary School 1996). Since there is no middle school or high school at NSTI, these students
36 were bussed to schools in San Francisco. Most middle school-aged children at NSTI were
37 bussed to the Potrero Hill Middle School. Most high school students from NSTI were bussed to
38 Galileo High School. Many of the middle school students at NSTI elected to attend the Everett
39 Middle School, as well as the Horace Mann and Martin Luther King Alternative Middle

1 Schools. Some high school students chose to attend the Thurgood Marshall Academic High
2 School or the Phillip and Sala Burton High School (SFUSD 1996d). The school district continues
3 to lease and operate the Treasure Island Elementary School, which serves students bussed in
4 from other parts of San Francisco (DON 1998f).

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1 **3.4 CULTURAL RESOURCES**

2 “Cultural resources” is a broad term that describes archaeological, architectural, and historical
3 objects, sites, buildings, structures, or districts. Some of these are listed in or eligible for listing
4 in the National Register of Historic Places (NRHP). To qualify as an eligible property, the
5 resource must meet specific criteria established in the National Historic Preservation Act
6 (NHPA). Section 106 of the NHPA requires federal agencies to consider the effects of their
7 actions on properties listed in or eligible for listing in the NRHP. The Section 106 process
8 requires federal agency consultation with the State Historic Preservation Officer (SHPO), Native
9 American tribes, and other appropriate agencies and parties and input from the Advisory
10 Council on Historic Preservation (ACHP).

11 Cultural resources can be divided into three broad categories: prehistoric, Native American, and
12 historic. Prehistoric resources consist of the physical evidence (often buried) resulting from
13 human activities that occurred before the time of written records. Native American resources
14 are sites, areas, or materials important to living Native Americans for religious, spiritual,
15 ancestral, or traditional reasons. Historic resources can consist of physical properties,
16 archaeological sites, structures, or built items resulting from human activities since the time of
17 written records. Cultural resources that are under water are called maritime or submerged
18 cultural resources, and they can be prehistoric, Native American, or historic. Maritime sites can
19 include inundated cities, harbors, shore installations, shipwrecks, or sunken aircraft.

20 In addition to the NHPA, cultural resources and Native American resources are protected by:
21 the Archaeological Resources Protection Act of 1979 (16 U.S.C. §§ 469-469c), the American
22 Indian Religious Freedom Act of 1978 (42 U.S.C. §§ 1996-1996a), and the Native American
23 Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 U.S.C. §§ 3001-3013). NAGPRA
24 provides for the return of human remains and burial items to identified Native American
25 descendants.

26 Cultural resources at NSTI have been identified through a number of previous investigations.
27 These investigations identified cultural resources throughout NSTI, including some resources in
28 areas that have since been transferred to other federal agencies and are no longer under Navy
29 control.

30 In 1998, land on Yerba Buena Island, including two historic buildings, was transferred to the US
31 Coast Guard. Some resources within this area are not part of the evaluation in this EIS. In 2000,
32 FHWA conveyed 98 acres (40 ha) on Yerba Buena Island held by Navy to Caltrans for
33 construction of the east span of the SFOBB. Approximately 20 acres (8 ha) of dry land were
34 permanently conveyed in fee; the remaining 78 acres (32 ha) comprises five separate easements:
35 51 acre (21 ha) and 18 acre (7 ha) TCEs over submerged land, an 8 acre (3 ha) TCE over dry land,
36 and two 0.3 acre (0.1 ha) permanent aerial easements over dry land. Resources that lie within
37 lands permanently conveyed in fee and were previously transferred are not included in this EIS;
38 however, resources that are within the TCEs or aerial easements are evaluated.

39 **Cultural Background of NSTI**

40 The cultural background for NSTI consists of an overview of the history of the area from
41 prehistoric times to the present. Summarized here, cultural backgrounds are used as contexts

3.4 Cultural Resources

1 for developing significance criteria to help determine if specific properties are eligible for the
2 NRHP. Specific contexts have been developed for NSTI's prehistoric, Native American, and
3 historic resources (DON 1997f).

4 *Prehistoric*

5 Not much is known about the region's first human inhabitants or when the area became home
6 to the ancestors of modern Native Americans. Several recent discoveries in South America have
7 seriously questioned the theory that the first people on the continent crossed the Bering Strait
8 only 10,000 years ago. Some of the earliest sites recorded in the vicinity, south of the project
9 area in San Jose and Scotts Valley, are dated to as early as 8,000 BC (Moratto 1984). Based on
10 dates and material gathered from extensive archaeological excavations conducted at several
11 large prehistoric shellmounds (i.e., sites where marine resources were consumed), it appears
12 that human occupation of the San Francisco Bay Area also goes back many thousands of years.
13 Evidence suggests that between 5,000 and 2,000 BC, the bay was used by groups of hunters and
14 gatherers who subsisted on a wide variety of land, bayshore, and marsh resources. As time
15 progressed, later groups who occupied the region are believed to have relied primarily on
16 shellfish (Breschini and Haversat 1980; Moratto 1984). Although the aboriginal populations
17 may have been affected by fluctuating sea levels, use of the region appears to have been
18 continual until the historic period.

19 *Native American (Ethnography)*

20 At the time of Euro-American contact (around 1769), Native American groups of the Costanoan
21 language family occupied the area, from San Francisco Bay to southern Monterey. The large
22 area that the Costanoans occupied was subdivided among several individual groups occupying
23 specific territories. Shells, pine nuts, and obsidian for making stone tools were likely traded
24 between coastal and inland groups, as evidence from excavated sites indicates. Costanoans
25 used several semi-permanent camp areas, depending on where food was available during each
26 season, moving locations to take advantage of both marine and land resources. The Ohlone, a
27 Costanoan group that lived along the ocean shore, once occupied the project area. Like most
28 California aboriginal groups, the Ohlone practiced a transient lifestyle and relied heavily on
29 hunting and gathering. With the onset of Euro-American immigration to the area, their
30 traditional way of life essentially disappeared by the mid-1800s (NPS 1976).

31 *Historical Setting of NSTI*

32 Although Navy has managed Yerba Buena Island and Treasure Island as a single facility since
33 1940, the islands have different histories. Yerba Buena is a natural island that has been used by
34 private parties and by the Army and Navy since the 1840s. Treasure Island is an entirely
35 engineered island, constructed in 1936 and 1937.

36 Yerba Buena Island. Various parties claimed ownership of Yerba Buena Island (also known as
37 Goat Island) through the Spanish-Mexican era of California history and through the early
38 decades of American control. The Army asserted the right to occupy and use Yerba Buena
39 Island in 1866, and in 1867 it took possession of the island. Troops were stationed on the
40 southeastern part of the island, in a cove near the modern US Coast Guard station. In 1879, the
41 Army reassigned artillery units to the Presidio of San Francisco and abandoned the Yerba

1 Buena Island garrison. In 1891, the Army Coast Artillery Corps took control of the island to
2 erect a torpedo (i.e., underwater mine) depot.

3 In 1898, the Navy established a Naval Training Station in the East Cove area, in the location of
4 the 1870s Army base, but the Army retained control of the eastern tip of the island until 1960.
5 The Naval Training Station was active from 1900 until 1923, when Navy relocated it to the
6 Naval Training Center in San Diego, and the Navy facility on Yerba Buena Island became a
7 receiving ship facility. In the mid-1930s, the SFOBB was constructed. Yerba Buena Island
8 became the center anchorage for the SFOBB (anchoring the suspension spans on the west and
9 the cantilever spans on the east), and a tunnel traversed the central hill.

10 Treasure Island. Treasure Island is an entirely engineered island, consisting of rock and mud fill
11 placed over shallow areas at the northern shore of Yerba Buena Island. The COE constructed
12 the approximately 400-acre (162-ha) island during 1936 and 1937 to provide a short-term site for
13 the Golden Gate International Exposition, with the intent of converting the site into a
14 permanent airport for San Francisco when the exposition closed. The exposition was conceived
15 to celebrate construction of the Golden Gate Bridge and the SFOBB. Most of the buildings
16 constructed for the exposition were built to be temporary, with only three planned to be
17 permanent.

18 In February 1941, Navy took possession of Treasure Island from San Francisco in exchange for
19 land south of San Francisco on the peninsula. The peninsula property would become the site of
20 the San Francisco International Airport. Following the bombing of Pearl Harbor in December
21 1941, the Navy built several hundred new buildings on the island, between 1942 and 1945.
22 Most construction at Treasure Island during World War II was designed to function only for the
23 duration of the war. Following World War II, Navy transformed Treasure Island into a training
24 facility and unified various specialized technical schools from throughout the Bay Area into a
25 consolidated facility on the island. Navy demolished dozens of World War II-era temporary
26 structures during the 1960s and 1970s, making way for more modern residential and classroom
27 buildings suited to its instructional needs.

28 3.4.1 Summary of Previous Investigations

29 In accordance with Section 106 of the NHPA, Navy conducted cultural resource investigations
30 to determine the presence of cultural resources within the area of potential effect (APE).

31 Previous studies of buildings and structures at NSTI fall into two categories—those conducted
32 before 1996 and those supporting a comprehensive inventory conducted by JRP Historical
33 Consulting Services in 1996 and 1997. Pre-1996 studies of buildings and structures at Yerba
34 Buena Island are restricted to studies of senior officers' quarters (DON 1982b) and a historical
35 investigation by staff from Mare Island Naval Shipyard conducted in 1995 (DON 1995a). The
36 National Park Service (NPS) inspected and analyzed data from the exposition buildings at
37 Treasure Island in 1987 for potential National Historic Landmark (NHL) status, as part of a
38 thematic study of world's fair sites in the U.S. (NPS 1987). The intent of the NPS study was to
39 determine whether any exposition buildings would qualify for listing in the NRHP,
40 individually or as a historic district.

3.4 Cultural Resources

1 In 1996-1997, JRP Historical Consulting Services conducted a comprehensive inventory of all
2 buildings and structures at NSTI (DON 1997a). That inventory effort included preparing a
3 historic context for evaluating historic significance, as well as an inspection of all buildings on
4 both islands.

5 Also in 1996, PAR Environmental Services, Inc., conducted archaeological investigations within
6 NSTI (DON 1997f). In addition to a field survey, personnel of the Northwest Information
7 Center (NWIC) of the Historical Resources File System, Sonoma State University, Rohnert Park,
8 completed a prehistoric and historic site record and literature search (NWIC File No. 96-227).

9 The California State Lands Commission Shipwreck database was reviewed for reported
10 shipwrecks in the vicinity of NSTI. The SFOBB retrofit project also has been investigated to
11 identify eligible and potentially eligible sites within the APE.

12 Background studies conducted at both Treasure Island and Yerba Buena Island identified
13 significant archaeological properties and historic buildings and structures that are within the
14 areas that Navy transferred to the US Coast Guard and the FHWA. While not formally part of
15 this analysis, discussions of some transferred resources are included to assist the reader in
16 understanding the project.

17 **3.4.2 Summary of Known Resources**

18 *Status of Cultural Resources at Yerba Buena Island*

19 The 1996 cultural resource investigations identified archaeological and historic resources on
20 Yerba Buena Island. Four areas, or zones, of subsurface archaeological sensitivity on Yerba
21 Buena Island were defined and are discussed further below (Figure 3-3). Due to the transfer of
22 Navy property to the US Coast Guard and FHWA, portions of Zone 1, Zone 2, and Zone 3, and
23 much of Zone 4 are no longer Navy property and are not part of the proposed disposal and
24 reuse action considered in this EIS.

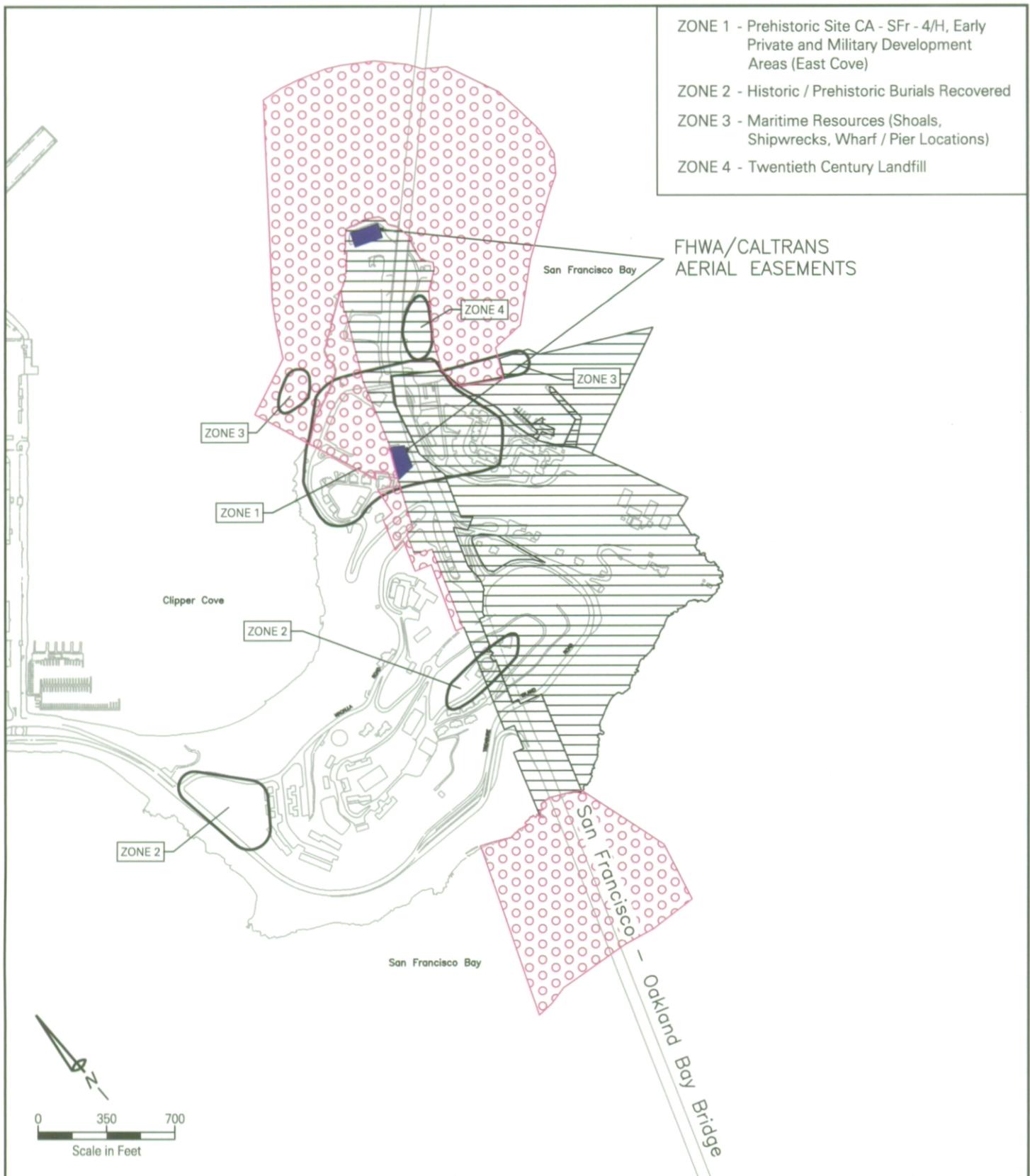
25 *Zone 1*

26 Zone 1 contains a prehistoric site with a historic component (CA-SFr-4/H) and early private
27 and military development. The prehistoric component of site CA-SFr-4/H contained burials
28 reportedly removed from the site in 1934 (DON 1997f). The remains are housed at the Phoebe
29 Hearst Museum in Berkeley, California. Following the FHWA transfer, Caltrans conducted
30 additional work at the prehistoric site, including Native American consultation, additional site
31 testing, and development of treatment plans to comply with the NHPA (Caltrans and FHWA
32 2001). Caltrans determined the historical component of site CA-SFr-4/H to be a
33 noncontributing element for eligibility to the NRHP (Caltrans and FHWA 2001). Caltrans
34 developed treatment plans for the resources, as part of the SFOBB retrofit project (Caltrans and
35 FHWA 2001).

36 There appear to be no remnant buildings or structures associated with pre-1867 occupation of
37 the island, even though it had been occupied since the 1840s (DON 1996p). One building
38 remaining from the early military period of occupation is the lighthouse, built in 1872 and still
39 used by the US Coast Guard. The lighthouse is not on Navy property and
40

- ZONE 1 - Prehistoric Site CA - SFr - 4/H, Early Private and Military Development Areas (East Cove)
- ZONE 2 - Historic / Prehistoric Burials Recovered
- ZONE 3 - Maritime Resources (Shoals, Shipwrecks, Wharf / Pier Locations)
- ZONE 4 - Twentieth Century Landfill

FHWA/CALTRANS
AERIAL EASEMENTS



There are four zones of predictable archeological sensitivity where the likelihood of unexpected discoveries of significant archeological and historical resources is judged high.

Archeologically Sensitive Zones Yerba Buena Island

Legend

- | | |
|--|--|
|  Areas Excluded from Proposed Navy Disposal |  FHWA/Caltrans TCEs |
|  FHWA/Caltrans Aerial Easement | |

Figure 3-3

1 would not be affected by the disposal action. The other remaining structure on Yerba Buena
2 Island from this early period is the reinforced concrete Building 262, the torpedo building
3 constructed in 1891 as the mine assembly building. It is north of and almost directly beneath
4 the SFOBB, at the eastern water's edge and is unoccupied. There is an aerial easement over
5 Building 262, although the structure itself was not transferred to FHWA. Also within Zone 1
6 are the foundation remnants of the Naval Training Station's original administration complex, its
7 associated outbuildings, and seven unmodified Senior Officers Quarters (Quarters 1 through 7).
8 Other buildings remaining from this period include Quarters 8 and 9, which were constructed
9 between 1900 and 1905. Quarters 8 and 9 were within an area transferred to the US Coast
10 Guard. One historic district and three individual buildings that meet the criteria for listing in
11 the NRHP were identified as part of the comprehensive 1996 investigation.

12 This Senior Officers Quarters Historic District includes seven senior officers quarters, Quarters 1
13 through 7, all built between 1900 and 1905 (Figure 3-4). The district also includes three
14 associated garages, Buildings 83, 205, and 230, and formal landscaping elements. In 1997, the
15 SHPO agreed in concept on the proposed historic district. One building within the group,
16 Quarters 1, the Nimitz House, was individually listed on the NRHP in 1991.

17 Zone 2

18 Zone 2 is broken into two areas, one that contains prehistoric burials, and the site of the original
19 historic cemetery site dated to 1849 (DON 1997f).

20 The first part of Zone 2 is an area of reported prehistoric and historic archaeological deposits,
21 including Native American remains removed in the 1930s from the top of the island where the
22 signal tower now stands (DON 1997f). Most of the area where the reported human remains
23 were found is within the area transferred to FWHA.

24 The second part of Zone 2 is reported as the early cemetery of the island, dated to 1849.
25 Although all known burials were relocated to San Francisco in the 1930s, the zone is considered
26 sensitive because of the possibility of additional unmarked graves (DON 1997f).

27 Zone 3

28 Zone 3 contains potential historic maritime resources from before 1835 through 1923 (DON
29 1997f). Maritime traffic both in prehistoric and historic times seems likely, due to the strategic
30 location of the island. A review of reported shipwrecks using the California State Lands
31 Commission Shipwreck database did not reveal any shipwrecks in the waters surrounding
32 Yerba Buena Island; however, four shipwrecks were reported in the vicinity (Caltrans and
33 FHWA 2001). In investigations conducted for the SFOBB retrofit project EIS, Caltrans included
34 a maritime archaeological survey that extended 1,200 feet on either side of the bridge, within
35 Clipper Cove, and in an area east of Building 262 (Caltrans and FHWA 2001). This survey did
36 not reveal the presence of any shipwrecks. The *Utica*, a boat that burned and sank in 1850, is
37 plotted (using latitude and longitude provided by the shipwreck database) on what would have
38 been the shoals to the north of Yerba Buena. This area has since been filled and is now Treasure
39 Island.

1 Zone 3 also contains areas where historic wharves were constructed, as shown on archival maps
2 from 1871 that depict a wharf within the East Cove off Yerba Buena (DON 1997f). The Navy
3 transferred some property within Zone 3 to FWHA as part of the SFOBB retrofit project.

4 *Zone 4*

5 Zone 4 is an area along East Cove that includes the site of a historic dump dated to the 1920s
6 through the 1930s associated with the Yerba Buena Naval Training School (DON 1997f). The
7 Navy transferred nearly all property within Zone 4 to FHWA as part of the SFOBB retrofit
8 project. In addition to those resources identified for each of the zones on Yerba Buena Island,
9 the SFOBB also plays a part of the historic record of Yerba Buena Island. The State Historical
10 Resources Commission nominated the SFOBB for listing in the NRHP on September 6, 1999
11 (Caltrans and FHWA 2001). Completed in 1937, the SFOBB was first determined as eligible for
12 NRHP listing in 1983. The bridge held numerous records when it opened, and it remains a Bay
13 Area centerpiece. (The Navy transferred the land supporting and immediately adjacent to the
14 SFOBB to FWHA, and it is not part of the NSTI disposal and reuse action.)

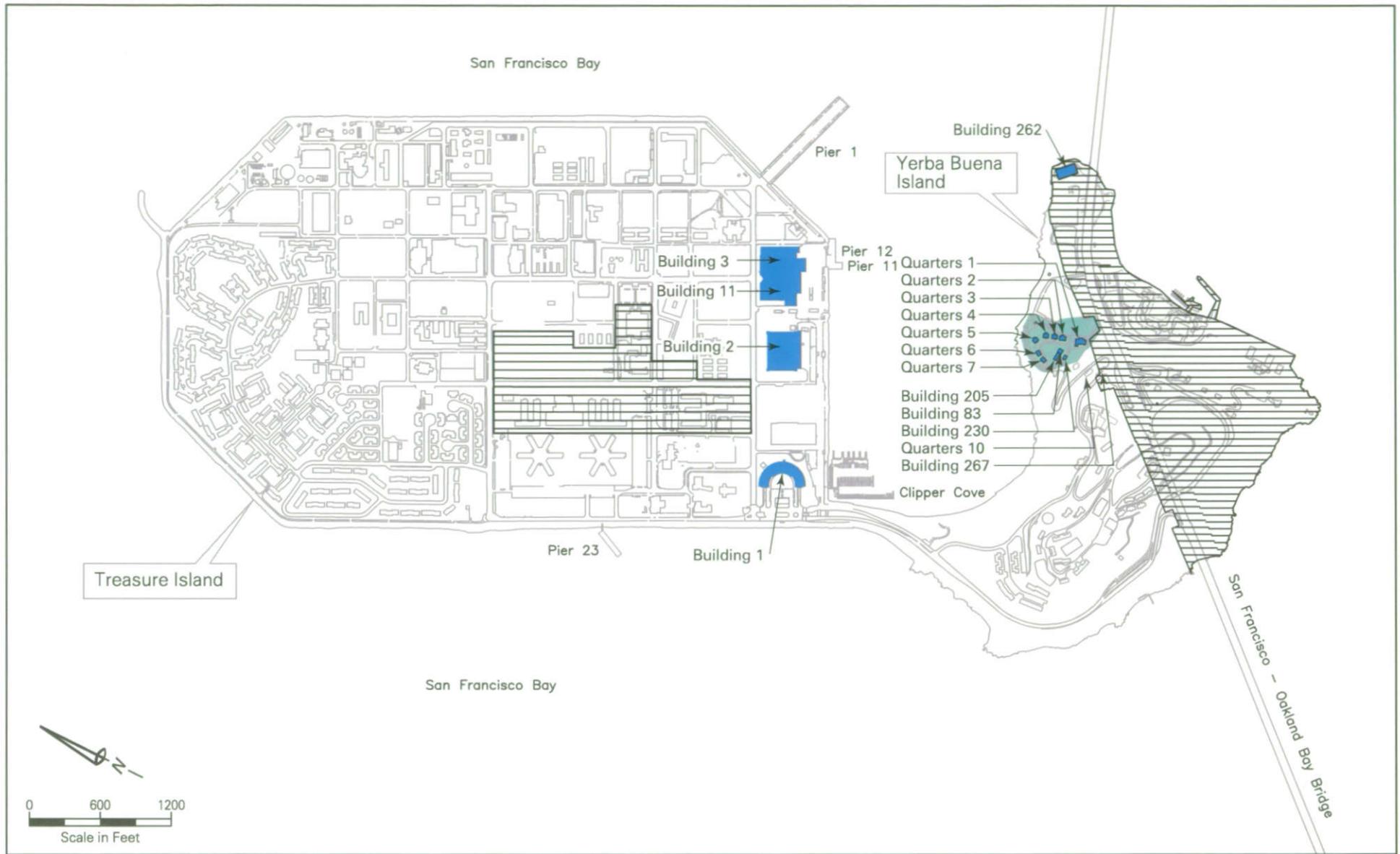
15 *Yerba Buena Consultation and Affected Properties*

16 The SHPO concurred with the Navy that the Senior Officers Quarters Historic District, Quarters
17 8 and 9, and Building 262 were eligible for listing in the NRHP and that zones 1 through 4 may
18 have properties that qualify for listing (SHPO letter October 15, 1997). The SHPO also
19 commented that further information was needed on several historic features before
20 determinations of eligibility were possible. In response, Navy provided additional information
21 (Navy letter dated March 2, 1998) supporting the argument that the features would not qualify
22 under eligibility criteria. Navy and the SHPO have completed a memorandum of agreement
23 (MOA) in which it is determined that the eligible properties that would be affected by the
24 undertaking are limited to Quarters 1, which is individually listed on the NRHP, Quarters 2
25 through 7 and their garages (Building 83, Building 205, Building 230), the formal landscaping
26 elements of the area, and any potential undiscovered prehistoric and historic sites on Yerba
27 Buena Island (the MOA is discussed further in section 4.4 and a copy is included as Appendix
28 H).

29 *Status of Cultural Resources at Treasure Island*

30 Because most of Treasure Island consists of fill material, the potential for buried prehistoric or
31 historic archaeological resources related to pre-Navy occupation is considered to be extremely
32 low. The potential for paleontological resources also is considered to be low, based on the soil
33 composition and geological formation of the Treasure Island project area lands. Any marine or
34 submerged cultural resources, such as shipwrecks, also would have been covered by the
35 dredge-and-fill used to create the island.

36 Treasure Island itself is an engineered island and is over 50 years old. In a letter, the SHPO
37 asked the Navy to consider the potential eligibility of the entire island, specifically the
38 engineering achievements of the San Francisco Army Corps of Engineers in 1936 (SHPO letter
39 October 15, 1997). In response, JRP Historical Consulting Services and Navy evaluated the
40 significance of Treasure Island in the field of engineering and concluded that it did not appear
41 to be a significant example of the dredge-and-fill techniques of the Corps of Engineers, which



Legend:

- National Register Listed and Eligible Buildings and Structures
- Areas Excluded from Proposed Navy Disposal

***National Register Listed Buildings
and Eligible Properties on NSTI***

Naval Station Treasure Island, California

Figure 3-4

1 had been doing similar work throughout the Bay Area, California, and the U.S. decades before
2 the island was built (Navy letter to SHPO dated March 2, 1998).

3 Three historic features containing a number of structural foundations built during World War II
4 were encountered on Treasure Island during the 1996 survey. These foundations are clustered
5 on the north end of the island and, except for the Brig Overflow that was constructed in 1943, all
6 date to 1944. They include Buildings 207 (barracks), 222 (brigade guard house), 228 (bachelor
7 officers quarters), 236 (administration and classrooms), 237 (oil tank), 238 (boiler house and
8 shop), 239 (oil separating pit), 240 (forecastle mock-up), 241 (boiler room), 242 (engine room),
9 243 (flight deck), 244 (diving tank), and 245 through 257 (oil and gas tanks and pits). Though 50
10 years old, these foundations are from a well-documented phase of Treasure Island's history.
11 The historic remains are limited to surface foundations that are documented on maps and do
12 not contribute significant information for interpreting the island's history. It was recommended
13 that the foundations do not qualify for inclusion in the NRHP.

14 Of the Golden Gate Exposition buildings that the Navy used during World War II (DON 1995a),
15 five still exist (in whole or in part), with only Building 1 (the Administration Building), Building
16 2 (the Hall of Transportation), and Building 3 (the former Palace of Fine and Decorative Arts)
17 remaining in relatively unaltered condition. In 1982, a cultural resources inventory of buildings
18 and structures on Treasure Island (DON 1982b) concluded that these three remaining buildings
19 individually meet the criteria for the NRHP. Building 111 also was considered eligible as a
20 structural component of Building 3. The National Park Service analysis in 1987 concluded that
21 insufficient resources from the exposition existed at Treasure Island to warrant additional
22 eligibility recommendations.

23 *Treasure Island Consultation and Affected Properties*

24 In 1984, the SHPO concurred with the Navy's finding that Building 1 was eligible for the NRHP
25 (California Office of Historic Preservation 1984), and in 1992 the SHPO made this same
26 determination for Building 2 and Building 3 (California Office of Historic Preservation 1992).
27 Building 111 also qualifies for the NRHP as a structural element of Building 3 (California Office
28 of Historic Preservation 1992). The SHPO and Navy in their MOA determined that the eligible
29 properties that would be affected by the undertaking are limited to Buildings 1 and 2, Building
30 3 with its associated Building 111, and any potential undiscovered prehistoric and historic sites
31 on Treasure Island.

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1 **3.5 TRANSPORTATION**

2 This section describes the existing roadway network, traffic volumes and level of service, public
3 transportation (including ferry service), pedestrian and bicycle circulation, parking, and goods
4 movement on and around NSTI.

5 **3.5.1 Roadway Network**

6 *Regional Roadway System*

7 Yerba Buena Island connections to and from the SFOBB/I-80 are provided by one off-ramp and
8 two on-ramps in the westbound direction and two off-ramps and one on-ramp in the eastbound
9 direction. The SFOBB/I-80 contains two traffic levels, each with five lanes, with the upper level
10 carrying westbound traffic and the lower level carrying eastbound traffic. Access to Treasure
11 Island is from Yerba Buena Island via a causeway (Treasure Island Road).

12 The SFOBB/I-80 structure, completed in 1937, is owned by Caltrans. The access ramps to and
13 from Yerba Buena Island are owned by Navy. Figure 3-5 shows the locations of the six ramps
14 and the Caltrans easement across Yerba Buena Island.

15 Southwest of the SFOBB/I-80, I-80 links NSTI to San Mateo and Santa Clara counties via U.S.
16 101 and I-280. Through downtown San Francisco, I-80 is generally three to four lanes, with
17 additional lanes added between on-ramps and off-ramps. I-80 connects with U.S. 101 south of
18 the 7th and 8th Street ramps, and U.S. 101 connects with I-280 south of Cesar Chavez Street,
19 near Alemany Boulevard. Northeast of the SFOBB, I-80 connects NSTI to Alameda and Contra
20 Costa counties via I-80 and I-580 north of the toll plaza area. The Cypress structure freeway
21 connection between I-80 and I-880, demolished following the 1989 Loma Prieta earthquake, was
22 reconstructed by Caltrans. A portion of this new freeway connecting I-880 and the SFOBB
23 opened in July 1997. The final link of this new freeway opened at the end of September 1998.
24 The new SFOBB east span is currently under construction. It will include a new structure on the
25 north side of the existing structure. This new structure will have improved on-ramp access
26 from Yerba Buena Island in the eastbound direction.

27 *NSTI Roadway System*

28 The following describes existing roadways on Treasure Island and Yerba Buena Island.

29 *Treasure Island*

30 Roadways on Treasure Island are classified collector or local. Collector roads provide for traffic
31 movement between major streets and local streets.

32 Local roads provide direct access for local traffic movements. As shown in Figure 3-6, the
33 collector system for Treasure Island is a basic grid. There are two main collector roads serving
34 the east-west direction, California Avenue and 9th Street. Five collector roads carry traffic in the
35 north-south direction – Avenues N, M, H, D, and Avenue of Palms. Avenue of the Palms is the
36 only access road onto Treasure Island from the causeway (Treasure Island Road). The
37 remaining roads on Treasure Island are considered local.

3.5 Transportation

1 California Avenue is a four-lane two-way roadway. The only traffic control devices on
2 California Avenue are stop signs controlling incoming traffic from the north-south collectors
3 and local roads onto California Avenue. Ninth Street runs from Avenue M to Avenue D as a
4 two-lane roadway and from Avenue D to Avenue of Palms as a four-lane roadway. Ninth
5 Street is controlled by four-way stop signs at its intersections with Avenue M and Avenue H
6 and by a two-way stop sign at its intersection with Avenue D. All five of the north-south
7 collectors are two-lane, two-way roadways. Avenues N, M, H, and D have one curb lane for
8 parking in each direction. Intersections with these collector roads are either two-way or four-
9 way stop sign-controlled. Avenue of Palms does not contain any traffic control devices, except
10 for a stop sign at the Main Gate.

11 The basic speed limit on Treasure Island roads is 25 miles per hour (mph) (40 km/hour). In the
12 housing areas and school zones the travel speed is 15 mph (24 km/hour). The four-lane
13 roadways have a 35 mph (56 km/hour) speed limit.

14 The widths of the major four-lane collector streets, such as California Avenue and 9th Street,
15 range from approximately 55 to 75 feet (17 to 23 m) (not including the road right-of-way). The
16 widths of local roads providing access between residential, commercial, and industrial areas
17 range from approximately 25 to 40 feet (7.5 to 12 m).

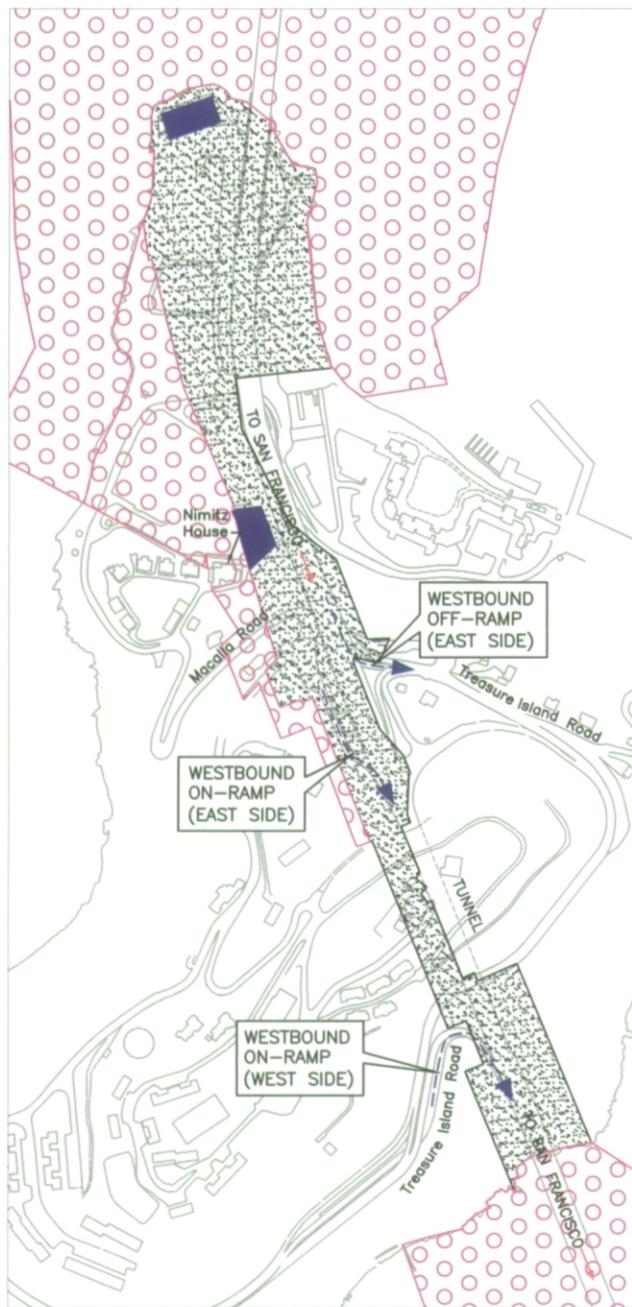
18 *Yerba Buena Island*

19 The roadway network on Yerba Buena Island consists primarily of Treasure Island Road and
20 Macalla Road (Figure 3-7). Treasure Island Road is the primary access road for the SFOBB/I-80
21 ramps. Macalla Road provides access to the former Navy housing area. Minor streets leading
22 from these two roads provide access to the US Coast Guard Station.

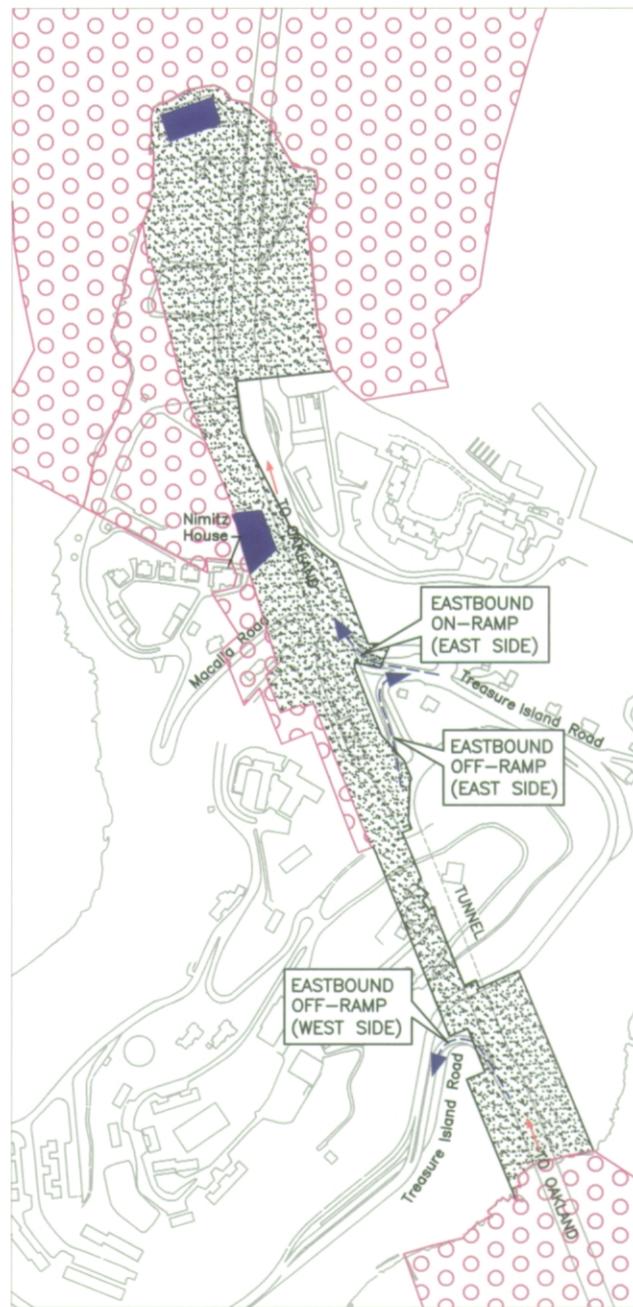
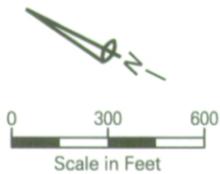
23 Treasure Island Road, a two-lane two-way roadway that links Treasure Island with Yerba
24 Buena Island, traverses the west and southeast sides of Yerba Buena Island. It provides access
25 for the SFOBB/I-80 ramps, except for the westbound on-ramp at the east side of the tunnel. As
26 it crosses over the SFOBB/I-80 tunnel from west to east, it has a grade of approximately 17
27 percent. The speed limit on Treasure Island Road varies from 25 to 35 mph (40 to 56 km/hour).

28 Macalla Road is a narrow two-lane two-way roadway that provides access to the former
29 military housing on Yerba Buena Island and to the US Coast Guard Station. It connects with
30 Treasure Island Road, at which point its grade is approximately 20 percent. Macalla Road
31 provides access to the westbound on-ramp on the east side of Yerba Buena Island at an
32 approximate 12 percent grade. It continues downhill toward former Navy housing and the US
33 Coast Guard Station; access to the US Coast Guard Station is restricted. The speed limit ranges
34 from 10 to 25 mph (16 to 40 km/hour).

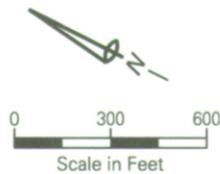
35 Other roadways include Yerba Buena Road, a narrow two-lane two-way roadway; Signal Road,
36 a two-lane two-way roadway; and Forest Road, a narrow one-lane one-way roadway circling
37 the top of the island. Speeds on these roadways are from 10 to 25 mph (16 to 40 km/hour), and
38 there are a number of sharp turns. Roadway grades on portions of these roadways approach
39 approximately 15 percent. Roadways range from approximately 19 to 32 feet (6 to 10 m) wide,
40 and have no or very narrow (1 to 2 feet [0.3 to 0.6 m] wide) shoulders.



Ramp Configuration
Upper Deck
SFOBB



Ramp Configuration
Lower Deck
SFOBB

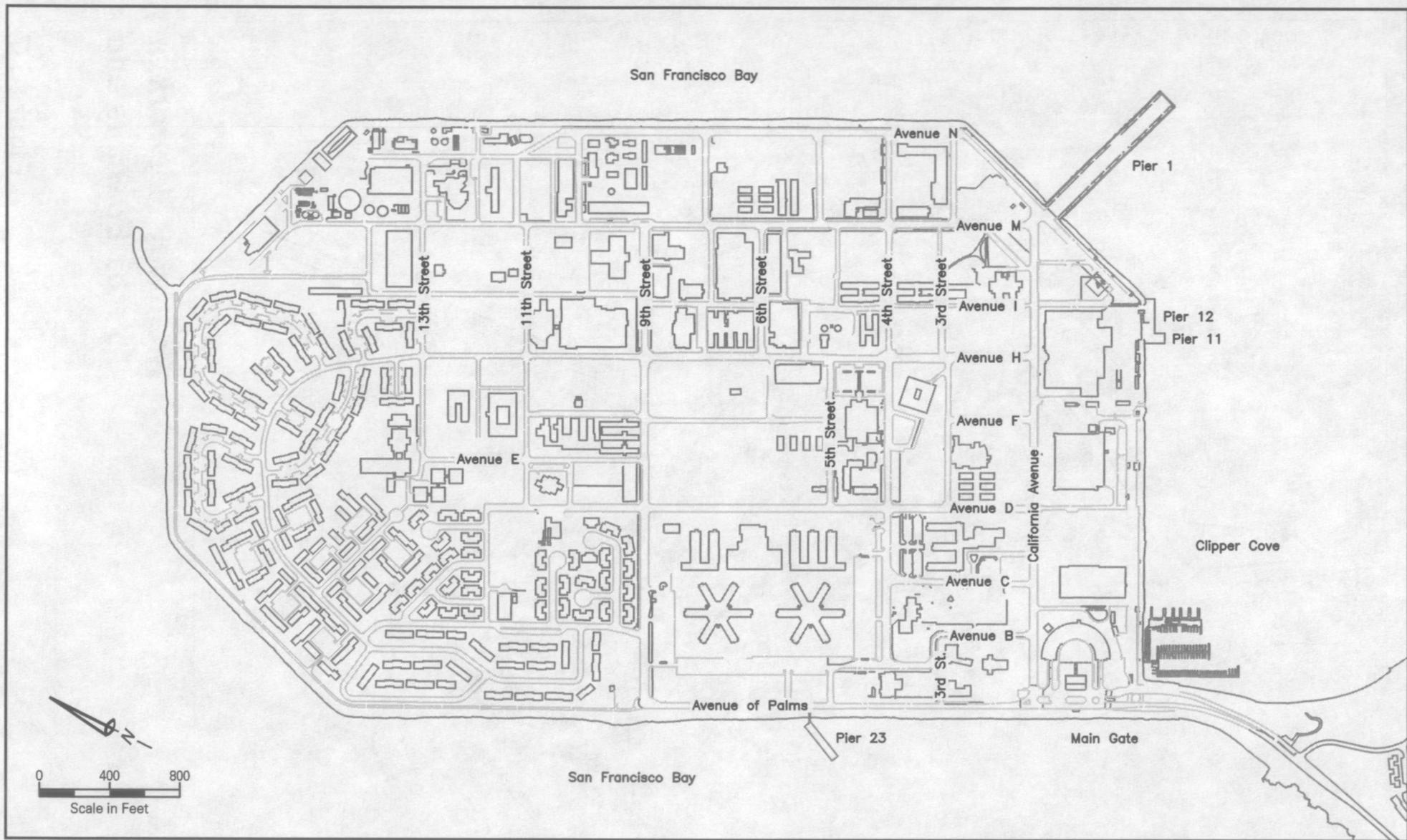


Caltrans has acquired about 98 acres on Yerba Buena Island for existing and proposed SFOBB structures. Six ramps (three on both the upper and lower decks) access the SFOBB. Four ramps are on the east side of the SFOBB tunnel structure, and two ramps are on the west side.

Legend

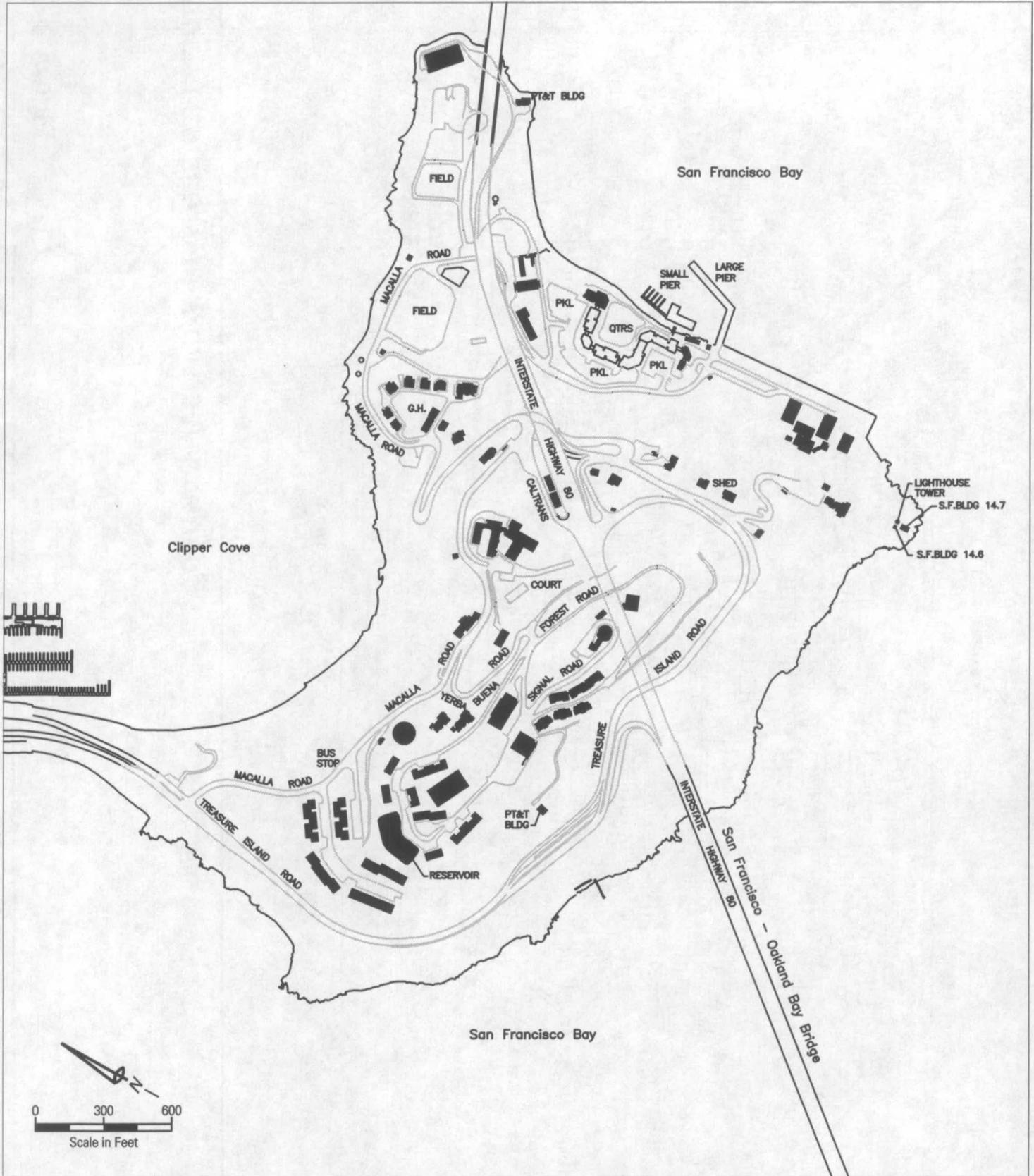
-  FHWA/Caltrans TCEs
-  FHWA/Caltrans Land Permanently Conveyed in Fee
-  FHWA/Caltrans Aerial Easement

SFOBB Ramp Configuration through Yerba Buena Island



The roadway network at Treasure Island is a basic grid.

Roadway Network at Treasure Island



Macalla Road is a narrow, two-lane two-way roadway that provides access from the SFOBB to the Treasure Island causeway.

Roadway Network at Yerba Buena Island

1 *Emergency Access*

2 Emergency access to NSTI in the event of a bridge or causeway failure could be provided by
3 boat or ferry. The San Francisco Fire Department can access the perimeter of Yerba Buena
4 Island and Treasure Island by fireboat.

5 Treasure Island has a designated helipad in the vicinity of Pier 1. Air transportation via
6 helicopter is also available to Yerba Buena Island in cases of emergency. The US Coast Guard
7 maintains a designated emergency landing and takeoff area for helicopters on US Coast Guard
8 property (US Coast Guard 1995b).

9 **3.5.2 Traffic Volumes and Level of Service**

10 This analysis and description of existing traffic conditions has been based on traffic data for key
11 freeway access points from Caltrans. The bridge and freeway analysis conducted as part of the
12 September 1996 Alternatives to Replacement of the Embarcadero Freeway and the Terminal
13 Separator Structure EIS/EIR (San Francisco 1996g) has been used to describe existing travel
14 conditions on the SFOBB/I-80.

15 Existing operating conditions on the SFOBB/I-80 were calculated using the FREQ11 software
16 program. This program evaluates the basic freeway segments, ramp junctions, and weaving
17 areas. The model for the SFOBB/I-80 and I-80/US 101 in downtown San Francisco was
18 developed as part of the Alternatives to Replacement of the Embarcadero Freeway and the
19 Terminal Separator Structure EIS/EIR (San Francisco 1996g). Caltrans 1993 and 1994 traffic
20 data were used for the mainline freeway sections, and 1993 and 1994 traffic data collected for
21 the Alternatives to Replacement of the Embarcadero Freeway EIS/EIR were used for the ramps.

22 FHWA and Caltrans have approved the proposal to construct a 11,526 foot (3,514 m) new east
23 span of the SFOBB. The new span would be north of the existing east span and the old existing
24 structure would be dismantled (FHWA 2001). This alternative involves constructing a new
25 bridge with two side-by-side bridge decks, each consisting of five lanes. Approximately 1,968
26 feet (600 m) east of the tunnel on Yerba Buena Island the alignment would transition from a
27 double-deck viaduct structure to two parallel structures. The eastbound on-ramp to the SFOBB
28 would be replaced with a ramp that provides a standard acceleration lane as opposed to the
29 current stop-sign design, resulting in improved eastbound access to the bridge from Yerba
30 Buena Island. The replacement alternative would not increase the SFOBBs vehicular capacity.
31 Shoulders would be added and may improve traffic operations but congestion is unlikely to be
32 affected (Caltrans and FHWA 2001).

33 *Freeway Volumes*

34 *Level of Service*

35 Operating characteristics of roadway facilities are described using the term level of service
36 (LOS). LOS designations are a qualitative description of a facility's performance, based on
37 travel speeds, delays, and density (number of cars per unit of lane). The designation for a
38 facility could range from LOS A, representing free-flow conditions, to LOS F, representing
39 severe traffic congestion (Transportation Research Board 1994). See Appendix F.3-B, SFOBB/I-

3.5 Transportation

1 80 Analysis and Intersection Analysis, for a detailed description of the LOS operating
2 conditions for the various transportation facilities.

3 *Weekday SFOBB/I-80 Traffic Volumes*

4 Westbound traffic on the SFOBB/I-80 is regulated by metering lights west of the toll plaza in
5 Oakland during the peak periods. Two inside and two outside high occupancy vehicle (HOV)
6 bypass lanes for carpools and vanpools with three or more passengers and buses are available
7 upstream of the metering lights on weekdays between 6:00 and 10:00 A.M. and between 3:00 and
8 6:00 P.M. In the eastbound direction, buses approaching the bridge from San Francisco's
9 Transbay Terminal also receive priority treatment in the form of a dedicated lane that merges
10 downstream with the Essex Street on-ramp traffic, and the Sterling Street on-ramp is dedicated
11 to HOV vehicles only on weekdays between 3:30 and 7:00 P.M.

12 During the peak hour of the peak period between 6:00 A.M. and 9:00 A.M., the peak direction
13 (westbound) volume is approximately 10,800 vehicles per hour (vph), and the nonpeak
14 direction (eastbound) volume is approximately 8,400 vph (see Appendix F, Freeway Volumes,
15 for 24-hour volumes and average daily vehicle trips). During the peak period of 3:00 P.M. to
16 7:00 P.M., the peak traffic flow in the eastbound direction is approximately 10,300 vph. Similar
17 to the A.M. eastbound direction, the P.M. peak westbound volume is approximately 8,500 vph.
18 During the nonpeak period of 11:00 A.M. to 2:00 P.M., the traffic volumes drop to approximately
19 6,500 to 7,000 vph for both the eastbound and westbound directions, resulting in an available
20 capacity on the SFOBB/I-80 of approximately 3,500 to 4,000 vph (total SFOBB/I-80 capacity is
21 10,500 vph) (Caltrans 1993).

22 *Weekend SFOBB/I-80 Traffic Volumes*

23 In the westbound direction of I-80, the Saturday (weekend) peak period of 10:00 A.M. to 1:00
24 P.M. has a volume of approximately 8,900 vph. In the eastbound direction, the weekend peak
25 period of 5:00 P.M. to 7:00 P.M. has a volume of approximately 9,600 vph. In both directions, the
26 peak period occurs later in the morning and afternoon than during the weekday peak periods,
27 and additional traffic volume can be accommodated during all times on the mainline because of
28 the lower traffic volumes during all weekend periods.

29 *Congestion Management Network (Weekday SFOBB/I-80 Traffic Volumes)*

30 The segment of the SFOBB/I-80 between San Francisco's Fremont Street and NSTI is within the
31 San Francisco Congestion Management Network. The LOS on this segment (1993 conditions)
32 during the A.M. peak period was LOS E in the westbound direction and LOS D in the eastbound
33 direction, while during the P.M. peak hour it was LOS F in the westbound direction and LOS E
34 in the eastbound direction (SFTA 1993). The segment of the SFOBB/I-80 between the toll plaza
35 and the Alameda and San Francisco county line is within the Alameda County Congestion
36 Management Program's network. The LOS on this segment during the P.M. peak period (1993
37 conditions) was LOS E in both the westbound and eastbound directions. In 1995, the eastbound
38 segment continued to operate at LOS E, while the westbound segment operated at LOS F
39 (County of Alameda, Congestion Management Agency 1995).

1 Ramp Volumes

2 The morning peak hour for traffic on the NSTI ramps is different from the mainline peak hour.
3 In both the westbound and eastbound direction, the morning peak hour for the ramps is
4 between 6:00 and 7:00 A.M. (with a volume of approximately 470 vph for the westbound off-
5 ramp and approximately 170 vph for the eastbound off-ramps), while the mainline peak period
6 is between 7:00 A.M. and 9:00 A.M. (see Appendix F, Ramp Volumes). Similarly, the evening
7 peak for the ramps is earlier than the mainline; the NSTI peak is between 3:00 P.M. and 4:00 P.M.,
8 while the mainline peak period is between 4:00 P.M. and 7:00 P.M. The total volume during the
9 peak hour for the two westbound on-ramps is approximately 225 vph, while the volume for the
10 eastbound on-ramp is approximately 310 vph (Caltrans 1994).

11 Ramp Operations

12 The SFOBB and NSTI ramps, built in 1937, and especially the westbound and eastbound on-
13 ramps, are substandard by today's requirements. The on-ramp merging distance ranges
14 between approximately 30 and 200 feet (9 and 61 m), far below the Caltrans standard of
15 approximately 600 feet (183 m). The off-ramps are also substandard, primarily in the
16 deceleration lengths provided between the exit point and the first curve (approximately 150 feet
17 [46 m] [existing] versus 300 feet [91.5 m] under today's standard). The radii of the ramps,
18 ranging from approximately 30 feet (9 m) to 100 feet (30.5 m), are less than the desirable 150-
19 foot (46 m) radius currently specified by Caltrans for freeway ramps (Caltrans 1995). The off-
20 ramps do not pose substantial constraints to auto traffic operations but could affect the
21 operation of trucks and buses.

22 Table 3.5-1 presents a summary of ramp information and identifies the radius of the curve at the
23 tightest point, the approach grade to or from the ramp, and the number and primary causes of
24 accidents reported between January 1992 and April 1995, when use of NSTI by Navy was
25 ending, that is, when the base was not at full activity levels.

26 Traffic volumes on the Macalla Road westbound on-ramp on the east side of Yerba Buena
27 Island are low, generally less than 50 vph. The westbound on-ramp on the west side of the
28 island carries approximately 140 vph at its peak between 3:00 P.M. and 4:00 P.M. Due to the
29 lower demand in the westbound direction, queues are not substantial during peak periods.
30 These volumes and queues were based on military (former Navy and US Coast Guard) use of
31 the island.

32 The merging distance for the eastbound on-ramp to Oakland cannot be fully utilized due to the
33 bridge piers that severely restrict sight distance for drivers trying to get onto the bridge. This
34 eastbound on-ramp to the SFOBB/I-80 has an effective merging distance of less than
35 approximately 50 feet (15 m). This is substantially below the design standards (600 feet [183 m])
36 and severely reduces the number of vehicles that can access the SFOBB/I-80. Based on field
37 observations during site visits, a queue of approximately 1,000 feet (305 m) was reported on
38 Yerba Buena Island during the peak period of 3:00 P.M. to 4:00 P.M.

Table 3.5-1. Summary of Ramp Information

<i>Ramp</i>	<i>Radius</i>	<i>Approach Grade</i>	<i>No. of Accidents 1/1997 to 12/2001</i>
Westbound on-ramp east side of tunnel	60 feet	6.0%	2 (no fatality and injury)
Westbound on-ramp west side of tunnel	90 feet	6.6%	3 (no fatality and injury)
Westbound off-ramp east side of tunnel	30 feet	10.0%	9 (2 injury)
Eastbound off-ramp west side of tunnel	53 feet	7.6%	9 (no fatality and injury)
Eastbound off-ramp east side of tunnel	65 feet	14% at steepest location crossing over tunnel	5 (1 injury)
Eastbound on-ramp east side of tunnel	100 feet	14% at steepest location crossing over tunnel	5 (2 injury)
<i>Note:</i> Caltrans Design Manual indicates that the "ramp profile grades should not exceed 8 percent with the exception of descending entrance ramps and ascending exit ramps, where a 1 percent steeper grade is allowed. However, the 1 percent steeper grade should be avoided on descending loops to minimize overdriving of the ramp."			
<i>Source:</i> Caltrans 2002.			

1 **Freeway Operations**

2 For the mainline section of I-80 between NSTI and San Francisco, travel speeds were used as the
3 evaluation criteria. During the A.M. peak hour, travel speeds are approximately 35 mph (56
4 km/hour) in the westbound direction approaching downtown San Francisco, indicating
5 congested travel conditions on the mainline section. Travel speeds in the eastbound direction
6 approaching Treasure Island are approximately 52 mph (84 km/hour).

7 During the P.M. peak hour, the average mainline travel speeds are somewhat lower than during
8 the A.M. peak hour. Travel speeds in the westbound direction are similar to A.M. peak hour
9 conditions (approximately 33 mph [53 km/hour]), reflecting the congestion on I-80/US 101 that
10 extends upstream onto the SFOBB/I-80. In the eastbound direction, the travel speeds are
11 approximately 47 mph (75.5 km/hour), indicating congested operating conditions (San
12 Francisco 1994b).

13 **Local Intersection Operations**

14 Traffic volumes on NSTI are low throughout the day. Based on field observations, local
15 intersections on Treasure Island and Yerba Buena Island operate with minimal or no delay (LOS
16 A) during both the A.M. and P.M. peak hours.

1 3.5.3 Public Transportation

2 San Francisco is a transit hub served by local and regional operators throughout the Bay Area.
3 Limited service is provided to Treasure Island and Yerba Buena Island. The following describes
4 the service provided by Muni, the school bus service for students between NSTI and San
5 Francisco, and the regional ferry service.

6 *Muni Line 108 Service*

7 Muni currently operates the only public transit service to Treasure Island and Yerba Buena
8 Island. This service is designated as Line 108 (Figure 3-8). Muni assumed responsibility and
9 operation of the "T" Route in December 1996 from the Alameda-Contra Costa Transit District
10 (AC Transit), which formerly ran the T service between Alameda and San Francisco via
11 Treasure Island, and renamed it Line 108. Line 108 now operates bidirectional service between
12 Treasure Island and Yerba Buena Island and the Transbay Terminal in San Francisco only;
13 direct service is no longer provided between NSTI and the East Bay. Bus shelters are provided
14 at a number of stops on the islands.

15 The Line 108 service operates every 20 minutes during weekday A.M. and P.M. peak periods and
16 evening. The rest of the time and weekends, it runs every 60 minutes. Weekday daily ridership
17 is about 520 passengers (San Francisco MUNI 1999-2000).

18 *School Bus Service*

19 The SFUSD provided transportation for students who lived in San Francisco and on Treasure
20 Island and attended the Treasure Island Elementary School and for students that lived on the
21 island and attended middle and high schools in San Francisco. Approximately 240 students
22 were transported to and from the elementary school on Treasure Island. Five buses were used
23 in this service. Five buses arrived on the island during the 7:00 A.M. hour, two during the noon
24 hour, and five during the 2:00 P.M. hour.

25 Approximately 228 middle and high school students were transported from the island to
26 various school locations in San Francisco. Six buses accessed the island between 7:00 A.M. and
27 8:00 A.M., and one accessed the island around 9:00 A.M. Five buses accessed the island in the
28 3:00 P.M. hour, three in the 4:00 P.M. hour, and two in the 5:00 P.M. hour. In addition, seven
29 elementary and three high school special education students were transported at various times
30 of the day on and off the island in vehicles equipped with wheelchair lifts.

31 *Other Land-based Transit Services*

32 Airport shuttle services, taxis, and other private transportation services access the island on an
33 as-called basis. There are no schedules for these services or statistics outlining the frequency
34 they are used.

35 *Ferry Service*

36 None of the regional ferry carriers currently stop at Treasure Island or Yerba Buena Island. The
37 Red and White Fleet provided service following the Loma Prieta Earthquake in 1989 when there
38 was no bridge access to the East Bay. In late March 1995, Harbor Bay Maritime initiated a

3.5 Transportation

1 shuttle service between Naval Air Station Alameda and Treasure Island. Within the first
2 2 weeks of service, approximately 40 passengers a day were carried on two A.M. peak and two
3 P.M. peak trips.

4 The US Coast Guard Station on the southeast side of Yerba Buena Island has both fixed piers
5 and floating docks. On Treasure Island, piers 11 and 12 consist of wooden decking at the
6 parking lot level, supported by deteriorating wood piles. A narrow gangway that does not
7 meet the Americans with Disabilities Act (ADA) access requirements connects the fixed piers to
8 anchored floating barges (no pilings), which are attached to the pier. The piers cannot be used
9 by vessels because they barely extend beyond the riprap shore. Vessels tie up to the floating
10 barges.

11 Pier 1 is a fixed concrete pier 930 feet (283 m) long by 125 feet (38 m) wide that is in good
12 condition. Large vessels can tie up to Pier 1. However, the vessels must have a long gangway
13 suitable of reaching the 10- to 13-foot (3- to 4-m) freeboard (height of the deck above the water)
14 of this pier at mean low tide. None of the ferries presently operating in the Bay have this
15 capability, although several large excursion vessels might be able to use the facility during some
16 tidal conditions with a second deck gangway. The current service uses a float with a gangway
17 attached to Pier 1.

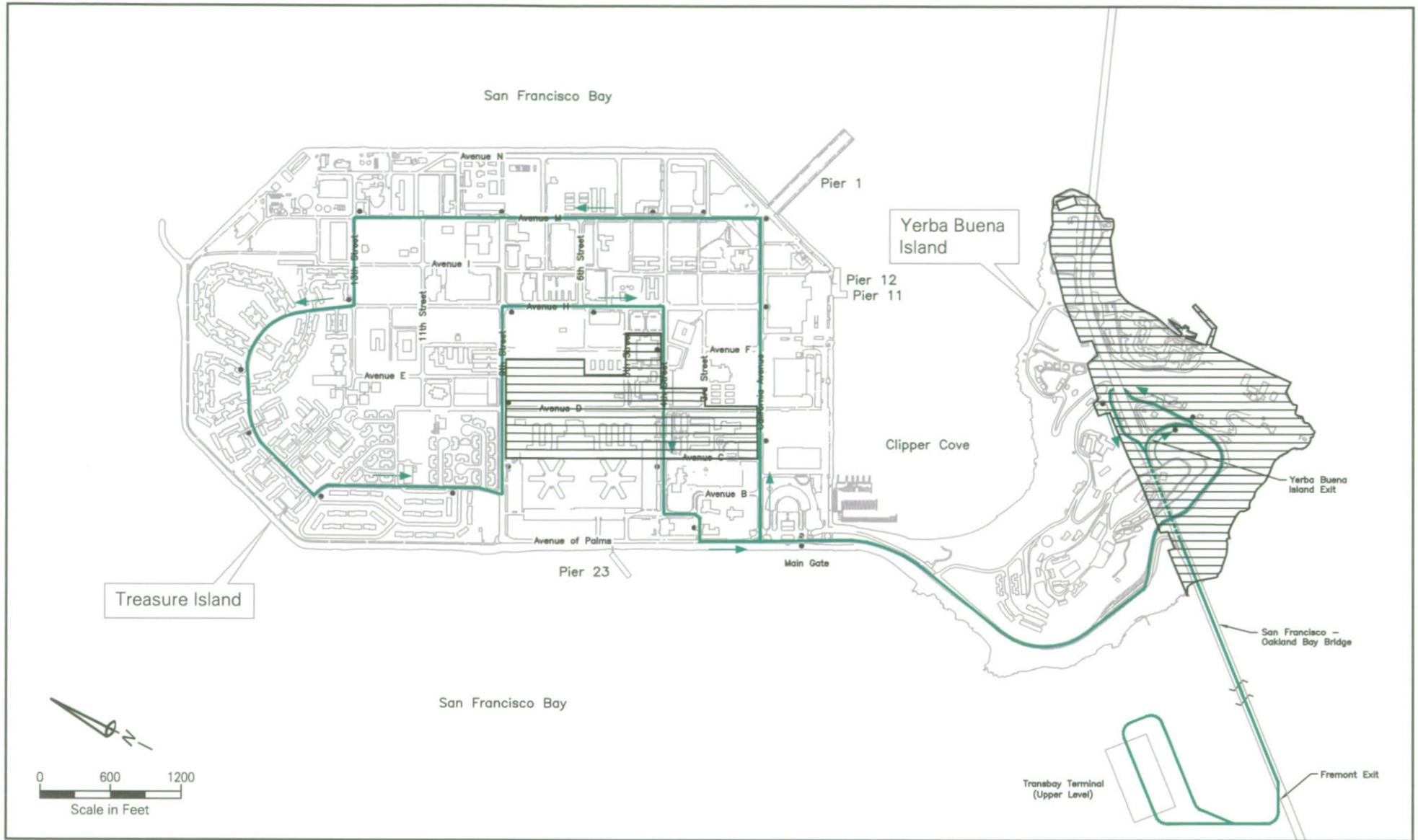
18 There are six active ferry routes in the Bay Area, all of them connecting the San Francisco
19 downtown to Sausalito, Tiburon, Larkspur, Vallejo, Alameda and Oakland, and Bay Farm
20 Island (Figure 3-9). Several of the routes operate to the Fisherman's Wharf/Pier 39 area during
21 off-peak hours. This includes the Sausalito and Tiburon service, and the Vallejo and Alameda
22 and Oakland services. Besides these routes, there is a recreation service providing trips to
23 Angel Island State Park from Tiburon and from San Francisco's Fisherman's Wharf and Pier 39.
24 A summary description of each of the routes and existing conditions at the ferry terminals is
25 included in Table 3.5-2 and Table 3.5-3. Of these existing six routes, only the Alameda and
26 Oakland to San Francisco route would be affected by the proposed action and is described in
27 more detail below.

28 *San Francisco Ferry Building and Pier ½*

29 This location is the primary ferry docking facility in San Francisco. The Golden Gate Bridge,
30 Highway, and Transportation District has a two-berth terminal behind the building with a
31 sheltered waiting room and hydraulic ramps. A small driveway on the south side of the Ferry
32 Building provides vehicular access for autos and shuttle vans; buses provide connecting service
33 along The Embarcadero in front of the building.

34 All other ferry services use the floating dock at Pier ½, between the north end of the Ferry
35 Building and Pier 1. The parking spaces north of the Ferry Building are reserved for long-term
36 users (Port of San Francisco parking permit required). Transit service is available at the foot of
37 Market Street approximately 800 feet (244 m) from the terminals, with access to many Muni
38 lines. Muni Metro and BART are available at the corner of Market and Drumm Streets, about
39 two blocks away. An Amtrak bus connection also is provided at the Ferry Building, providing
40 service to and from Amtrak's Emeryville and Jack London Square stations.

41



Muni line 108 was established in December 1996 to service Treasure Island. It is currently the only public transit service to Treasure Island.

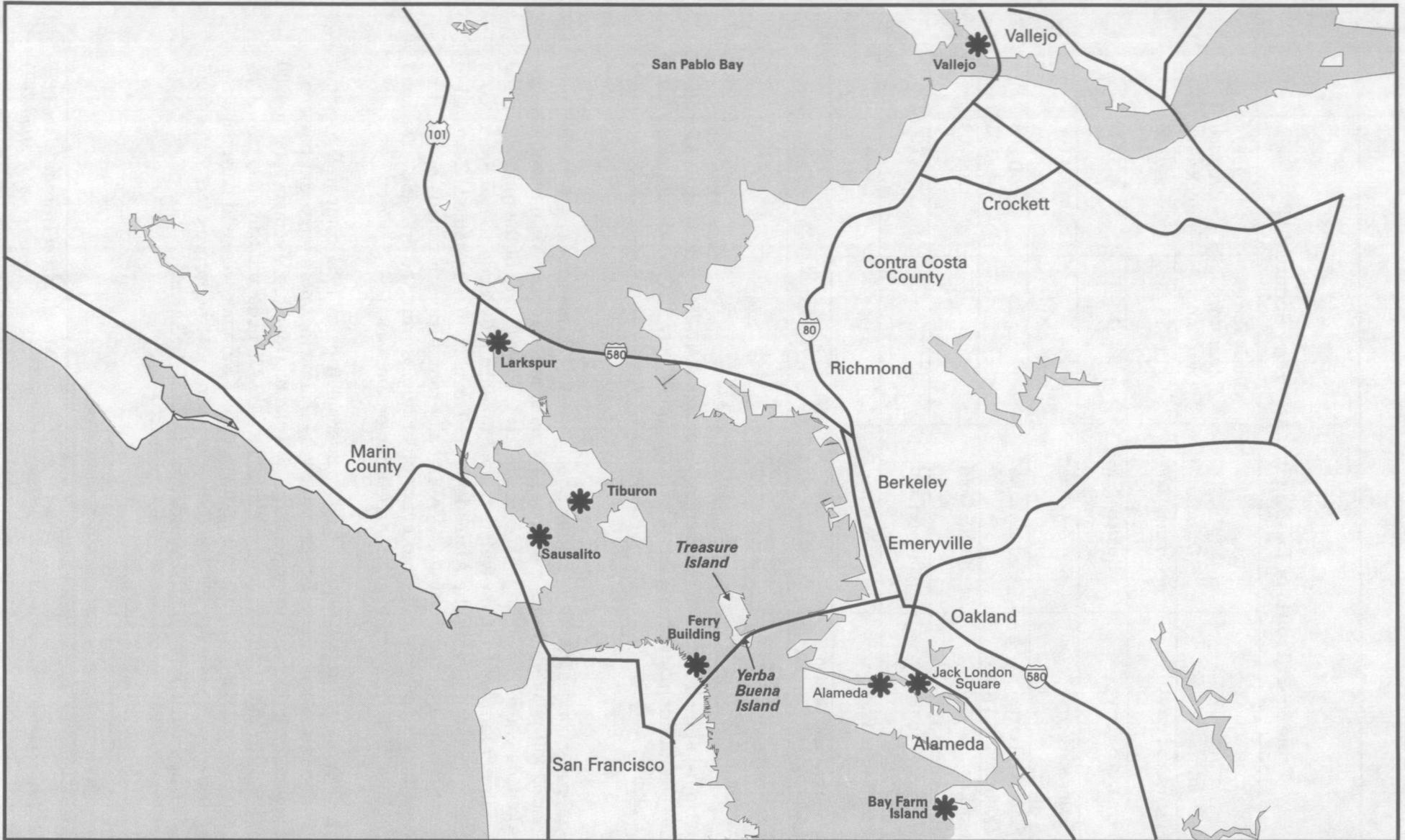
Legend:

- Bus Stop
- Route
- ▨ Areas Excluded from Proposed Navy Disposal

Muni Line 108

Naval Station Treasure Island, California

Figure 3-8



There are six active ferry routes in the Bay Area, all of them connecting to the San Francisco Ferry Building. The Jack London Square terminal in Oakland and Alameda terminal are considered one route.

LEGEND:

 Ferry Terminal Site

Ferry Terminal Locations

Bay Area, California

Figure 3-9

1

Table 3.5-2. Profile of Existing Bay Area Ferry Services

Route	Operator	Daily Ferry Round-trips (Weekday)	1994 Annual Riders
Larkspur - San Francisco Ferry Building	Golden Gate Transit	13 - 15	940,000
Sausalito - San Francisco Ferry Building	Golden Gate Transit	9 - 11 (seasonal)	465,000
Sausalito - San Francisco Ferry Fisherman's Wharf	Red & White *	4	354,000
Tiburon - San Francisco Ferry Building/Fisherman's Wharf	Red & White *	9	301,000
Vallejo - San Francisco Ferry Building/Fisherman's Wharf	Blue & Gold	4	209,000
Alameda/Oakland - San Francisco Ferry Building/Fisherman's Wharf	Blue & Gold	12	278,000
Alameda (Bay Farm) - San Francisco Ferry Building	Harbor Bay Maritime	6	94,000

* Operator changed to Blue and Gold in 1997
Source: San Francisco 1995a.

2 *Alameda-Oakland to San Francisco*

3 The Alameda terminal at the foot of Main Street has approximately 250 parking spaces for ferry
4 patrons, and the Jack London Square facilities have approximately 1,100 undedicated parking
5 spaces. Both Oakland and Alameda have floating docks with covered, accessible piers and
6 gangways.

7 The 5-mile (8-km) route connecting Jack London Square on the Oakland Estuary with the Ferry
8 Building and Pier 39 (off-peak) includes a stop at a terminal at the foot of Main Street adjacent
9 to the former Alameda Naval Air Station. Approximately 2 miles (3 km) of the route are in the
10 estuary, and 3 miles (5 km) are in open water. Travel time from Oakland to San Francisco is
11 approximately 22 to 25 minutes with the Alameda stop. Travel from the Alameda Terminal to
12 the Ferry Building is about 12 to 15 minutes. A 12-daily round-trip schedule is operated on
13 weekdays, hourly during peak periods, and every other hour during the off-peak. Weekend
14 service includes six to eight ferry round-trips, depending on the season.

15 Ridership has grown on this route, with 278,000 passenger trips in 1994 compared to about
16 202,000 in 1990. The introduction of a larger faster vessel, allowing more ferry and passenger
17 trips, led to a 24 percent increase in ridership. Weekday ridership averages 800 to 900
18 passengers per day, with most commuters traveling between Alameda and San Francisco. Off-
19 peak travelers use the Oakland Terminal to a greater degree. Summer weekend patronage can
20 be upwards of 1,000 passengers a day, and both weekend and afternoon peak ferry trips from
21 San Francisco often approach or exceed the vessel capacity of 250 people.

22

1

**Table 3.5-3
Traffic Conditions and Parking Supply at Existing Ferry Terminals**

Location	Traffic Conditions ¹		Parking Supply	Parking Occupancy	
	WEEKDAY (PM)	WEEKEND (MIDDAY)		WEEKDAY (PM)	WEEKEND (MIDDAY)
Larkspur	heavy	medium	dedicated supply of 1,150 spaces park & ride: 20 spaces 8 bus bays	85-90%	15%
Sausalito	heavy	heavy	around 265 spaces - not dedicated for ferry use	50%	100% (not all ferry passengers)
Tiburon	medium	medium	limited private parking (about 220 spaces) located 300 to 500 feet from dock - not dedicated for ferry use	50%	40-50%
Vallejo	light	light	dedicated supply of 500 spaces	50%	5-10%
Oakland - Jack London Square	medium	medium	Jack London Square area lot and garage total long-term supply of 1,100 spaces - not dedicated for ferry use	80-90% (15% ferry passenger s)	10%
Alameda - Main St.	medium	light	dedicated supply of 250 spaces	70-80%	10%
Alameda - Bay Farm Island	light	-	dedicated supply of 250 spaces	30-40%	-
San Francisco - Pier 39 / Fisherman's Wharf & Pier 43 ½ / Fisherman's Wharf	light	medium	total supply of 1,525 spaces directly adjacent to the piers - not dedicated for ferry use	50-60%	70-80%
San Francisco - Pier ½ / Ferry Building	heavy	heavy	no ferry parking available	N/A	N/A

¹Traffic conditions are defined as follows:

Light: low to moderate traffic volumes on roadway, with minimal delays at intersections. Medium: higher traffic volumes on roadways, with some waiting at intersections. Heavy: roadways are crowded, with moderate to long delays at intersections.

N/A = not applicable

Source: San Francisco 1995a; revised by Korve 1997.

- 2 In Alameda, AC Transit provides a dedicated shuttle (Route 325) between central Alameda and
3 the ferry terminal. The Oakland Terminal, at the foot of Clay Street, uses the Port of Oakland
4 garage one block from the terminal. A number of AC Transit routes provide service within 2
5 blocks of the ferry terminal, including connections to the 12th Street City Center BART Station,
6 approximately 12 blocks from the terminal. The City of Oakland also operates a midday shuttle
7 service on Broadway, connecting downtown Oakland, including the 19th and 12th street BART
8 stations, to Jack London Square during weekdays.

1 **3.5.4 Pedestrian and Bicycle Circulation**

2 *Treasure Island*

3 There are no designated bicycle facilities on Treasure Island, but there is a sidewalk network
4 throughout the island. Sidewalks are provided on at least one side of all the roads on the
5 island, with some streets having sidewalks on both sides. Sidewalks and crosswalks meet ADA
6 standards in nonresidential areas but are not ADA-accessible in residential areas. In addition,
7 crosswalks are available at all intersections. In most cases, landscaping separates the sidewalk
8 and the street curb. On several streets, the sidewalk is not aligned along the road, and the
9 sidewalk distance from the curbside varies from block to block.

10 *Yerba Buena Island*

11 Sidewalks are not provided except on one side of Macalla Road between Treasure Island Road
12 and the Macalla Court former Navy housing. Throughout Yerba Buena Island, concrete stairs
13 provide pedestrian access between facilities and roadways. There are no designated bicycle
14 facilities, but several of this island's narrow roadways are closed to vehicle traffic.

15 **3.5.5 Parking**

16 *Treasure Island*

17 On most of the major and minor collector roadways on Treasure Island, 90-degree parking is
18 available, except on the perimeter roads and California Avenue. Parking restrictions are in
19 effect at a number of industrial and retail locations on the island that have allocated parking
20 spaces. Other parking restrictions include painted red zones near bus shelters, most residential
21 areas, and collector streets, such as California and Avenue of Palms. Figure 3-10 presents the
22 locations where on-street parking is allowed.

23 In the residential areas, covered and uncovered off-street parking spaces are available. Some
24 housing units have garages. The older apartments have parking stalls. On the rest of the
25 island, off-street parking lots are available (Figure 3-10).

26 A public viewing area, with views of the downtown San Francisco skyline, is directly outside
27 the base entrance. There are approximately seven parking spaces, including one space for
28 disabled persons, and a yellow zone for bus parking.

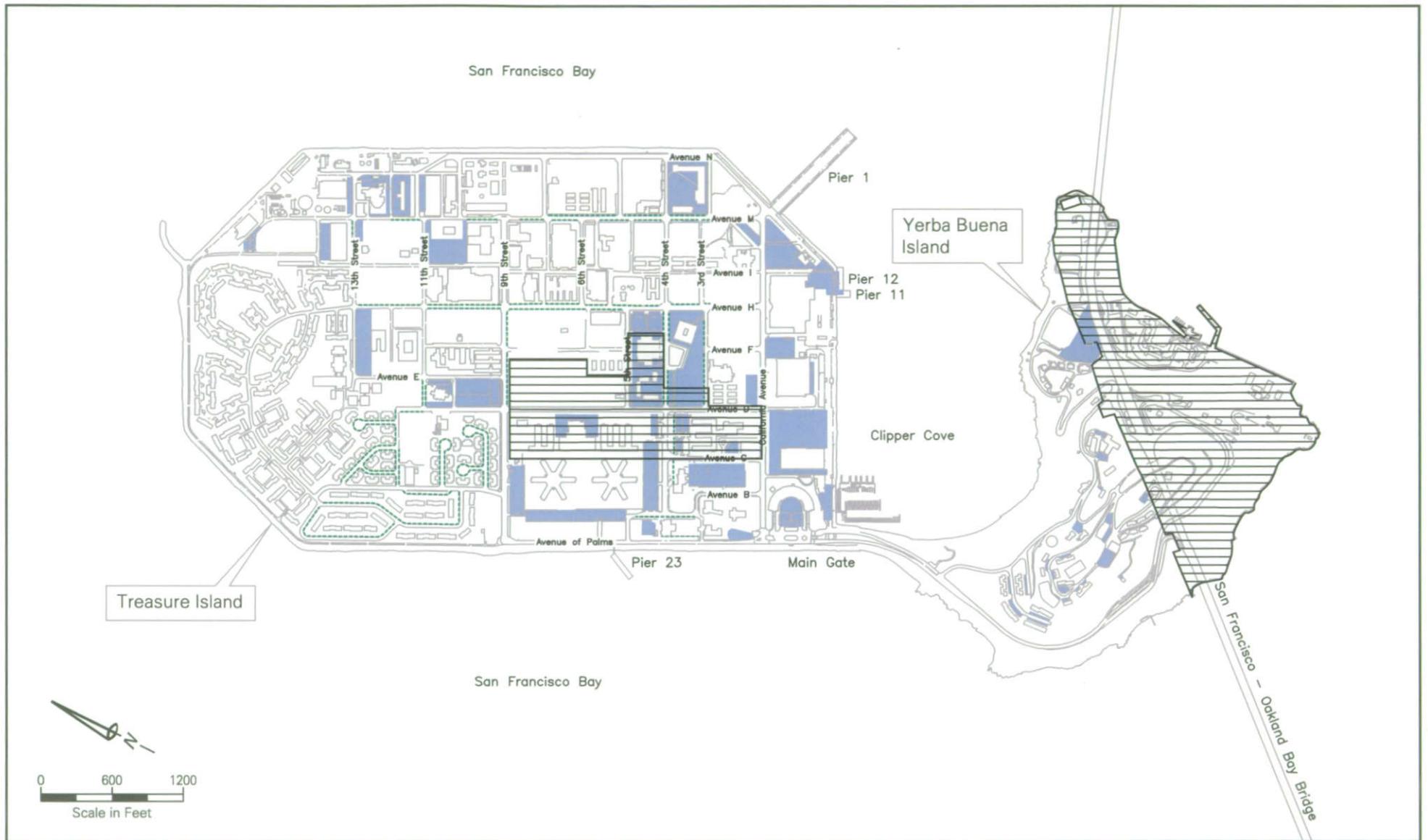
29 *Yerba Buena Island*

30 On-street parking is not permitted on Yerba Buena Island roads. Residential areas include off-
31 street parking (Figure 3-10).

32 **3.5.6 Goods Movement**

33 Freight service deliveries to Treasure Island are primarily by truck. The eastbound off-ramp at
34 the east side of the tunnel has a 12-foot (3.5-m) height restriction.

35



Parking is available on most of the major roadways on Treasure Island, except on the perimeter road and California Avenue. Limited off-street parking is available on Yerba Buena Island.

Legend:

- On-street Parking
- Off-street Parking
- Areas Excluded from Proposed Navy Disposal

Parking at NSTI

Naval Station Treasure Island, California

1 **3.6 AIR QUALITY**

2 Air pollutants are characterized as being "primary" or "secondary" pollutants. Primary
3 pollutants are those emitted directly into the atmosphere (e.g., carbon monoxide, sulfur dioxide,
4 lead particles, and hydrogen sulfide). Secondary pollutants are those formed through chemical
5 reactions in the atmosphere (e.g., ozone and sulfate particles); these chemical reactions involve
6 primary pollutants, pollutants present in the atmosphere, and other secondary pollutants.

7 **3.6.1 Climate and Meteorology**

8 The San Francisco Bay Area experiences a Mediterranean-type climate, characterized by mild
9 temperature conditions. Weather conditions are monitored at major airports and various
10 locations in the Bay Area (WeatherDisc Associates 1990a, 1990b, 1990c, 1990d). Daily
11 temperature variations are typically 44 to 58 degrees Fahrenheit (°F) during the winter and 54 to
12 66 °F during the summer. Annual precipitation averages about 20 inches (51 centimeters [cm])
13 at sea level locations, with most precipitation falling from October through April. Poor
14 visibility, primarily due to heavy fog, is most likely during late fall and winter.

15 **3.6.2 Applicable Regulations, Plans, and Policies**

16 The federal Clean Air Act (42 U.S.C. §§ 7401-7671q, as amended in 1977 by Pub. L. 95-95, 91
17 Stat. 685-796 and Pub. L. 95-190, 91 Stat. 1399-1404) requires the adoption of national ambient
18 air quality standards (NAAQS) to protect the public health, safety, and welfare from known or
19 anticipated effects of air pollution. The NAAQS have been updated occasionally. Current
20 standards are set for sulfur dioxide (SO₂), carbon monoxide, nitrogen dioxide (NO₂), ozone
21 (O₃), particulate matter equal to or less than 10 microns in size (PM₁₀), fine particulate matter
22 equal to or less than 2.5 microns in size (PM_{2.5}), and lead. These federal standards are shown in
23 Table 3.6-1.

24 The Clean Air Act Amendments of 1990 (Pub. L. 101-549, 104 Stat. 2399 codified as amended at
25 42 U.S.C. §§ 7401-7671q) require the US Environmental Protection Agency (EPA) to promulgate
26 rules to ensure that federal actions conform to the appropriate state implementation plan (SIP).
27 These rules, known together as the General Conformity Rule (40 C.F.R. §§ 51.850-51.860 and 40
28 C.F.R. Part 93), require any federal agency responsible for an action to determine if its action
29 conforms with pertinent guidelines and regulations. Certain actions are exempt from
30 conformity determination, including those actions associated with transfers of land or facilities
31 where the federal agency does not retain continuing authority to control emissions associated
32 with the properties. Federal actions also may be exempt if the projected emissions rates would
33 be less than specified emission rate thresholds, known as de minimis limits.

34 The Clean Air Act defines a group of pollutants called Hazardous Air Pollutants (HAPs) or air
35 toxics. Exposure to these pollutants is a concern, as they can cause or contribute to cancer, birth
36 defects, genetic damage, and other adverse health effects. The source and effects are generally
37 local rather than regional. Evaluation is based on case studies, not standards for concentrations.
38 Examples of air toxics include benzene and asbestos. Title III of the Clean Air Act provides a
39 program for the control of 189 HAPs. The first stage of the program involves the

**Table 3.6-1
Federal Ambient Air Quality Standards**

<i>Pollutant</i>	<i>Symbol</i>	<i>Averaging Time</i>	Standard, as	Standard,	Violation Criteria
			parts per million (ppm) by volume	as micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)	
			<i>National</i>	<i>National</i>	<i>National</i>
Ozone	O ₃	1 Hour	0.12	235	If exceeded on more than 3 days in 3 years
		8 Hours	0.08	157	If exceeded by the mean of annual 4th highest daily values for a 3-year period
Carbon Monoxide	CO	8 Hours	9.0	10,000	If exceeded more than 1 day per year
		1 Hour	35	40,000	If exceeded more than 1 day per year
Inhalable Particulate Matter	PM ₁₀	Annual Geometric Mean ¹	---	---	---
		Annual Arithmetic Mean ²	---	50	If exceeded as a 3-year single station average
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	---	---	---
Sulfur Dioxide	SO ₂	Annual Average	0.03	80	If exceeded
		24 Hours	0.14	365	If exceeded more than 1 day per year
		3 Hours	0.5	1,300	If exceeded more than 1 day per year
Lead Particles	Pb	1 Hour	---	---	---
		Calendar Quarter	---	1.5	If exceeded more than 1 day per year
Sulfate Particles	SO ₄	30 Days	---	---	---
Hydrogen Sulfide	H ₂ S	24 Hours	---	---	---
Vinyl Chloride	C ₂ H ₃ Cl	1 Hour	---	---	---
		24 Hours	---	---	---

Notes: All standards except the national PM₁₀ and PM_{2.5} standards are based on measurements corrected to 25 degrees Celsius and 1 atmosphere pressure. The national PM₁₀ 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) standard. 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 PM₁₀ standards (which had different violation criteria than the September 1997 standards) will remain in effect for existing PM₁₀ nonattainment areas until EPA takes actions required by Section 172(e) of the Clean Air Act or approves emission control programs for the relevant PM₁₀ 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 PM₁₀ 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 percent mass efficiency by certified sampling equipment. The maximum particle size collected by PM₁₀ 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.

¹ The annual geometric mean is defined as the "nth" root of the product of "n" observations.

² The annual arithmetic mean is defined as the sum of "n" observations divided by the number of observations.

Sources: National Ambient Air Quality Standards (ARB Fact Sheet 39); 40 C.F.R. Parts 50, 53, and 58.

1 promulgation of National Emissions Standards for HAPs (NESHAPs) to reduce HAP emissions
2 from new and existing sources. Major sources will be required to implement Maximum
3 Available Control Technology. Area sources will be required to implement general achievable
4 control technology. This will be followed by a second phase in which residual risks will be
5 evaluated, and further controls will be considered.

6 The California Clean Air Act of 1988, as amended in 1992 (CCAA), outlines a program to attain
7 the California ambient air quality standards (CAAQS) for O₃, NO₂, SO₂, and CO by the earliest
8 practical date. Since the CAAQS are more stringent than the NAAQS, emissions reductions
9 beyond what would be required to show attainment of the NAAQS are needed.

10 The Bay Area Air Quality Management District (BAAQMD) is the regional authority that
11 enforces the state and federal Clean Air Act requirements by promulgating rules for the
12 purpose of regulating stationary emission sources. BAAQMD is also responsible for the
13 preparation of the planning documents that guide the efforts necessary to achieve the national
14 and state ambient air quality standards. The current planning document is the *Bay Area 2001*
15 *Ozone Attainment Plan*, which functions as that part of the SIP applicable to the BAAQMD
16 (BAAQMD et al 2001). This plan also contains measures to show progress towards attainment
17 of the state O₃ standard.

18 3.6.3 Regional and Local Air Quality

19 *Bay Area*

20 With respect to federal ambient air quality standards, specific geographic areas are classified by
21 the EPA as either nonattainment, attainment, or unclassified for each pollutant. For most air
22 pollutants, initial federal status designations are made as either nonattainment or unclassified.
23 In the federal usage, the unclassified designation includes attainment areas that comply with
24 federal standards and areas for which monitoring data are lacking. Unclassified areas are
25 treated as attainment areas for most regulatory purposes. Federal attainment designations
26 generally are used only for areas that change from a nonattainment status to an attainment
27 status.

28 In June 1998, the San Francisco Bay Area was reclassified from an attainment/maintenance area
29 to an unclassified nonattainment area for the federal one-hour ozone standard. The urbanized
30 portions of the San Francisco Bay Area are categorized presently as attainment areas for the
31 federal carbon monoxide standards. The Bay Area is currently designated as unclassified for
32 the federal PM₁₀ standard (BAAQMD 1998).

33 Ozone, CO, and PM₁₀ are the major pollutants of concern in the Bay Area and are monitored at
34 a number of locations. The monitoring station at Arkansas Street in San Francisco (between US
35 101 and I-280, south of Sixteenth Street) is the major monitoring location for the city. Carbon
36 monoxide levels in San Francisco also are monitored at the BAAQMD office on Ellis Street.
37 Table 3.6-2 summarizes recent (1990-1999) monitoring data for O₃, CO, and PM₁₀.

Table 3.6-2
Summary of Recent Air Quality Monitoring Data for San Francisco Monitoring Stations

Monitoring Station	Air Quality Indicator	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
OZONE											
San Francisco - Arkansas St.	Peak 1-hour value (ppm)	0.06	0.05	0.08	0.08	0.06	0.09	0.07	0.07	0.05	0.08
	Days above federal standard	0	0	0	0	0	0	0	0	0	0
CARBON MONOXIDE											
San Francisco - Arkansas St.	Peak 1-hour value (ppm)	8.0	9.0	8.0	7.0	6.0	5.0	5.0	5.0	N/A	N/A
	Peak 8-hour value (ppm)	5.6	6.5	6.4	5.1	4.5	4.4	3.9	3.5	4.0	3.7
	Days above federal standard	0	0	0	0	0	0	0	0	0	0
San Francisco - Ellis St.	Peak 1-hour value (ppm)	12.0	14.0	10.0	10.0	8.0	9.0	9.0	8.0	N/A	N/A
	Peak 8-hour value (ppm)	6.9	8.4	7.4	6.9	5.4	5.5	5.6	5.8	5.7	3.8
	Days above federal standard	0	0	0	0	0	0	0	0	0	0
INHALABLE PARTICULATE MATTER, PM₁₀											
San Francisco - Arkansas St.	Peak 24-hour value ($\mu\text{g}/\text{m}^3$)	165	109	81	69	93	50	71	81	52	78
	Annual geometric mean ($\mu\text{g}/\text{m}^3$)	27.8	29.7	27.6	25.1	24.7	22.1	21.4	22.5	20.1	N/A
	Annual arithmetic mean ($\mu\text{g}/\text{m}^3$)	34.0	34.9	31.6	28.8	28.0	24.9	24.3	25.0	N/A	N/A
	Number of 24-hour samples	61	60	61	61	61	61	61	61	61	61
	% of samples above federal standard	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<p><i>Notes:</i> ppm = parts per million by volume. $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter. N/A = Data not available. Federal 1-hour ozone standard is 0.12 ppm. Federal 1-hour carbon monoxide standard is 35 ppm. Federal 8-hour carbon monoxide standard is 9 ppm. Federal PM₁₀ standards: 50 $\mu\text{g}/\text{m}^3$, annual arithmetic mean; 150 $\mu\text{g}/\text{m}^3$, 24-hour average. PM₁₀ samples are collected approximately once every six days. Other pollutants are monitored continuously (except for instrument calibration and maintenance periods). Source: CARB 1990-1997; CARB 2000.</p>											

- 1 The federal 1-hour O₃ standard is 0.12 ppm. The federal 1-hour CO standard is 35 ppm, while
2 the federal 8-hour standard is 9.0 ppm. Federal standards for O₃ and CO were not violated in
3 San Francisco from 1990 to 1999. Several violations of the federal ozone standard occurred in
4 other parts of the Bay Area during 1995, 1996, and 1998 (in Contra Costa, Alameda, and Santa
5 Clara counties) (CARB 1995, 1996; BAAQMD 1997; BAAQMD et al. 1999).

1 The federal 24-hour average PM₁₀ standard is 150 µg/m³. The federal PM₁₀ standard has not
2 been exceeded in the project region since 1990.

3 *NSTI*

4 Air emission sources at NSTI included stationary sources, where emissions from a source are
5 generated at a fixed point, and mobile sources, where emissions from a source may be
6 generated at multiple locations.

7 *Stationary Sources*

8 Stationary emission sources at NSTI included boilers, fuel storage tanks, gasoline dispensing
9 islands, individual fuel dispensing facilities, a gasoline truck loading rack, an incinerator, a
10 paint spray booth, a sandblasting machine, miscellaneous welding and sheet metal equipment,
11 an electric heating oven, a fire fighter training facility, and a wastewater treatment system.

12 Approximately 82 percent of the stationary sources at NSTI operated under air quality permits
13 issued by the BAAQMD. Exempt sources are those not requiring permits because the sources
14 are indicated explicitly in relevant BAAQMD rules as exempt from permit requirements. The
15 permit exemption can be based on equipment capacity, material usage, or emissions below
16 certain thresholds. At closure of NSTI, Navy had 32 permitted stationary sources and 7 exempt
17 sources (DON 1997j). As shown in Table 3.6-3, some permitted and exempt sources have been
18 retained by Navy to meet DoD needs, some have been shut down, and some, based on Navy's
19 preliminary allocation plan, may be transferred to the LRA.

Table 3.6-3. Stationary Emission Source Status at NSTI

<i>Sources and Disposition Status</i>	<i>Number of Sources</i>
Number of stationary sources	
With BAAQMD permits	32
Exempt from permit requirements	7
Total	39
Permitted sources banked by Navy to meet DoD needs	1
Permits or exempt sources that may be transferred to the LRA	13
Permitted sources shut down or transferred to other agencies	25
<i>Source: DON 1997j.</i>	

20 The BAAQMD has an emissions banking program to credit facilities that close or reduce
21 emissions from permitted sources. The emissions reduced may be deposited into the banking
22 program as offsets to meet future permit requirements at DoD facilities. NSTI had one banking
23 certificate as of February 1997.

24 *Mobile Sources*

25 Mobile sources at NSTI included private and government vehicles, heavy trucks, lawn
26 maintenance equipment, ships, and aircraft. The mobile source emission inventory for NSTI
27 documented 1992 emission levels from on-road vehicles and off-road mobile sources, such as
28 marine vessels and ground support equipment. These emissions are shown in Table 3.6-4.

Table 3.6-4. NSTI Mobile Source Emissions Summary

Activity Type or Vehicle Class	Tons per Year				
	ROG	CO	NO _x	PM ₁₀	SO _x
Privately Owned Vehicles	6.5	54.8	4.9	1.9	0.1
Government-owned Vehicles	0.9	7.6	1.6	0.2	0.0
Commercial Vehicles and Visitors	9.1	65.8	12.5	3.7	0.3
Off-road Equipment	1.7	6.6	0.5	0.0	0.0
Ship Operations	17.0 ¹	20.5	88.5	3.0 ²	12.8
Totals	35.3	155.3	107.9	8.9	13.2
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: DON 1996s.					

1

1 **3.7 NOISE**

2 Most sound consists of a broad range of frequencies. Because the human ear is not equally
3 sensitive to sound at all frequencies, noise is measured using the "A-weighted" decibel scale
4 (dBA), which estimates the way the human ear responds to noise levels.

5 Average noise exposure over 24 hours often is presented as a day-night average sound level
6 (Ldn) or a community noise equivalent level (CNEL). Ldn values are calculated from hourly
7 equivalent noise level (Leq) values, with the Leq values for the nighttime period (10:00 PM to
8 7:00 AM) increased by 10 dB to reflect the greater disturbance potential from nighttime noises.
9 Leq values are used to develop single-value descriptions of average noise exposure over various
10 periods. CNEL values are very similar to Ldn values but include a 5 dB annoyance adjustment
11 for the evening period (7:00 PM to 10:00 PM) in addition to the 10 dB adjustment for nighttime
12 Leq values. Unless otherwise noted, Ldn and CNEL values are assumed to be based on dBA
13 measurements.

14 **3.7.1 Noise Standards**

15 Community noise consists of a wide variety of sounds, some near and some distant, that vary
16 over a 24-hour day. Scientists and planners have found that humans respond generally to the
17 24-hour variation in noise based on the total energy content of the sound over the day, with a
18 greater sensitivity to noise in the evening and at night.

19 *State of California*

20 The California Department of Housing and Community Development has adopted noise
21 insulation performance standards for new hotels, motels, and dwellings other than detached
22 single-family structures (Cal. Code Regs. Title 25, § 4370). These standards require that hotels,
23 motels, and multiple-unit dwellings be constructed so that outdoor noise sources will not cause
24 interior noise levels to exceed an annual average CNEL value of 45 dB with windows closed.

25 *City and County of San Francisco*

26 The noise element for the San Francisco General Plan is in the Environmental Protection
27 Element. The noise element includes a land use compatibility chart (Table 3.7-1). An Ldn of 60
28 dB is identified as the upper limit of satisfactory noise conditions for residential and transient
29 lodging land uses. Ldn levels of 65 to 70 dB are generally satisfactory for most office and retail
30 commercial land uses.

31 In addition to general policy guidance provided by the General Plan, San Francisco has adopted
32 a noise ordinance (Article 29 of the Police Code) to regulate noise from fixed sources, portable
33 equipment, construction activities, and other sources of unnecessary, excessive, or offensive
34 noise. The ordinance contains general nuisance abatement provisions and specific noise
35 limitations that vary by zoning district, time of day, and type of noise source. The general noise
36 limitations specified in the noise ordinance are summarized in Table 3.7-2. The ordinance
37 contains provisions for emergency work, emergency and safety signaling devices, and various
38 types of impact tools, pavement breakers, and jackhammers. The ordinance provides for a
39 variance process and a permit process for nighttime construction work.

Table 3.7-1. Land Use Compatibility Chart for Community Noise

LAND USE CATEGORY	Sound Levels and Land Use Consequences (see explanation below) L _{dn} Value in Decibels					
	55	60	65	70	75	80
RESIDENTIAL - All Dwellings, Group Quarters	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
TRANSIENT LODGING - Hotels, Motels	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
SCHOOL CLASSROOMS, LIBRARIES, CHURCHES, HOSPITALS AND NURSING HOMES	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
AUDITORIUMS, CONCERT HALLS, AMPHITHEATERS, MUSIC SHELLS	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
PLAYGROUNDS, PARKS	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
GOLF COURSES, RIDING STABLES, WATER-BASED RECREATION AREAS, CEMETERIES	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
OFFICE BUILDINGS - Personal, Business, and Professional Services	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
COMMERCIAL - Retail, Movie Theatres, Restaurants	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
COMMERCIAL - Wholesale and Some Retail, Industrial/Manufacturing, Transportation, Communications and Utilities	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]
MANUFACTURING - Noise-Sensitive COMMUNICATIONS - Noise-Sensitive	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]	[Satisfactory]

Source: San Francisco 1974, 1991.

-  Satisfactory, with no special noise insulation requirements.
-  New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
-  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
-  New construction or development should generally not be undertaken.

Table 3.7-2. Summary of Noise Limits Established in the San Francisco Noise Ordinance

Noise Source	Applicable Zoning District	Time Period	Noise Limits
Construction Equipment (Except Impact Tools)	All Zoning Districts	7 AM - 8 PM	80 dBA at 100 feet limit does not apply to impact tools and equipment
		7 AM - 8 PM	5 dBA above ambient at property line without special permit
Waste Collection Equipment	All Zoning Districts	Any time	75 dBA at 50 feet
Off-Highway Vehicle Use - Off-Highway Vehicles - Heavy-Duty Vehicles - Motorcycles - Other Highway Vehicles	Public Zones	Any time	70 dBA at 50 feet 82 dBA at 50 feet 77 dBA at 50 feet 74 dBA at 50 feet
Fixed Noise Sources	Low- and Medium-Density Residential Zones	7 AM - 10 PM	55 dBA at property line
		10 PM - 7 AM	50 dBA at property line
	High-Density Residential, Neighborhood Commercial, and Residential Commercial Zones	7 AM - 10 PM	60 dBA at property line
		10 PM - 7 PM	50 dBA at property line
	Commercial Zones	7 AM - 10 PM	70 dBA at property line
		10 PM - 7 AM	60 dBA at property line
	Light Industrial Zones	Any time	70 dBA at property line
	Heavy Industrial Zones	Any time	75 dBA at property line
Engine-Powered Model Vehicle Use	Low- and Medium-Density Residential Zones	7 AM - 10 PM	55 dBA at 50 feet
		10 PM - 7 AM	50 dBA at 50 feet
	High-Density Residential Neighborhood Commercial and Residential Commercial Zones	7 AM - 10 PM	60 dBA at 50 feet
		10 PM - 7 AM	50 dBA at 50 feet
	Commercial Zones	7 AM - 10 PM	70 dBA at 50 feet
		10 PM - 7 AM	60 dBA at 50 feet
	Light Industrial Zones	Any time	70 dBA at 50 feet
	Heavy Industrial Zones	Any time	75 dBA at 50 feet
Public Zones	Any time	80 dBA at 50 feet	
<p>Note: The noise ordinance provides for certain exceptions and variances from these limits. Source: San Francisco Police Code, Article 29.</p>			

1 **3.7.2 Existing Treasure Island Noise Conditions**

2 Most of Treasure Island is more than 0.5 mile (0.8 km) from the open portions of the SFOBB.
3 Consequently, wind, occasional aircraft fly-over, and local traffic are the primary noise sources
4 affecting Treasure Island.

5 Limited ambient noise monitoring conducted at NSTI during 1986 showed afternoon noise
6 levels of 55 to 58 dBA at each of four different locations on Treasure Island (DON 1987). The
7 noise monitoring locations on Treasure Island included the east side of Building 257 at 9th
8 Avenue and Avenue E, the corner of 9th Avenue and Avenue B, in front of Building 369
9 (bachelor officer quarters), and the parking lot for Building 3. The 1986 noise monitoring results
10 are a reasonable representation of conditions on Treasure Island at the time of closure (1993).
11 Present noise levels are likely to be similar or lower than conditions in 1986 since there is
12 currently far less activity on Treasure Island. The majority of Treasure Island is too far from the
13 SFOBB to be measurably affected by traffic noise.

14 Short-term (10-minute) noise measurements conducted in a film studio parking lot near piers 11
15 and 12 on Treasure Island in 1998 showed a measured noise level of 62 dBA. Noise modeling
16 performed to predict the highest noise period and level for existing SFOBB traffic conditions
17 indicated a peak noise-hour level of 67 dBA at this location (Caltrans and FHWA 1998).

18 **3.7.3 Existing Yerba Buena Island Noise Conditions**

19 SFOBB traffic is the dominant noise source affecting Yerba Buena Island. During 1986 noise
20 monitoring at NSTI, a noise level of 67 dBA was recorded at the north end of Yerba Buena
21 Island near Building 213 (Former Fire Station No. 2), about 300 feet (91 m) from the SFOBB
22 (DON 1987).

23 Noise monitoring also was conducted on Yerba Buena Island during January 1996 (DON
24 1996h). One location was monitored for a 24-hour period, and 12 locations were monitored for
25 15-minute periods. The 24-hour monitoring site was at the eastern end of Yerba Buena Island,
26 approximately 80 feet (24 m) below the SFOBB. The Ldn measurement at this site was 76 dB,
27 with a peak 1-hour noise level of 74 dBA (3:00 PM to 4:00 PM) and a minimum 1-hour noise level
28 of 65 dBA (4:00 AM to 5:00 AM). A noticeable decrease in noise levels occurred during the
29 afternoon rush hour due to reduced vehicle speeds caused by traffic congestion.

30 Noise levels measured at the short-term monitoring sites depended on proximity to the SFOBB
31 and the extent that terrain shielded the noise source. The noisiest areas were close to the east
32 and west side tunnel openings. Noise levels during the late morning and early afternoon were
33 generally 65 to 73 dBA for sites near the SFOBB and 52 to 58 dBA for distant locations or
34 locations shielded by buildings or terrain.

35 Additional noise monitoring conducted in 1998 at Yerba Buena Island showed that with the
36 exception of noise measurements taken on US Coast Guard property south of the existing
37 SFOBB, noise levels ranged from 66 to 74 dBA. Yerba Buena Island 24-hour noise
38 measurements ranged from 59 dBA to 72 dBA (Caltrans and FHWA 1998).

1 **3.8 BIOLOGICAL RESOURCES**

2 Biological resources include plant and animal species and the habitats or communities in which
3 they occur. This section is divided into discussions of regulatory considerations, vegetation,
4 wildlife species, sensitive or special status species, sensitive habitats, essential fish habitats, and
5 wetlands. The ROI for biological resources includes Treasure Island and Yerba Buena Island
6 and surrounding aquatic habitat within a half-mile (0.8-km) radius. This radius of the
7 surrounding bay was selected because it includes potential sensitive species and habitats that
8 could be affected by NSTI reuse activities, such as dredging and ferry service to and from NSTI.

9 Biological data were collected from numerous sources, including the California Department of
10 Fish and Game (CDFG) Natural Diversity Database (CDFG 2001), the California Native Plant
11 Society (CNPS), and environmental documents cited in this section. Data from a November
12 1996 plant survey of Yerba Buena Island also is included in this section (DON 1996r). Field
13 surveys were conducted on April 12, 22, and 30, May 13 and 28, June 17, and October 4, 18, and
14 20, 1996, and September 14, 2001, to identify the natural resources at NSTI and to check for the
15 presence of sensitive species. Sensitive species are those that the U.S. Fish and Wildlife Service
16 (USFWS) has proposed for listing as endangered, threatened, or candidates for listing or as
17 species of special concern. USFWS and the National Oceanic and Atmospheric Administration
18 (NOAA)'s National Marine Fisheries Service (NMFS, also referred to as NOAA Fisheries)
19 personnel were consulted regarding the likelihood of finding listed species at NSTI (see
20 Appendix C for copies of correspondence).

21 **3.8.1 Regulatory Considerations**

22 Natural resources in the project area were evaluated in accordance with the applicable
23 provisions of the following statutes, executive orders, and permit requirements.

24 ***Endangered Species Act***

25 The Endangered Species Act of 1973 (ESA) (16 U.S.C. §§ 1531-1534) protects plant and animal
26 species (and their designated critical habitats) that are listed under the act as threatened or
27 endangered. Species are listed as endangered if found to be in danger of extinction throughout
28 all or a significant portion of their ranges. Threatened species are those likely to become
29 endangered within the foreseeable future. The ESA also protects designated critical habitat for
30 listed species. This consists of specific geographic areas which are essential to the conservation
31 of the species, which may require special management considerations. ESA-listed species of
32 marine invertebrates, marine and anadromous fishes, marine reptiles, and marine mammals
33 with the exception of the sea otter are under the jurisdiction of NMFS. Remaining ESA-listed
34 species, including the sea otter, are under the jurisdiction of the USFWS. The ESA requires
35 federal agencies to consult with the USFWS or NMFS, as applicable to the species in question,
36 before initiating any action that may adversely affect a listed species.

37 ***Migratory Bird Treaty Act and Executive Order 13186***

38 The Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C. §§ 703-712) is domestic legislation
39 implementing international agreements made among the United States and England, Mexico,
40 the former Soviet Union, and Japan to protect migratory bird populations. It protects

1 indigenous species of birds that live, reproduce, or migrate within or across international
2 borders at some point during their life cycles from unauthorized take (possession, injury, or
3 mortality). Executive Order 13186, issued by President Clinton in 2001, provides additional
4 mechanisms for federal agencies to protect migratory birds and promote their conservation.

5 ***Marine Mammal Protection Act***

6 The Marine Mammal Protection Act (MMPA) (16 U.S.C. §§ 1361-1421h) protects and conserves
7 marine mammal species by prohibiting harm or harassment of any marine mammal unless
8 specifically authorized by NOAA Fisheries. If a project proponent determines that an action
9 could harm harass marine mammals, the proponent shall consult with either the USFWS or
10 NMFS to determine if a permit to take a marine mammal is required.

11 ***Magnuson-Stevens Fishery Conservation and Management Act***

12 The Magnuson-Stevens Fishery Conservation and Management Act (MSA) (amended by the
13 Sustainable Fisheries Act of 1996, Pub. L. 104-267, as codified in scattered sections of 16 U.S.C. §
14 1801 et seq.) applies to fisheries resources and fishing activities in federal waters that extend to
15 200 miles (322 km) offshore. It addresses conserving and managing U.S. fisheries, developing
16 domestic fisheries, and phasing out foreign fishing activities. It also establishes regional
17 fisheries management councils that set fishing quotas and restrictions in U.S. waters in the form
18 of fish management plans (FMPs). All fish included in a FMP are assigned essential fish habitat
19 (EFH)—those waters and substrate necessary for fish to spawn, breed, feed, or grow to
20 maturity. Federal agencies must consult with the NMFS on proposed actions authorized,
21 funded, or undertaken by the agency that may adversely affect EFH. The act sets forth the
22 enforcement actions that authorized officers may take, including making arrests, boarding,
23 searching, and inspecting fishing vessels and seizing fishing vessels, fish, and other evidence.
24 For more detailed information on FMPs and EFH, refer to section 3.8.6.

25 ***Clean Water Act/Federal Water Pollution Control Act***

26 The CWA/Federal Water Pollution Control Act (33 U.S.C. §§ 1251-1387) sets the basic structure
27 for regulating discharges of pollutants to waters of the U.S. This includes those waters used for
28 navigation or those leading to navigable rivers or waters used for interstate commerce
29 (including lakes) and wetlands bordering streams or other waterbodies. The CWA states that it
30 is unlawful for any person to discharge any pollutant from a point source into navigable waters
31 in the absence of a permit. Section 404 of the Clean Water Act (33 U.S.C. § 1344) requires a
32 permit from the COE for the placement of dredged or fill material into the waters of the United
33 States.

34 Waters of the United States include all waters that are, have been, or are likely to be, important
35 to interstate commerce, including tidal waters, freshwater lakes, rivers and streams, and
36 wetlands that are adjacent to these bodies of water. The landward regulatory limit for nontidal
37 waters (in the absence of adjacent wetlands) is the "ordinary high water mark," which is the
38 line on the shores established by the fluctuations of water and indicated by physical
39 characteristics. Wetlands are defined under the CWA regulations as "those areas that are
40 inundated or saturated by surface or groundwater at a frequency and duration sufficient to
41 support, and that under normal circumstances do support, a prevalence of vegetation typically

1 adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes,
2 bogs, and similar areas" (33 C.F.R. 328.3). Jurisdictional wetlands exist when the following
3 three criteria are present: wetlands hydrology, hydric soils, and hydrophytic vegetation (COE
4 1987).

5 Water quality on and around Treasure Island is regulated by the San Francisco Regional Water
6 Quality Control Board (RWQCB), which operates under authority delegated to it by the EPA
7 and the State Water Resources Control Board (SWRCB). The RWQCB is the local agency that
8 implements the CWA and (the State Porter-Cologne Water Quality Act (Cal. Water Code §§
9 13000-13999.19). The RWQCB regulates discharges under the National Pollutant Discharge
10 Elimination System (NPDES) permit regulations. NPDES permitting requirements cover runoff
11 discharged from point sources (e.g., industrial outfall discharges) and specific nonpoint sources
12 (e.g., stormwater runoff), including construction and industrial sites. The RWQCB implements
13 the NPDES program by issuing construction and industrial discharge permits.

14 The RWQCB, EPA, COE, and BCDC also participate in the San Francisco Bay Long Term
15 Management Strategy (LTMS) for dredging in San Francisco Bay (information at
16 www.epa.gov/region09/water/ltms/ltms.html). The LTMS is intended to identify long-term
17 solutions for dredging and dredged material disposal for a 50-year planning period. An
18 estimated average of approximately 300 million cubic yards (229 million m³) per year of dredge
19 materials will require disposal through the planning period (1995 to 2045). The LTMS agencies
20 have established a Dredged Material Management Office (DMMO) which provides guidance on
21 sediment testing for new dredging programs, and for disposing of, rehandling, and reusing
22 dredge material in both construction and fill activities.

23 *Rivers and Harbors Appropriations Act of 1899*

24 Section 10 of the Federal Rivers and Harbors Appropriations Act of 1899 (RHA) (30 Stat. 1151,
25 codified at 33 U.S.C. §§ 401, 403) prohibits the unauthorized obstruction or alteration of any
26 navigable water (33 U.S.C. § 403). Navigable waters under the RHA are those "subject to the
27 ebb and flow of the tide and/or are presently used, or have been used in the past, or may be
28 susceptible for use to transport interstate or foreign commerce" (33 C.F.R. § 3294). Typical
29 activities requiring Section 10 permits are construction of piers, wharves, bulkheads, marinas,
30 ramps, floats, intake structures, cable or pipeline crossings, and dredging and excavation.

31 *National Environmental Policy Act*

32 NEPA requires federal agencies to evaluate the environmental impacts of proposed projects,
33 programs, and policies that could significantly affect the quality of the human environment.

34 *California Endangered Species Act*

35 Under the California Endangered Species Act (CESA) (Cal. Fish & Game Code §§ 2050-2116),
36 CDFG maintains a list of threatened and endangered species at the state level and a list of
37 candidate species, which are those under review for being added to the state list of endangered
38 or threatened species. The CDFG also maintains watch lists of species of special concern.
39 Pursuant to the requirements of CESA, an agency reviewing a proposed project within its
40 jurisdiction must determine whether any state-listed endangered or threatened species could be

3.8 Biological Resources

1 present in the project area and must determine whether the proposed project will have a
2 potentially significant impact on such a species. In addition, the CDFG encourages informal
3 consultation on any proposed project that could affect a candidate species. The CESA applies to
4 state and local government agencies only and not the federal government.

5 *McAteer-Petris Act*

6 The McAteer-Petris Act (Cal. Gov't Code §§ 66600-66682) created BCDC, which regulates
7 dredging and filling and public access within 100 feet (30 m) of the mean high tide line within
8 San Francisco Bay. Under the McAteer-Petris Act, BCDC has jurisdiction over all areas of the
9 bay that are subject to tidal action, including subtidal areas, intertidal areas, and tidal marsh
10 areas that are between mean high tide and five feet above mean sea level. In addition, BCDC
11 has jurisdiction over a 100-foot (30-m) shoreline band surrounding the bay from the mean high
12 tide line. BCDC's jurisdiction does not extend to federally owned areas, such as the Navy or US
13 Coast Guard property on Yerba Buena Island, because they are excluded from state coastal
14 zones pursuant to the Coastal Zone Management Act.

15 *Coastal Zone Management Act*

16 The CZMA (16 U.S.C. §§ 1451-1465) encourages states to preserve, protect, develop, and, where
17 possible, restore or enhance valuable natural coastal resources, such as wetlands, floodplains,
18 estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using
19 those habitats. To encourage states to participate, the CZMA makes federal financial assistance
20 available to any coastal state or territory that is willing to develop and implement a
21 comprehensive coastal management program. Federal agencies are required to carry out
22 activities that affect any land or water use or natural resource of a state's coastal zone in a
23 manner consistent with the enforceable policies of an approved state management plan.

24 *Executive Order 11990*

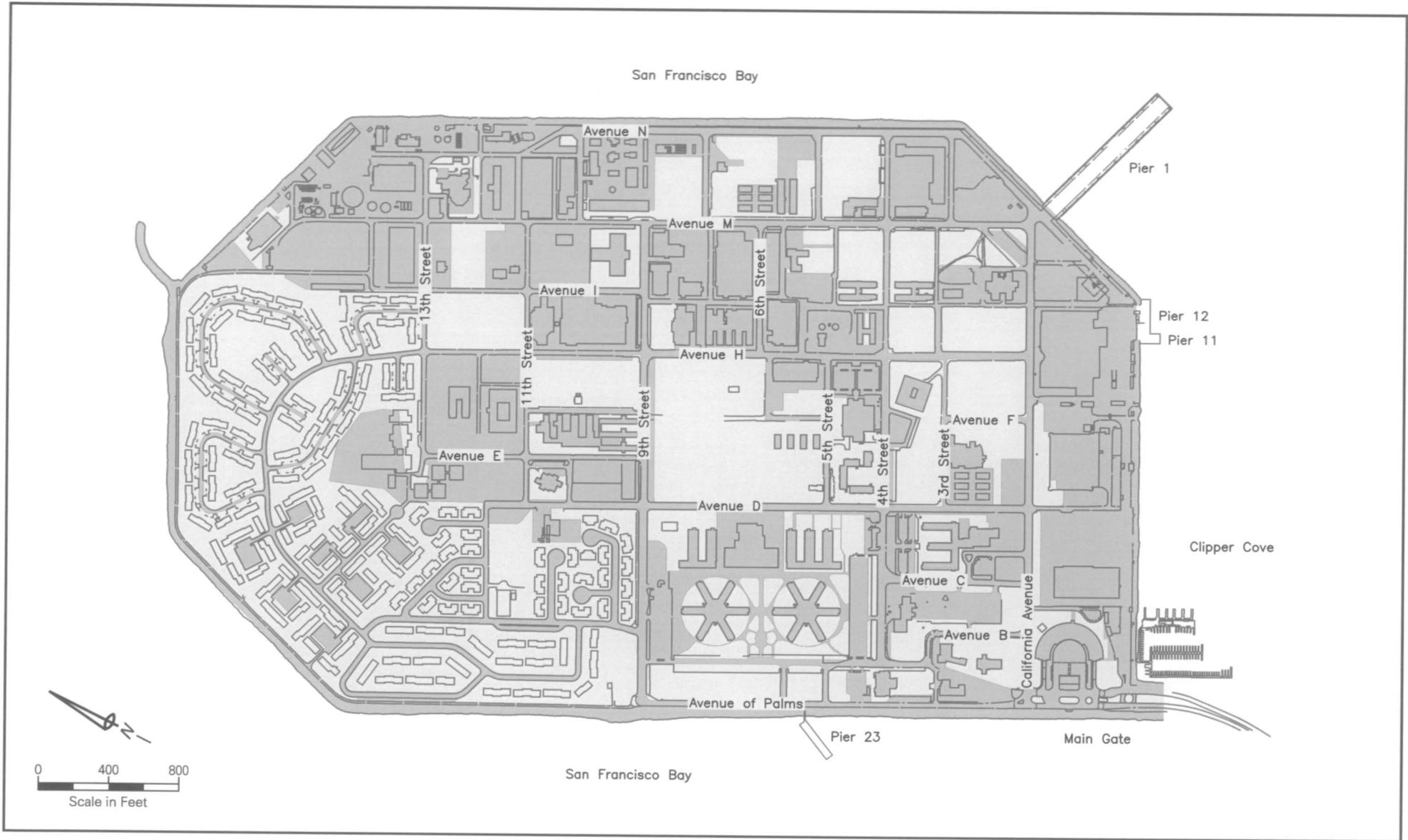
25 Executive Order 11990, Protection of Wetlands (42 Fed. Reg. 26961, May 24, 1977), was signed
26 by President Carter in 1977 and directs federal agencies to avoid wherever feasible the adverse
27 impacts associated with destroying or modifying wetlands.

28 *US Coast Guard Aid to Navigation Permit*

29 The US Coast Guard's primary responsibility is to preserve and enhance the navigability and
30 safety of navigable waters of the U.S. Placing buoys in the bay to limit access to sensitive
31 mudflat habitat at Clipper Cove (see section 4.8, Biological Resources) would require an aid to
32 navigation permit from the US Coast Guard to ensure that the buoys do not interfere with safe
33 navigation through these parts of the bay (14 U.S.C. § 83).

34 **3.8.2 Vegetation/Habitat Types**

35 Figures 3-11 and 3-12 illustrate the location of the terrestrial habitats on Treasure Island and
36 Yerba Buena Island. Treasure Island is an engineered island and contains little native habitat.
37 Habitat types on Treasure Island are landscaped and developed areas. Landscaped areas
38 include mature ornamental trees, shrubs, and grasses (Figure 3-11). The only undeveloped

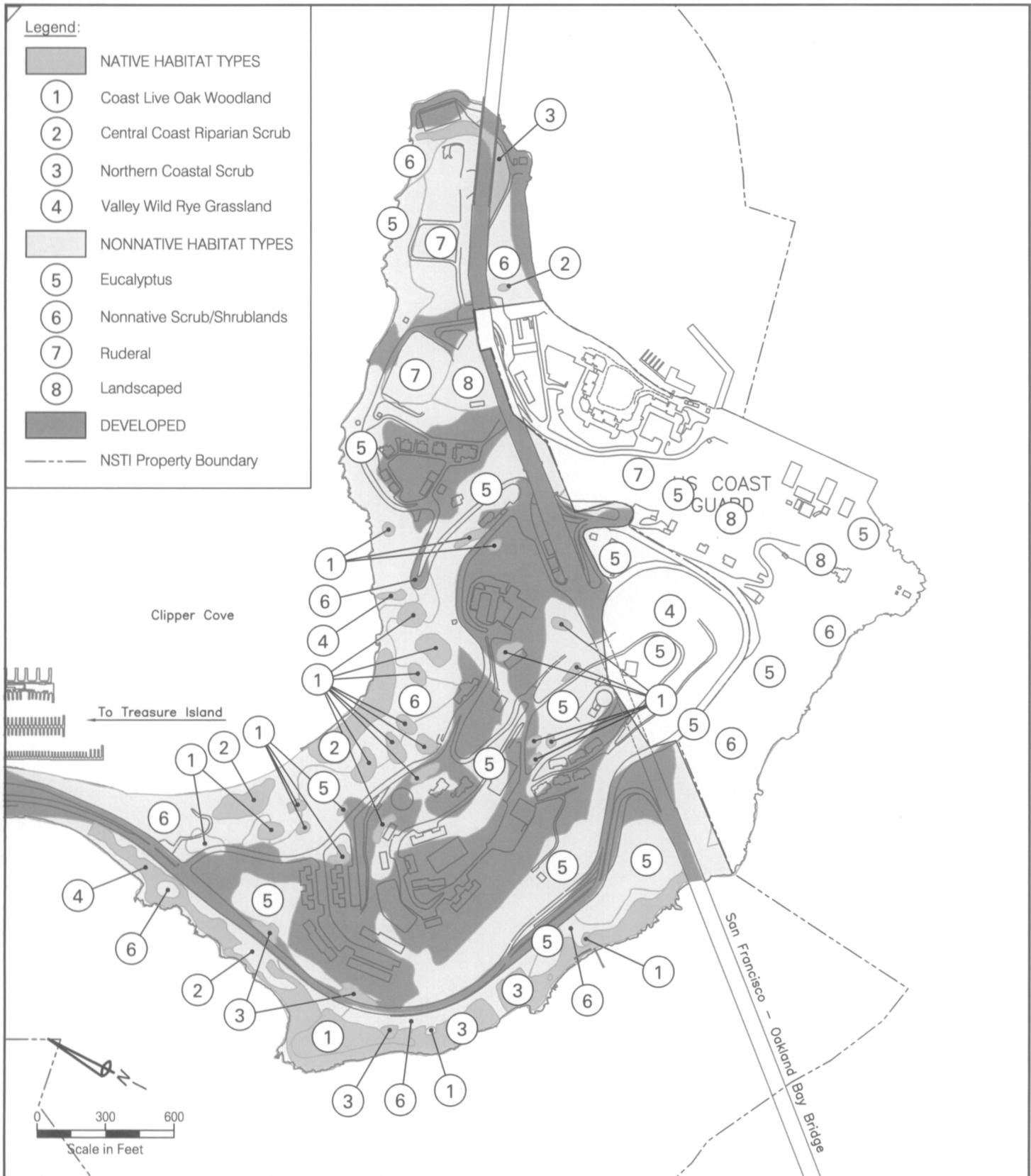


Treasure Island is an engineered island composed of artificial fill. Habitat types on Treasure Island are landscaped areas and developed areas. These areas correspond with "landscaped" and "developed" areas, respectively, on the terrestrial habitat type map of Yerba Buena Island.

Legend:

- Non-native Habitat Types - Landscaped
- Developed

Terrestrial Habitat Types Treasure Island



Habitat types at Yerba Buena Island consist of large areas of nonnative plant communities and developed areas with smaller areas dominated by native vegetation. This figure reflects habitats identified during a series of focused special status plant surveys at the portion of Yerba Buena Island controlled by the Navy.

Terrestrial Habitat Types Yerba Buena Island

1 areas on NSTI are on Yerba Buena Island, where eucalyptus woodlands represent the largest
2 habitat. Yerba Buena Island has a mix of five habitat types of predominantly native species,
3 four habitat types of predominantly nonnative species, and developed areas with little or no
4 vegetation, forming a mosaic pattern of habitat types (Figure 3-12) (San Francisco 1995a). The
5 native habitat types are coast live oak woodland, northern coastal scrub, valley wild-rye
6 grassland, central coast riparian scrub, and northern coastal salt marsh. The nonnative habitat
7 types are eucalyptus woodland, nonnative scrub-shrub land (i.e., nonnative invading garden
8 species), ruderal (i.e., weedy), and landscaped (San Francisco 1995a).

9 Eelgrass beds (*Zostera marina*), common to sheltered areas of water, such as harbors and coves,
10 are located within the project area along the north shore of Yerba Buena Island at Clipper Cove
11 and the east shore of Yerba Buena Island. Eelgrass habitat is described in detail in the Estuarine
12 Habitat section below.

13 *Terrestrial Habitats*

14 *Coast Live Oak Woodland*

15 This habitat type is dominated by coast live oak (*Quercus agrifolia*) and consists almost
16 exclusively of closed canopy forests. Coast live oak communities are frequently found on shady
17 clay hillsides and may form a buffer between grasslands and mixed evergreen forests (Zeiner et
18 al. 1990). Coast live oak woodland differs from other oak woodland subclasses in the relative
19 rarity of annual grasses in its understory. The most frequent dominant plant found beneath
20 coast live oak canopies is poison oak (*Toxicodendron diversilobum*), but other species, such as
21 California blackberry (*Rubus ursinus*) and creeping snowberry (*Symphoricarpus mollis*), are
22 frequently found there as well.

23 Coast live oak woodland may offer habitat to such wildlife species as pocket gopher (*Thomomys*
24 *bottae*), western gray squirrel (*Sciurus griseus*), western fence lizard (*Sceloporus occidentalis*), and
25 Steller's jay (*Cyanocitta stelleri*). The black-crowned night heron (*Nycticorax nycticorax*) roosts
26 and nests on Yerba Buena Island oak woodland (FHWA 2001). The black-crowned night heron
27 is protected under the MBTA.

28 *Northern Coastal Scrub*

29 Northern coastal scrub is a dense shrub-dominated community that commonly occurs as a
30 buffer between northern oak woodland and southern oak woodland. This habitat type is
31 composed of low-growing shrubs that are able to grow where tree growth is prevented by
32 strong onshore winds and is therefore frequently found on steep slopes with strong prevailing
33 winds (Heady et al. 1977). Coyote brush (*Baccharis pilularis*) is the dominant shrub species, with
34 others being sticky monkey flower (*Mimulus aurantiacus*), coffeeberry (*Rhamnus californica*), and
35 poison oak.

36 The most representative stand of northern coastal scrub on Yerba Buena Island is found in a
37 continuous band along the steep bluffs on the islands western edge, mostly west of Treasure
38 Island Road. Northern coastal scrub habitat often hosts such wildlife species as song sparrow
39 (*Melospiza melodia*), Bewick's wren (*Thryomanes bewickii*), and vagrant shrew (*Sorex vagrans*).

1 *Central Coast Riparian Scrub*

2 Central coast riparian scrub typically consists of a scrubby, streamside, open to impenetrable
3 thicket composed of any of several species of willow. This habitat type is dominated by arroyo
4 willow (*Salix lasiolepis*), with lesser amounts of red willow. Together, these species form a
5 complete canopy supporting virtually no understory.

6 The most representative growth of central coast riparian scrub on Yerba Buena Island is found
7 at lower elevations of the steep north-facing slope adjacent to Clipper Cove where the water
8 table nears the surface. There is also a single stand on the western side of the island. Wildlife
9 species that may be found in this habitat include white-crowned sparrow (*Zonotrichia*
10 *leucophrys*) and Steller's jay (*Cyanocitta stellari*).

11 *Valley Wild Rye Grassland*

12 Valley wild rye grassland typically forms dense patches dominated by creeping ryegrass
13 (*Leymus triticoides*). This plant community typically occurs on moist sites at low elevations,
14 often adjacent to riparian or freshwater marsh habitat.

15 On Yerba Buena Island, valley wildrye grassland can be found above the western shoreline near
16 the causeway connecting Yerba Buena Island and Treasure Island (Figure 3-12). This habitat
17 forms a dense band on the bluffs above the northern coastal scrub and extends into the
18 eucalyptus trees.

19 *Ruderal*

20 Ruderal vegetation is found in heavily disturbed areas, such as roadsides and abandoned dirt
21 lots. Plant species found in these areas are generally weedy species, such as French broom
22 (*Genista monspessuliana*), wild mustard (*Brassica kaber*), and wild radish (*Raphanus raphanistrum*).
23 In general, this habitat is of little value from an ecological standpoint; however, it may provide
24 temporary cover and foraging area for small animal species.

25 Ruderal habitat may be used on Yerba Buena Island by birds, such as the western sandpiper
26 (*Calidris mauri*), killdeer (*Charadrius vociferous*), and dunlin (*Calidris alpina*), as they escape tidal
27 inundation.

28 *Nonnative, Landscaped*

29 Much of the vegetation found on Treasure Island consists of introduced species, including trees
30 such as blue gum eucalyptus (*Eucalyptus globulus*), Monterey pine (*Pinus radiata*), and Monterey
31 cypress (*Cupressus macrocarpa*). Woodland comprised of blue gum eucalyptus occurs on Yerba
32 Buena Island. These nonnative trees are of some value to wildlife, e.g., as foraging, perching,
33 and nesting habitat for birds. Native plant species are not likely to be found in landscaped
34 areas due to frequent disturbance, human control, and lack of proper soils. For these reasons,
35 this habitat type is of little value to wildlife.

1 *Estuarine Habitats*

2 This section discusses habitat types that fall within the general classification of estuarine, as
3 defined by Cowardin (U.S. Department of Interior 1979). Cowardin defines the estuarine
4 system as "consisting of deepwater habitats and adjacent tidal wetlands that are usually semi-
5 enclosed by land but have open, partly obstructed, or sporadic access to the open ocean and in
6 which ocean water is at least occasionally diluted by freshwater runoff from the land."
7 Subsystems of estuarine habitat are classified as subtidal, which is continuously submerged,
8 and intertidal, which is alternately exposed and flooded by tides and includes the associated
9 splash zone (U.S. Department of Interior 1979). NSTI and the ROI of the proposed action
10 encompass all of these habitat types.

11 Estuaries are some of the most productive habitats on earth. Varying degrees of salinity,
12 differences in current velocities, a gradient of depths and temperatures and a diversity of
13 intertidal habitat types contribute to this productivity, making estuaries extremely important
14 habitat. The San Francisco Bay is the largest estuary on the West Coast and is very important in
15 terms of fisheries and other wildlife habitat values.

16 San Francisco Bay has a surface area of approximately 820 square miles (1,312 square km)
17 (Cloern and Nichols 1985), and salt waters extend approximately 40 miles (64 km) inland at
18 some times of the year. The bay is divided into four main sections: Suisun Bay, San Pablo Bay,
19 the Central Bay, and the South Bay (Figure 3-13). Suisun Bay, which is the northeastern portion
20 of San Francisco Bay, supports the prime mixing zone for fresh and salt waters and is lower in
21 salinity than other parts of the bay such as the Central or South bays. NSTI is within the Central
22 Bay.

23 The Central Bay, including NSTI, delineated in this report by Point Richmond in the north and
24 Candlestick Point in the south, is largely deep bay and channel habitat. Deepwater habitat is
25 found on the western side of NSTI, with water depths growing increasingly shallower to the
26 east. Waters are cold and saline in this portion of the bay and are heavily influenced by tidal
27 action. As the Central Bay is the entrance to the bay, all anadromous and pelagic fish species
28 that occasionally visit the bay pass through the Central Bay.

29 The predominant aquatic habitat around Treasure Island and Yerba Buena Island is subtidal,
30 with unconsolidated mud (silt and clay) bottom substrate. Water depths around NSTI range
31 from about 7 to 33 feet (2 to 10 m), with the exception of the southeastern tip of the facility,
32 where depth increases to more than 66 feet (20 m). There are no freshwater or wetland habitats
33 on Treasure Island, although a small salt marsh is found on Yerba Buena Island (DON 1990a).
34 There is rocky intertidal shoreline with mudflats on the western side of the cove between Yerba
35 Buena Island and Treasure Island. There is limited intertidal habitat, consisting of concrete
36 riprap and dock and pier pilings, along most of the shoreline surrounding Treasure Island.
37 Yerba Buena Island has a rocky intertidal shoreline, with mudflats extending to the north
38 between it and Treasure Island. Cobble gravel substrate is found off the southern and western
39 edges of Yerba Buena Island (Figure 3-14).

40

1 Tidal Salt Marsh

2 Tidal marsh also once ringed San Francisco Bay but is now confined to a few large contiguous
3 areas and remnant marshes in a variety of locations. This habitat type is generally found along
4 the margins of bays, lagoons, and estuaries sheltered from excessive wave action (Macdonald
5 and Barbour 1974). The existing bay habitat type (referred to by Cowardin as persistent
6 emergent wetland) is typically dominated by pickleweed (*Salicornia virginica*). Saltgrass
7 (*Distichlis spicata*) is common at the upper edges, whereas cordgrass (*Spartina foliosa*) is typically
8 found at the lower edges of this habitat. Nonnative species of cordgrass (*Spartina* spp.) are
9 becoming increasingly established in San Francisco Bay and threaten to displace native
10 cordgrass as well as mudflat habitat. The vegetative composition of tidal marsh varies
11 depending on the part of the bay and the topography of the area in which it is found. Tidal
12 marsh in brackish areas where salt water and freshwater meet, most notably in the Suisun
13 Marsh, tend to be dominated by tules (*Scirpus* spp.) and cattails (*Typha* spp.). There are about
14 40,000 acres (16,194 ha) of tidal marsh in San Francisco Bay (Goals Project 1999), although very
15 little of this habitat exists in the project area. Non-tidal salt marsh vegetation remains in many
16 diked areas of San Francisco Bay. No salt marsh is found on Treasure Island, but there is a
17 narrow band of it on the eastern side of Clipper Cove on Yerba Buena Island (FHWA 2001).

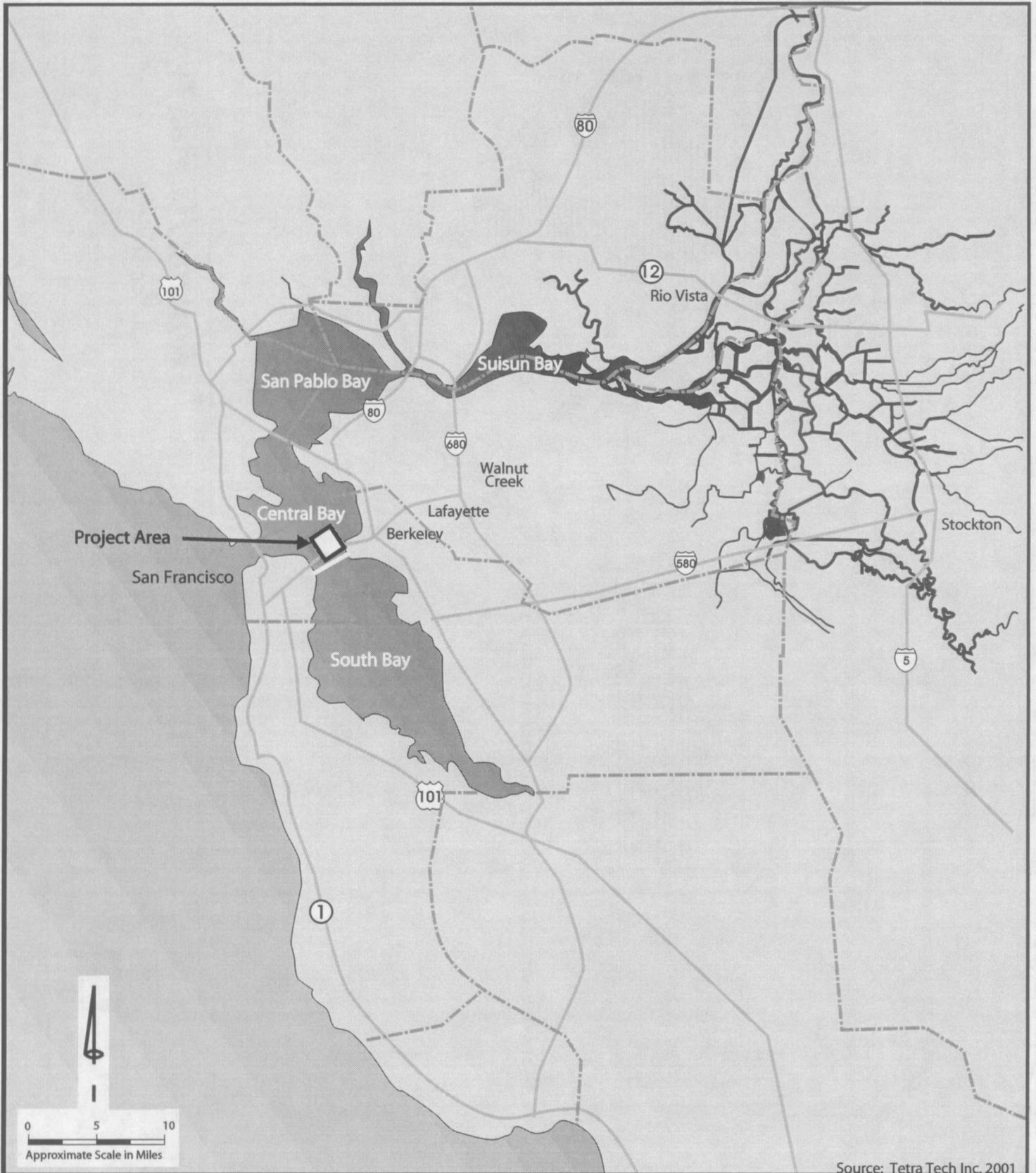
18 Common tidal salt marsh plants, such as pickleweed, glasswort (*Salicornia subterminalis*),
19 cordgrass, alkali heath (*Frankenia salina*), and saltgrass (*Distichlis spicata*), have differing
20 tolerances for submergence and exposure, and, as a result, are found in distinct elevation zones
21 along the shoreline. Wildlife species found in salt marshes in the bay may include the federally
22 listed endangered California clapper rail (*Rallus longirostris*), the state-listed threatened
23 California black rail (*Laterallus jamaicensis*), and the federally listed endangered salt marsh
24 harvest mouse (*Reithrodontomys raviventris*). None of these species are likely to occur at NSTI.
25 Great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), coots (*Gymnopus californicus*),
26 ducks, and many species of shorebirds are also found in tidal salt marshes.

27 Rocky Shore

28 The riprapped shoreline of Treasure Island and the natural rocky shoreline of Yerba Buena
29 Island provide rocky intertidal to shallow subtidal habitat. Rocky shores are productive
30 habitats that provide a substrate for algae and sessile invertebrates, which in turn provide food
31 and shelter for mobile invertebrates, fishes, birds, and mammals. Most rocky shores in San
32 Francisco Bay are artificial, being composed of riprap, pier pilings, and wharves, while natural
33 rocky shores are limited to exposed headlands and islands.

34 Shallow Subtidal Areas and Tidal Flats

35 There are about 200,000 acres (80,980 ha) of shallow subtidal habitat and tidal flats in San
36 Francisco Bay (Goals Project 2000). Shallow subtidal areas extend to depths of about 18 feet
37 (5.2 m). Tidal flats generally occur between the mean tide level (MTL), or the lower elevation
38 limit of cordgrass flats, to the lowest tide level, about 2.5 feet (0.7 m) below mean lower low
39 water (MLLW). The semidiurnal (twice daily) tidal cycles that characterize San Francisco Bay
40 submerge and expose tidal flats once or twice daily. There are approximately three acres
41 (1.2 ha) of intertidal mudflats in the project area along the southeasterly edge of Clipper Cove
42 (Figure 3-14).

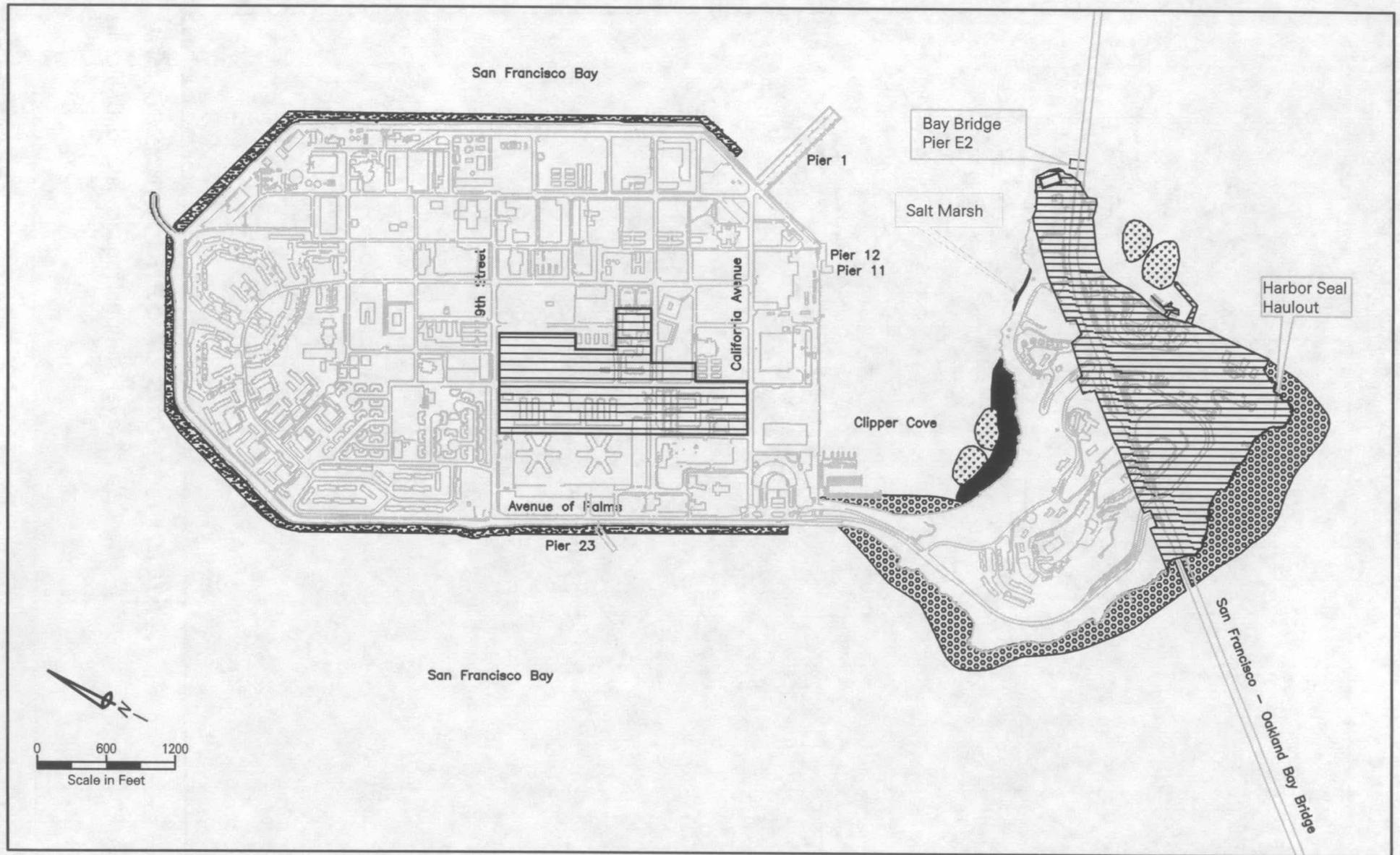


Source: Tetra Tech Inc. 2001

Major Regions of San Francisco Bay

Naval Station Treasure Island, California

Figure 3-13



Yerba Buena Island has a variety of aquatic habitat types, whereas Treasure Island is limited to rocky areas. Harbor seals haul out on the southeastern shoreline of Yerba Buena Island under the SFOBB.

Legend:

- | | | | |
|--|----------------------|--|--|
| | Eelgrass | | Rocky |
| | Mud flat, Mud bottom | | Areas Excluded from Proposed Navy Disposal |
| | Cobble gravel bottom | | |

Aquatic Habitat Types

Naval Station Treasure Island, California

1 Shallow subtidal areas and tidal flats of the bay support few plant communities, compared to
2 other estuaries, such as Humboldt Bay and Tomales Bay. These plant communities include
3 microalgae (such as diatoms), macroalgae (i.e., seaweed), and eelgrass (*Zostera marina*).
4 Microalgae form the basis for the estuarine food chain, providing a readily available food
5 source for such organisms as worms and clams, which are then consumed by shorebirds and
6 waterfowl. Macroalgae are found throughout the bay, primarily in the more saline areas, such
7 as the Central Bay.

8 *Eelgrass*

9 Although often thought of as seaweed or grass, eelgrass is actually a flowering plant that has
10 adapted to living submerged in the shallow waters of protected bays and estuaries in temperate
11 regions of the world (Phillips and Menez 1988). Eelgrass is the only seagrass in the bay (Phillips
12 and Menez 1998) and is found in intertidal zones that become exposed during the lower spring
13 tides. It is also found in subtidal areas at depths of less than 7 feet (2 m). Eelgrass provides
14 food, shelter, and spawning grounds for many fish and invertebrates, including the Pacific
15 herring (*Clupea harengus*), which prefers eelgrass beds for spawning (Spratt 1981). Eelgrass
16 provides forage for the black brant (*Branta nigricans*), which relies on it almost exclusively
17 during migration along the Pacific flyway (Einarsen 1965). Eelgrass provides many important
18 ecological functions, such as stabilizing unconsolidated sediments, providing shelter for many
19 organisms, and improving water quality by reducing nutrients, sediments, and pollutant inputs
20 from land (Williams and Davis 1996).

21 Surveys in 1999 and 2000 identified eelgrass beds in the project area, four near Yerba Buena
22 Island (FHWA 2001). Two of these were within Clipper Cove on the north side of Yerba Buena
23 Island and two within Coast Guard Cove on the east side of Yerba Buena Island (Figure 3-14).
24 Eelgrass beds are highly dynamic and fluctuate in size, as such variables as light availability
25 and nutrient load change. The most recent surveys indicated that total area of eelgrass beds in
26 the project area is approximately 1.8 acres (0.75 ha) (FHWA 2001). Eelgrass beds in these areas
27 occur along the edges of the shoreline and extend to areas no greater in depth than 4 to 6 feet
28 (1.1 to 1.8 m) (FHWA 2001).

29 *Open Waters*

30 Open waters, also referred to as deep bay and channel habitat, are those parts of the bay that
31 are deeper than 18 feet (5.2 m) below MLLW. Open waters are saline and, where they surround
32 the project area, are strongly influenced by tidal currents. There are about 82,000 acres (33,198
33 ha) of this habitat in the bay (Goals Project 1999). Approximately 950 acres (384 ha) of open
34 water habitat lies within the project area, mostly to the west of NSTI. Large aquatic
35 invertebrates, such as crab and shrimp, and fish, such as sturgeon and rockfish, are found in
36 this habitat. Anadromous fish, such as chinook salmon (*Oncorhynchus tshawytscha*) and
37 steelhead (*Oncorhynchus mykiss*), use open water habitat as migratory corridors. Resting and
38 foraging habitat is found in the open water habitat for such species as the brown pelican,
39 double-breasted cormorant (*Phalacrocorax auritus*), and the Caspian tern (*Sterna caspia*). Marine
40 mammals, such as harbor seals (*Phoca vitulina richardsi*) and California sea lion (*Zalophus*
41 *californianus*), are also found in the open water habitat. The species that are likely to be found in
42 the open water habitat surrounding the project area are discussed in detail below in the
43 Sensitive Wildlife Species section.

1 **3.8.3 Wildlife**

2 Wildlife found in the region, including on NSTI, includes terrestrial and aquatic species of birds,
3 mammals, invertebrates, amphibians, and reptiles. Treasure Island is developed and
4 landscaped and provides little habitat for wildlife, while the habitats on Yerba Buena Island are
5 more diverse and provide greater wildlife value. The entire Bay Area is a crucial resting and
6 foraging area and wintering ground for thousands of birds in the Pacific Flyway, which extends
7 from South America to the Arctic Circle (DON 1986).

8 ***Terrestrial Wildlife***

9 Observed bird species on Yerba Buena Island include Lewis' woodpecker (*Melanerpes lewis*),
10 Steller's jay, white-breasted nuthatch (*Sitta carolinensis*), and American robin (*Turdus*
11 *migratorius*). Birds known to inhabit the brushland habitats on Yerba Buena Island are
12 California quail (*Callipepla californica*), northern mockingbird (*Mimus polyglottos*), savannah
13 sparrow (*Passerculus sandwichensis*), and white-crowned sparrow (*Zonotrichia leucophrys*). More
14 common bird species on the landscaped or developed regions of NSTI include European
15 starling (*Sturnus vulgaris*), pigeon (*Columba livia*), American robin, house sparrow (*Passer*
16 *domesticus*), mourning dove (*Zenaida macroura*), scrub jay (*Aphelocoma coerulescens*), and flicker
17 (*Colaptes auratus*). Great blue heron (*Ardea herodias*), black-crowned night heron, and great egret
18 (*Casmerodius albus*) have been observed foraging along the riprapped shoreline (San Francisco
19 1995a). Other common species not observed but likely to be found include the California brown
20 pelican and several grebe, cormorant, and gull species. Yerba Buena Island also provides
21 habitat for two small mammal species; the pocket gopher (*Thomomys bottae*) and the California
22 ground squirrel (*Citellus beecheyi*).

23 ***Maritime Wildlife***

24 Rocky shores, tidal marshes and mudflats occupy the intertidal zone, separating the adjacent
25 developed lands from open waters. The mudflats in particular contain substantial surface and
26 subsurface microalgal and macroalgal growth and diverse invertebrate fauna. These
27 invertebrate faunas, consisting of worms, small mollusks, and arthropods, are an important
28 food source for a variety of wintering shorebirds. When the mudflats are exposed at low tide,
29 large congregations of shorebirds gather on them to feed. These feeding areas are important in
30 the yearly migration and winter residence cycle of most of these bird species.

31 Benthic (those living in or on the floor of a waterbody) species most abundant in the nearshore
32 environment include mollusks, such as the bay mussel (*Mytilus edulis*), California mactra
33 (*Mactra californica*), and common littleneck (*Protothaca staminea*), as well as crustaceans, such as
34 amphipods, copepods, shrimp, graceful rock crab (*Cancer gracilis*), and Dungeness crab (*C.*
35 *magister*). Most of the species of benthic organisms in San Francisco Bay are introduced species,
36 such as the aforementioned bay mussel, the Amur River clam (*Potamocorbula amurensis*), and the
37 recently introduced Chinese mitten crab (*Eriocheir sinensis*). Many of these exotic species have
38 been released to the bay in water from cargo ship ballast.

39 Phytoplankton is found throughout the water column in the bay and is prey for such species as
40 clams, mussels, and barnacles. Copepods, such as ghost shrimp and euphausiids, also known
41 as krill, prey on phytoplankton and are in turn an important food source for juvenile fish. The

1 amount of phytoplankton in an area is influenced by such factors as water depth and
2 transparency, river inflow and water salinity, or any other factors that influence the amount of
3 light available for phytoplankton to use in photosynthesis. In the Central Bay, phytoplankton
4 levels generally remain relatively low due to tidal mixing. Seasonal variation in degree of
5 turbidity, changes in nutrient load, and filtering organisms influences the amount of
6 phytoplankton.

7 A wide variety of fish species reside in and migrate through San Francisco Bay. Typical species
8 include the staghorn sculpin (*Leptocottus armatus*), chameleon goby (*Tridentiger trigonocephalus*),
9 topsmelt (*Atherinops affinis*), bay pipefish (*Syngnathus leptorhynchus*), and Pacific herring (*Clupea*
10 *pallasii*). Pacific herring is not listed under ESA, but it is the most important commercial species
11 in the ROI. This species also has significant spawning grounds in the project area. Pacific
12 herring swim in the middle to surface level of the water column. They spend most of their
13 adult lives in coastal waters but use estuaries for spawning and rearing. The Pacific herring
14 feeds on zooplankton and lives in schools.

15 Adult herring, age two or three, begin their migration into the bay in November (ABAG 1996),
16 and spawning occurs mainly from January to March in intertidal and subtidal habitat (Miller
17 and Schmidtke 1956; Hardwick 1973). Some documented Pacific herring spawning grounds
18 include Angel Island, Alcatraz Island, and Treasure Island (Miller and Schmidtke 1956). Pacific
19 herring are known to spawn in much of the project area, including the shallow water off NSTI.
20 They deposit their eggs on eelgrass, algae, rocks, sand, and other submerged objects off these
21 islands. In San Francisco Bay, the Pacific herring eggs have been shown to hatch in six to eleven
22 days (Miller and Schmidtke 1956). The larvae tend to move out to the coast immediately, but
23 some may remain for longer periods in the surface water of the bay (Eldridge et al. 1973; Wang
24 1986). Much of the larvae that remain inhabit the shallow waters of the South Bay as juveniles.

25 Marine mammals have been observed at or near NSTI. The harbor seal is routinely seen in the
26 San Francisco Bay waters at NSTI. The San Francisco Bay harbor seal population of
27 approximately 700 has remained constant since the early 1970s (San Francisco Estuary Project
28 [SFEP] 1993). From December to April, several hundred harbor seals go ashore at "haulout"
29 areas on the southeast shoreline of Yerba Buena Island, near the SFOBB. This area is within the
30 ROI but not within the boundaries of the property for disposal (see Figure 3-14) (SFEP 1993;
31 DON 1990a; Green 2001). Seals typically haul out to rest, sleep, or give birth (pup).

32 3.8.4 Sensitive Species

33 This section identifies special status, or sensitive, species that may occur in the project area.
34 Sensitive species include those species that the USFWS or the CDFG lists or has proposed for
35 listing as endangered, threatened, or candidate species. Plants that the CNPS lists as rare or
36 threatened are also considered sensitive. Potential sensitive species at NSTI were identified
37 from USFWS (USFWS 2001), CDFG (CDFG 2001), and the CNPS. USFWS personnel were
38 consulted regarding the likelihood of finding listed species at NSTI (USFWS 2001).

39 Lists of all sensitive species and any critical habitat found in the region, according to USFWS
40 and NOAA Fisheries, are provided in Appendix C. Critical habitat may be designated only for
41 federally listed threatened and endangered species; no such designation is applicable to other
42 species. As mentioned in the species accounts below, critical habitat designations for some of

3.8 Biological Resources

1 the listed salmonids have been vacated (withdrawn) by NOAA Fisheries in response to a court
 2 ruling (NOAA Fisheries 2003). An assessment of the likelihood of a species occurring at NSTI
 3 was made based on the habitat requirements and geographic distribution of the species,
 4 existing on-site habitat quality, and the results of biological surveys of NSTI (DON 1993a, 1996b;
 5 FHWA 2001).

6 The following discussion includes a profile of only those sensitive or special status species that
 7 are known or considered likely to be found in the project area.

8 *Sensitive Plant Species*

9 All sensitive plant species listed as potentially occurring in the project area are listed in Table 3-
 10 8.1. Of these species, only marsh gumplant (*Grindelia stricta*) is confirmed to occur within the
 11 ROI. This species is considered a sensitive plant species because of its limited range and
 12 increasing destruction of its habitat. This species is found on the northern portion of Yerba
 13 Buena Island, outside of the proposed disposal area (FHWA 2001).

14 **Marsh Gumplant.** Although it has no federal or state status, marsh gumplant is considered
 15 locally significant because of its association with wildlife species of concern and has been
 16 included in the CNPS list of species that have limited distribution. This species was observed
 17 during botanical surveys on the northern portion of Yerba Buena Island (FHWA 2001).

18 Marsh gumplant is a host species for the Alameda song sparrow, a federal species of concern.
 19 However, the portion of Yerba Buena Island in which it is found is not within the proposed
 20 disposal area.

Table 3.8-1
Sensitive Plant Species that may occur within the Project Area

Common Name Scientific Name	Status ¹ F/S/CNPS	Preferred Habitat	Likelihood of Occurrence in Project Area ²	Comments
Marsh gumplant <i>Grindelia stricta</i>	-/-/1B	Northern coastal salt marsh	C	Northern portion of Yerba Buena Island
San Francisco gumplant <i>Grindelia hirsutula</i> var. <i>maritima</i> .	-/-/1B	Coastal scrub, coastal bluff scrub, valley and foothill grassland	P	Potential habitat occurs on northwestern edge of Yerba Buena Island

Source: CDFG 2001; USFWS 2001; CNPS 2001; FHWA 2001.

¹Status
 F = Federal; S = State; CNPS = California Native Plant Society Listing; 1B = Plants, rare, threatened or
 endangered in California

²Likelihood of occurrence on the project site
 C = Confirmed; P = Potentially may occur

21 **San Francisco Gumplant (*Grindelia hirsutula* var. *maritima*).** Suitable habitat for the San
 22 Francisco gumplant exists on Yerba Buena Island in proximity to marsh gumplant; however,
 23 this species was not reported on the island during field surveys.

1 *Sensitive Wildlife Species*

2 Several sensitive animal species may use or are known to use NSTI (USFWS 1994a; CDFG
3 1996a, 1996b). Numerous other wildlife species that the USFWS and NMFS classified as
4 threatened or endangered are known to occur in the Bay Area and historically have been
5 reported to intermittently forage or roost at NSTI (DON 1990a). These latter species include
6 Sacramento winter-run and Central Valley spring-run chinook salmon, central California coast
7 and Central Valley steelhead, and the California brown pelican.

8 *Sensitive (ESA) Fish Species*

9 *Salmonids*

10 Salmonids are members of the Salmonidae family and include trout and salmon. For
11 salmonids, a population (or group of populations) is considered distinct (and may be given
12 consideration for listing under the ESA) if it represents an evolutionarily significant unit (ESU)
13 of the biological species. To be considered an ESU, a population must be reproductively
14 isolated, such that evolutionarily important differences accrue, and it contributes substantially
15 to the ecological and genetic diversity of the species as a whole. Table 3.8-2 lists special status
16 fish species that may occur within the project area.

17 The salmonids that occur in the San Francisco Bay include chinook salmon, coho salmon, and
18 steelhead trout. Salmonids are anadromous, meaning they are ocean dwellers that migrate to
19 freshwater streams to spawn (lay and fertilize their eggs). There are four runs of chinook
20 salmon that use San Francisco Bay: the Sacramento winter-run, Central Valley spring-run,
21 Central Valley fall-run, and the Central Valley late fall-run chinook salmon. These runs are
22 distinguished by the time of year that they spawn. The central California coast coho salmon,
23 Central Valley steelhead, and the central California coast steelhead are also known to use San
24 Francisco Bay for migrating and rearing. These salmonids share a similar life cycle and use of
25 the bay. As discussed further in section 3.8.6, all of San Francisco Bay is considered Essential
26 Fish Habitat (EFH) for West Coast salmon fisheries.

27 Adult salmonids leave the ocean and migrate to freshwater streams when they are two or three
28 years old, though this varies according to the species. They follow a migratory route that takes
29 them to deep pools along a river where they may wait several months until they are sexually
30 mature. In order to successfully reproduce, salmon need clean cold water, flowing over a
31 gravel bed. Females search out these conditions and will lay their eggs in a gravel depression
32 they dig, called a redd. Adult chinook and coho salmon die within one to two weeks after
33 spawning. Steelhead, however, do not necessarily die but may live to spawn another year.
34 Salmonid eggs hatch in one to two months and remain in the stream, absorbing essential
35 nutrients from their yolk. Once the hatchlings surface from their gravel covering, they are
36 known as juveniles and feed on larvae and other planktonic (drifting) organisms in the river.
37 The amount of time that juvenile salmonids remain in the bay varies, with some emigrating
38 immediately and others remaining for several months or years. Steelhead juveniles, for
39 example, rear in freshwater streams for up to three years, far longer than Pacific salmon. Once
40 juvenile salmonids have migrated to the ocean they will remain there until they are two to four
41 years of age, and then they will begin their spawning migration.

**Table 3.8-2
Special Status Fish Species that may occur within the Project Area**

<i>Common Name Scientific Name</i>	<i>Status¹ F/S</i>	<i>Preferred Habitat</i>	<i>Likelihood of Occurrence in Project Area²</i>	<i>Comments</i>
Central California coast coho salmon <i>Oncorhynchus kisutch</i>	T/E	Migrates from ocean through estuaries to freshwater streams	P	Migrates through bay
Central California coast steelhead trout <i>O. mykiss</i>	T/-	Migrates from ocean through estuaries to freshwater streams	P	Migrates through bay
Central Valley fall-run/late fall-run chinook salmon <i>O. tshawytscha</i>	C/-	Migrates from ocean through estuaries to freshwater streams	P	Migrates through bay
Central Valley spring-run chinook salmon <i>O. tshawytscha</i>	T/-	Migrates from ocean through estuaries to freshwater streams	P	Migrates through bay
Central Valley steelhead trout <i>O. mykiss</i>	T/-	Migrates from ocean through estuaries to freshwater streams	P	Migrates through bay
Green sturgeon <i>Acipenser medirostris</i>	SC/SC	Marine and estuarine environments	C	Anadromous, migrates into Central Bay
Longfin smelt <i>Spirinchus thaleichthys</i>	SC/SC	Open waters of the bay	P	Found throughout open water areas
Sacramento River winter-run chinook salmon <i>Oncorhynchus tshawytscha</i>	E/E	Migrates from ocean through estuaries to freshwater streams	P	Migrates through bay

Source: NMFS 2001; CDFG 2001; USFWS 2001; FHWA 2001.

¹Status
F = Federal; S = State; E = listed as endangered; T = listed as threatened; SC = species of concern; C = candidate

²Likelihood of occurrence on the project site
C = Confirmed; P = Potentially may occur.

- 1 **Sacramento River Winter-Run Chinook Salmon (*Oncorhynchus tshawytscha*).** Sacramento
2 River winter-run chinook salmon is federally and state-listed as endangered. Winter-run
3 chinook salmon migrate and spawn from mid-December to September, along the Sacramento
4 River, up to Keswick Dam in Shasta County.
- 5 Adult winter-run chinook salmon can be found in San Francisco Bay beginning November
6 through December, with individuals remaining only a few days (Herbold et al. 1992). Juveniles
7 emigrate from their initial upstream habitat to the bay in the fall. Although most individual
8 juveniles remain in the bay only for 4 to 10 days (USFWS 1987) some may stay for several
9 months (Myers et al. 1998), using the habitat for rearing (Healey 1991). Winter run chinook may
10 occur in the Central Bay and in the project area in low numbers (Woodbury 2001).

- 1 The primary threats to winter-run chinook salmon are the changes to the Sacramento River
2 basin, which include the presence of dams and other water diversions, increasing water
3 temperatures, agricultural and industrial pollution, and drought conditions (CDFG 2001).
- 4 Winter-run chinook salmon designated critical habitat includes all waters of San Francisco Bay
5 north of the SFOBB. The project area lies within this critical habitat area (National Marine
6 Fisheries Service Northwest Region [NMFS NWR] 2000a).
- 7 **Central Valley Spring-Run Chinook Salmon (*O. tshawytscha*).** A federally listed threatened
8 ESU, the spring-run chinook salmon has a similar life history to the winter-run salmon but
9 begins its spawning migration to the Sacramento/San Joaquin Delta in late winter to spring.
10 Adults are found in San Francisco Bay during the migratory period in the spring, and juveniles
11 have the potential to inhabit the bay in the fall, winter, and spring. Spring-run chinook may
12 occur in the Central Bay and in the project area in low numbers (Woodbury 2001).
- 13 The decline of spring-run chinook is mainly attributed to over fishing and to the degradation
14 and loss of upstream habitat due to development and water diversion (CDFG 1995).
- 15 There is currently no critical habitat designated for the Central Valley spring-run chinook
16 salmon; the previous critical habitat designation (NMFS NWR 2000a) has been vacated (NOAA
17 Fisheries 2003).
- 18 **Central Valley Fall-Run/Late Fall-Run Chinook Salmon (*O. tshawytscha*).** The Central Valley
19 fall-run/late fall-run chinook salmon is a federally and state-designated candidate ESU. This
20 ESU constitutes the largest number of chinook salmon in San Francisco Bay (NMFS NWR
21 2000b).
- 22 Adult fall-run/late fall-run chinook salmon begin their migration toward their spawning
23 grounds in June, with a peak in September. They spawn in the Sacramento/San Joaquin Delta
24 during December and January (USFWS 1999). Juvenile salmon potentially occur in San
25 Francisco Bay in the late winter through summer. This ESU can occur in the Central Bay, and in
26 the project area, in low numbers (Woodbury 2001).
- 27 The primary threats to the fall-run/late fall-run chinook salmon are the impacts from high
28 hatchery production and harvest levels and from the loss of 40 to 50 percent of spawning and
29 rearing habitat (NMFS 1999).
- 30 There is currently no critical habitat designated for this ESU; the previous critical habitat
31 designation has been vacated (NOAA Fisheries 2003).
- 32 **Central California Coast Coho Salmon (*O. kisutch*).** The Central California coast coho salmon
33 is a federally listed threatened and state-listed endangered ESU. Adult coho migrate through
34 San Francisco Bay after heavy late fall or winter rains to spawn in the Sacramento/San Joaquin
35 Delta. Juvenile coho potentially occur in the San Francisco Bay in the spring, summer, and fall.
36 Central California coast coho may occur in the Central Bay, and therefore in the project area, in
37 low numbers (Woodbury 2001).
- 38 The primary threats to this ESU are habitat degradation and unfavorable climate conditions in
39 the last few decades, such as droughts and floods (CDFG 2000).

3.8 Biological Resources

1 Central California coast coho critical habitat includes all river reaches, including estuarine areas
2 and tributaries accessible to listed coho salmon, from Punta Gorda in northern California south
3 to the San Lorenzo River in central California (NMFS NWR 2000c). The project area lies
4 partially within this critical habitat area, with the water surrounding NSTI north of SFOBB
5 qualifying as Central California coast coho critical habitat (Bybee 2001).

6 **Central California Coast Steelhead Trout (*O. mykiss*).** The Central California coast steelhead
7 trout is federally listed as a threatened ESU but has no state status. Steelhead are rare in most
8 streams that are tributary to San Francisco Bay.

9 Central California coast steelhead migrate from the Pacific coast through San Francisco Bay to
10 spawn in freshwater in the upper Sacramento River. They are also known to migrate to the
11 South Bay, where they spawn in the Guadalupe River, Coyote Creek, and San Francisquito
12 Creek (Woodbury 2001). Upstream migration occurs from December through May, and peak
13 spawning occurs in April. Juveniles may spend a year or more in San Francisco Bay before
14 moving on to the ocean. This ESU is known to occur in the Central Bay, and in the project area,
15 in moderate numbers (Woodbury 2001). The Central California coast steelhead may be present
16 in the ROI at any time of the year.

17 The primary threats to Central California coast steelhead are degradation and loss of critical
18 spawning and rearing grounds, due to development and water diversions (CDFG 2000).

19 There is currently no critical habitat designated for this ESU; the previous critical habitat
20 designation has been vacated (NMFS 2003).

21 **Central Valley Steelhead Trout (*O. mykiss*).** The Central Valley steelhead is federally listed as
22 threatened ESU and has no state status. Central Valley steelhead migrate between the ocean
23 and the Sacramento and San Joaquin rivers and their tributaries via the San Francisco and San
24 Pablo bays. Upstream migration occurs in the winter, with peak spawning occurring December
25 through April (McEwan and Jackson 1996). Historically, adults may have remained in the delta
26 for several years after spawning, but recent changes to the hydrology of the delta has limited
27 this time frame (Interagency Ecological Program [IEP] 1998). Most Central Valley steelhead
28 juveniles rear in freshwater for one to two years. They can be found migrating downstream at
29 any time of the year, with peak emigration occurring in the spring (IEP 1998). This ESU has the
30 potential to occur in the Central Bay, and therefore in the project area, in low numbers
31 (Woodbury 2001).

32 The primary threats to Central Valley steelhead are degradation and loss of critical spawning
33 and rearing grounds due to development and water diversions (CDFG 2000).

34 There is currently no critical habitat designated for this ESU; the previous critical habitat
35 designation has been vacated (NMFS 2003).

36 *Other Fish Species*

37 **Green Sturgeon (*Acipenser medirostris*).** The green sturgeon is a federal species of concern.
38 Green sturgeon are bottom dwelling fish. Locally they are found in San Francisco Bay, San

1 Pablo Bay, the lower San Joaquin River, and the delta (Wang 1986). This species may occur in
2 the ROI.

3 Although little is known about the green sturgeon's life history, it does differ from that of the
4 salmonid species. Green sturgeon are characterized as slow growing and late maturing fish that
5 spawn every 4 to 11 years (Pacific States Marine Fisheries Commission [PSMFC] 1996) and rely
6 on streams, rivers, estuarine habitat, and marine waters during their lifecycle. They prefer to
7 spawn in lower reaches of large rivers with swift currents and large cobble. Adults broadcast
8 eggs into the water column. The fertilized eggs sink and attach to the bottom, where they
9 hatch. Local spawning occurs in the upper Sacramento River (Fry 1973) in the spring to early
10 summer (Moyle 1976). The green sturgeon spends limited time in freshwater, only while young
11 and spawning. Juveniles migrate downstream before they are two years old. While young,
12 green sturgeon feed on algae and small invertebrates (organisms without internal backbones).
13 In general, juveniles remain in estuaries for a short time and migrate to the ocean as they grow
14 larger. However, adult green sturgeon are known to inhabit or forage in estuaries (PSMFC
15 1996). Adult green sturgeon feed on benthic (bottom dwelling) invertebrates and small fish.
16 Green sturgeon are potentially found in the Central Bay at any time of the year, but adults are
17 more likely found in spring and summer, when they migrate to freshwater for spawning and
18 then return to the ocean.

19 The primary threats to this species are over fishing, water diversions, and pollution (CDFG
20 2000).

21 **Longfin Smelt (*Spirinchus thaleichthys*).** A federal and state species of special concern, the
22 longfin smelt is a pelagic (living in open ocean) estuarine fish known to inhabit San Francisco
23 Bay, including the waters surrounding NSTI (IEP 2001; Hieb 2001). Longfin smelt feed
24 primarily on planktonic crustaceans, such as the opossum shrimp (*Neomysis mercedis*). Mature
25 adults, nearing the end of their second year, migrate in the fall from the brackish waters of the
26 San Francisco and San Pablo bays to Suisun Bay and the lower delta (Wang 1986). Spawning
27 occurs December through June in the freshwater portions of the delta, along areas with rocks
28 and aquatic plants (Moyle 1976; Wang 1986). Most of the adults die after spawning, though
29 some females survive for a second spawning season (Moyle 1976). Longfin smelt eggs are
30 deposited and adhere to substrates, such as rocks and vegetation. Larvae live in the middle to
31 surface portion of the water column and can be found from Carquinez Strait to the lower
32 reaches of the delta (Wang 1986). Juveniles migrate downstream in the late spring and summer
33 to Suisun, San Pablo, and San Francisco bays, where they spend most of their time in the middle
34 to lower portion of the water column (McAllister 1963; Ganssle 1966). Longfin smelt may be
35 found in the Central Bay at any time of the year. CDFG monitoring stations have detected the
36 species within the project area (IEP 2001).

37 The primary threats to longfin smelt are low water levels due to water diversions, water
38 pollution, climatic variation, and introduced species.

39 **Delta Smelt (*Hypomesus transpacificus*).** Delta smelt are state- and federally listed as
40 threatened and are endemic to the upper Sacramento-San Joaquin estuary. They occur in the
41 delta, primarily below Isleton on the Sacramento River, below Mossdale on the San Joaquin
42 River, and in Suisun Bay. They move into freshwater when spawning. During high outflow
43 periods, they may be washed into San Pablo Bay, but they do not establish permanent

3.8 Biological Resources

1 populations there (USFWS 1996). Consequently, delta smelt are rare to the Central Bay and are
2 unlikely to be found in the project area. The USFWS has listed this federally and state-listed
3 threatened species as potentially occurring in the project area (USFWS 2001).

4 In the fall, adults congregate and begin their swim upstream to spawn in river channels and
5 sloughs. Spawning occurs between January and July. Most spawning occurs in the dead-end
6 sloughs and shallow edge waters of channels in the western delta, though it also has been
7 recorded in Montezuma Slough near Suisun Bay and far upstream in the Sacramento River near
8 Rio Vista (Radtke 1966; Wang 1986). With low levels of vegetation in the winter, it is likely that
9 the eggs are deposited on submerged tree branches or on sandy and rocky substrate (Thelander
10 et al. 1994). It takes 10 to 14 days for eggs to hatch, at which time the current carries the
11 planktonic larvae downstream, where they feed on a steady supply of zooplankton. The final
12 destination for most juvenile smelt is the null zone, an area where saltwater from the ocean
13 meets freshwater from rivers (Thelander et al. 1994).

14 The primary threats to delta smelt include the decrease in water level in the delta due to water
15 diversions and entrainment (when fish are drawn into hydroelectric turbines on dams or
16 irrigation canals).

17 There is no critical habitat designated for this species in the project area.

18 *Bird Species*

19 Bird species are protected under the ESA or the MBTA. Information on these statutes and their
20 implementing regulations can be found in section 3.1. Table 3.8-3 lists those bird species of
21 concern that the USFWS states could occur within the project area. With the exception of the
22 listed species (California least tern, the California clapper rail, and the western snowy plover),
23 only those species considered likely to occur or known to occur in the project area are addressed
24 below.

25 This section is divided into two parts, the first of which discusses ESA listed species or species
26 of concern that could occur or are known to occur in the project area. The second part describes
27 species covered only by the MBTA that are known to occur or have nesting habitat in the area.
28 Because some birds are protected under both the ESA and the MBTA, there may be overlap
29 between the sections.

30 *Sensitive (ESA) Bird Species*

31 **American peregrine falcon (*Falco peregrinus anatum*).** This species is no longer federally listed
32 but is state-listed as endangered. The peregrine falcon was fairly common in the state before
33 1947, with at least 100 nesting pairs counted (USFWS 1992). The peregrine falcon was placed on
34 the federal endangered species list in 1970, when fewer than five pairs were believed to nest in
35 all of California. Presently, an estimated 10 to 20 birds range over the San Francisco
36

**Table 3.8-3
Special Status Bird Species that May Occur within the Project Area**

Common Name Scientific Name	Status ¹ (F/S)	Habitat Requirements	Potential Occurrence within Project Area ²	Comments
Alameda song sparrow <i>Melospiza melodia pusillula</i>	SC/SC	Fresh, brackish, or salt marsh habitats.	C	May be an occasional visitor, breeding populations unlikely.
American peregrine falcon <i>Falco peregrinus anatum</i>	DL/E	Woodlands, coastal habitats, riparian areas, coastal and inland waters, human-made structures that may be used as nest or temporary perch sites.	C	Habitat in project area; nests adjacent to project area.
Black-Crowned Night Heron <i>Nycticorax nycticorax</i>	*	Lowlands and foothills. Nests and roosts in dense-foliaged trees and dense emergent wetlands.	C	Nests and roosts on YBI in woodland areas.
Black oystercatcher <i>Haematopus bachmani</i>	SC/SC	Rocky shores of marine habitats and adjacent islands.	C	Occurs in project area.
Brant's cormorant <i>Phalacrocorax penicillatus</i>	*	Yearlong resident of marine subtidal and pelagic zones of California. Nests on rocky headlands or islets.	C	Occurs in project area; nest known on YBI.
California brown pelican <i>Pelecanus occidentalis</i>	E/E	Open water, estuaries, beaches; roosts on various structures (e.g., pilings, boat docks, breakwaters, mudflats).	C	Habitat in project area.
California clapper rail <i>Rallus longirostris obsoletus</i>	E/E	Salt marshes traversed by tidal sloughs, tidal marshes, pickleweed marshes.	U	Little habitat in project area, unlikely to occur.
California least tern <i>Sterna antillarum browni</i>	E/E	Shallow areas of bays estuaries, lagoons, and at the joining points between rivers and estuaries.	U	Foraging habitat in project area offshore.
Double-crested cormorant <i>Phalacrocorax auritus</i>	-/SC	Open water, fresh and estuarine waters, near-shore.	C	Habitat in project area.
Pelagic cormorant <i>P. pelagicus</i>	*	Frequently in marine subtidal and uncommon to marine pelagic around rocky coasts. Nests on rocky cliffs.	C	Occurs in project area.
Western gull <i>Larus occidentalis</i>	*	Occupies coastal islands, cliffs, harbors, bays, river mouths and garbage dumps. Nests in a depression on ground, among vegetation or rocks in a variety of habitats.	C	Occurs in project area.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	T/SC	Sandy beaches, estuarine, inter-tidal mudflats, salt pond levees, alkali lakes, gravel areas near beaches and estuaries.	U	Little habitat in project area, unlikely to occur.

Source: CDFG 2001; USFWS 2001; FHWA 2001.

¹Status

F = Federal; S = State; * = Protected under MBTA; E = listed as endangered; T = listed as threatened; SC = species of concern; C = candidate; DL = delisted

²Likelihood of occurrence on the project site

C = Confirmed; U = Unlikely to occur

Note:

YBI = Yerba Buena Island

- 1 Bay Area and delta region (FHWA 2001). Other bird species are prey for the peregrine falcon,
- 2 including pigeons, terns, blackbirds, sparrows, and shorebirds. Peregrine falcons usually nest
- 3 in depressions on protected ledges of high cliffs or on rock outcrops (Peterson 1990). They are
- 4 also known to use tall buildings or bridges in urban areas. During the last few years, four pairs
- 5 have begun nesting in the Central Bay. Two of these peregrine falcon nests occur on the SFOBB;

1 one on the support structure east of Yerba Buena Island and one on the central support
2 structure, between the island and San Francisco (Bell 1996). They most likely forage within the
3 project area.

4 **California clapper rail (*Rallus longirostris obsoletus*).** Although the USFWS cites the federally
5 and state-listed endangered California clapper rail as occurring in the area (USFWS 2001), very
6 little of the salt marsh habitat preferred by this species exists in the project area. It is unlikely
7 that the species is found in the project area.

8 **California least tern (*Sterna antillarum browni*).** Listed as endangered both federally and by the
9 state, this migratory species is found in California and Baja California from April to September
10 (Thelander et al. 1994) and is believed to winter along the Pacific coast of South America
11 (Massey 1971). During the breeding season, from May through September, the California least
12 tern is found in the Central Bay at the former Alameda Naval Air Station and at Oakland
13 International Airport (approximately 3 and 9 miles [5 and 9 km]) respectively, to the southeast
14 of NSTI), where major nesting areas occur. The former Naval Air Station Alameda is the largest
15 nesting spot for least terns in San Francisco Bay, and the terns have been observed occasionally
16 in nearshore waters surrounding NSTI. No least tern nesting colonies have been recorded on
17 Yerba Buena Island (DON 1990a), and the potential habitat for nesting on NSTI is unlikely. The
18 California least tern is believed to be an infrequent visitor to Treasure or Yerba Buena islands
19 and most likely does not occur in the project area. This species has declined in numbers
20 because of coastal development, introduced predators, and human disturbance (USFWS 1992).

21 **California brown pelican (*Pelecanus occidentalis californicus*).** A federally and state-listed
22 endangered species, brown pelicans are found in estuarine, marine subtidal, and marine pelagic
23 waters throughout coastal California (Thelander et al. 1994). Important habitat for pelicans
24 during the nonbreeding season includes roosting and resting areas, such as offshore rocks,
25 islands, sandbars, breakwaters, and pilings. Suitable areas need to be free of disturbance. They
26 rest temporarily on the water or isolated rocks, but roosting requires a dry location near food
27 and a buffer from predators and humans. California brown pelicans use open water areas for
28 feeding and use rocks, jetties, and piers for roosting. Brown pelicans feed on small surface-
29 schooling fish, primarily anchovy (Zeiner et al. 1990). Nesting normally begins in the spring but
30 is highly variable, according to colony and year. Breeding occurs from March to early August,
31 with eggs being laid from March to June.

32 California brown pelicans migrate from their breeding zones in the Channel Islands and Mexico
33 as early as mid-May, to disperse throughout coastal California. Most pelicans return to breed
34 by the following March. Brown pelicans are common in northern California from June to
35 November, are rare to uncommon from December to February and May, and are very rare in
36 March and April (Anderson and Anderson 1976; Cogswell 1977; McCaskie et al. 1979). The
37 California brown pelican is a common post-breeding resident (May through November) of the
38 open waters of the central San Francisco Bay and of San Pablo Bay (USFWS 1992). They can be
39 found roosting at Breakwater Island, near the former Naval Air Station Alameda (Jacques-
40 Strong 1994) and fishing throughout the bay. This species occurs at the project area and
41 occasionally forages at the nearshore areas at NSTI. They are also known to rest on bridge
42 footings and to forage by the SFOBB (FHWA 2001).

1 This species has been affected by numerous factors that have contributed to its decline,
2 including disease outbreaks, low productivity, colony failure, its primary dependence on the
3 northern anchovy for prey (which has declined), oil and other toxic spills, the presence of
4 relatively high levels of pesticides in the tissues of some pelicans, human and nonnative
5 mammal disturbance at central California coast post-breeding roosts, physical injury and
6 mortality due to fish hooks, entanglement in abandoned fishing line, and El Niño events that
7 cause prey fishes to move well offshore and away from pelican nesting islands.

8 There is no critical habitat designation for this species (USFWS 2001).

9 **Western snowy plover (*Charadrius alexandrinus nivosus*).** A federally listed threatened
10 species and a state species of special concern, they typically occupy sandy beaches, salt ponds,
11 and intertidal areas of marine and estuarine habitats but are known to occur in some inland
12 areas (Thelander et al. 1994). Along the Pacific Coast, snowy plovers are distributed on the
13 mainland and offshore islands, from southern Washington to southern Baja California, Mexico.
14 Some populations, however, reside yearlong in California. Within California, plovers tend to
15 winter along Bodega Bay in Sonoma County and to the south in the Los Angeles vicinity, with a
16 large congregation around the San Francisco Bay Area (Zeiner et al. 1990). Nests are usually
17 established in sparsely vegetated to nonvegetated areas of sandy beaches and estuaries.
18 Western snowy plovers forage on insects and amphipods from the dry sand of upper beaches
19 along the coast and occasionally forage for sand crabs and brine flies. This species is sensitive
20 to human harassment, and direct destruction of nest sites and breeding habitat are some
21 reasons for its decline.

22 Snowy plovers nest March through September at sandspits and open beaches near rivers and
23 estuaries. The nests can sometimes be found in salt pond levees and dry salt ponds. Western
24 snowy plovers are known to winter in the San Francisco Bay Area, and an estimated 250
25 individuals have been recorded in the bay during the breeding season (Goals Project 2000).
26 Critical habitat for the western snowy plover falls outside of the project area. Although a small
27 amount of potential foraging habitat exists for the snowy plover at NSTI, there is no nesting
28 habitat. Any occurrences of this species at NSTI would be incidental, and the species is unlikely
29 to be found there.

30 **Alameda song sparrow (*Melospiza melodia pusillula*).** A federal species of concern, the
31 Alameda song sparrow is found in freshwater, brackish, and salt marsh habitats. This species
32 occurs in coastal salt marsh habitat bordering South San Francisco Bay and can be found near
33 NSTI, at the Emeryville Crescent, adjacent to the SFOBB toll plaza. The main range of the
34 Alameda song sparrow extends from Coyote Creek, at the southern extremity of the bay,
35 northward along the west shore of south San Francisco Bay to Belmont Slough, and along the
36 east shore to San Lorenzo (Jurek 1974). Small populations also occur in marshes at the northeast
37 shore of Richmond Inner Harbor in El Cerrito, along the shoreline from Emeryville to the
38 SFOBB toll plaza, and at Arrowhead Marsh at the mouth of San Leandro Creek in the bay in San
39 Leandro (Jurek 1974).

40 There is potential nesting habitat for this species at sites where marsh gumplant occurs, such as
41 on Yerba Buena Island. The Alameda song sparrow has been observed perching on individual
42 gumplants in these areas. The Alameda song sparrow could nest in the project area but has not
43 been observed nesting at NSTI.

3.8 Biological Resources

1 The song sparrow has been affected by urbanization and economic development throughout its
2 range. Increasing salinity from diversion of freshwater streams has resulted in only limited
3 areas of brackish marsh, the preferred habitat. Salt marshes have been filled or converted to salt
4 ponds, so few remaining areas of complex salt marsh exist.

5 *Migratory Bird Treaty Act Protected Species*

6 Although numerous bird species covered by the MBTA are found in the project area, only the
7 following species are confirmed as nesting on NSTI or Yerba Buena Island: black-crowned night
8 heron, double-crested cormorant (*Phalacrocorax auritus*), Brandt's cormorant (*Phalacrocorax*
9 *pencilatus*), the pelagic cormorant (*Phalacrocorax pelagicus*), the western gull (*Larus occidentalis*),
10 and black oystercatcher (*Haematopus bachmani*) (USFWS 1995c).

11 **Black-crowned night heron (*Nycticorax nycticorax*).** The black-crowned night heron is a fairly
12 common yearlong resident in lowlands and foothills throughout most of California. This
13 species usually nests between February and July. Nesting and roosting occurs in dense foliage
14 trees and dense emergent wetlands. It feeds along the margins of lakes, large rivers, fresh and
15 salt water wetlands and, rarely, on kelp beds in marine subtidal habitats. The black-crowned
16 night heron both nests and roosts in woodland areas on Yerba Buena Island.

17 **Double-crested cormorant (*Phalacrocorax auritus*).** A state species of special concern, the
18 cormorant is a year-long resident along the entire coast of California and is known to frequent
19 inland lakes and fresh, salt, and estuarine waters. Fish make up the bulk of the double-crested
20 cormorant's diet, while crustaceans and amphibians are known to be taken as food items to a
21 lesser degree. It feeds during the day and is known to roost beside water on offshore rocks,
22 islands, steep cliffs, trees, or engineered structures (wharves, jetties, and bridges). Nests are
23 built in habitats similar to those used for roosting, with the further requirements that the area be
24 inaccessible to predators, that it be near a foraging area, and that it have a dependable food
25 supply. Breeding cormorants are very sensitive to human disturbance (Goals Project 2000).
26 Causes of decline include habitat destruction and human disturbance, particularly from boating
27 (Ellison and Cleary 1978), eggshell thinning from DDT contamination, and human disturbance
28 at nest sites.

29 Double-crested cormorants are fairly common within San Francisco Bay, especially during the
30 winter. The largest colonies are on the SFOBB, where there is a large nesting colony, and on the
31 Richmond-San Rafael Bridge. The species is known to occur within the project area.

32 **Black oystercatcher (*Haematopus bachmani*).** This species is a permanent resident on rocky
33 shores of marine habitats along almost the entire California coast, as well as on adjacent islands.
34 The state breeding population has been estimated at about 1,000 (Sowls et al. 1980).

35 The black oystercatcher is sensitive to human disturbance and is subject predation by native
36 and nonnative predators, such as rats and feral cats. It may be either uncommon or locally
37 fairly common in northern and central California (Cogswell 1977). It is rare on the mainland
38 coast south of Point Conception (Santa Barbara County), and no recent California nesting
39 records exist south of this locality (Garrett and Dunn 1981). This species tends to be distributed
40 fairly evenly along the mainland where suitable habitat exists, with denser concentrations on
41 offshore islands, such as the Farallons and the Channel Islands.

1 The black oystercatcher has nesting sites in the San Francisco Bay Area. The USFWS has
2 documented one breeding black oystercatcher on Yerba Buena Island (USFWS 1995c) and it has
3 been observed on Treasure Island (USFWS 1995c).

4 **Western gull (*Larus occidentalis*).** This species is quite common along the California coast. It is
5 abundant year round, occurs in the project area, and nests locally. It forages often at low tide
6 on mudflats.

7 Western gulls nest on the column footings of the SFOBB west span and could nest on the
8 footings of the east span. The USFWS has documented 31 known nest sites for this species on
9 Yerba Buena Island (USFWS 1995c).

10 **Brandt's cormorant (*Phalacrocorax penicillatus*).** This species is a common yearlong resident in
11 marine subtidal and pelagic zones of California, especially near rocky shores. Perch sites are
12 usually barren of vegetation. Brandt's cormorants roost communally and tend to nest on rocky
13 headlands or islets along the coast and on islands. This species is common in outer parts of
14 large estuaries but is only an occasional visitor in inner bay areas or on smaller estuaries. It
15 dives for food in shallow or deep water and consumes mostly small saltwater fishes and also
16 some crabs and shrimps. Brandt's cormorant requires a dependable food supply within
17 commuting distance of a suitable roost or nest site, but it is known to commute a relatively great
18 distance (Palmer 1962).

19 There are large numbers of this species that nest offshore (approximately 22,000 breed on South
20 Farallon Island; DeSante and Ainley 1980). Large numbers have been seen migrating
21 northward past Goleta Point, Santa Barbara County, in February and March (Garrett and Dunn
22 1981). The population increases south of Morro Bay in the winter, from migrants from the
23 north, Baja California, and the Channel Islands. Many members of the population may be local
24 or distant migrators. Many Southeast Farallon Island juveniles disperse northward as far as
25 Vancouver Island, British Columbia (DeSante and Ainley 1980).

26 In San Francisco Bay, they rarely feed near their winter roosts and have been known to
27 commute as much as 10 miles (16 km) daily from their roost to feeding areas (Bartholomew
28 1949). Brandt's cormorant occur in the project area, and the USFWS has documented four
29 known nest sites for this species on Yerba Buena Island (USFWS 1995c). These are the only
30 known nesting sites for this species in San Francisco Bay.

31 **Pelagic cormorant (*Phalacrocorax pelagicus*).** The pelagic cormorant is a yearlong resident of
32 California. Pelagic cormorants inhabit marine subtidal areas along the rocky coasts of
33 California and its islands, south to San Luis Obispo County. Less commonly they are found in
34 marine pelagic habitats. Although most pelagic cormorants remain close to their breeding sites
35 throughout the year, some populations migrate within California, heading south after nesting.
36 Locally they are found at the outermost part of bays (Zeiner et al. 1990). The pelagic cormorant
37 breeds on rocky cliffs beginning in April through August (Zeiner et al. 1990). Their diet consists
38 of small fish and crustaceans, to a lesser degree. These cormorants prefer to feed in shallow
39 rocky-bottomed areas (Robertson 1974).

40 Pelagic cormorants are known to inhabit San Francisco Bay, with a breeding colony on Alcatraz
41 Island (Point Reyes Bird Observatory 2001), and are known to occur in the project area.

1 **Mammals**

2 No special status terrestrial mammal species are found in the project area, but several marine
 3 mammal species, all of which are of concern and/or sensitive insofar as they are protected
 4 under the ESA and/or MMPA, have been observed at or near NSTI. These commonly include
 5 the harbor seal, the California sea lion (*Zalophus californianus*), and occasionally, the gray whale
 6 (*Eschrichtius robustus*). On rare occasions, the following marine mammal species may occur in
 7 the bay as individual transients: humpback whale (*Megaptera novaengliae*), minke whale
 8 (*Balaenoptera acutorostrata*), steller sea lion (*Eumetopias jubatus*), and southern sea otter (*Enhydra*
 9 *lutris nereis*). Table 3.8-4 lists the marine mammal species that may occur within the project
 10 area. The marine mammal species considered likely to occur or known to occur are discussed
 11 below.

Table 3.8-4
Marine Mammal Species That May Occur Within the Project Area

Common Name Scientific Name	Status ¹ (F/S)	Habitat Requirements	Potential Occurrence within Project Area ²	Comments
Southern sea otter <i>Enhydra lutris nereis</i>	T*/	Coastal California waters	P	May occur in bay.
California sea lion <i>Zalophus californianus</i>	*	Coastal California waters	P	May occur in bay.
Gray whale <i>Eschrichtius robustus</i>	DL*/-	Coastal arctic and tropical waters	C	May occur in bay.
Harbor seal <i>Phoca vitulina richardsi</i>	*	Deep water with gently sloping terrestrial area nearby	C	Occurs throughout the bay.
Steller sea lion <i>Eumetopias jubatus</i>	T*/-	Pacific ocean, island and coastal rookeries	U	May occur rarely in bay.

Source: CDFG 2001; USFWS 2001; FHWA 2001.

¹Status
F = Federal; S = State; T = listed as threatened; DL = delisted; * protected under MMPA

²Likelihood of occurrence on the project site
C = Confirmed; P = Potentially may occur; U = Unlikely to occur

12 The section is divided into two parts. The first part discusses ESA-listed species (which are also
 13 protected under the MMPA) and the second discusses species protected by the MMPA only.

14 **ESA-Listed Species**

15 **Southern sea otter (*Enhydra lutris nereis*).** This mammal is federally listed as threatened under
 16 the ESA. It is not known if California sea otters are migrants or residents in certain areas of
 17 California. Southern sea otters in San Francisco Bay are probably not seasonal residents but are
 18 more likely to be isolated foragers that ranged north of their generally recognized territory. The
 19 northern edge of their range is usually considered to be Half Moon Bay (Allen 2001), although
 20 this range keeps extending. They are common at Point Reyes but are considered to occur rarely

1 in the waters off Treasure Island. One sea otter has been sighted in the waters off Yerba Buena
2 Island (Green 2001)

3 **Steller sea lion (*Eumetopias jubatus*).** Federally listed as threatened under the ESA, this
4 species is found in nearshore waters out to and beyond the continental shelf (Marine Mammal
5 Center 2000a). They haul out at various locations, which have changed historically in the San
6 Francisco Bay region. Historically they hauled out at the rocks near the Cliff House and also at
7 Pier 39 in San Francisco, though not regularly (Allen 2001). They occur to the south at Año
8 Nuevo Island, which is the southernmost breeding area for the species (Tetra Tech 1999), and on
9 the Farallon Islands, much farther offshore.

10 They can occur in the waters off NSTI and Yerba Buena Island rarely as individual and
11 intermittent transients, but their presence in the ROI is unlikely. They have never been sighted
12 hauling out at either Treasure Island or Yerba Buena Island (Allen 2001). Any occurrences of
13 this species in the ROI would most likely correspond to when the herring are running in the
14 bay, as this is a prey species for Steller sea lions (Allen 2001). Typically, however, they are
15 unlikely to occur in the waters of Treasure Island.

16 The project area is within designated critical habitat for this species, due to considerations other
17 than the species' presence. The critical habitat for the Steller sea lion includes areas where its
18 preferred prey occurs, such as San Francisco Bay, or areas that have been within its historic
19 range. Steller sea lions are not currently found throughout much of their historic range and
20 rarely occur in San Francisco Bay.

21 *Additional Marine Mammal Species (Protected under the MMPA)*

22 **Harbor seal (*Phoca vitulina richardsi*).** This species is a permanent resident in the San
23 Francisco Bay and is routinely seen in waters at NSTI. They have been observed as far
24 upstream as Sacramento, though their use of the habitat north of Suisun Bay is irregular (Goals
25 Project 2000).

26 There are several harbor seal haulout sites in the Central Bay, located near feeding sites,
27 including Yerba Buena Island, Sisters Island in Muzzi Marsh, Castro Rocks, Brooks Island, a
28 floating abandoned dock near Sausalito, Angel Island, and a breakwater at the Oakland
29 entrance to Alameda Harbor (Allen 1991; Harvey and Torok 1995). Haulout sites must have
30 gently sloping terrain and deep water immediately nearby and must be free of disturbance
31 (Allen 1991). Only three sites in the bay—Yerba Buena Island, Mowry Slough, and Castro
32 Rocks—show greater than 40 individuals present during the breeding and molting seasons
33 (Kopec and Harvey 1995).

34 Seals haul out year-round on Yerba Buena Island. The haulout area is within the ROI but not
35 within the boundaries of the property for disposal. The Yerba Buena Island haulout site near
36 the SFOBB is on the southeast side of the island (Figure 3-14), on US Coast Guard property.
37 Individual seals may occasionally haul out farther to the west and southwest of the main
38 haulout site on Yerba Buena Island, depending on space availability and conditions at the main
39 haulout area (Figure 3-14).

3.8 Biological Resources

1 Harbor seals feed in the deepest waters of the bay, and the areas from Golden Gate to Treasure
2 Island and from the San Mateo Bridge south are the principle feeding sites (Kopec and Harvey
3 1995). Harbor seals feed on a variety of fish, such as perch, gobies, herring, and sculpin.

4 CDFG aerial surveys done since 1998 of the bay population reflect a conservative estimate of
5 approximately 500 animals. Land-based censusing reflects a higher, and probably more
6 accurate, number of approximately 700 animals (Richmond Bridge Harbor Seal Survey [RBHSS]
7 2001). This number has remained relatively constant since the early 1970s (SFEP 1993).

8 Several hundred harbor seals use the Yerba Buena Island site as a year-round haulout site,
9 though highest counts occur in the winter, from December to April (SFEP 1993; DON 1990a;
10 RBHSS 2001). This most likely corresponds to the period of high Pacific herring numbers in the
11 bay, Pacific herring being a preferred prey. In January 1999, 296 animals were counted at Yerba
12 Buena Island (Green et al. 2001), and in March 2001, the count was 277 (Green 2001).

13 Only the most undisturbed sites are used for pupping, which occurs in the spring. The area is
14 not historically identified as a pupping site for harbor seals but pups are occasionally seen there
15 (Kopec and Harvey 1995), as is afterbirth. One dead pup was documented as having been born
16 there (Green 2001). The number of pups sighted on Yerba Buena Island, while still under 10 a
17 year, has increased by one a year for each of the last four years. Males made up 83.1 percent of
18 the seals whose gender could be determined on the haulout site at Yerba Buena Island in a
19 study conducted in 1997 (Spencer 1997).

20 Harbor seals at Yerba Buena Island are subject to high levels of disturbance, primarily from
21 recreational watercraft. This is particularly true during the summer, when numbers of small
22 boats, jet skis, and kayaks on the bay increase. A minimum distance of 100 yards is
23 recommended as a standard to boaters from the haulout area to avoid disturbing the seals
24 (RBHSS 2001). Researchers have reported seals shifting from a predominantly diurnal (active
25 during the day) hauling pattern to a nocturnal (active at night) pattern in response to human
26 disturbance (Paulbitski 1975). Others have reported that increased disturbance can cause
27 reduced reproductive success and site abandonment (Bartholomew 1949; Calambokidis et al.
28 1979).

29 **California sea lion (*Zalophus californianus*).** The California sea lion occurs year-round in parts
30 of San Francisco Bay though, as with the other seal species, they are most abundant in the
31 winter, corresponding with the herring run. California sea lions are not listed under the ESA
32 but are protected under the MMPA. The largest haulout site in the bay is at Pier 39 in San
33 Francisco. Most of the sea lions hauled out at this site are males, and no pupping has been
34 observed (Goals Project 2001).

35 Individual sea lions have been observed with some regularity in the shipping channel south of
36 Yerba Buena Island. Individuals have also been sighted in the waters east of Yerba Buena
37 Island (Green 2001). It is unlikely that these animals would occur within the defined ROI of the
38 project.

39 **Gray whale (*Eschrichtius robustus*).** Gray whales are found only in the Pacific Ocean, with the
40 current northeastern Pacific population estimated at approximately 26,000 (NMFS 2001). Gray
41 whale populations have begun to rebound, and the species was delisted under the ESA in 1994.

1 Protected under the MMPA, the gray whale is the most common cetacean along the central
2 California coast during its annual spring migration to northern feeding grounds and during its
3 late fall-winter return to Mexican calving and breeding lagoons (Monterey Bay National Marine
4 Sanctuary 2001).

5 Gray whales may occur in the waters off Treasure Island. Gray whale populations have been
6 increasing in San Francisco Bay over the last three years. In 1999, they were spotted in the bay
7 on 39 days, in 2000 on 64 days, and in 2001 (to date) on 116 days (Oliver et al. 2001). They are
8 usually sighted traveling alone, but also have been sighted in pairs. A single sighting at the
9 Dumbarton Bridge consisted of a group of five whales (Oliver et al. 2001). Greater than 95
10 percent of the sightings occur during the northern migration, from February to May.

11 All age classes have been sighted, though the majority of animals sighted in San Francisco Bay
12 have been juveniles, less than 37 feet (11 m) long. This overall sighting increase may represent
13 an increase in habitat utilization by this species. They have been sighted from the extreme
14 southern end of the bay to the extreme northern end. Behaviors observed in the bay include
15 traveling, milling, socializing, and foraging. Numbers of strandings have also been increasing
16 and range from 17 to 29 animals (Marine Mammal Center 2001b).

17 *Sensitive Amphibian Species*

18 Three amphibian species are listed by USFWS as potentially occurring within the project area.
19 These are the California red-legged frog (*Rana aurora draytonii*), the Alameda whipsnake
20 (*Masticophis lateralis euryxanthus*), and the giant garter snake (*Thamnophis gigas*). No habitat for
21 any of these species is found within the project area; therefore, they are considered unlikely to
22 be present in the project area.

23 *Sensitive Invertebrate Species*

24 The USFWS lists three invertebrate species as potentially occurring within the project area: the
25 Mission blue butterfly (*Icaricia icarioides missionensis*), the San Bruno elfin butterfly (*Incisalia*
26 *mossii bayensis*), and the white abalone (*Haliotis sorenseni*). However, no habitat for any of these
27 species is found within the project area, and they are considered unlikely to be present in the
28 project area.

29 *Sensitive Reptile Species*

30 Four species of sea turtles occur at least occasionally along the central California coast. These
31 are the federally endangered leatherback turtle (*Dermochelys coriacea schlegelii*) and the federally
32 threatened green turtle (*Chelonia mydas agassizi*), the olive ridley turtle (*Lepidochelys olivacea*), and
33 the loggerhead turtle (*Caretta caretta gigas*). These species are all unlikely to occur in the
34 estuarine waters near NSTI and have no known occurrences in the project area.

35 3.8.5 Sensitive Habitats

36 Sensitive habitats are vegetation communities that federal, state, or local agencies or
37 conservation organizations have assigned special status because of declining, restricted, or
38 threatened populations or areas. Habitat areas or vegetation communities that are unique or
39 that offer particular value to wildlife also are considered sensitive.

3.8 Biological Resources

1 The mudflats, which may contain eelgrass beds, on the western side of the cove between
2 Treasure Island and Yerba Buena Island are a sensitive habitat at NSTI (DON 1996a). The soft
3 bay mud substrate provides habitat for many invertebrates, including oligochaetes, polychaetes,
4 crustaceans, isopods, gastropods, and bivalves. These species, which typically reside in the top
5 few inches of the substrate, are preyed upon by shorebird species, such as western sandpipers
6 (*Calidris mauri*), sanderling (*Calidris alba*), spotted sandpiper (*Actitis macularia*), and killdeer
7 (*Charadrius vociferus*), which forage in the area during low tide. Research on stomach contents
8 has shown that the gem clam, the polychaete *Neanthes succina*, and the mud snail are the most
9 common prey species among many shorebirds (USFWS 1992).

10 **Critical Habitat**

11 Areas of habitat considered essential to the conservation of a listed endangered or threatened
12 species may be designated as critical habitat, which is protected under the ESA. Although
13 critical habitat may be designated on private or government land, activities on these lands are
14 not restricted unless there is federal involvement in the activities or direct harm to listed
15 wildlife.

16 The ROI of the project area contains critical habitat for the following species, as designated by
17 NMFS on the dates shown:

- 18 • Sacramento River winter-run chinook salmon, June 16, 1993; and
- 19 • Steller sea lion, March 23, 1999.

20 As mentioned above, previous designations of critical habitat for salmonid ESUs have been
21 withdrawn (NMFS 2003).

22 **3.8.6 Essential Fish Habitat**

23 The MSA defines EFH as those waters and substrate necessary to fish for spawning, breeding,
24 feeding, or growth to maturity. The MSA set forth a number of new mandates for NMFS,
25 regional fishery management councils, and federal action agencies to identify EFH and to
26 protect important marine and anadromous fish habitat. The MSA provided NMFS with
27 legislative authority to regulate fisheries in the U.S., in the area between 3 miles (5 km) and 200
28 miles (320 km) offshore and established eight regional fishery management councils that
29 manage the harvest of the fish and shellfish resources in these waters. The councils, with
30 assistance from NMFS, are required to delineate EFH in FMPs or FMP amendments for all
31 managed species. A FMP is a plan to achieve specified management goals for a fishery and is
32 composed of data, analyses, and management measures for a fishery. EFH that is sanctioned
33 for an FMP includes all fish managed by the plan. Federal agency actions that fund, permit, or
34 carry out activities that may adversely affect EFH are required to consult with NMFS regarding
35 potential adverse effects of their actions on EFH and to respond in writing to NMFS'
36 recommendations. In addition, NMFS is required to comment on any state agency activity that
37 will affect EFH (NMFS 2000).

38 The MSA requires that EFH be identified for all species that are federally managed. This
39 includes species managed by the councils' FMPs, as well as those managed by NMFS under
40 FMPs developed by the Secretary of Commerce.

1 The project area is designated as EFH for fish managed under three FMPs—Pacific groundfish,
2 coastal pelagics, and Pacific coast salmon (National Marine Fisheries Service Southwest Region
3 [NMFS SWR] 2001). All species for which EFH exists in the project area and that are found in
4 the project area are listed in Table 3.8-5. For a comprehensive list of all species included in these
5 three FMPs, refer to Appendix G. A description of the relevant FMPs follows.

6 *West Coast Groundfish FMP*

7 There are 83 species of groundfish that are managed under this FMP. (For a listing of species
8 that are found in the project area, refer to Table 3.8-5; for a comprehensive list of all species
9 included in the west coast groundfish FMP, refer to Appendix G.) The EFH for west coast
10 groundfish includes saltwater from the mean higher high waterline and the upriver extent of
11 saltwater intrusion in river mouths along the coast of California (NMFS 1998). Therefore, the
12 whole project area lies within the west coast groundfish EFH.

13 *Coastal Pelagic FMP*

14 Species managed under this plan include northern anchovy (*Engraulis mordax*), Pacific sardine
15 (*Sardinops sagax*), Pacific (chub) mackerel (*Scomber japonicus*), jack mackerel (*Trachurus*
16 *symmetricus*), and market squid (*Loligo opalescens*) (Coastal Pelagic Species Fish Management
17 Plan 1998). San Francisco Bay, including the project area, qualifies as EFH for all species
18 managed under this FMP.

19 *Pacific Coast Salmon FMP*

20 The Pacific coast salmon FMP includes coho, chinook, and Puget Sound pink salmon (Pacific
21 Fishery Management Council [PFMC] 1999). Variation in the timing of migration and
22 spawning of chinook salmon has led to the designation of ESUs, a distinctive group of Pacific
23 salmon, steelhead, or sea-run cutthroat trout. Four ESUs of chinook and a coho salmon ESU are
24 found in the project area. They are fall, late-fall, winter-run, and spring-run chinook and central
25 California coast coho salmon (Vogel and Marine 1991). The EFH associated with the Pacific
26 coast salmon FMP encompasses all of the project area (PFMC 1999).

27 **3.8.7 Special Aquatic Sites**

28 Under the section 404(b)(1) guidelines of the CWA, the EPA identifies six categories of special
29 aquatic sites: sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and
30 riffle and pool complexes. Discharges of dredged or fill material in special aquatic sites are not
31 authorized under section 404 unless there is no less damaging practicable alternative.

32 Special aquatic sites in the project area include the mudflats and shallow water habitat in Clipper
33 Cove, sand flats on the eastern side of Yerba Buena Island, and vegetated shallows around the
34 perimeter of the island. The only delineated wetland in the ROI is a small band of northern
35 coastal salt marsh that occurs on the north side of Yerba Buena Island, adjacent to Clipper Cove
36 (FHWA 2001). This salt marsh is not within the proposed disposal area.

**Table 3.8-5
FMP Species Abundance in the Central Bay**

Common Name Scientific Name	Fish Management Plan (FMP)	Abundance
Big skate <i>Raja binoculata</i>	GF	Present
Bocaccio <i>Sebastes paucispinis</i>	GF	Rare
Brown rockfish <i>S. auriculatus</i>	GF	Abundant
Cabezon <i>Scorpaenichthys marmoratus</i>	GF	Few
Chinook salmon <i>Oncorhynchus tshawytscha</i>	PCSP	*
Coho salmon <i>O. kisutch</i>	PCSP	*
Curlfin turbot <i>Pleuronichthys decurrens</i>	GF	Present
English sole <i>Parophrys vetulus</i>	GF	Abundant
Jack mackerel <i>Trachurus symmetricus</i>	CP	Present
Kelp greenling <i>Hexagrammos decagrammus</i>	GF	Present
Leopard shark <i>Triakis semifasciata</i>	GF	Present
Lingcod <i>Ophiodon elongates</i>	GF	Present
Market squid <i>Loligo opalescens</i>	CP	*
Northern anchovy <i>Engraulis mordax</i>	CP	Abundant
Pacific sanddab <i>Citharichthys sordidus</i>	GF	Present
Pacific sardine <i>Sardinops sagax</i>	CP	Rare
Pacific whiting (hake) <i>Merluccius productus</i>	GF	Present
Sand sole <i>Psettichthys melanostictus</i>	GF	Present
Soupin shark <i>Galeorhinus galeus</i>	GF	Rare
Spiny dogfish <i>Squalus acanthias</i>	GF	Present
Starry flounder <i>Platichthys stellatus</i>	GF	Abundant
Source: NMFS SWR 2001.		
*Abundance not known		
GF = Groundfish Fishery Management Plan; CP = Coastal Pelagics Fishery Management Plan; PCSP = Pacific Coast Salmon Plan		

1 **3.9 GEOLOGY AND SOILS**

2 NSTI is located in the seismically active San Francisco Bay Area, which is characterized by
3 numerous active faults and historic earthquakes. The following description includes regional,
4 vicinity, and underlying geologic features at NSTI. The principal geologic features and
5 formations at NSTI are discussed in this section in the context of the regional geologic setting.

6 **3.9.1 Regional Geology and Seismicity**

7 NSTI is located within the Coast Ranges Geomorphic Province. Landforms within the region
8 are influenced by geologically young processes, such as active uplift of mountains, rapid
9 erosion of streams, active transform faulting within the San Andreas Fault system, and large
10 fluctuations in sea level brought on by Pleistocene (Ice Age) glaciation.

11 Treasure Island was constructed in 1936 and 1937 with engineered fill placed on a sandy shoal,
12 located immediately north of Yerba Buena Island. Treasure Island is nearly flat, with interior
13 elevations ranging from about 3.7 to 11.7 feet (1.1 to 3.6 meters [m]) NGVD and with a
14 perimeter dike as high as approximately 13.2 feet (4 m) NGVD. (NGVD is the National
15 Geodetic Vertical Datum of 1929, which is the elevation datum used on U.S. Geological Survey
16 topographic maps.)

17 Yerba Buena Island is a peak in the bedrock surface that underlies San Francisco Bay. To the
18 east of Yerba Buena Island is a deep erosional trough developed in the Franciscan bedrock
19 surface that extends beneath Alameda Island and the Oakland Airport. As a result, the top of
20 the bedrock extends from an elevation of about 338 feet (103 m) NGVD on Yerba Buena Island
21 to about -1,000 feet (-305 m) NGVD beneath Oakland Airport (US NSF 1992).

22 *Geology in the Vicinity of NSTI*

23 East of the San Andreas Fault, the Bay Area is underlain by marine cherts, sandstone, and
24 volcanic rock belonging to the Franciscan Formation. The region that is now San Francisco Bay
25 was above sea level until about a million years ago. At that time, a combination of basin
26 subsidence and rising sea levels led to sediment deposition in the valleys that had been eroded
27 in the Franciscan bedrock surface. Yerba Buena Island may have been uplifted relative to the
28 surrounding land by faulting along an early offshoot of the Hayward Fault. This offshoot,
29 called the Coyote Shear, is believed to have caused the uplift of the Coyote Hills in Fremont. A
30 deep trough formed adjacent to the Coyote Shear zone extends along the East Bay shore from
31 Emeryville to south of the Oakland Airport. Sediments collected in this trough as streams
32 emptied into the basin.

33 The first sediments deposited on the Franciscan bedrock surface belong to the Alameda
34 Formation, which spans several cycles of glacial advance and retreat between 700,000 and
35 135,000 years ago. During this period, sea level was as much as 350 feet (107 m) lower than
36 present (US NSF 1992). The Alameda Formation is about 100 feet (30.5 m) thick on the north,
37 east, and south sides of Yerba Buena Island and increases to over 900 feet (274 m) thick where it
38 fills the trough in the Franciscan bedrock surface beneath Oakland Airport.

3.9 Geology and Soils

1 The top of the Alameda Formation is an erosional surface caused by downcutting streams. The
2 surface of the Alameda Formation shows evidence of an ancient channel that may have drained
3 to the Pacific Ocean along the southwest side of San Bruno Mountain. Later, the channel
4 changed direction and drained through the Golden Gate via the east side of Yerba Buena Island.
5 Ultimately the channel moved to its current position west of Yerba Buena Island (US NSF 1992).

6 Around 115,000 years ago, the climate changed dramatically as the huge glaciers covering the
7 interior melted and sea levels rose high enough to inundate the San Francisco basin. The
8 marine silt and clay sediments that were deposited on the surface of the Alameda Formation at
9 this time are known as the Old Bay Mud, and more recently as the Yerba Buena Mud. The
10 thickness of the Yerba Buena Mud ranges from less than 50 feet (15 m) on the west side of NSTI
11 to about 125 feet (38 m) east of NSTI (US NSF 1992). The top of the Yerba Buena Mud is less
12 than 100 feet (30.5 m) below sea level.

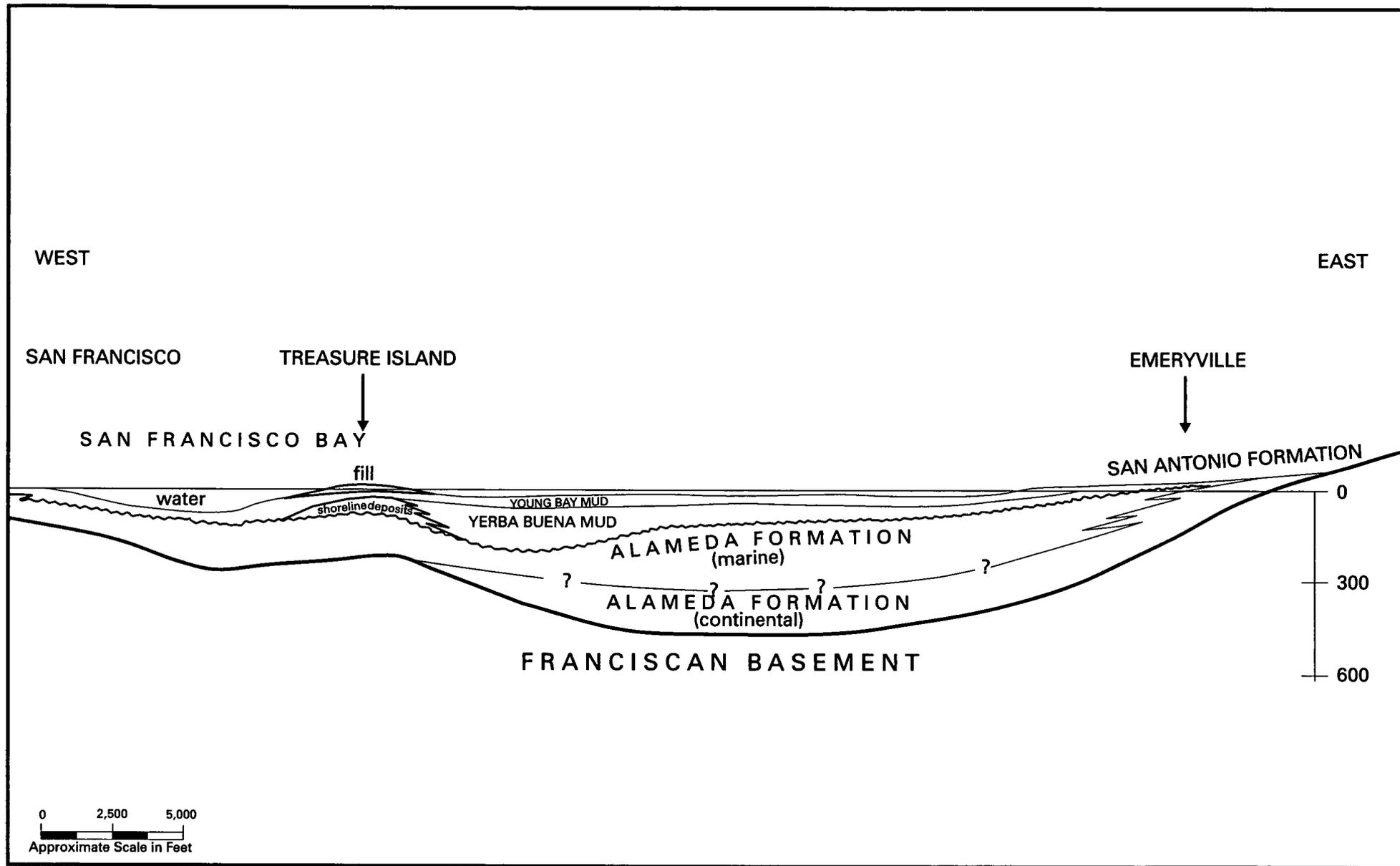
13 The top of the Yerba Buena Mud is an erosional surface created between about 90,000 and
14 11,000 years ago when sea levels were lower. Coarser, nonmarine sediments, including silts
15 and sands, were deposited in a variety of estuarine, alluvial, and shoreline dune environments
16 during this period. The classification of these units is not well established. In general, the basin
17 deposits have been lumped together as the San Antonio Formation, which includes the Posey
18 and Merritt sand members that form local aquifers. By the end of the Wisconsin glacial age, a
19 number of deeply incised channels had been eroded in the surface of the San Antonio
20 Formation, including Temescal Creek, San Antonio Creek, San Leandro Creek, and San Lorenzo
21 Creek. Temescal Creek flowed around the south side of Yerba Buena Island from what is now
22 Emeryville, joining the north-flowing main drainage channel of the South Bay.

23 At the end of the Wisconsin Age, sea levels rose again to approximately existing levels. During
24 this period, the Younger Bay Mud (or Bay Mud) was deposited in the now inundated incised
25 stream channels. Figure 3-15 shows an interpretive east-west cross section of the geology
26 beneath Treasure Island.

27 *Seismicity*

28 NSTI is located within the San Andreas Fault system, which is approximately 44 miles (71
29 kilometers [km]) wide in the Bay Area (USGS 1990a). The principal active faults include the San
30 Andreas, San Gregorio, Hayward, Rogers Creek, West Napa, Calaveras, Concord, and Green
31 Valley faults (California Division of Mines and Geology 1982), as shown on Figure 3-16. The
32 last major earthquake to affect the Bay Area was the Loma Prieta earthquake in October 1989.
33 The epicenter of this earthquake was approximately 59 and 61 miles (95 and 98 km) south of
34 Yerba Buena Island and Treasure Island, respectively. An active fault is defined by the
35 California Division of Mines and Geology (CDMG) as a fault that has "had surface
36 displacement within Holocene time (about the last 11,000 years)" (CDMG 1992a). In general, it
37 is believed that future earthquakes are more likely to occur on recently active faults than on
38 faults that have not been recently active.

39 In California, special restrictions apply to construction within "fault-rupture hazard zones," as
40 defined by CDMG under the Alquist-Priolo Earthquake Fault Zoning Act (Cal. Pub. Res. Code
41 § 2621), to prevent structures for human occupancy being built across the traces of active faults.



Yerba Buena Island is a high point in the Franciscan formation, which slopes to more than 300 feet beneath Treasure Island. The line of this cross-section passes north of Yerba Buena Island.

Geologic Cross Section from West to East Beneath Treasure Island

Treasure Island, California

Figure 3-15

1 Treasure Island is in an area of liquefaction potential and has been designated a Seismic
2 Hazards Studies Zone (SHSZ) by CDMG (CDMG 1997). No active faults have been identified at
3 NSTI, and NSTI is not in an Alquist-Priolo Earthquake Fault Zone. NSTI is approximately 7
4 miles (11 km) west of the northern segment of the Hayward Fault and about 18 miles (29 km)
5 east of the San Andreas Fault (CDMG 1994).

6 The last major earthquake along the Hayward Fault occurred in 1868 (130 years ago) and had an
7 estimated Richter magnitude of 6.8 (CDMG 1992b). It is estimated that the recurrence interval
8 for an earthquake of that size is about 130 ± 60 years (CDMG 1992c). The last major
9 earthquakes on the San Francisco segment of the San Andreas Fault were the 1906 San Francisco
10 earthquake, with an estimated Richter magnitude of 8.3 (USGS 1990b), and the 1989 Loma
11 Prieta earthquake, with an estimated Richter magnitude of 7.1 (USGS 2003).

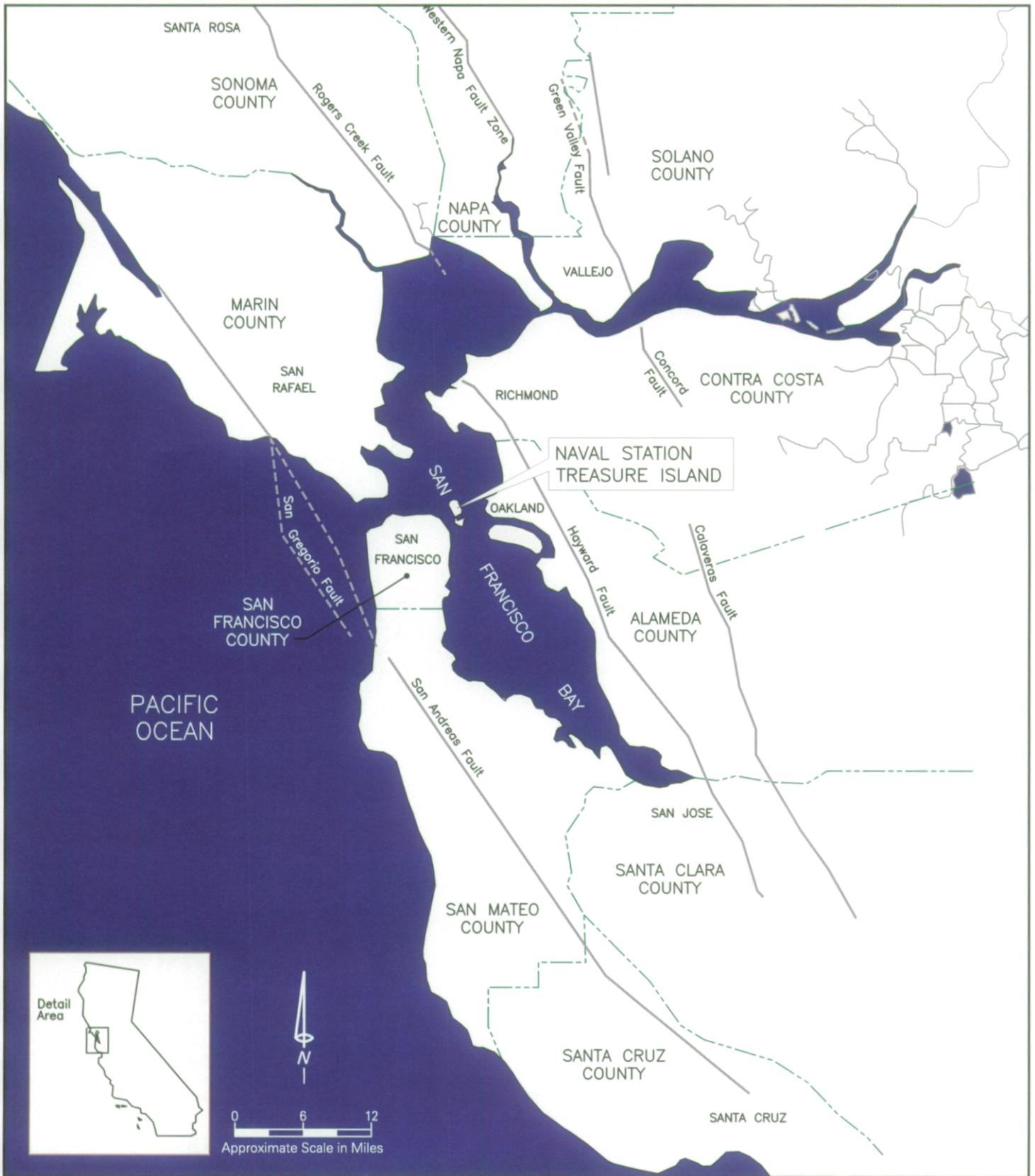
12 The probability of one or more large earthquakes (Richter magnitude 7.0 or greater) occurring
13 on the San Andreas, Hayward, or Rogers Creek faults has been estimated to be greater than 67
14 percent for the 30-year period from 1990 to 2020 (USGS 1990c). The estimated individual
15 probabilities of magnitude 7.0 or greater earthquakes for the same period on either the northern
16 segment of the Hayward Fault or the San Francisco Peninsula segment of the San Andreas Fault
17 were estimated to be 27 percent and 23 percent, respectively.

18 3.9.2 Geology Underlying NSTI

19 *Treasure Island*

20 Treasure Island is connected to Yerba Buena Island by an engineered causeway constructed on
21 a former sand spit. Treasure Island was engineered by placing over 29 million cubic yards (22
22 million cubic m [m³]) of fill from various sources (CDMG 1969a). The fill was placed on Yerba
23 Buena Shoals, a submerged area of about 735 acres (298 hectares [ha]), between February 1936
24 and July 1937. The shoals varied in elevation from -2 feet (-0.6 m) to -26 feet (-8 m) mean lower
25 low waterline (MLLW). About 8 million cubic yards (6 million m³) of the original fill
26 subsequently was lost to erosion, settlement, and drift of fine material during placement (DON
27 1990c).

28 The unconsolidated deposits that constitute and underlie Treasure Island can be divided into
29 four broad categories based on their engineering characteristics—fill, native shoal sand, recent
30 bay sediments, and older bay sediments (USGS 1994). The fill was derived from hydraulic and
31 clamshell dredging and was placed within a retaining dike built of rock. Filling commenced
32 February 11, 1936, and was completed July 2, 1937, except for refill operations from August 1 to
33 24, 1937 (CDMG 1969a). The retaining dike was placed in two to four stages on a prepared bed
34 of coarse sand placed over the shoal. The retaining dike was later covered with riprap from
35 elevation -6 to +14 feet (-2 to +4 m) MLLW (USGS 1994). Of the 29 million cubic yards (22
36 million m³) of artificial fill placed on Treasure Island, 1.3 million cubic yards (0.99 million m³)
37 (less than 0.5 percent) was described as “heavy sand,” consisting of coarse and well-graded
38 sand and gravel from Presidio, Alcatraz, and Knox Shoals. The remaining material was
39 predominantly sand, but much finer-grained, which was transported to the island by pipeline
40 from nearby dredging grounds. Beneath the artificial fill are sand and Bay Mud deposits that
41 formed the Yerba Buena Shoals.



The nearest principal active regional faults to Treasure and Yerba Buena Islands are the San Andreas and Hayward Faults.

- Legend:**
- Active fault
 - - - Active fault, concealed
 - · - · - County Lines

Principal Regional Active Faults

Bay Area, California

Figure 3-16

Source: Wallace 1990

1 *Yerba Buena Island*

2 Yerba Buena Island consists predominantly of consolidated sandstone and shale of the
3 Franciscan Formation. Slopes on Yerba Buena Island range from approximately 5 to 75 percent
4 (Figure 3-17) (DON 1986). The Franciscan Formation is overlain in some areas by thin sand
5 deposits belonging to the Pleistocene Colma Formation (USGS 1974) or is derived from the
6 underlying Franciscan sandstone (USGS 1957). Only a small area has been filled, on the
7 northeast tip of the island beneath the SFOBB (USGS 1975b; USGS 1957).

8 **3.9.3 Soils**

9 *Treasure Island*

10 Soils on Treasure Island and the extreme northeastern tip of Yerba Buena Island, covering zero
11 to 2 percent slopes, are classified as Urban Land-Orthents complex. Urban Land includes those
12 areas that are more than 85 percent covered by asphalt, concrete, or structures. Underlying
13 these areas are reclaimed soil, gravel, broken concrete, Bay Mud, and other materials that
14 extend to depths of -2 to -26 feet (-0.6 to -8 m). The main characteristics of these soils are
15 subsidence, corrosivity (due to the shallow tidally influenced water table), and highly variable
16 soil properties (USDA 1991; DON 1986).

17 *Yerba Buena Island*

18 Soils on Yerba Buena Island range from fine sandy loam to gravelly loam, 10 to 40 inches (25 to
19 102 cm) deep. The natural soils consist of a complex of Candlestick, Kron, and Buriburi soils.
20 These are generally coarse, loose soils, which reflect the underlying Franciscan sandstone
21 bedrock. The permeability of these soils is moderately low. Stormwater runoff is rapid, and
22 soil erosion potential is high. Candlestick soil is a sandy loam that is very susceptible to failure
23 on steep slopes. The Kron soil, also a sandy loam, is the shallowest of the three subunits, with a
24 depth of 10 to 20 inches (25 to 51 cm) to bedrock. The Buriburi subunit is a gravelly loam, with
25 a depth of 20 to 40 inches (51 to 102 cm) to bedrock.

26 The soil covering the moderately steep to steep (5 to 75 percent) slopes of north-central Yerba
27 Buena Island are classified as Orthents, Cut and Fill-Urban Land complex. The original soil
28 structure was modified by cutting and filling (Orthents) and is covered by buildings or
29 pavement (Urban Land). On Yerba Buena Island the properties of this soil are expected to be
30 very similar to the Candlestick-Kron-Buriburi complex from which the soil was derived.
31 Limitations to development tend to be steepness of slopes and high erosion (USDA 1991; DON
32 1986).

33 **3.9.4 Geologic Hazards at NSTI**

34 Figure 3-17 shows geologic hazards at NSTI, including those that would occur in a major
35 seismic event. These hazards consist of areas of fill and areas subject to liquefaction, settlement,
36 lateral spreading, and slope and dike instability. Each of these potential hazards is described
37 briefly below.

1 *Ground Shaking*

2 The Mercalli intensity scale is used to describe the severity of an earthquake and rates
3 earthquake damage based on anticipated damage levels ranging from I to XII (e.g., an intensity
4 of I means that the earthquake is not felt, whereas an intensity of XII is a condition where large
5 rock masses are displaced, objects are thrown into the air, and damage is nearly total).
6 Earthquake intensity depends on many factors, including the distance from the origin of the
7 earthquake and the nature of the geologic materials at the location where the earthquake is felt.
8 Generally, bedrock shakes the least because seismic waves travel quickly and efficiently
9 through these materials. Loose water-saturated materials shake more violently because seismic
10 waves are slowed down and are amplified in these materials.

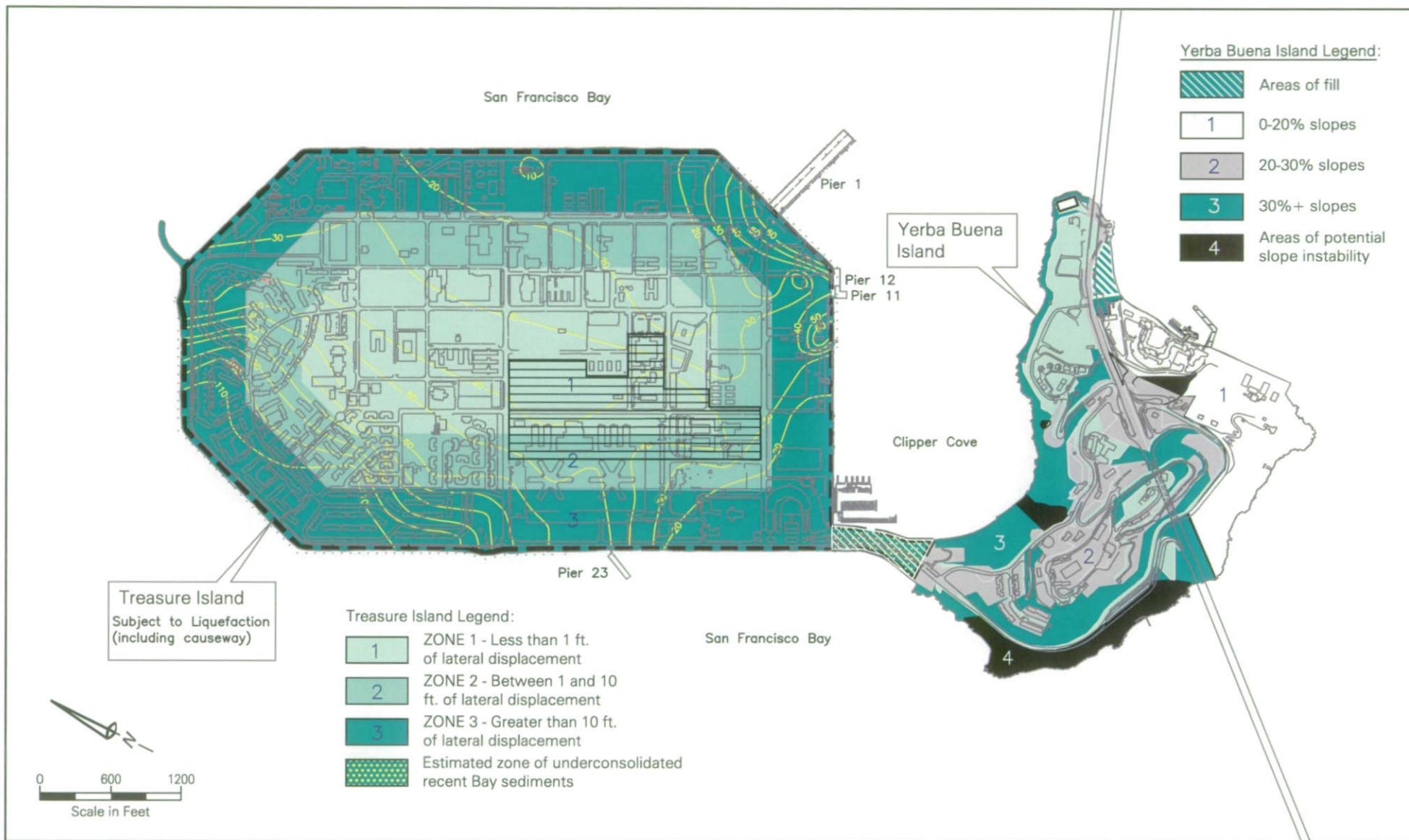
11 Damage to structures depends not only on the intensity and duration of an earthquake but also
12 on how structures are built, the direction of travel of seismic waves, the orientation of the
13 supporting elements of the structure relative to the direction of seismic wave travel, and the
14 underlying materials (i.e., reclaimed soil, cement, and bedrock).

15 ABAG has prepared a series of maps projecting the intensity of ground shaking in geologic
16 materials throughout the Bay Area (ABAG 1995a). According to these maps, the fill materials at
17 NSTI are the type of materials that typically increase seismic shaking. The most damaging
18 earthquake at NSTI would be one originating on the northern portion of the Hayward Fault
19 (ABAG 1995a). Such an earthquake, with a Richter magnitude of 7.1, could produce ground
20 shaking on NSTI with an intensity of IX on the Mercalli scale (ABAG 1995a). By comparison,
21 ABAG assigned a Mercalli intensity of VIII to ground shaking on NSTI during the October 17,
22 1989, Loma Prieta earthquake.

23 The Loma Prieta earthquake resulted in property damage throughout the greater Bay Area,
24 including Santa Cruz, approximately 65 miles (105 km) south of San Francisco. The 1989
25 damage in San Francisco was not evenly distributed through the city. Most of the severe
26 property damage occurred in areas built on unengineered artificial fill in the Marina and South
27 of Market districts where the nature of the soils resulted in liquefaction, severe ground shaking,
28 and fire. Bay Area transportation systems were also disrupted, particularly by the collapse of
29 the Cypress Freeway in the West Oakland neighborhood in the City of Oakland and a portion
30 of the SFOBB (San Francisco 1996b).

31 During the Loma Prieta earthquake, damage varied widely on Treasure Island. Types of
32 damage observed included lateral spreading, slope failure, pavement collapse and cracking,
33 and dike settlement. Liquefaction was pervasive in the interior of Treasure Island, evidenced
34 by numerous large sand boils. Settlement of up to 12 inches (30.5 cm) occurred, causing
35 numerous pipe breaks and ponding water at the surface (USGS 1994). There were no fires.

36 There is a 67 percent probability that one or more earthquakes of magnitude 7.0 or greater on a
37 nearby portion of the Hayward or San Andreas Faults will occur by 2010 (USGS 1990c). The
38 USGS (1994) predicted that a magnitude 7.0 earthquake on the Hayward Fault would produce a
39 peak bedrock acceleration of about 0.45 times the acceleration of gravity (g) on Yerba Buena
40 Island, or about 7.5 times the acceleration observed during the Loma Prieta earthquake. Even
41 though Treasure Island is underlain by fill, the peak acceleration in a large nearby earthquake



The primary geotechnical hazards induced from earthquakes could include soil liquefaction, settlement, lateral spreading and slope instability.

- Thickness contours of recent Bay sediments
- Most susceptible to deep failure through recent Bay sediments
- Areas subject to liquefaction
- Areas Excluded from Proposed Navy Disposal

Geotechnical Hazards
Naval Station Treasure Island, California

1 would be about the same on both Yerba Buena Island and Treasure Island, because the seismic
2 response of fill is not linear (USGS 1994).

3 In addition to ground shaking, several types of ground failure can be triggered by earthquakes.
4 These secondary seismic effects include liquefaction, settlement, and lateral spreading, and in
5 areas with steep slopes, earthquakes may trigger landslides.

6 *Liquefaction Potential*

7 A major cause of damage to structures during earthquakes is soil liquefaction, which occurs
8 when loose, water-saturated soils (generally fine-grained sand) are subjected to strong seismic
9 ground motions of significant duration.

10 Treasure Island has been designated a Seismic Hazards Studies Zone (SHSZ) by CDMG because
11 of its high liquefaction potential (CDMG 1997). The San Francisco General Plan Community
12 Safety Element, Map 4, indicates Treasure Island, along with portions of the San Francisco
13 shoreline perimeter, as an area of liquefaction potential (see Figure 3-18) (San Francisco 1996b).
14 Liquefaction was observed in the Marina and South of Market districts (San Francisco 1996b), as
15 well as throughout Treasure Island, during the Loma Prieta earthquake (DON 1990d).

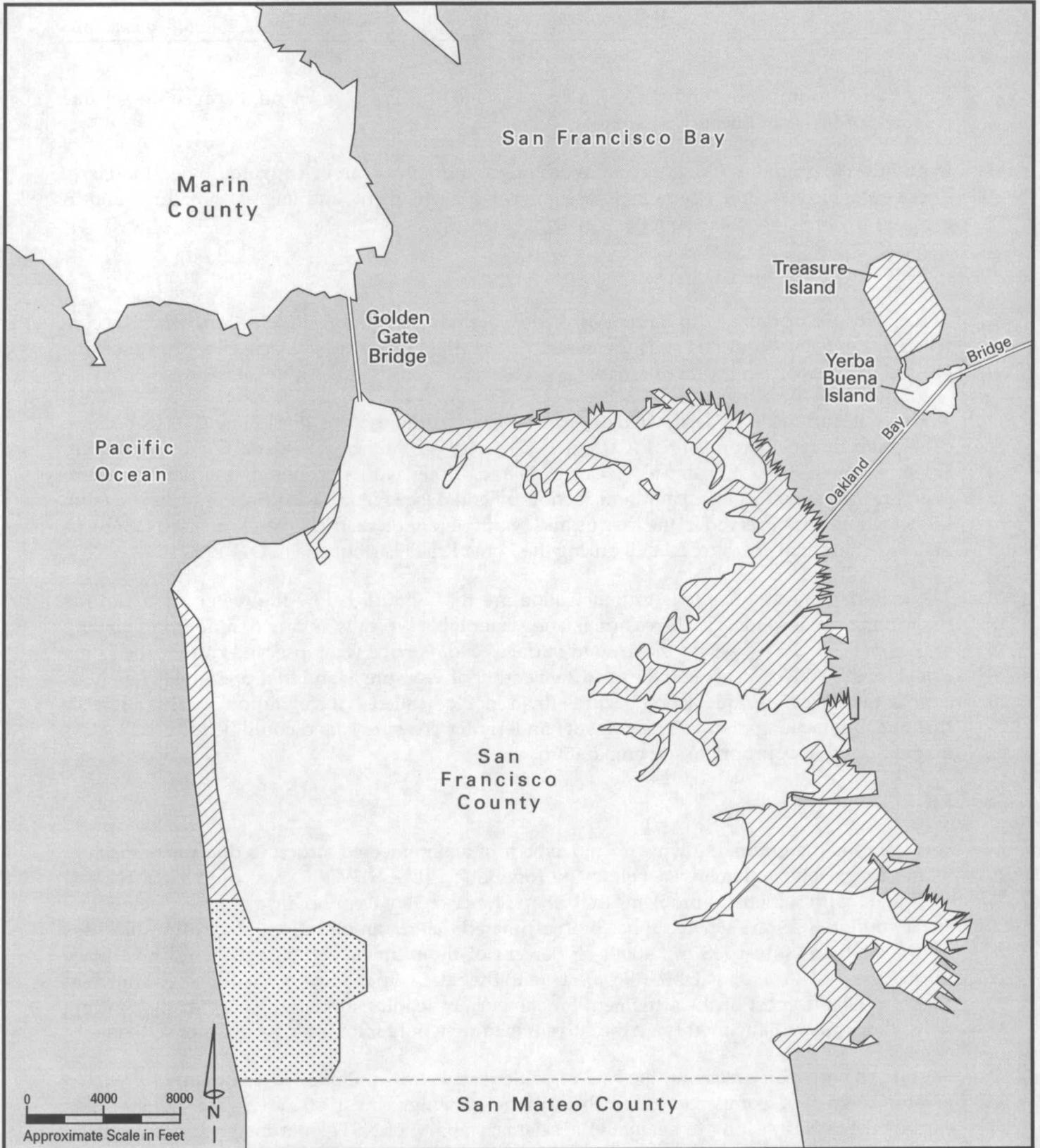
16 The materials most susceptible to liquefaction are the sand fill below the water table and the
17 underlying shoal sands. The Treasure Island water table typically occurs at a depth of about 5
18 to 8 feet (1.5 to 2.5 m) below the ground surface. No damage was observed during the Loma
19 Prieta earthquake in an area on the southeast corner of Treasure Island that previously had been
20 compacted to reduce liquefaction hazards (by a method called "vibroflotation"). This suggests
21 that the liquefaction potential of sediments underlying Treasure Island could be reduced by this
22 method or other appropriate site preparation.

23 *Settlement*

24 Settlement is the gradual downward movement of an engineered structure due to compaction
25 of the unconsolidated material below the foundation (USGS 1979). Bay Mud frequently is
26 associated with settlement problems in the San Francisco Bay Area because of its extremely low
27 shear strength (CDMG 1969b). It has been estimated that for an underlying Bay Mud thickness
28 of greater than 60 feet (18 m), about 35 percent of the ultimate settlement would take place
29 during the first 10 years (CDMG 1969a). Due to the relatively old age of the fill across much of
30 Treasure Island, most of the settlement for the current loading already has occurred. Adding
31 new fill or substantially modifying the current loading would initiate a new cycle of settlement.

32 Seismic shaking can accelerate the rate of settlement, allowing liquefied sediments to reach a
33 greater degree of compaction than before the shaking. In 1990, after the Loma Prieta
34 earthquake, a Navy study to evaluate the seismic stability of NSTI's perimeter dikes estimated
35 that a relatively uniform seismically induced settlement of 1 to 2 feet (0.3 to 0.6 m) would occur
36 across Treasure Island after a large earthquake (DON 1990c).

37 Differential or uneven settlement results from spatial variations in the uniformity or thickness
38 of the fill and underlying uncompacted sediments. Differential settlement is of particular



Treasure Island has been designated a seismic hazard zone by the California Division of Mines and Geology because of its high liquefaction potential.

LEGEND:

-  Area of liquefaction potential
-  Area of probable liquefaction potential

***Seismic Hazards
Study Zones - Areas of
Liquefaction Potential***

Bay Area, California

Figure 3-18

1 concern to structures because of the potential for floors, foundations, pavement, or other
2 distributed loads to break or buckle rather than to settle uniformly.

3 *Lateral Spreading*

4 Lateral spreading is the horizontal component of soil movement in the direction of an open (i.e.,
5 unsupported) slope face that typically results from liquefaction of a supporting soil layer due to
6 an earthquake. Lateral spreading also occurs due to slope failure that is not caused by
7 earthquakes. Cracks in a nearly horizontal or gently sloping ground surface are a common
8 visual indicator of lateral spreading.

9 Lateral spreading accompanying liquefaction is a major seismic hazard for Treasure Island
10 (DON 1990e). It has been estimated that lateral displacements in the vicinity of the Treasure
11 Island perimeter dikes may be more than 10 feet (3 m) within the first 500 feet (152 m) from the
12 perimeter for a magnitude 8.0 earthquake on the San Andreas Fault and on the order of 4 feet (1
13 m) for a magnitude 7.0 earthquake on the Hayward Fault (DON 1990e; San Francisco 1995b).
14 The displacements would extend inland, probably significantly more than the 500 feet (152 m)
15 observed in the Loma Prieta earthquake, and would be exposed as horizontal cracks ranging in
16 size from less than an inch (2.5 cm) to a few feet (0.6 m). Vertical sliding of a fourth to a half the
17 magnitude of the horizontal movements also would occur. Vertical sliding is considered more
18 damaging to structures than the more uniform liquefaction-induced settlement.

19 *Slope Stability*

20 Slope stability depends on a combination of factors, including rainfall, geology, slope steepness,
21 orientation, vegetation cover, seismicity, and development. Slope failure could occur from
22 landslides, debris flows and avalanches, creep, earthflow, or erosion. Catastrophic slope failure
23 in susceptible areas may be triggered by seismic events, rainfall, undercutting of slopes by
24 construction activities, and overloading of unstable deposits.

25 Figure 3-19 shows the locations of landslide deposits on Yerba Buena Island (USGS 1975a). In
26 addition, the San Francisco General Plan Community Safety Element (Map 5) shows areas of
27 potential landslide hazard on Yerba Buena Island. Landslide deposits are susceptible to
28 continuing failure. Landslide deposits occur at the base of steep slopes around the margin of
29 Yerba Buena Island, mostly on the south side. There is one landslide area on the north side.
30 The island interior is underlain by bedrock with thin soil, which is less susceptible to slope
31 failure.

32 *Dike Stability*

33 Treasure Island contains approximately 15,800 feet (4,816 m) of perimeter stone dike that varies
34 in elevation from 7.7 to 13.8 feet (2.3 to 4.2 m) NGVD. The perimeter dike performs several
35 essential functions—it protects the island interior from flooding, it resists shore erosion, and it
36 retains the fill material that composes the island. The island and the dike were constructed
37 concurrently in 1936 and 1937. Portions of the dike were repaired between 1983 and 1985. This
38 increased the height of the slope north of the entry gate to 54 feet (16.5 m). Repairs consisted of
39 placing rock in this area.

3.9 Geology and Soils

1 The stability of the perimeter dike at Treasure Island was evaluated by the Navy following the
2 1989 Loma Prieta earthquake (DON 1990c). It was found that in most locations around the
3 island perimeter, less than 6 inches (15 cm) of lateral (bayward) movement occurred in response
4 to this earthquake. Settlements near the dike were generally less than 12 inches (30.5 cm).
5 Small lateral spreading cracks were observed more than 500 feet (152 m) inland from the
6 perimeter dike on the east side of the island (DON 1990c).

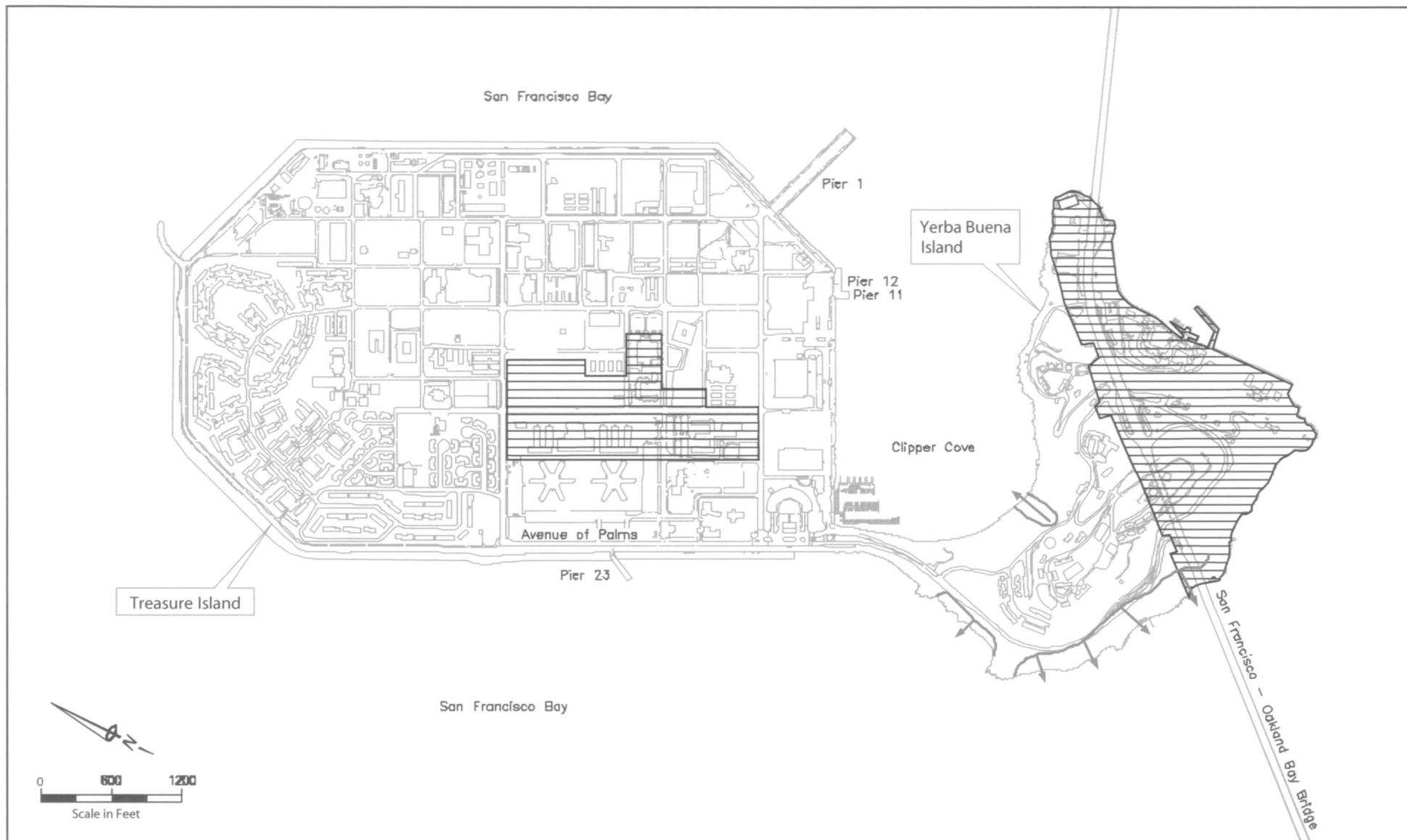
7 Figure 3-20 shows four cross sections of the perimeter dike (DON 1990c). Cross sections F-F'
8 and I-I', which are the most typical, show that the dikes are constructed on potentially
9 liquefiable material. Cross section C-C' shows where offshore material was removed by
10 dredging or erosion and was repaired with rock. Section D-D' is the location where the
11 retaining dike was reconstructed on 70 feet (21 m) of sand after the slope failed during the
12 initial construction.

13 The Navy's 1990 study, incorporated into the 1995 Treadwell and Rollo report, indicated that
14 during a design-level earthquake (Richter magnitude 8.0 on the San Andreas Fault or
15 magnitude 7.0 on the north East Bay segment of the Hayward Fault), the sand fill and shoal
16 materials below the water table would be expected to liquefy, and the existing perimeter dikes
17 and causeway shoreline would be expected to spread laterally toward the Bay. Within 500 feet
18 (152 m) inland of the perimeter dike and along portions of the causeway underlain by sand fill
19 and shoal materials, lateral spread displacements were estimated to be greater than 10 feet (3
20 m). Movements of this magnitude would cause dike failure. Even if improvements are made to
21 mitigate the hazards associated with liquefaction and lateral spreading, rotational slope failures
22 may still occur through the underlying weak layer of recent Bay sediments. During a design-
23 level earthquake, deep failures that could occur through recent Bay sediments could result in up
24 to 5 feet (1.5 m) of slope movement. The study further concluded that if improvements were
25 performed to increase the stability of the slope against deep failures, lateral displacements could
26 be reduced to less than one foot (DON 1990c; San Francisco 1995b).

27 3.9.5 Improving Ground Stability

28 Five foundation soil modification techniques have been used at Treasure Island to reduce soil
29 susceptibility to liquefaction and differential settlement (DON 1990c). These techniques
30 involved some form of densifying the underlying soil, such as installing sand compaction piles,
31 installing nonstructural timber piles, vibro-compaction, and stone columns. Mixing the soil
32 with portland cement to form a foundation of "soilcrete" also has been attempted. Figure 3-21
33 shows the locations of the 12 buildings and one area at the base of Pier 1 with improved
34 foundations. All structures founded on improved ground or piles reportedly performed
35 reasonably well during the Loma Prieta earthquake, with the exception of Building 461 (San
36 Francisco 1995b).

37



Existing landslide deposits are limited to the margins of Yerba Buena Island.

Legend :



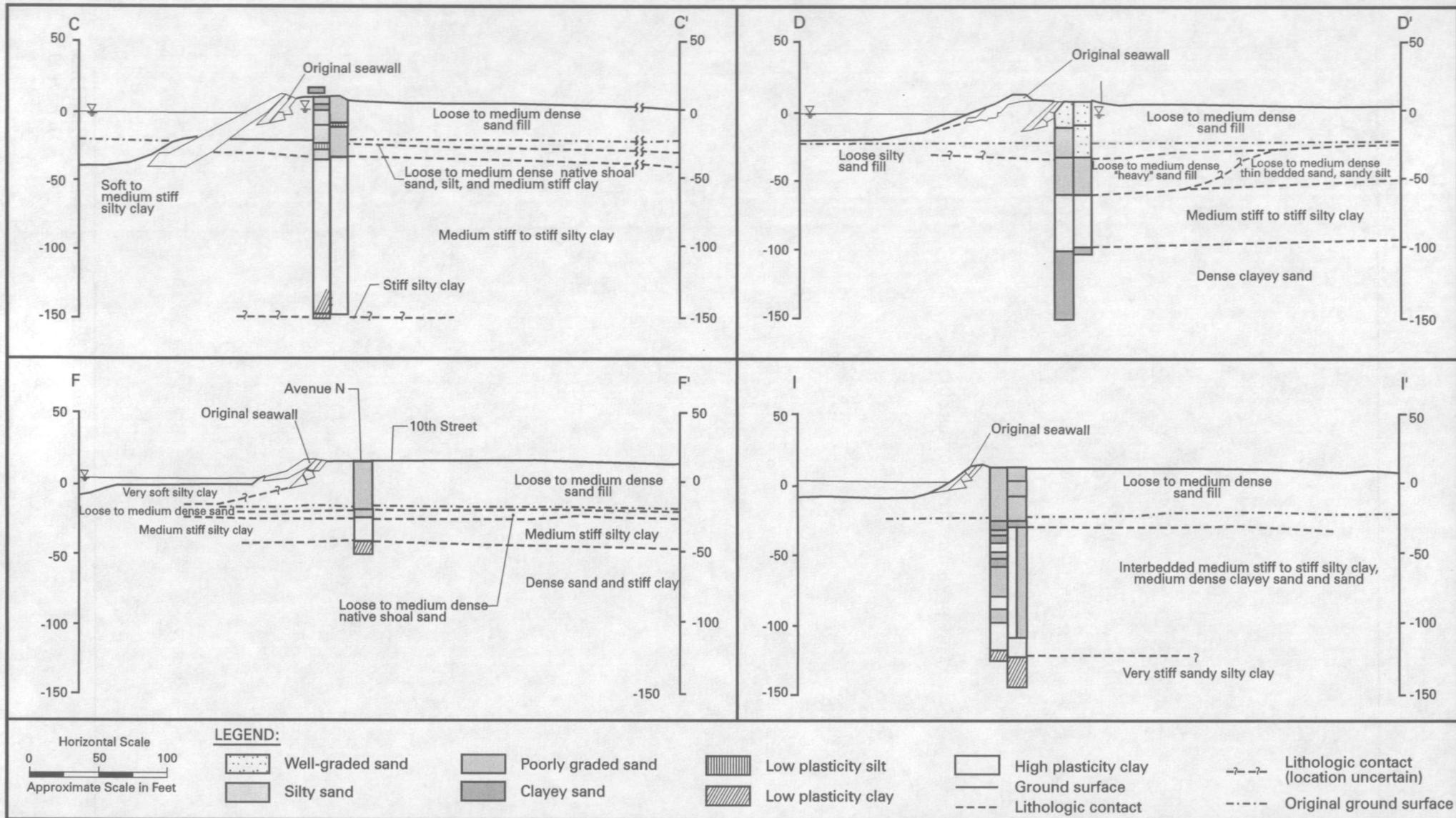
Landslide deposit showing direction of movement



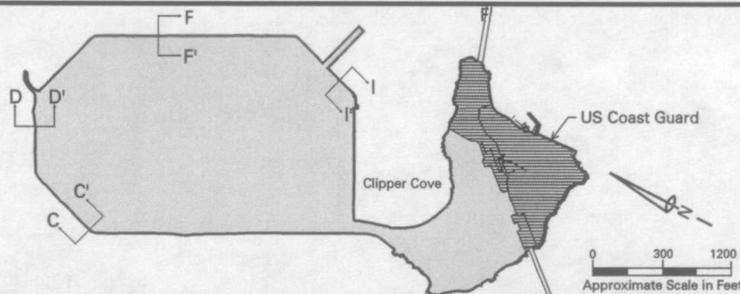
Areas Excluded from Proposed Navy Disposal

Landslide Deposits at NSTI

Naval Station Treasure Island, California



Cross sections illustrate that perimeter dikes are constructed on sand or fill materials.



Representative Cross Sections on Perimeter Dikes at Treasure Island

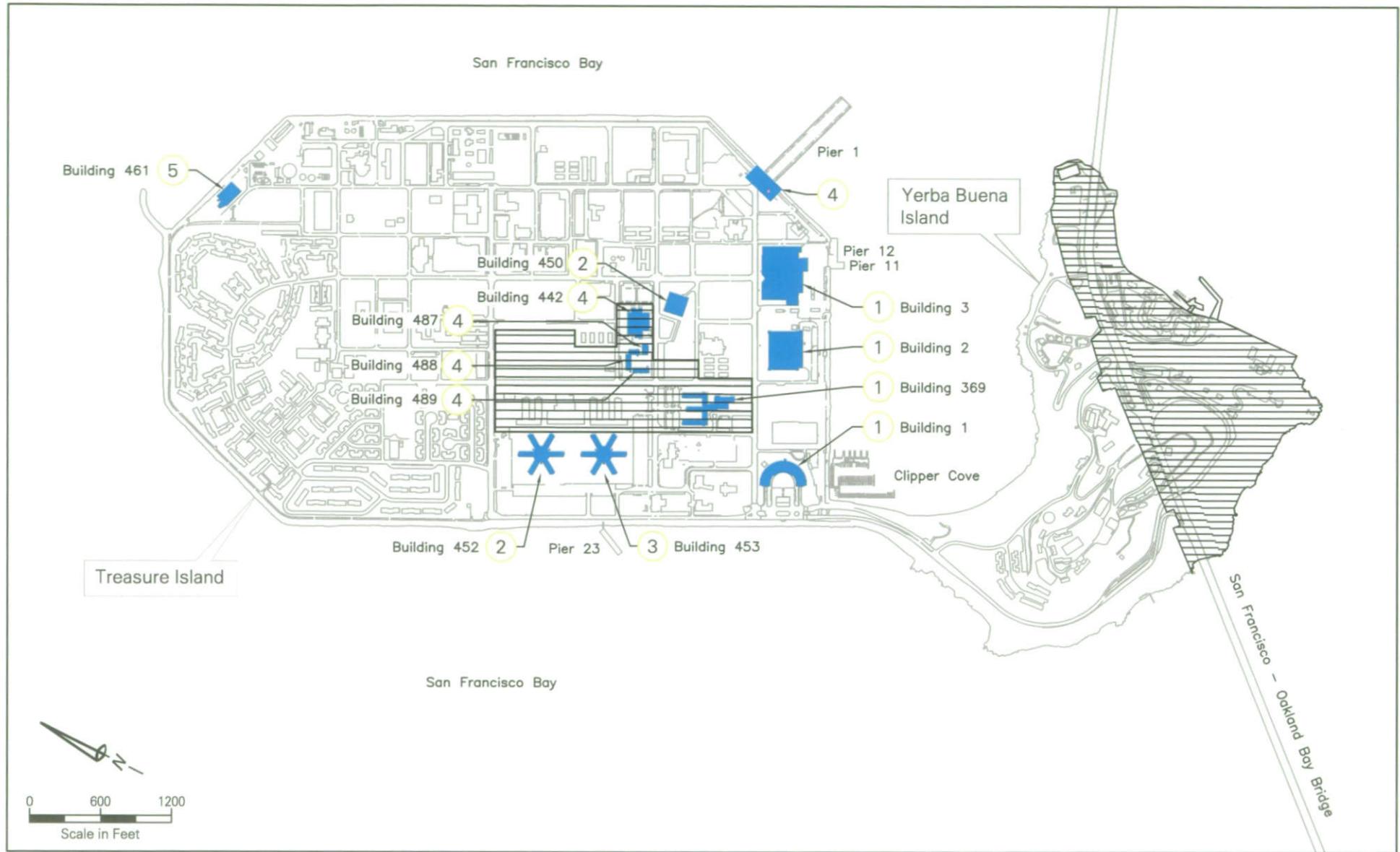
Treasure Island, California

Figure 3-20

1

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2



Some of the building sites have been compacted or otherwise prepared to prevent settlement.

Legend:

- 1 Structure supported by pile foundation
- 2 Ground improvement by sand compaction piles
- 3 Ground improvement by nonstructural timber piles
- 4 Ground improvement by stone columns
- 5 Structure constructed on pad of soilcrete

-  Areas Excluded from Proposed Navy Disposal
-  Buildings with Improved Foundations

Locations of Buildings with Improved Foundations

Naval Station Treasure Island, California

Figure 3-21

1 **3.10 WATER RESOURCES**

2 This section describes regulatory considerations, surface water resources on NSTI (including
3 flood hazards and water quality), the ground water underlying the islands, and past dredging
4 activities. Other water-related issues, such as stormwater runoff and contamination, are
5 discussed in Utilities (sections 3.11 and 4.11) and Hazardous Materials and Waste (sections 3.13
6 and 4.13).

7 **3.10.1 Regulatory Considerations**

8 *San Francisco Bay Regional Water Quality Control Board*

9 The San Francisco Regional Water Quality Control Board (RWQCB) operates under authority
10 delegated to it by the EPA and the State Water Resources Control Board (SWRCB). The
11 RWQCB is the local enforcement agency for the federal Clean Water Act (Pub. L. 92-500, as
12 amended, 33 U.S.C. §§ 1251-1387) and the State Porter-Cologne Water Quality Act (Cal. Water
13 Code §§ 13000-13999.19). The RWQCB participates in the regionwide long-term management
14 strategy (LTMS) program for dredging and disposing of material dredged from the Bay. The
15 RWQCB also regulates urban runoff discharges under the National Pollutant Discharge
16 Elimination System (NPDES) permit regulations. NPDES permitting requirements cover runoff
17 discharged from point (e.g., industrial outfall discharges) and nonpoint (e.g., stormwater
18 runoff) sources. The RWQCB implements the NPDES program by issuing construction and
19 industrial discharge permits.

20 Construction projects of one or more acre are subject to NPDES Phase II permit regulations,
21 which require the development of a Storm Water Pollution Prevention Plan (SWPPP). The
22 SWPPP is designed to minimize water quality degradation through storm water monitoring,
23 establishment of Best Management Practices (BMPs) (e.g., bioswales), implementation of
24 erosion control measures, and implementation of spill prevention and containment measures.
25 Separate SWPPPs are required for construction and post-construction operations.

26 All of the stormwater runoff from mainland San Francisco is directed to the city's sewage
27 treatment plants for pretreatment prior to discharge into the Bay or ocean. The treatment plants
28 operate under individual NPDES industrial discharge permits. However, unlike mainland San
29 Francisco, Treasure Island has separate stormwater and wastewater systems.

30 The wastewater treatment plant at NSTI operates under an NPDES permit. The permit specifies
31 discharge prohibitions, effluent limitations, receiving water limitations, and sludge
32 requirements for the plant. Navy has a self-monitoring arrangement for effluent with RWQCB
33 (DON 1996g). Under this arrangement, effluent constituents are continuously analyzed at one-
34 minute intervals (San Francisco 1995b).

35 NSTI complies with the statewide General Permit for Stormwater Discharges Associated with
36 Industrial Activities through a notice of intent that covers the entire base as a single industrial
37 site. The permit includes a SWPPP and existing and proposed BMPs. The SWPPP includes a
38 representative stormwater sampling program that evaluates stormwater quality from the most
39 active industrial areas (DON 1998g). Under the three reuse alternatives, anyone conducting

3.10 Water Resources

1 specific industrial operations at the site would be required to comply with requirements of the
2 statewide General Permit for Stormwater Discharges Associated with Industrial Activities.

3 The RWQCB also regulates water quality in accordance with state laws and policies identified
4 in the San Francisco Basin Plan. The plan identifies beneficial uses of surface and ground
5 waters, wetlands, and marshes, and sets forth water quality objectives to protect the beneficial
6 uses. Beneficial uses for San Francisco Bay include industrial uses, processing, navigation,
7 contact and noncontact recreation, fishing, commercial uses, wildlife habitat, species
8 preservation, and fisheries habitat (RWQCB 1995). The San Francisco Bay RWQCB has
9 determined that groundwater beneath Treasure Island is not a potential source of drinking
10 water and is therefore not considered to be a beneficial use. Groundwater is not used for any
11 beneficial use at NSTI. Stormwater discharges would need to be consistent with beneficial uses
12 identified for San Francisco Bay as part of the basin plan. NPDES permit effluent discharge
13 limitations are structured to achieve regional compliance with basin plan beneficial uses.

14 *Long-term Management Strategy*

15 The LTMS study is intended to identify long-term solutions to the problem of regional dredge
16 material disposal for a 50-year planning period. An estimated average of approximately 300
17 million cubic yards (229 million m³) per year of dredge materials will require disposal through
18 the planning period (1995 to 2045). The LTMS includes provisions for disposing of, rehandling,
19 and reusing dredge material in both construction and fill activities. Under the proposed reuse
20 alternatives, dredged materials would be required to be disposed of in compliance with the
21 LTMS Plan.

22 *U.S. Army Corps of Engineers*

23 The San Francisco Bay and shoreline is within the jurisdiction of the COE. The COE's
24 regulatory authorities and responsibilities are based on the following laws:

- 25 • Sections 9 and 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §§ 401, 403), which
26 regulate diking, filling, or placing structures or work in or affecting navigable waters of
27 the US;
- 28 • Section 404 of the Clean Water Act of 1972 (33 U.S.C. § 1344), which regulates disposal of
29 dredged or fill material into the waters of the US; and
- 30 • Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. §
31 1413), which regulates the transportation of dredged material for purposes of disposing
32 of it in ocean waters.

33 The COE also participates in the regionwide LTMS program for dredging and disposing of
34 material dredged from the Bay. For a proposed project within its jurisdiction, the COE
35 conducts a public interest review by soliciting comments on permit applications through a
36 public notice process. The BCDC, RWQCB, CDFG, EPA, USFWS, and NMFS have specific
37 review and comment responsibility for COE-permitted projects. The COE will review
38 developments proposed under the reuse plan that involves structures or dredging within the
39 Bay shoreline or proposed discharges of dredged material into U.S. waters.

1 3.10.2 Surface Water Resources

2 *Surface Drainage*

3 Surface drainage is the flow or runoff of rainfall from the site. This runoff can be over the
4 ground surface in open drains or through a system of storm drainpipes. Area precipitation is
5 mostly rainfall and averages about 20 inches (51 cm) annually between October through April.
6 The two islands have very different topography; Treasure Island is relatively flat, with shoreline
7 areas protected by a perimeter dike, while Yerba Buena Island has steep slopes and a natural
8 bedrock shoreline. Storm drainage systems of the two islands are separate, but runoff from
9 both systems flows to San Francisco Bay.

10 *Treasure Island*

11 Runoff from Treasure Island collects in a series of storm drain systems and is directed to the
12 Bay via gravity outfalls and pump stations. The Treasure Island storm drainage system
13 includes six storm drain lift stations, each with high capacity pumps for winter storms and
14 lower capacity pumps for summer duty, primarily irrigation runoff. Twenty-five major outfalls
15 serve Treasure Island, primarily steel or concrete pipes, ranging from 12 to 42 inches (31 to 107
16 cm) in diameter. Approximately 24 smaller outfalls supplement this system, ranging from 4-
17 inch (10-cm) to 10-inch (25-cm) pipes of varied composition (San Francisco 1995a). The Treasure
18 Island storm drain system is adequate in terms of capacity. It performed well in heavy rains
19 during 1995-1996 and 1996-1997, and no ponding or other problems were noted during these
20 events. The Treasure Island storm drain system was inspected in 1991-1992 and was repaired in
21 1993 (DON 1996i).

22 Localized ponding occurs on low-lying areas of Treasure Island, particularly on its northern
23 side, from tidal seepage through the perimeter dikes during extreme high tides. This has not
24 affected structures or foundations, which are above the seepage level, but has resulted in
25 ponding in yard and open space areas.

26 *Yerba Buena Island*

27 Runoff from the generally undeveloped portions of Yerba Buena Island flows to the Bay via
28 natural ravines and overland sheetflow; this runoff has caused erosion and slope failures (San
29 Francisco 1998a). Runoff from developed areas flows to the Bay via a gravity stormwater
30 drainage system that discharges at various points along the shoreline.

31 *Flood Hazards*

32 Treasure Island is protected from tidal flooding by a perimeter dike. The dike provides
33 adequate protection from wind- and wake-generated waves (San Francisco 1995b). Tsunamis
34 (also known as seismic sea waves or tidal waves) can be generated by offshore or distant
35 seismic activity or by submarine landslides. Seiches are waves generated in an enclosed body
36 of water caused by seismic shaking, climatic forces, or landslides into the water body.
37 Although seiches are possible in San Francisco Bay, the largest ever measured in the Bay was 4
38 inches (10 cm) in the 1906 earthquake (Alameda Reuse and Redevelopment Authority 1995).

3.10 Water Resources

1 The site has not been mapped for flood hazards by the Federal Emergency Management
2 Agency (FEMA) (DON 1988b).

3 Tide heights range from approximately zero to about 6 feet (2 m) NGVD, with 100-year highest
4 estimated tides of 6.4 feet (2 m) NGVD (COE 1984). Waves generated by 60 mph (97 km/hour)
5 storm winds may reach heights of approximately 7.5 feet (2 m) (DON 1985). Therefore, in a
6 worst-case scenario, a maximum high tide, in combination with 60 mph (97 km/hour) storm
7 winds, could result in waves reaching 13 to 14 feet (4 to 4.3 m) above sea level NGVD.

8 Predictions of future accelerated sea level rise due to global warming vary widely. The EPA
9 projects a 50 percent likelihood that sea levels will rise approximately 4 inches (10 cm) (an
10 average of 0.14 inches [0.36 cm]/year) by 2025 and approximately 8 inches (20 cm) (an average
11 of 0.16 inches [0.39 cm]/year) by 2050 (EPA 1995).

12 *Water Quality*

13 NSTI surface runoff contains relatively low levels of urban pollutants, such as oil and grease,
14 heavy metals, rubber, fertilizers, and pesticides (DON 1998e). Localized ground water
15 contamination from spills and leaks of hazardous materials have been identified in areas of
16 NSTI, and exceedances of the EPA's ambient water quality criteria for various organic
17 compounds and metals have been measured. Areas of contamination are in proximity to the
18 shoreline, and contaminants may reach the Bay via tidal influence (for further discussion, see
19 section 3.13, Hazardous Materials and Waste).

20 San Francisco Bay in its entirety has water quality problems resulting from past and present
21 practices, including urban waste disposal, runoff from agricultural areas into the Bay,
22 contaminants entrained in urban street runoff, ship repair, and accidental spills or deliberate
23 discharges from ships. The SWRCB has listed Central San Francisco Bay as impaired on the
24 basis of field surveys of the water column, sediments, sediment toxicity, bivalve
25 bioaccumulation, and water toxicity. This determination related to levels of copper, mercury,
26 selenium, diazinon, and PCBs (SWRCB 1997; San Francisco 1998d). Regarding discharge of
27 sewage from vessels at Treasure Island, since 1981, most military vessels have been equipped
28 with holding tanks for both sewage and grey water, and there are adequate pump-out facilities
29 at NSTI docks. However, the marina does not have a pump-out station for recreation boats (San
30 Francisco 1998a).

31 The sewage treatment plant at NSTI provides for secondary treatment of sanitary sewage and
32 discharge to the Bay via an outfall near the plant. Baseline (pre-closure) discharge volumes
33 equaled approximately 600,000 gallons per day (2,271,000 liters per day) dry-weather flow in
34 1994 (DON 1994b). This quantity and the quality of discharge is permitted by the RWQCB,
35 which has regulatory authority over Bay discharges. The quality of sediments in near-shore
36 waters is addressed in section 3.13.

37 **3.10.3 Ground Water**

38 NSTI influences on regional ground water hydrology are considered minimal because the
39 islands are isolated from water-bearing aquifers in the Oakland area. Ground water at Treasure
40 Island is recharged by direct infiltration of precipitation, landscape irrigation, and leaking storm

1 drains (DON 1990b; RWQCB 1996). Ground water occurs at shallow depths throughout
2 Treasure Island but is limited on Yerba Buena Island. The Treasure Island subsurface, whether
3 fill, Bay Mud, or shoal deposits, is saturated at elevations of 0 to 6 feet (0 to 2 m) NGVD,
4 depending on tidal influence. Average ground water elevations in the central part of the island
5 were measured at 3 feet (0.9 m) NGVD in 1990 (DON 1990c) and at 4 feet (1 m) NGVD in 1995
6 (San Francisco 1995b).

7 The shallow ground water in fills and Bay Mud is hydrologically connected with the saline
8 waters of San Francisco Bay; this connection is greatest at the edges of the island. Tidally
9 influenced ground water table fluctuations have been observed at distances ranging from 90 to
10 250 feet (27 to 76 m) inland. Ground water at Treasure Island generally flows from the island
11 center towards the shoreline. Tidal mixing with ground water has been noted up to about 100
12 feet (30.5 m) inland from the shoreline (DON 1995e), resulting in brackish ground water.

13 The San Francisco Groundwater Master Plan (San Francisco Public Utilities Commission 1996)
14 does not consider ground water at Treasure Island to be an important water supply aquifer.
15 The San Francisco Bay RWQCB conducted a Pilot Beneficial Use Project (RWQCB 1996), which
16 considered Treasure Island to be of limited value as a water supply aquifer and recommended
17 deleting water supply as a beneficial use for the island's ground water. The San Francisco Bay
18 RWQCB determined that ground water beneath Treasure Island is not a potential source of
19 drinking water, pursuant to SWRCB Resolution no. 88-63 and RWQCB Resolution No. 89-39,
20 because of the quality and hydrologic conditions of the groundwater. Localized ground water
21 contamination from spills and leaks of hazardous materials are discussed in the hazardous
22 materials and waste section of this document (section 3.13).

23 3.10.4 Past Navy Dredging

24 Treasure Island and Yerba Buena Island form a cove east of the causeway, open to the
25 northeast. A large shoal area from -3 to -5 feet (-0.9 to -1.5 m) mean lower low waterline
26 (MLLW), which is about 3.1 feet (0.9 m) below NGVD, has formed across the cove, extending to
27 within 150 yards (137 m) of Pier 1. Other depths in the cove, including the marina area, range
28 to -20 feet (-6 m) MLLW. Berth soundings at Pier 1 are -28 feet (-8.5 m) MLLW on the north side
29 and -15 to -28 feet (-4.5 to -8.5 m) MLLW on the south side.

30 Between 1970 and 1985, Navy dredged a 3-mile (5-km) long, 1,000- to 1,500-foot (305- to 457-m)
31 wide channel to a depth of -35 feet (-11 m) MLLW adjacent to the northern and eastern shores of
32 Treasure Island. This channel continues around the east side of Yerba Buena Island, extending
33 about 3,000 feet (914 m) beyond its southern edge. Three contiguous berthing zones on the
34 northern and eastern side of Treasure Island were dredged to a depth of -45 feet (-14 m) MLLW
35 in 1970 and 1985. The dredging from these projects extracted approximately 763,000 cubic
36 yards (583,355 cubic m) of material, averaging about 51,000 cubic yards (38,992 cubic m) per
37 year from 1970 to 1985. In 1970, approximately 272,000 cubic yards (207,958 cubic m) of
38 material was disposed of at open water sites. In 1985, about 35,000 cubic yards (26,759 cubic m)
39 was disposed of on Treasure Island, and approximately 457,000 cubic yards (349,401 cubic m)
40 was disposed of at the Alcatraz Island disposal site (COE 1996). Navy has maintenance
41 dredged the marina and pier areas of NSTI. The last dredging in the marina area occurred in
42 1990.

3.10 Water Resources

1 Pursuant to Section 404 of the Clean Water Act (33 U.S.C. § 1344), dredge material is tested
2 routinely for dissolved metals and other contaminants. Sediment quality in the southeast
3 corner of Treasure Island was evaluated in 1984 for the potential homeport of the USS Missouri
4 Battle Group, and no contaminants were detected (DON 1984b). Navy's Treasure Island
5 Dredging Project reported no history of sediment contamination in the navigation channel
6 (COE 1996). Few data are available to establish sediment quality in Clipper Cove, although
7 data from nearby locations suggest that sediments at other locations in the Central Bay,
8 including nearby at Yerba Buena Island, are contaminated by metals. In one study that
9 compared the toxicities of sediments from various sites in the Bay, sediments from Clipper
10 Cove were found to be toxic to sea urchin, mussel, and amphipod species. However, the source
11 of the toxicity was thought to be high concentrations of ammonia and sulfides, rather than
12 heavy metals. The concentration of copper, nickel, cadmium, zinc, and lead in the Clipper Cove
13 sediments was found to be relatively low (Anderson et al. 1995).

1 **3.11 UTILITIES**

2 This section describes the utility delivery system and quantities of utility use under baseline
3 conditions, including potable water and fire protection distribution, wastewater collection and
4 treatment, stormwater collection, electrical and natural gas, telecommunications, and solid
5 waste systems. The utility infrastructure is still owned by Navy, unless otherwise noted.
6 Portions of the utility infrastructure cross the property that was appropriated by FHWA and
7 transferred to Caltrans; under the terms of the appropriation, that infrastructure is owned by
8 Caltrans. San Francisco personnel are granted periodic access to the property to maintain the
9 infrastructure. While this section describes the current condition of utility systems, levels of use
10 or consumption represent baseline conditions (1993 units). Most buildings at NSTI, including
11 housing units, were not individually metered for utilities.

12 **3.11.1 Potable Water and Fire Protection Water**

13 NSTI has a combined potable water and fire protection distribution system. The San Francisco
14 Water Department supplies water to NSTI through its 10-inch (25.5-cm) diameter steel main
15 attached to the SFOBB. According to the San Francisco Water Department (San Francisco Water
16 Department 1998), the maximum pump rate for that line is 1,750 gallons per minute (6,624 liters
17 per minute).

18 Emergency backup water service has been provided by the East Bay Municipal Utilities District
19 (EBMUD) through a Navy-owned, 12-inch (30.5-cm), cement-lined steel pipe attached to the
20 SFOBB. This pipe is connected to a Navy-owned pump station in Pier E-23 of the SFOBB and
21 connects at the east end of the SFOBB with approximately 13,000 feet (3,962-m) of Navy-owned
22 land-based pipeline of 12-inch (30.5-cm) and 14-inch (35.6-cm) diameter that originates at a
23 connection to an EBMUD water main in Emeryville. The water is treated with chloramines
24 before delivery to NSTI. The line is used to supply water to SFOBB fire hydrants; however, it
25 has not been used for hydrants since 1999. Total capacity of the system is about 2 million
26 gallons per day (MGD) (7.5 million liters per day).

27 Water from the San Francisco main is routed into four concrete reservoirs on Yerba Buena
28 Island, which have a total storage capacity of approximately 6.5 million gallons (24.5 million
29 liters) (DON 1994b). The capacity and use of each reservoir is summarized in Table 3.11-1. Use
30 of Reservoir 242 is reserved for fire protection purposes, with a capacity adequate for five hours
31 of firefighting demand (San Francisco 1995b). Reservoir 242 has been drained and repaired;
32 Reservoir 168 is currently out of service but has not been drained; Reservoir 227 was inspected
33 by a dive team, was drained in 1998, and remains out of service since its three million gallon
34 capacity is not required for the current operation of the islands (DON 2001; San Francisco
35 1998a). With some maintenance and repair, all of the reservoirs are serviceable.

36 The original potable water distribution system, constructed in 1939, was separate from the fire
37 protection system. This separate system was replaced in 1989-1990 with a combined system.
38 All areas are supplied by gravity except for one housing area on Yerba Buena Island that is
39 supplied from Reservoir 168 by a booster pump. Water from Reservoir 227 is supplied to
40 Treasure Island through an 18-inch (46-cm) main with a maximum flow rate of approximately
41 7,900 gallons (29,905 liters) per minute. A 22-inch (56-cm) backup main runs parallel to the 18-
42 inch (46-cm) main.

Table 3.11-1
Water Storage Capacity at NSTI (Yerba Buena Island)

<i>Reservoir</i>	<i>Capacity (million gallons)</i>	<i>Water Elevation Range (feet above mean sea level)</i>	<i>Use</i>
227	3.0	252.5 to 255.5	Primary potable water supply to Treasure Island
162	2.0	322.0 to 327.0	Supplies potable water to Yerba Buena Island
242	1.0	247.0 to 251.0	Reserved for fighting fires
168	0.5	356.0 to 359.0	Supplies potable water to Yerba Buena Island
(Total capacity)	6.5	-	-

Source: DON 1994b.

1 The present system is equipped with sectioning valves that allow sectors to be isolated for
 2 maintenance and repair. The distribution system, which includes a chlorination unit, is in
 3 good condition and received regular preventive maintenance. The polyvinyl chloride (PVC)
 4 piping in the distribution system, which is present in limited sections, does not conform to San
 5 Francisco Water Department standards (San Francisco 1996e). The fire hydrants do not possess
 6 backflow regulators. The total capacity of the system is approximately 2 MGD (7.5 million liters
 7 per day) (San Francisco 1995b). Baseline domestic water use was 0.96 MGD (3.6 million liters
 8 per day) (DON 1997c).

9 3.11.2 Wastewater Collection and Treatment

10 The wastewater collection system was constructed in 1939 and was upgraded in 1984 (DON
 11 1994b). Approximately 52,600 linear feet (16,032 linear m) of 4-inch (10-cm) to 16-inch (40.5-cm)
 12 diameter pipes collect the wastewater. Wastewater flows through collection piping from
 13 gravity and pumping. The system includes 24 lift stations of varying configurations and
 14 equipment. The collection system at Yerba Buena Island is linked to Treasure Island by an
 15 underwater 6-inch (15-cm) force main. There is also a sewer line connecting the two islands
 16 along the causeway.

17 The current condition of the collection system is fair (DON 2001). Some elements of the plant
 18 are in need of repair (San Francisco 1995b). About a third of this system was cleaned and
 19 inspected in 1997; repairs were made to the most critical deficiencies (San Francisco 1998a). The
 20 wastewater collection system does not conform to San Francisco standards (San Francisco
 21 Public Utilities Commission 1998). The plant is constructed on unreinforced ground adjacent to
 22 the shoreline, where lateral spreading of 10 feet (3 m) or greater during a severe earthquake is
 23 considered a possibility (San Francisco 1995b).

24 Wastewater flows to the wastewater treatment plant in the northeast corner of Treasure Island.
 25 The plant, constructed in 1990, provides secondary treatment and has a design capacity of
 26 approximately 2 MGD (7.5 million liters per day), wet weather capacity of approximately 8
 27 MGD (30 million liters per day), and storage tanks that provide 200,000 gallons (757,082 liters)
 28 of pre-treatment storage. The plant has a minimum treatment requirement of approximately
 29 200,000 MGD (757,082 million liters per day) and is capable of providing service to a residential

1 population of about 22,000 people. Under a RWQCB permit, the wastewater treatment plant is
2 permitted to discharge up to approximately 2 MGD (7.5 million liters per day) of treated
3 effluent to San Francisco Bay. Following treatment, residual solids are disposed of at Redwood
4 Landfill in Marin County. Baseline sewage generation was 0.04 MGD (0.15 million liters per
5 day)(DON 1997c).

6 3.11.3 Stormwater Collection

7 Storm drains throughout NSTI collect stormwater and convey it via 4-inch (10-cm) to 42-inch
8 (107-cm) pipelines to outfalls. There are 49 outfalls at the perimeter of Treasure Island and 26 at
9 Yerba Buena Island. San Francisco's assessment of the collection system indicated potential
10 problems, including crushed pipe, redwood pipe, asbestos cement pipe, and cross connections,
11 which may be contributing to petroleum contamination of the Bay (San Francisco Department
12 of Public Works 1996). The problem with cross connections has been resolved, and problems
13 related to the nonstandard materials and age of the system require repair and replacement
14 actions (DON 2001). The stormwater collection system does not conform to San Francisco
15 standards (San Francisco Public Utilities Commission 1998). The system operates under a
16 NPDES statewide General Permit for Stormwater Discharges Associated with Industrial
17 Activities. Stormwater quality with respect to urban pollutants is discussed in section 3.10,
18 Water Resources. Stormwater contamination due to hazardous materials, spills, and leaks is
19 discussed in section 3.13, Hazardous Materials and Waste.

20 3.11.4 Electrical and Natural Gas Systems

21 *Electricity Distribution*

22 Electricity is supplied to NSTI through a Navy-owned 12.5-kilovolt (kV) underwater cable,
23 which originates at a connection at the eastern end of the SFOBB. At that point, the underwater
24 cable connects to a Navy-owned 12.5-kV overhead line originating at the Navy's Davis
25 Substation, located at the former Fleet and Industrial Supply Center (FISC) in Oakland (DON
26 1996d; DON 2001). Western Area Power Administration (WAPA) power (115 kV) supplied to
27 the substation is stepped down to 12.5 kV for transmission to NSTI. WAPA electricity is
28 generated by 55 hydroelectric plants with a combined capacity of 10,600 megawatts. The Pacific
29 Gas and Electric Company (PG&E) provides secondary electrical power to NSTI via a 12.5-kV
30 underwater cable originating at PG&E Substation J in San Francisco.

31 The main electrical substation is in Building 3 on Treasure Island. From here, four underground
32 12.5-kV feeders extend to the NSTI distribution system. In addition, two 4.16-kV feeders supply
33 power to Yerba Buena Island (DON 1985). The electrical distribution system at NSTI was
34 upgraded in the early 1980s. The system is in good condition and is capable of providing
35 service to existing load demands (San Francisco 1995b; DON 2001). The Yerba Buena Island
36 distribution system is aging and in need of replacement. Individual buildings at NSTI are not
37 metered, and most meters serve multiple buildings or customers.

38 *Natural Gas Distribution*

39 PG&E provides natural gas transmission service to the NSTI main metering station, located
40 near the steam plant (Building 455), via a 10-inch (25.5-cm) 120-pounds per square inch (psi)

3.11 Utilities

1 (8.4 kilograms [kg] per square cm [cm²]) underwater main from the East Bay. This main has a
2 capacity of 700,000 cubic feet (178,360 m³) per hour, which is 130 percent of the current load.

3 Four distribution systems (referred to as A, B, C, and D) supplied both Treasure Island and
4 Yerba Buena Island with natural gas. The Existing Conditions Report (San Francisco 1995b)
5 determined that the distribution system is in adequate condition for current needs. Buildings
6 and customers on the islands are not individually metered. System A, installed in 1965, delivers
7 service (mostly via steel pipe) at 10 psi (0.7 kg per cm²). System B was installed in 1965 to
8 provide natural gas to steam plants. The steel lines provide gas at 10 psi (0.7 kg per cm²) to
9 steam plants located in Buildings 455 and 540. System C was installed in 1970 to provide
10 service to the fire fighting school and the steam generation plant at Building 550. Gas is
11 provided through an 8-inch (20-cm) diameter steel pipe at 20 psi (1.4 kg per cm²). System D
12 was installed in 1985 to provide service to the steam plants at Buildings 520 and 530. Gas is
13 provided at 20 psi (1.4 kg per cm²) through a 4-inch (10-cm) diameter PVC pipe.

14 3.11.5 Telecommunications

15 A conduit on the SFOBB provides telecommunications connections to NSTI from San Francisco
16 through trunk lines installed in 1989. The system consists of basic T-1 trunks (24 voice channels
17 per T-1, over 2 twisted pairs) grouped in cables of 100 to 1,200 copper pairs. The copper cable,
18 consisting of 9,375 cable pairs, is in excellent condition (DON 1996l).

19 The NSTI telecommunications system was designed for the specific requirements of Navy and
20 tenant organizations. The telephone component of the telecommunications infrastructure was
21 installed in 1989 using both new and used equipment (DON undated). Telecommunications at
22 NSTI were divided into three independent systems: the residential system, the Consolidated
23 Area Telephone System (CATS), and a classified system. The residential system is operated by
24 Pacific Bell, and CATS and the classified system were owned and operated by Navy (DON
25 1996d). CATS and the classified system are no longer in operation.

26 The residential system owned and operated by Pacific Bell provides standard "1+" service to
27 meet private needs at family residences, bachelor officers quarters, and bachelor enlisted
28 quarters. The service is connected to a cable hut at Yerba Buena Island from Pacific Bell's
29 central office switch at 611 Folsom Street in San Francisco. From the hut, the cable extends to
30 Building 1 via the causeway. The Pacific Bell system appears to be at capacity. The bachelor
31 officers quarters and bachelor enlisted quarters are underserved. In addition, the cable lines
32 have degraded to the point where only 25 percent are operable.

33 3.11.6 Solid Waste

34 Solid waste was collected either by Navy or a private contractor. The solid waste is delivered to
35 the Davis Street Transfer Station, and then it is transported to the Altamont Landfill (DON
36 1996e). The landfill receives an average of 6,000 tons (5,444 metric tons) per day from all
37 customers and can accept a maximum of approximately 11,150 tons (10,117 metric tons) per day
38 (Waste Management of Alameda County 1997). The landfill was recently expanded and will
39 reach capacity in approximately 30 years.

1 Weights are not routinely measured, as Navy's agreement with the contractor is based on the
 2 number of containers by volume removed, as shown in Table 3.11-2. Assuming that each
 3 emptied container was full, NSTI would have generated approximately 113,623 cubic yards
 4 (86,871 m³) or 14,203 tons (12,882 metric tons) of solid waste in fiscal year 1993 (FY93). In
 5 addition, Navy removed approximately 8,291 cubic yards (6,339 m³) or 1,037 tons (941 metric
 6 tons) of construction debris in FY93. Combining these two waste streams, the total amount of
 7 solid waste generated at NSTI in FY93 is estimated to be 15,240 tons (13,829 metric tons), an
 8 average of approximately 42 tons (38 metric tons) per day. The recycling program at NSTI is
 9 outlined in the solid waste management plan.

Table 3.11-2
Solid Waste Removed from NSTI (Fiscal Year 1993)

<i>Container Type</i>	<i>Volume of Container</i>	<i>Number of Containers Removed, FY93</i>
Waste container	50 cubic yards	312
Waste container	20 cubic yards	728
Waste container	5 cubic yards	13,156
Waste container	2 cubic yards	364
Can	32 gallons	105,144
Bag	variable	12,108
TOTAL	77 cubic yards/32 gallons	131,812

Source: DON 1994b.

10 3.11.7 Steam Distribution

11 Five boiler plants supplied various areas of NSTI with steam for building space heating,
 12 domestic water heating, and galleys (DON 1994b). Steam was the primary source of heat for
 13 most nonresidential buildings at NSTI. Approximately 14,000 feet (4,267 m) of distribution pipe
 14 and approximately 14,000 feet (4,267 m) of condensate return pipe make up the distribution
 15 system. Over 70 buildings received steam at a pressure of 55 psi (3.9 kg per cm²) through
 16 insulated underground piping. The entire system was upgraded in 1983 and closed in 1997; the
 17 pipes remain in place.

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1 **3.12 PUBLIC SERVICES**

2 This section describes public services both at NSTI and in San Francisco. Fire protection, police
3 protection, and emergency medical services are addressed. San Francisco public service
4 providers would be responsible for serving NSTI following property disposal. The baseline for
5 conditions at NSTI is pre-closure (1993) conditions. For San Francisco public service providers,
6 baseline conditions are presented to reflect the conditions present at the time the EIS was
7 initiated (1996-1997).

8 **3.12.1 Fire Protection**

9 ***NSTI***

10 Prior to October 1, 1997, Navy NSTI Fire Department provided services to the islands, including
11 fire suppression, emergency medical services, fire prevention, public education, and hazardous
12 materials mitigation response. A mutual aid agreement was in place with San Francisco.
13 Historically, Navy operated two fire stations, one on Treasure Island (Building 157) and one on
14 Yerba Buena Island (Building 213). The 1988 Master Plan Update (DON 1988b) indicated that
15 the Treasure Island station was in substandard condition and recommended constructing a new
16 facility. This project was not completed.

17 In 1993, the department employed 41 fire fighters and 18 emergency medical personnel (DON
18 1996t). In 1993, the department's jurisdiction included the Hunters Point Annex in San
19 Francisco. Approximately 51 fire suppression calls and 224 emergency medical calls were
20 dispatched to both sites in 1993.

21 In 1992, a fire fighter training complex was completed at NSTI. The complex is a computer-
22 controlled facility with six fire-simulator sites, four classrooms, and training grounds (San
23 Francisco 1995a). Located at the northeast edge of Treasure Island, the complex covers
24 approximately 8 acres (3 ha). The complex was used in 1993 to train Navy firefighters and in
25 1997 by the California Maritime Academy to train its personnel (San Francisco Fire Department
26 1997b). The San Francisco Fire Department began using the complex to train department
27 personnel at the end of 1997. San Francisco's planned expansion of the complex would
28 accommodate aircraft crash rescue training facilities.

29 ***San Francisco***

30 The San Francisco Fire Department is responsible for providing fire suppression, fire
31 prevention, and emergency medical assistance in San Francisco. On October 1, 1997, the
32 department began providing these services to NSTI from Building 157.

33 The department is trained and equipped to meet the unique public safety requirements that San
34 Francisco presents, including surf, water, and cliff rescues. The department employs 1,510 fire
35 fighters, 719 of whom are cross-trained as emergency medical technicians (EMTs) (San
36 Francisco Fire Department 1996). Approximately 294 personnel are on duty during an average
37 shift, distributed among 41 fire stations throughout San Francisco.

1 The department's response time goal is three minutes for the first engine company, and the
2 department is currently achieving that goal (San Francisco Fire Department 1996). The
3 department received 57,112 emergency calls during fiscal year 1996 (San Francisco Fire
4 Department 1997a). Of that number, 29,940 were fire suppression calls, a decrease of 6.6
5 percent over fiscal year 1995. The remaining calls were emergency medical-related and totaled
6 27,712, a decrease of 7.5 percent from fiscal year 1995.

7 Landward, the station nearest NSTI is at 36 Bluxome Street in San Francisco, approximately 4.5
8 miles (7 km) from NSTI. This station has an 11 person staff, and the vehicles include one fire
9 engine, one fire truck, and one chief's sedan.

10 Laws and ordinances governing building structure design and equipment requirements for
11 detecting, restraining, and extinguishing fires are in Cal. Code. Regs. Title 24, § 13000 et seq.,
12 and the Life Safety Provisions of the San Francisco Uniform Building Code, 1991, as amended in
13 1992. Under these laws, fire stations and other critical facilities (e.g., police) are required to
14 remain operational after an earthquake. Enforcing these laws and ordinances is the
15 responsibility of the Bureau of Fire Prevention (San Francisco 1996d).

16 **3.12.2 Police Protection**

17 *NSTI*

18 Prior to October 1, 1997, police protection services were provided by Navy NSTI Security
19 Department. The Security Department's primary mission was to enforce Navy/military,
20 federal, state, and local laws; to provide security to NSTI; and to maintain evidence for possible
21 use in criminal cases (DON 1996j). A mutual aid agreement was in place with the San Francisco
22 Police Department. In the event of large-scale emergency situations, the department would
23 assist or would be assisted by the San Francisco Police Department and the California Highway
24 Patrol. The department also provided initial response and assistance to emergency situations
25 on the SFOBB.

26 Police protection facilities at NSTI included a police station (Building 107), a dispatch center
27 (within Building 157), and a military brig (Building 670). The police station was in the middle
28 of Treasure Island and housed the administrative offices of the department. The brig remains
29 on a 3-acre (1-ha) site in the northwest corner of the island. It housed ten single-person cells
30 and 5 prisoner dormitories. The 1988 Master Plan Update (DON 1988b) indicated that Building
31 107 was in substandard condition and recommended constructing a new facility. This project
32 was not completed.

33 In 1993, the department employed 65 police and security personnel. Of those, an average of
34 eight officers were on duty at any one time. Approximately 9,400 emergency calls were
35 dispatched in 1993 (DON 1996j).

36 *San Francisco*

37 The San Francisco Police Department is the agency responsible for providing police protection
38 and security services to San Francisco. On October 1, 1997, the department began providing
39 these services to NSTI.

1 The department currently employs 2,043 sworn officers and 398 nonsworn administration and
2 support personnel (San Francisco Police Department 1996). A minimum of 200 patrol officers
3 are on duty during daytime shifts. This number increases during nighttime shifts, due to an
4 increase in criminal activity. Patrol officers are deployed at ten district stations throughout San
5 Francisco. The patrol force is fully staffed, although newly hired personnel have not all
6 completed the field training program. In 1996, the department received 776,678 calls and filed
7 139,425 reports, an increase of 25.1 percent and 0.7 percent over 1995 levels, respectively (San
8 Francisco Police Department 1997).

9 3.12.3 Emergency Medical Services

10 *NSTI*

11 The fire department at Treasure Island has first response duties for emergency medical calls. If
12 a situation requires transporting injured persons, an ambulance unit is requested. The medical
13 clinic employed approximately 12 EMTs trained in basic life support (DON 1996k). A
14 minimum of two EMTs were on duty at all times. The San Francisco fire department is now the
15 emergency response organization for NSTI.

16 *San Francisco*

17 The San Francisco Department of Public Health provides paramedic services to San Francisco.
18 The Paramedic Division of the Department of Public Health currently employs 189 paramedics,
19 an average of 32 of whom are on duty at any one time (San Francisco Department of Public
20 Health 1996, 1997). The division dispatches approximately 65,000 calls per year, approximately
21 54,000 of which require ambulance transportation to San Francisco hospitals. Of the 1,510 San
22 Francisco Fire Department personnel, 719 are dual-trained as EMTs. Fire department
23 emergency medical personnel are dispatched when a call involves a potentially life-threatening
24 situation.

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1 **3.13 HAZARDOUS MATERIALS AND WASTE**

2 Military activities on NSTI have included operations and training, administration, general
3 engineering support and mission operations, medical and dental activities, materials
4 maintenance, and supply operations. Fuels, lubricants, paints, solvents, and other industrial
5 chemicals have been used throughout much of the history of the station.

6 **3.13.1 Hazardous Materials Management**

7 Under the requirements of the BRAC process, NSTI completed a basewide environmental
8 baseline survey (EBS) in May 1995 (DON 1995c) and a BRAC cleanup plan (BCP) in March 1997
9 (DON 1997b). The EBS is a broad evaluation and summary of all known and suspected areas
10 where hazardous materials or petroleum products have been handled, stored, disposed of, or
11 released within the boundaries of NSTI and adjacent areas. It also identifies clean properties on
12 Treasure Island under the Community Environmental Response Facilitation Act (CERFA) (Pub.
13 L. 102-426, 42 U.S.C. § 9620). The BCP provides an overview of the environmental restoration
14 and associated compliance programs.

15 At the time of NSTI closure, hazardous materials that were not required for the environmental
16 site restoration process or caretaker maintenance activities were collected from all designated
17 storage areas and transferred to the Defense Reutilization and Marketing Office (DRMO) off-
18 site. Materials that were not redistributed or sold were removed and disposed of off-site in
19 accordance with the Resource Conservation and Recovery Act of 1976 (RCRA) (Pub. L. 94-580,
20 42 U.S.C. § 6901-6992k) and state requirements.

21 Small quantities of hazardous materials will continue to be used at NSTI during the caretaker
22 period. These materials will consist predominantly of lubricants, degreasers, and cleaners used
23 for general maintenance.

24 **3.13.2 Hazardous Waste Management**

25 NSTI has a hazardous waste management plan (DON 1992b). NSTI generated approximately
26 9,921 pounds (4,500 kg) of hazardous waste per month (based on 1991 records) and is classified
27 as a fully regulated generator, subject to all laws and regulations governing the generation and
28 handling of hazardous waste. Navy hazardous waste management plan for NSTI (DON 1992b)
29 remains in effect for Navy generated waste until NSTI is transferred to a new owner.

30 Twelve facilities at NSTI generated or stored hazardous wastes or recyclable petroleum
31 products. Waste solvents, cleaners, adhesives, and other hazardous wastes, as well as
32 recyclable oil and antifreeze, were generated by various NSTI work centers. Hazardous wastes
33 were stored in designated hazardous waste accumulation areas for up to 90 days before
34 removal by the hazardous waste handler. The hazardous waste handler notified the NSTI
35 hazardous waste manager of container types, volume, and the waste profile.

36 Navy has a one-time compliance closure program for closing operational light industrial and
37 hazardous waste and material accumulation facilities. All hazardous wastes and hazardous
38 materials other than structural materials such as asbestos and lead-based paint (LBP) will be

1 removed in accordance with the NSTI hazardous waste management plan before properties are
2 transferred or conveyed. For discussion of asbestos and LBP, see sections 3.13.4 and 3.12.7.

3 **3.13.3 Installation Restoration (IRP)**

4 The IRP is an ongoing DoD-administered program for identifying, evaluating, and remediating
5 contaminated sites on federal lands under DoD control. The inventory of the full administrative
6 record for the NSTI IRP is at:

7 U.S. Navy, Southwest Division
8 Naval Facilities Engineering Command
9 1230 Columbia Street, Suite 1100
10 BRAC Operations Office
11 San Diego, California 92101-8517

12 Public information repositories are at two locations:

13 San Francisco Public Library
14 Main Branch, Government Division
15 100 Larkin Street
16 San Francisco, CA 94102

17 Caretaker Site Office
18 410 Palm Avenue, Room 123
19 San Francisco, CA 94130

20 In January 1995, the Department of Justice (DOJ) determined that a federal agency is not
21 required to independently implement NEPA at CERCLA clean-up sites. The DOJ decision
22 stated that the CERCLA process incorporates many of the NEPA values of public participation
23 including public review, and collection of environmental and human health impacts that could
24 result from a federal action, thus making the clean-up decision process under CERCLA the
25 functional equivalent of NEPA. Clean up of Navy property under CERCLA is independent of,
26 and not a part of, the NEPA decision-making process.

27 On September 29, 1992, Navy and California Environmental Protection Agency (Cal EPA)
28 (including the Department of Toxic Substances Control [DTSC] and the RWQCB) signed a
29 federal facility site remediation agreement (FFSRA) (DON 1992c). The NSTI FFSRA provides a
30 means for Navy and the State of California to cooperate in accelerating and streamlining the
31 remediation process at NSTI consistent and in compliance with applicable federal and state
32 laws and to use consensus problem-solving to achieve the goal of environmental restoration. It
33 is designed to ensure that environmental impacts associated with past and present activities at
34 NSTI are investigated and remediated to protect public health and welfare and the
35 environment. The agreement specifies and outlines review and approval procedures and
36 stipulates primary and secondary documents to be prepared, meetings to be conducted, and
37 deadlines and extensions to meet. It also takes into consideration emergencies and removals,
38 dispute resolution procedures, enforceability, public participation criteria, real property
39 transfer, statutory compliance and corrective action, quality assurance, funding, and

1 exemptions. Appendix D of the NSTI FFSRA, which provides the submittal schedule for draft
2 primary and secondary documents, was last updated in 2002.

3 The following tasks are required under Section 6.2 of the agreement:

- 4 • Investigating and sampling all sites to establish the nature and extent of contamination
5 at each site;
- 6 • Conducting feasibility studies to determine the most effective method of cleaning up
7 each site;
- 8 • Preparing all response actions for the sites, such as removing contaminants and
9 installing treatment systems;
- 10 • Conducting operation and maintenance response actions at the sites, including
11 maintaining treatment systems and monitoring to assess the effectiveness of
12 remediation; and
- 13 • Notifying and coordinating federal and state natural resource trustees.

14 ***CERCLA Remediation Process***

15 CERCLA (Pub. L. 96-510, 42 U.S.C. §§ 9601 - 9675) requires that all federal facilities comply with
16 federal and state laws with regard to the remediation process. The NSTI IRP follows this
17 process. Phases of the process are described below.

18 *Site Discovery (SD)*. A site is an area that has had or has the potential for a hazardous substance
19 release. A single facility may contain several sites to be studied under the IRP. Occasionally,
20 potential sites are discovered by searching through records or during construction projects.

21 *Preliminary Assessment (PA)*. This assessment identifies areas of potential contamination and
22 evaluates each area to determine if there is a threat to human health or the environment. A PA
23 report is developed from readily available information, such as past inventory records, aerial
24 photographs, employee interviews, existing analytical data, and an activity visit. A PA may
25 recommend no further action, additional work under the IRP, or a removal action.

26 *Site Inspection (SI)*. This inspection is conducted after the PA when additional information is
27 needed to evaluate a site. Collecting and analyzing soil, sediment, surface, and ground water
28 samples may help to determine the need for further study. Information needed for hazard
29 ranking also is collected. An SI may recommend a site for no action, further study, or an
30 immediate removal action. The PA and SI often are performed concurrently.

31 *Removal Actions*. A removal action is any action that may be necessary to monitor, evaluate,
32 prevent, minimize, or mitigate a threat or potential threat to public health or welfare or the
33 environment. A removal action may include cleanup or removal of a hazardous materials
34 release or hazardous material threat. Usually, removal actions do not completely clean up a site
35 and additional remediation steps are required.

36 *Remedial Investigation (RI)*. This investigation is performed to more fully define the nature and
37 extent of the contamination at a site and to evaluate possible methods of cleaning up the site.
38 During the investigation, ground water, surface water, soil, sediment, and biological samples

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1 are collected and analyzed to determine the type and concentration of each contaminant.
2 Samples are collected at different areas and depths to help determine the spread of the
3 contamination. The RI process at NSTI typically is done in two phases; phase I is site
4 characterization, and phase II is characterization of the constituents of concern, the migration
5 pathways, and the potential hazards to human health and the environment.

6 *Feasibility Study (FS).* The FS identifies and evaluates all applicable site cleanup alternatives. As
7 part of the study, a risk assessment is performed to quantify the level of risk posed by the site.
8 Each alternative is evaluated for effectiveness in protecting human health and the environment,
9 ease of implementation, and overall cost. Remedial Action Objectives (RAOs), specific goals for
10 protecting human health and the environment, are developed. The RI and FS may be
11 performed concurrently.

12 Remedial Action Plans (RAP)/Record of Decision (ROD). These two documents are essentially
13 the same. RAP is the state term, while ROD is the federal term. The RAP/ROD documents the
14 reasoning behind selecting a particular cleanup alternative. A RAP/ROD is required even if the
15 most feasible alternative is no action.

16 *Remedial Design (RD).* After a RAP/ROD is signed, the remedial design phase can begin. In the
17 RD, specific construction parameters or equipment specifications are presented for the selected
18 cleanup alternative.

19 *Remedial Action (RA).* During the remedial action phase, the selected cleanup technology is
20 implemented. An RA can be as simple as soil excavation or as complicated as a complete
21 ground water treatment system, which may operate for many years. Remedial action work
22 plans for long-term remediation include operation and maintenance (O&M) plans, which
23 continue until the cleanup is complete.

24 *Long-term Monitoring.* After completion of the RA, federal, state, or local regulatory agencies
25 may require subsequent monitoring of the site.

26 ***Petroleum Hydrocarbons***

27 The CERCLA definitions of hazardous substances (42 U.S.C. § 9601[14]) and pollutants or
28 contaminants (42 U.S.C. § 9601[33]) specifically exclude petroleum unless specifically listed.
29 The EPA interprets the term petroleum to include hazardous substances found naturally in
30 crude oil and crude oil fractions, such as benzene, and hazardous substances normally added to
31 crude oil during refining. Petroleum additives or contaminants that increase in concentration in
32 petroleum during use are not excluded from CERCLA regulations. Petroleum hydrocarbons in
33 ground water that are not commingled with CERCLA-regulated substances are addressed
34 under a corrective action plan (CAP) administered by the RWQCB. The RWQCB, whose
35 mandate is to protect ground water quality, requires that potential petroleum contamination in
36 ground water be evaluated and, if necessary, a petroleum CAP be developed.

37 The CAP for NSTI covers nine major sites. These sites are described in more detail below.
38 Several of these sites were initially part of the NSTI Installation Restoration Program (IRP) but
39 following initial site investigation under the IRP, the sites were excluded from the IRP under
40 the CERCLA petroleum exclusion. A Draft Fuel Line CAP has been developed. Closure

1 documentation is also being prepared for underground storage tank (UST) sites. Cleanup levels
2 for these petroleum-contaminated sites have been determined by the Navy, in coordination
3 with the RWQCB. Final cleanup methods have not been determined but could range from no
4 action to bioventing.

5 *Site 04 (Hydraulic Training School) and Site 19 (Refuse Transfer Area).* Sites 04 and 19 (formerly IR
6 04 and IR 19, respectively) are along the northeastern side of Treasure Island. The Hydraulic
7 Training School operated from the 1970s to 1997, and the Refuse Transfer Area operated until
8 1997. These two sites were investigated together, since they have similar contaminants and are
9 in close proximity. Petroleum-contaminated soils were identified at these sites, which were
10 investigated during the phase I and II RIs under the IRP and were found to qualify for
11 CERCLA's petroleum exclusion clause. Navy transferred the sites into the petroleum program
12 based on data indicating contamination limited to petroleum products. A site closure report is
13 expected to be submitted to the RWQCB in May 2003.

14 *Site 06 (Fire Training Area).* Site 06 (formerly IR 06) is along the northern side of Treasure Island.
15 This site was an active fire training area from 1946 to 1992. During the phase I and II RIs under
16 the IRP, this site was found to qualify for CERCLA's petroleum exclusion. Navy transferred the
17 site into the petroleum program based on data indicating contamination limited to petroleum
18 products. However, in June 1997, the RWQCB requested that Navy continue ground water
19 monitoring for potential CERCLA substances at the site, including, but not limited to, metals
20 and chlorinated solvents (RWQCB 1997b). The CAP was finalized on June 28, 2002.
21 Remediation measures recommended in the Final CAP includes in-situ treatment of
22 groundwater and deep soil (soil vapor extraction) and bioremediation. Dioxins have also been
23 detected and will be further investigated in the CERCLA program. Field activity was
24 completed in January 2003. The Post Construction Summary Report (PCSR) will be submitted
25 in May 2003. The report will include a request for no further action for petroleum in shallow
26 soil. Ground water monitoring will continue for one year. The PCSR includes analysis of
27 dioxins at Site 06. Navy and the regulatory agencies will review the dioxin data to determine if
28 there is a need for additional dioxin investigation. The estimated site closeout date is late 2004.

29 *Site 14 (New Fuel Farm) and Site 22 (Navy Exchange Services Station).* Site 14 and Site 22 (formerly
30 IR 14 and IR 22, respectively) are north of 11th Street, between Avenue N and the Bay on the
31 northeast corner of Treasure Island. The sites were investigated together because of their close
32 proximity and similar contaminants. IR 14 operated as a fuel farm between 1943 and 1997. IR
33 22 operated as Navy Exchange Service Station between 1946 and 1997. Contaminants of
34 concern include VOCs, petroleum, and polynuclear aromatic hydrocarbons (PAHs) in soil. IR
35 14/IR 22 were investigated during the phase I and phase II RIs and later found to qualify for
36 CERCLA's petroleum exclusion. Based on data indicating contamination limited to petroleum
37 products, Navy evaluated this site as part of the petroleum program. The CAP was finalized on
38 June 28, 2002. Final CAP recommendations included excavation and treatment for surface soil
39 and bioventing for subsurface soil. Soil vapor extraction began operation in June 2002. Navy is
40 currently performing ongoing groundwater monitoring. The estimated site closeout date is late
41 2004.

42 *Site 15 (Old Fuel Farm).* Site 15 (formerly IR 15) is on the southeastern portion of Treasure
43 Island, at the intersection of California Avenue and Avenue M. The site operated as a fuel farm
44 during the 1940s. Petroleum and SVOC contamination in soil were identified as the

1 contaminants of concern during phase I and phase II RIs. Based on data indicating
2 contamination is limited to petroleum products, the Navy evaluated this site as part of the
3 petroleum program. A Final CAP, dated June 28, 2002, recommended excavation and treatment
4 for surface soil and six months of continued groundwater monitoring. Additional monitoring is
5 required through May 2004 and site closure is anticipated in August 2004.

6 *Site 16 (Clipper Cove Tank Farm).* Site 16 (formerly IR 16) is located on the northwestern corner of
7 Yerba Buena Island, at the intersection of Macalla Road and Treasure Island Road. The site
8 operated as a tank farm between the 1940s and the 1960s. Phase I and phase II RIs identified
9 petroleum-contaminated soil. Based on data indicating contamination limited to petroleum
10 products, Navy evaluated this site as part of the petroleum program. Draft CAP
11 recommendations included excavation and treatment for surface soil. The Navy was preparing
12 a construction summary report and a closure summary report when it was discovered that the
13 aboveground tank farm appears to lie south and east of the initial RI investigation area. An
14 additional site investigation was initiated in March 2003. The site closure date depends on the
15 results of the investigation.

16 *Site 20 (Auto Hobby Shop and Transportation Center).* Site 20 (formerly IR 20) is in the western
17 portion of Treasure Island. The site is bordered by 12th Street to the north and Avenue B to the
18 west. From 1943 to 1997, the site operated as an auto hobby shop and a transportation center.
19 RI activities identified petroleum-contaminated soil, and excavation and treatment of surface
20 soils was completed. The construction summary report and closure summary report have been
21 completed, and the groundwater monitoring is ongoing. The estimated site closeout date is late
22 2003.

23 *Site 25 (Seaplane Maintenance).* Site 25 (formerly IR 25) is located on the southern portion of
24 Treasure Island, between Avenue D and F. The site operated as a seaplane maintenance facility
25 between 1938 and 1946. Petroleum-contaminated soil was identified during RI activities. Based
26 on data indicating contamination limited to petroleum products, Navy evaluated this site as
27 part of the petroleum program. Regulatory agency concerns at this site are limited to releases at
28 the shoreline and their potential environmental risks. The Final CAP, dated 28, 2002,
29 recommended soil vapor extraction in deep soil and groundwater, which began operation in
30 June 2002. Navy is also currently performing a groundwater monitoring program. The
31 estimated site closeout date is late 2004.

32 ***NSTI Installation Restoration Program***

33 Twenty-nine IR sites were originally identified for investigation. Based on the recom-
34 mendations of a PA/SI conducted in 1988 (DON 1997b), 25 sites remained in the IRP for further
35 study; four sites (02, 18, 23, 26) were removed from the IRP. The three sites requiring no further
36 action under CERCLA are sites 02, 18, and 23. Site 26 was composed of underground storage
37 tanks (USTs); therefore, it was deactivated as an IR site and the individual tank sites are being
38 investigated under a separate petroleum program. As discussed above, nine sites that were
39 initially part of the IRP were removed from the program following the determination under the
40 Draft RI that the petroleum products were the only concern and therefore qualified for the
41 petroleum exclusion under CERCLA. An additional site (IR 30) was added on September 6,
42 2002. The 17 remaining IRP sites are described below.

1 Localized ground water contamination from hazardous materials has been noted on both
2 Treasure Island and Yerba Buena Island. Contamination is from various petroleum
3 hydrocarbons and chlorinated solvents that have spilled or leaked into the soil and entered the
4 high ground water table. This contamination has resulted in limited exceedances of the US
5 EPA's ambient water quality criteria for various organic compounds and metals commonly
6 associated with fuel leaks and spills and, at one site, solvents associated with dry cleaning
7 activities (DON 1996n). Most of the known contaminated areas are on the perimeter of
8 Treasure Island within approximately 50 to 600 feet (15 to 183 m) from the shore. Given the
9 proximity of many of these contaminated sites to San Francisco Bay and tidal influences, some
10 contaminated materials may have entered the Bay in concentrations exceeding the US EPA
11 criteria. Specific sites are discussed below.

12 A draft baseline human health risk assessment and a draft ecological risk assessment report
13 were prepared in conjunction with the draft phase I RI report for the IR sites in 1993. A phase II
14 RI was conducted during 1994, 1995, and 1996 to further characterize the extent of
15 contamination and to collect data necessary for evaluating remedial alternatives.

16 As IR sites are identified as candidates for removal actions, and after removal actions are
17 completed, some of the IR sites are expected to require no further action.

18 *IR 01 (Medical Clinic).* IR 01 is in the central portion of Treasure Island at the intersection of 9th
19 Street and Avenue F. From the 1940s to the late 1970s, the site operated as a medical clinic for
20 NSTI personnel. The clinic occupied Building 257, and the X-ray department was operated at
21 the south end of the middle wing in Building 257 until the early 1970s. During this period of
22 operation, developer and corrosive fixer solutions leaked from the X-ray equipment through the
23 wooden floor of the building into the soil (DON 1997i). Residual silver from the X-ray film was
24 identified as the contaminant of concern at the site. The removal of silver-contaminated soil
25 was completed at the site. At the time of the soil removal, it was determined that the building
26 was constructed over a concrete sub-floor. All contaminated soil was located on top of this
27 concrete sub-floor. No further action under CERCLA is recommended since contamination was
28 limited to the concrete sub-floor and there was no release to the environment. Navy received
29 the site closure approval from DTSC on March 20, 2002.

30 *IR 03 (Polychlorinated Biphenyls [PCB] Equipment Storage Area).* IR 03 is along the southeastern
31 side of Treasure Island, approximately 150 feet (46 m) from the shore. The site was used to
32 store and repair transformers used to supply electricity to the various facilities at NSTI from
33 before 1953 to the present. Some of the transformers were known to have contained PCBs.
34 PCB-containing transformer fluid may have been spilled at the site as recently as the mid-1980s
35 (DON 1997i). Based on sampling results from the PA/SI, IR 03 was recommended for further
36 study in an RI. Based on the results of the draft RI, baseline human health risk assessment, and
37 ecological risk assessment, the site has been recommended for no further action under
38 CERCLA. Navy received the site closure approval from DTSC on March 20, 2002.

39 *IR 05 (Old Boiler Plant).* IR 05 is on the southeastern portion of Treasure Island. The old boiler
40 plant operated from the 1940s to 1968. Asbestos was used as an insulating material for the
41 boilers and pipes in the building, and mercuric nitrate may have been used during boiler plant
42 operations to inhibit scaling. In 1968, the building was demolished and the debris reportedly
43 buried in place. Underground fuel pipelines that may have been damaged in the 1989 Loma

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1 Prieta earthquake run beneath the site in an east-west direction along 5th Street. A 1988 PA/SI
2 identified that building debris possibly containing asbestos had been buried at the site;
3 therefore, an RI was recommended. Asbestos was not detected in the soil samples taken from
4 the site; however, petroleum and volatile organic compound (VOC) contamination were
5 discovered during Navy's RI. Petroleum contamination will be addressed under the petroleum
6 program. The site will be subject to deed restrictions due to VOC-contaminated ground water.
7 Any additional investigation of ground water at the site will be investigated as part of the dry
8 cleaning facility at Site 24. The Navy will prepare a letter documenting no action at the site.
9 Navy received closure approval from DTSC on January 17, 2001.

10 *IR 07 (Pesticide Storage).* IR 07 is located north of 13th Street, between Avenue M and the Bay, in
11 the northeast corner of Treasure Island. Between 1943 and the 1960s, the site was used for
12 storage and handling of a variety of liquid substances, including pesticides, chlorinated
13 herbicides, and paint. Pesticide- and herbicide-contaminated soil and ground water were
14 identified at the site during the phase I and phase II RIs. Additional sampling for contaminants
15 of concern was completed in April 2002 and a Final Supplemental Site Inspection report was
16 completed in October 2002. The Navy has recommended No Further Action at this site. The
17 DTSC is postponing closure of this site until additional investigations at adjacent areas are
18 complete.

19 *IR 08 (Army Point Sludge Disposal Area, Yerba Buena Island).* IR 08 is on Army Point at the
20 extreme eastern end of Yerba Buena Island. The site was used as a disposal area for sludge
21 from the wastewater treatment facility on Treasure Island between 1968 and 1976. Waste
22 sludge was transported from the wastewater treatment facility and spread on the ground
23 between the foundations of former buildings at IR 08 to dewater the sludge. Pesticides and
24 metals, including elevated lead concentrations, were identified as the contaminants of concern
25 at the site. DTSC requested that additional effort be made to explain elevated lead
26 concentrations in four borings collected from the site. The Navy is currently reviewing
27 responses to DTSC and CDFG's comments on the Draft Final Onshore RI and will follow up
28 with their findings. This site was transferred to FHWA/Caltrans on October 26, 2000. A
29 validation study for ecological risk has been completed and further evaluation of Caltrans
30 environmental data performed. The final RI will be prepared with Sites 28 and 29. The
31 estimated site closeout date is late 2005.

32 *IR 09 (Foundry).* IR 09 is in the central portion of the southern end of Treasure Island. The site
33 has been used for multiple operations since the early 1940s, including a forge and foundry
34 between 1943 and 1947 and a paint shop between 1952 and 1981. Metals are the most likely
35 contaminants from the foundry and the paints used at this facility were known to have
36 contained lead and zinc-chromium based pigments. Two concrete trenches, the remnants of a
37 hydraulic lifting system, indicate that vehicle maintenance also may have been performed at
38 this site. From 1981 to 1987, the foundry building was used as a welding training school by
39 Navy Technical Training Center, and in 1994, it was the site of a small boat maintenance shop.
40 A 1988 PA/SI recommended further investigation because of potential soil and ground water
41 contamination from previous site activities (DON 1997i).

42 Petroleum and metal contamination was discovered in both soil and ground water during RI
43 activities. The site was recommended for further evaluation and inclusion in the RI because of
44 ecological risks associated with the potential impacts to the Bay. A request was made in March

1 2000 by DTSC and RWQCB to analyze soil samples collected near a 30-gallon (114-liter)
2 hydraulic hoist tank for VOCs and PCBs. RWQCB also requested adding VOCs to the ground
3 water monitoring program for well 09-MW01. Analytic results indicated no major VOC
4 contamination in ground water. PCB concentrations were below detection limits. Trench oil
5 soil samples were collected and were non detect for PCBs (< 10 mg/kg). Navy completed
6 additional investigation in January 2003 and is currently preparing an RI report in anticipation
7 of a No Action ROD. Site closure is anticipated in late 2004.

8 *IR 10 (Bus Painting Shop)*. IR 10 is north of 13th Street, between Avenue M and the Bay, in the
9 northeast corner of Treasure Island. It was constructed during the mid-1940s and operated as a
10 bus painting shop through the 1950s. For an unspecified period of time, the building also may
11 have been used for paint mixing. Pesticides, petroleum, and semi-volatile organic compounds
12 (SVOCs) have been identified as the contaminants of concern in both ground water and soil.
13 Additional research was conducted regarding the catch basins located within the building.
14 Elevated TPH extractable concentrations were detected in sediment samples collected from the
15 catch basins. Navy completed additional investigation in January 2003 and is currently
16 preparing an RI report in anticipation of a No Action ROD. Site closure is anticipated in late
17 2004.

18 *IR 11 (Yerba Buena Island Landfill)*. IR 11 is a 200- by 600-foot (66- by 197-m) former marsh area
19 on the southern side of the eastern tip of Yerba Buena Island. The site operated as a landfill for
20 an unspecified period of time beginning in 1935. The exact nature of materials disposed at this
21 site is unknown but is thought to include solid wastes from Yerba Buena Island and Treasure
22 Island operations. Former USTs and a fuel pipeline also may have been sources of
23 contamination at the landfill site. The 1988 PA/SI concluded that the site warranted further
24 investigation in an RI due to potential soil and ground water contamination from past site
25 operations (DON 1997i). Metals, petroleum, pesticides, VOCs, and SVOCs in soil and ground
26 water were identified as the contaminants of concern during RI activities. A validation study
27 for ecological risk was finalized and an additional investigation for landfill delineation and lead
28 concentrations in surface soils was completed. Additional sampling of intertidal sediments
29 offshore of Site 11 has been completed. No PCBs or petroleum hydrocarbons were detected
30 above screening criteria, which were presented in the Sampling and Analysis Plan (SAP).
31 Therefore, this sampling data will be incorporated into the No Action ROD being prepared for
32 the Basewide Offshore Sediments (Site 13).

33 Although this site is on land that was transferred to either the US Coast Guard or
34 FHWA/Caltrans, Navy is continuing with the remedial activities pursuant to CERCLA.

35 *IR 12 (Old Bunker Area)*. IR 12 comprises about 90 acres (36 ha) at the northwestern end of
36 Treasure Island. Ammunition, electronics, tear gas, and film were stored in bunkers throughout
37 the site from the early 1940s until about 1969 when the site was converted to military housing.
38 Soil trenching and boring activities performed prior to housing foundation excavations in 1965
39 indicated that debris, including rubbish, bottles, wire rope, paper, and steel drums, had been
40 disposed of in the areas between and around the bunkers. Incinerator ash was also suspected to
41 have been disposed in this area. A UST, a former landing strip, and a former storage yard (FSY)
42 in the area also may have contributed to potential contamination at this site (DON 1997i).

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1 A PA/SI was conducted in 1988 to review past activities. A preliminary risk assessment,
2 including a geophysical survey to locate utilities and buried items, and soil sampling for metals,
3 TPHs, VOCs, and SVOCs, was conducted in 1990. Following the preliminary risk assessment,
4 an RI was performed to assess the nature and extent of the identified TPH and metals
5 contamination, to determine whether the bunker areas and buried oil tank continued to be
6 sources of contamination, to assess the extent of soil and ground water contamination, and to
7 characterize ground water hydraulic parameters for modeling purposes. Petroleum, metals,
8 and SVOCs were identified as contaminants of concern during RI activities. Additional soil and
9 ground water sampling to characterize the portions of the site beyond the boundaries of known
10 or suspected contamination began in October 1997. Further evaluation of the site in an FS was
11 recommended due to potential human health and ecological risks. A removal action at the site
12 is scheduled to be completed in 2004 and will be followed by a Final RI.

13 Analysis of soil and groundwater samples from the FSY area indicated that PAHs and PCBs
14 were the chemicals of concern. In 2000, all soil in the FSY area containing PCBs at levels in
15 excess of the screening level (1 mg/kg) was excavated to 4 feet (1 m) bgs, except where
16 buildings or other structures such as transformer pads impeded access. Indoor air monitoring
17 to evaluate the potential risk posed by vapor intrusion from volatilization of PCBs into
18 buildings is ongoing. Initial conservative estimates from this investigation indicate that PCB
19 volatilization may pose a risk to human health in Building 1100 Unit C.

20 This site is currently residential and is expected to remain residential under reuse. Numerous
21 housing units on this site are currently occupied under interim leases with San Francisco and
22 TIHDI for market rate rentals and homeless housing. All CERCLA response actions will be
23 conducted to ensure continued protection of human health and the environment. The Remedial
24 Action Objective under CERCLA will be for residential or unrestricted use, consistent with the
25 current configuration of housing on NSTI. Any subsequent redevelopment of the area that
26 would involve demolition of existing structures and the grading and reconfiguring of the soil
27 would be subject to land use controls on the property, including a City-administered soil
28 management plan that would ensure proper characterization and management of soil and
29 groundwater disturbance. In addition, deeds conveying the affected property will contain a
30 notice that portions of the property not accessible to remediation efforts (such as areas beneath
31 existing foundations) may require additional characterization and possible response actions
32 subject to appropriate regulatory oversight. Navy is currently in remedial investigation and
33 performing ongoing groundwater monitoring with supplemental investigations. The estimated
34 site closeout date is mid-2006.

35 *IR 13 (Stormwater Outfalls, Treasure Island and Yerba Buena Island, Offshore Sediments).* IR 13
36 comprises six stormwater outfall areas (A through G) surrounding Treasure Island and the
37 northeastern end of Yerba Buena Island. Historically at IR 13, petroleum leaks were suspected
38 to have entered Treasure Island storm drains and flowed to the Bay. Navy has a stormwater
39 pollution prevention plan (SWPPP) that monitors the outfalls for petroleum and other potential
40 contaminants on an annual basis.

41 During the 1993 Phase I ecological risk assessment for NSTI, chemicals of potential ecological
42 concern (CPOECs) were identified using data collected during the stormwater investigation, in
43 which drainage areas served by each stormwater outfall were investigated. The onshore RI
44 focused on human health issues, and the offshore RI primarily addressed ecological risks based

1 on the CPOECs identified in the 1993 data. The final offshore RI report was completed in
2 December 2001 (DON 2001a). Based on chemical concentration screening of offshore sediment
3 and pore water, the following were identified as chemicals of concern at the IR 13 outfall areas:
4 arsenic, barium, cobalt, copper, lead manganese, mercury, nickel, selenium, vanadium, zinc,
5 and organics, including dichlorodiphenyltrichloroethane (DDT), PCBs, and polychlorinated
6 aromatic hydrocarbons (PAHs). The draft offshore RI addresses the risk these chemicals
7 present to benthic receptors and birds. The Final RI has been completed, a No Action ROD is
8 currently being prepared, and the estimated site closeout date is late-2003. The Navy has
9 recommended No Further Action at this site.

10 *IR 17 (Tanks 103/104)*. IR 17 is near the center of Treasure Island, approximately 1,400 feet (460
11 m) west of the eastern edge of the island. The site is bordered by Avenue H, Avenue I, 5th
12 Street, and an unnamed street to the south. The site contains two 200,000-gallon (757,000-liter)
13 diesel fuel aboveground storage tanks (ASTs). The ASTs were installed before 1943 and
14 decommissioned in 1993. An estimated 20,000 gallons (75,700 liters) of diesel fuel was
15 reportedly released from the ASTs in 1983. The 1983 fuel spill, other unrecorded minor spills,
16 and tank or pipeline leaks are thought to be the primary sources of contamination at the site
17 (DON 2001a). Petroleum, metals, and SVOCs were detected in soil and ground water during RI
18 activities. No VOCs have been detected in preliminary well and soil samples collected at the
19 site. The Navy will prepare a letter documenting no action at the site. IR 17 could be the
20 subject of deed restrictions due to solvent-contaminated ground water, depending on the
21 success of remediation actions. Petroleum will be addressed under the petroleum program
22 (Uribe and Associates 2000). Any additional investigations of soil and ground water at the site
23 will be investigated as part of the dry cleaning facility at Site 24. Navy received closure
24 approval from DTSC on January 17, 2001.

25 *IR 21 (Vessel Waste Oil Recovery)*. IR 21 is along the southeastern edge of Treasure Island,
26 directly adjacent to the Bay and Clipper Cove. Asphalt and buildings cover this site. IR 21
27 operated as a waste oil transfer and separation facility from 1946 to 1995. Waste oil unloaded
28 from ships was transferred to an onshore oil/water separation facility at IR 21, consisting of five
29 2,000-gallon (7,570-liter) capacity ASTs. The ASTs were removed in 1995. Several of the
30 buildings at this site were reportedly used for chemical storage. For example, Building 3 stored
31 sulfuric acid for batteries, paint, paint thinner, lubricating oil, and hydraulic fluid. A fuel line
32 also was on the site and was abandoned in place after the 1989 Loma Prieta earthquake
33 damaged it (DON 1997i).

34 In 1988, a PA/SI was conducted for IR 21, and in 1994 the soil and ground water in the vicinity
35 of the abandoned pipeline were sampled for VOCs, including chlorinated solvents. Chlorinated
36 solvents were detected in ground water samples but not in soil samples (DON 1997i). An RI
37 was conducted to determine the nature and extent of TPH contamination near the oil recovery
38 system and chlorinated solvent contamination near the abandoned pipeline. Petroleum and
39 VOCs (chlorinated solvents from an unknown source) were identified in ground water and soil
40 during RI activities. No further action is planned for soils. For this site, human health risks are
41 within the US EPA target risk range considered protective of human health. Further
42 investigations will lead to decisions regarding remedial action through the IRP. Additional
43 investigation of VOC contamination has been performed and groundwater
44 monitoring/investigation is ongoing. A final RI is being prepared. The estimated site closeout
45 date is mid-2006.

3.13 Hazardous Materials and Waste

1 IR 24 (*Fifth Street Fuel Releases and Dry Cleaning Facility*). IR 24 is on the southeastern part of
2 Treasure Island and extends from the central portion of the island east towards the Bay. The
3 site is rectangular and is bounded by Avenue H on the west, Avenue N on the east, 6th Street
4 on the north, and 4th Street on the south. Building 99, on the site, operated as a laundry and
5 dry cleaning facility from the 1940s through the 1950s. Trench drains in the building's floor
6 may have been used to dispose of dry-cleaning waste solvents. The site also contains an
7 underground pipeline that was formerly used to transport oil and fuel on Treasure Island
8 between 1943 and 1977. In 1986, leaks were discovered at several locations along 5th Street. A
9 PA/SI was conducted in 1988 to determine the extent of soil contamination from the abandoned
10 fuel lines along 5th Street. The highest concentrations of TPHs were detected in soil samples
11 from a stockpile excavated in 1986 and 1987 near the intersection of Avenue M and 5th Street.
12 An RI was conducted to determine the extent of chlorinated solvent contamination in soil and
13 ground water. To further characterize contamination at IR 24, additional ground water
14 sampling was conducted in July 1997. The RI recommended continued ground water
15 monitoring for VOCs.

16 In March 2000, the RWQCB recommended that additional investigation be conducted to
17 identify the source of VOCs at the site. The site is recommended for further evaluation and
18 inclusion in an FS because of ecological risks associated with the potential impacts to the Bay.
19 For this site, human health risks are within the US EPA target risk range considered protective
20 of human health. Petroleum contamination in the soil and any associated remedial actions will
21 be conducted under the petroleum program (DON 1997i). As with Site 17, a remedial action is
22 planned. The site could be subject to deed restrictions, depending on the success of remedial
23 actions. Navy is currently performing an additional investigation for delineation of VOCs and
24 TPH in addition to ongoing groundwater monitoring/investigation. Workplans are currently
25 being drafted for a source area pilot study, which will include in-situ bioremediation of
26 chlorinated solvents utilizing lactic acid. If the pilot study proves effective on remediating the
27 source area and downgradient plume, the estimated site closeout date could be in 2006.

28 IR 27 (*Clipper Cove Skeet Range*). IR 27 is a separate operable unit off the southern shore of
29 Treasure Island. The site operated as a skeet range between 1979 and 1989. IR 27 was
30 investigated in 1996 during the Phase II ecological risk assessment. Sampling to define the
31 vertical and horizontal extent of lead and PAHs in offshore sediments and overlying surface
32 water was conducted during this investigation. This site is included in the December 2001 final
33 offshore RI report (DON 2001a), which was conducted to characterize the sources, extent, and
34 potential toxicity of chemicals in offshore sediments at NSTI. Based on the screening of
35 chemical concentrations in offshore sediment and pore water, lead and PAHs were identified as
36 chemicals of concern. The Clipper Cove Skeet Range was under a Regional Board Cleanup and
37 Abatement Order, and Navy worked with the RWQCB under a Compliance Plan. A feasibility
38 study is being prepared for this site and the estimated site closeout date is mid-2005.

39 IR 28 (*West Side On- and Off-Ramps*). IR 28 consists of the northwestern slopes of Yerba Buena
40 Island and the SFOBB's west side on- and off-ramps, along Treasure Island Road. The west side
41 on- and off-ramps on Yerba Buena Island have been in operation since the SFOBB was opened
42 to traffic in 1936. A 1993 investigation indicated lead and zinc concentrations in soil near the
43 west side on- and off-ramps. An RI was conducted to determine the extent of metals
44 contamination, which was found to be present in soils throughout the site. No action for soil
45 has been proposed based on the site's industrial use only categorization. A validation study for

1 ecological risk was finalized and no additional investigation is required. A final RI will be
2 prepared with Sites 8 and 29. The estimated site closeout date is mid-2004.

3 *IR 29 (East Side On- and Off-Ramps)*. IR 29 consists of the eastern slopes of Yerba Buena Island
4 directly underneath the SFOBB, and its east side on- and off-ramps along Treasure Island Road,
5 near the guard shack, which is no longer active. The east side on- and off-ramps have been in
6 operation since the SFOBB was opened to traffic in 1936. Similar to IR 28, IR 29 was suspected
7 to be subject to lead and other metals contamination as a result of vehicle emissions and ramp
8 painting and maintenance. Lead contamination in soil was identified during RI activities.
9 Further investigations were requested by RWQCB in March 2000 to evaluate lead concentration
10 levels at the site. Because of the uncertainty associated with the pending SFOBB work, any
11 remedial action would most likely be delayed until all bridge-work is complete. This site was
12 transferred to FHWA/Caltrans on October 26, 2000. A validation study for ecological risk was
13 finalized and further evaluation of Caltrans environmental data performed. An additional
14 investigation of lead concentrations in the surface soils was performed. A final RI will be
15 prepared with Sites 8 and 28. The estimated site closeout date is late 2005.

16 *IR 30 (Building 502)*. This site was added to the IRP on September 6, 2002. IR 30 currently
17 consists of a Day Care Center (Building 502) and outside play area constructed in 1987. Prior to
18 construction of the building, burn ash was deposited on the site and subsequently spread
19 through grading. Lead, copper, and dioxin have been identified as soil contaminants at this
20 site. Based on the results from the first phase of the site investigation, a time-critical removal
21 action was instituted in the northwestern portion of the site to remove soils contaminated with
22 elevated levels of lead and copper. Additional subsurface characterization at IR 30 detected
23 elevated dioxin levels from various sample locations. An investigation was subsequently
24 conducted to determine the extent of contamination and assist in assessing site options. The
25 site was capped with an agency-approved concrete/asphalt covering over areas where elevated
26 dioxin levels were reported below 2 feet below ground surface. The site closure agreement
27 included deed restriction requirements prohibiting/limiting any future subsurface excavations
28 in the area. The Day Care opened on March 17, 2003. An RI/FS will be completed for this site.

29 3.13.4 Asbestos

30 Several surveys to determine the presence of asbestos-containing material (ACM) have been
31 conducted at NSTI. Between 1995 and 1997, the Mare Island Naval Shipyard conducted an
32 ACM survey of some of the nonresidential buildings at NSTI, and Radian conducted surveys of
33 the remaining major nonresidential structures. Abatement of asbestos in all residential and
34 nonresidential buildings has been completed, and the results have been compiled into a report
35 of ACM type, location, and status (Uribe and Associates 2000).

36 Navy began and partially completed an asbestos survey of the Job Corps buildings. However,
37 this Navy survey was not completed because the Department of Labor began their own
38 asbestos survey and took over remediation responsibility for any hazards. This property has
39 been transferred by DoD to the Department of Labor, and there are no further Navy actions for
40 asbestos.

41 DoD policy is that any ACM at NSTI found to be a threat to human health will be abated prior
42 to property transfer. ACM considered a threat to human health is defined as any damaged

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1 ACM that is accessible. Any undamaged friable ACM and any damaged friable ACM that is
2 inaccessible may remain (U.S. DoD 1994).

3 ACM is regulated both as a hazardous material under the Toxic Substances Control Act (TSCA)
4 (15 U.S.C. §§ 2601-2692) and a hazardous air pollutant under the Clean Air Act (42 U.S.C. §§
5 7401-7671q). It is a potential worker safety hazard under the authority of California's
6 Occupational Safety and Health Administration (Cal OSHA). These regulations limit emissions
7 of asbestos from asbestos-related manufacturing, demolition, or construction activities and
8 require notice to federal and local government agencies prior to beginning renovation or
9 demolition that could disturb asbestos. BAAQMD requires asbestos removal pursuant to state
10 regulations.

11 All available information on ACM will be provided to the transferee. The information must
12 include the following:

- 13 • Available information on the type, location, and condition of asbestos in any building or
14 improvement on the property;
- 15 • Results of testing for asbestos;
- 16 • A description of asbestos control measures taken for the property;
- 17 • Available information on costs or time necessary to remove all or any portion of the
18 remaining ACM; and
- 19 • Results of a site-specific update of the asbestos inventory performed to revalidate the
20 condition of the ACM.

21 3.13.5 Polychlorinated Biphenyls (PCBs)

22 PCBs are considered a hazardous substance under the TSCA (15 U.S.C. §§ 2601-2692). A
23 basewide remedial program began in the mid-1980s to update electrical equipment, including
24 primary transformers and capacitors. Investigation of potential releases of PCBs from this
25 equipment was not conducted at the time of replacement. In 1995, Navy completed a survey to
26 determine whether any primary electrical equipment containing PCBs remained at NSTI.
27 Naval Operations Instruction (OPNAVINST) 5090.1B specifies eliminating all transformers
28 containing 500 ppm or more PCBs by October 1998 and eliminating all transformers containing
29 50 ppm or more PCBs by October 2003. Approximately five pieces of equipment were removed,
30 since PCBs were detected in them at over 500 ppm.

31 Navy has investigated IR sites 03, 12, and 17 for potential PCB contamination. No further action
32 relative to PCBs has been recommended at either site 03 or 17. A removal action for soils
33 containing PCBs at levels in excess of the screening level (1 mg/kg) was conducted in 2000 at IR
34 12. The EBS also identified parcels that may have contained PCB equipment. Additional
35 research and investigation into soils for PCBs at IR site 09 has been recommended by DTSC and
36 RWQCB. Two transformers are being investigated as part of EBS data gaps sampling. Results
37 will be presented in a technical memorandum.

1 3.13.6 Storage Tanks and Oil/Water Separators

2 *Underground Storage Tanks (USTs)*

3 Eighty-six sites with suspected USTs were investigated at NSTI. Of these, 41 were removed, 15
4 were closed in place, and investigation of 16 USTs indicated that the tanks did not exist (DON
5 1997b). Recently, two USTs were found near the entrance to the US Coast Guard Station.

6 Fuel lines also are subject to UST regulations requiring upgrade or removal. Navy has
7 completed removing or closing approximately 11,000 linear feet (3,353 m) of abandoned fuel
8 lines at NSTI. These areas were investigated in 1998 and 1999.

9 The SWRCB has a draft policy regarding the cleanup of low-risk petroleum sites. The intent of
10 the policy for low-risk sites is to remove floating product and the contaminant source, followed
11 by ground water monitoring to assess whether bioremediation has occurred. Navy has
12 identified approximately 10 sites that appear to qualify as low risk under this guidance.
13 Approval of these sites is pending further negotiations with the RWQCB (DON 1998b).

14 *Aboveground Storage Tanks (ASTs)*

15 Fifty-three ASTs are or were located at NSTI. Of these, 27 have been removed (DON 1997b).
16 Twenty-six ASTs are at NSTI, and seven are included in IR sites (section 3.13.3). Any
17 contamination associated with these ASTs will be addressed under the IRP. Only eight of the
18 remaining ASTs are active. They are being used by the gasoline station (one), fire training
19 school (five), sewer treatment boiler plant (one), and brig (one). Remaining ASTs will be or
20 have been drained and cleaned and will remain in place unless demolition is needed for
21 remedial action (TtEMI 2000b).

22 *Oil/Water Separators (OWS)*

23 There were two underground oil/water separators at the former fire training school location, IR
24 Site 06; however, these tanks were removed in 2002. The status of this site is addressed under
25 section 3.13.3.

26 3.13.7 Lead

27 *Lead-Based Paint (LBP)*

28 Lead was a major ingredient in the house paint used throughout the country for many years. In
29 1978, the maximum lead content was reduced to 0.06 percent of newly applied dry paint. LBP
30 use was discontinued in 1980.

31 Navy, in accordance with HUD guidelines, will abate any hazardous LBP found in residential
32 use structures constructed before 1960. The inspection and abatement will not be performed for
33 buildings scheduled for demolition or nonresidential use.

34 DTSC has considered a release to soil of LBP from DoD buildings or structures to be a CERCLA
35 hazardous substance release. DoD and EPA have developed a Field Guide for Lead-Based
36 Paint guidelines for disposal of DoD residential real property. Navy's policy for LBP

3.13 Hazardous Materials and Waste

1 remediation in nonresidential areas has been to comply with CERCLA in the same manner and
2 to the same extent, both procedurally and substantively, as any non-governmental entity.

3 *Lead in Drinking Water*

4 NSTI tested for lead and copper in drinking water in 1993, 1994, and 1995, but no copper or lead
5 was detected above the federal maximum contaminant levels (MCLs). The City and County of
6 San Francisco, under Navy Cooperative Agreement, will continue to monitor lead and copper
7 in drinking water, as required by the Safe Drinking Water Act of 1974 (Pub. L. 93-523, as
8 amended, 42 U.S.C. §§ 300f-300j-26).

9 **3.13.8 Radon**

10 Radon screening for six locations was conducted by Navy at NSTI (March 1991) as part of Navy
11 Radon Assessment and Mitigation Program. Concentrations ranged from none detected above
12 the detection limit of 0.5 picocuries per liter (pCi/L) (4 locations) to 0.6 pCi/L. No buildings
13 were identified as having radon gas levels above 4 pCi/L, which is the US EPA recommended
14 action level (US EPA 1988).

CHAPTER 4.0

Environmental Consequences

4.0 ENVIRONMENTAL CONSEQUENCES

1 Chapter 4 of this EIS addresses the environmental consequences of the proposed disposal and
2 reuse of NSTI with respect to 13 environmental issue areas. Each issue is addressed in its own
3 section, numbered as follows:

- | | |
|------------------------|------------------------------------|
| 4.1 Land Use | 4.8 Biological Resources |
| 4.2 Visual Resources | 4.9 Geology and Soils |
| 4.3 Socioeconomics | 4.10 Water Resources |
| 4.4 Cultural Resources | 4.11 Utilities |
| 4.5 Transportation | 4.12 Public Services |
| 4.6 Air Quality | 4.13 Hazardous Materials and Waste |
| 4.7 Noise | |

4 Each of the disposal/reuse alternatives is analyzed from the viewpoint of these 13
5 environmental issues. Navy disposal is assumed as part of each reuse alternative. Each
6 discussion is organized as follows:

- 7 • Alternative 1—This subsection addresses the environmental consequences of the LRA's
8 Draft Reuse Plan for NSTI (San Francisco 1996e). The Draft Reuse Plan can be
9 characterized by a combination of publicly oriented development, open space and
10 recreation, and extensive residential development at full build-out.
- 11 • Alternative 2—This subsection analyzes the environmental consequences of a reuse
12 alternative based on development of the site with a land use plan characterized by an
13 emphasis on open space and recreation and publicly oriented uses with low residential
14 use.
- 15 • Alternative 3—This subsection analyzes the environmental consequences of a reuse
16 alternative based on development of the site with a land use plan characterized by little
17 new development and extensive reuse of existing facilities.
- 18 • No Action Alternative—This subsection addresses the environmental consequences of
19 retaining NSTI in caretaker status in Navy ownership.

20 Measures that can be taken to reduce impacts to a level below significant are suggested for each
21 alternative, as appropriate. Navy would be responsible for mitigation measures identified in its
22 ROD for the proposed disposal action. As reuse would occur after the property is transferred
23 from federal ownership, mitigation measures identified for impacts associated with reuse are
24 the responsibility of the acquiring entity, under the direction of federal, state, and local agencies
25 with regulatory authority over and responsibility for such resources. Mitigation for impacts
26 associated with reuse is not the responsibility of the Navy.

27 As discussed in Chapter 3, the environmental baseline year for the EIS is 1993, the year that
28 NSTI was designated for closure. Because data from 1993 was not available for some resource
29 areas, baseline data from the most recent year that represents 1993 conditions was used. The
30 impacts presented in this chapter have been evaluated against the baseline environmental
31 conditions presented in Chapter 3. The Navy recognizes that changes in the environmental

1 conditions may have occurred in the period between the baseline years and the present and that
2 these changes may result in different, and in many cases, lesser impacts to certain resources.
3 Since baseline environmental conditions are used as the benchmark for analysis, it would be
4 inappropriate to alter the impact analysis based on any interim change in resource conditions.

5 **4.1 LAND USE**

6 The following discussion focuses on compatibility of proposed actions with land uses on the
7 site, compatibility with existing uses adjacent to the reuse plan area (e.g., non-Navy land uses,
8 such as the US Coast Guard Station and FHWA/Caltrans land for the SFOBB on Yerba Buena
9 Island, and Job Corps on Treasure Island), and consistency with the City and County of San
10 Francisco General Plan and zoning ordinance.

11 Factors considered in determining whether an alternative would have a significant land use
12 impact included the extent or degree to which implementation of the alternative would:

- 13 1. Result in non-attainment of policies of applicable plans of the City and County of San
14 Francisco or BCDC; or
- 15 2. Result in proposed uses that are incompatible with existing or adjacent land uses.

16 **4.1.1 Alternative 1**

17 *Significant and Mitigable Impact*

18 Impact: Land use policy (Factor 1). The City and County of San Francisco General Plan land use
19 designation for NSTI is Military. The zone classifications that would be required for Alternative
20 1 (i.e., Public, Residential, Mixed Use) would be inconsistent with the existing general plan
21 designation and zoning classification.

22 Mitigation. To achieve consistency between the selected reuse alternative and city policies, it
23 will be necessary to amend the San Francisco General Plan to include land use designations for
24 surplus property on Treasure Island and Yerba Buena Island prior to approving future land use
25 actions. NSTI would not be rezoned until the final reuse plan is adopted, at which time the City
26 and County of San Francisco should amend its Planning Code to be consistent with planned
27 land uses. Upon receiving a zoning designation, the area would be subject to the land use and
28 height and bulk regulations established by the zoning. These controls would be subject to the
29 Redevelopment Plan and its design for development standards and would likely include site
30 design measures, such as buffering, landscaping, screening, and setbacks, to ensure high quality
31 development and compatibility between land uses.

32 *Not Significant Impacts*

33 Land use policy (Factor 1). Implementing Alternative 1 would increase public access to existing
34 open space areas, including the San Francisco Bay shoreline, and would allow development of
35 recreational facilities, which would be substantially consistent with the anticipated priority use
36 designations for NSTI in the San Francisco Bay Plan. Specific development plans for reuse of
37 NSTI would be subject to BCDC permit authority, which would ensure consistency with the

1 Bay Plan. Implementation of Alternative 1, in accordance with the Draft Reuse Plan, would not
2 conflict with Sustainability Plan objectives.

3 Land use compatibility—Treasure Island (Factor 2). As a result of implementing this alternative,
4 proposed reuse of Treasure Island would change the intensity of use and develop publicly
5 oriented land uses in place of former military uses. Introduced and expanded uses would
6 require demolishing some buildings and constructing others.

7 At full build-out, implementing this alternative would result in a higher development density
8 than existed before the closure decision. However, proposed reuse of Treasure Island would
9 provide additional opportunities for public access to open space and recreational resources,
10 publicly oriented attractions, and access to the Bay. These land use changes would be
11 consistent with the Draft Reuse Plan guiding policies to ensure land use compatibility under
12 reuse and therefore would not be a significant land use impact. No mitigation is proposed.

13 At the time of the closure decision, there were no non-Navy land uses on Treasure Island.
14 However, after the federal agency screening process, approximately 36 acres and 12 buildings
15 were provided to the US Department of Labor for developing a Job Corps facility. Proposed
16 publicly oriented land uses, including the themed attraction, hotels, retail and specialty stores,
17 and film production, would provide a compatible land use relationship with the Job Corps
18 facility and would provide employment opportunities for the resident population. Proposed
19 reuse of Treasure Island would therefore not result in a significant land use impact to the Job
20 Corps facility. No mitigation is proposed.

21 Land use compatibility—Yerba Buena Island (Factor 2). Proposed reuse of Yerba Buena Island
22 would represent a change in the intensity of some uses and would introduce publicly oriented
23 use of the island. Proposed land use changes would convert the senior officers quarters
24 (Quarters 1-7), an NRHP listed historic district, to publicly oriented facilities, would develop
25 new residential areas and infill existing residential areas, and would develop a bed and
26 breakfast and restaurant in place of existing residential units on the Yerba Buena hilltop.
27 Introduced and expanded uses would require demolishing some buildings and constructing
28 others. If Quarters 1-7 were to continue in residential use, then fewer dwelling units would be
29 included elsewhere at NSTI so that the total number of units available would remain the same.

30 At full build-out, implementing Alternative 1 would result in a higher development density
31 than existed at the time of the closure. However, the proposed reuse of Yerba Buena Island
32 would provide additional opportunities for public access to open space, recreational resources,
33 publicly oriented attractions, and access to the Bay. These land use changes would be
34 consistent with applicable Draft Reuse Plan policies guiding future development and would not
35 be considered a significant land use impact. No mitigation is proposed.

36 Existing non-Navy land uses on Yerba Buena Island include an active US Coast Guard Station
37 and the SFOBB and tunnel structures. The approximately 30-acre (12-ha) US Coast Guard
38 Station is physically separated from land proposed for community reuse, and consequently the
39 physical arrangement of the station would not be disrupted or divided by proposed land use
40 changes. As a result of the federal agency screening process, the US Coast Guard was provided
41 an additional 11 acres (5 ha) of dry land and associated facilities on the southeastern Yerba
42 Buena Island hilltop. This property is physically separated from the land proposed for

1 community reuse, and the physical arrangement of either would not be disrupted or divided by
2 proposed land use changes.

3 The existing SFOBB or the proposed realignment would not be affected by changes in land use
4 that are part of community reuse. Land on Yerba Buena Island permanently conveyed in fee to
5 Caltrans to accommodate the SFOBB realignment is no longer available for transfer and reuse
6 and consequently no land use conflict exists. Cumulative impacts from community reuse and
7 the SFOBB are discussed in Chapter 5. Please refer to the EIS for the east spans realignment for
8 discussion of impacts of that project (see <http://www.dot.ca.gov/dist4/sfobb/sfobbfeis.htm>).
9 There would be no significant land use impact, and no mitigation is proposed.

10 4.1.2 Alternative 2

11 *Significant and Mitigable Impact*

12 Impact: Land use policy (Factor 1). The City and County of San Francisco General Plan land use
13 designation for NSTI is Military. The zone classifications that would be required for Alternative
14 2 (i.e., Public, Residential, Mixed Use) would be inconsistent with the existing general plan
15 designation and zoning classification.

16 Mitigation. To achieve consistency between the selected reuse alternative and city policies, it
17 will be necessary to amend the San Francisco General Plan to include land use designations for
18 surplus property on Treasure Island and Yerba Buena Island prior to approving future land use
19 actions. NSTI would not be rezoned until the final reuse plan is adopted, at which time the City
20 and County of San Francisco should amend its Planning Code to be consistent with planned
21 land uses. Upon receiving a zoning designation, the area would be subject to the land use and
22 height and bulk regulations established by the zoning. These controls would be subject to the
23 Redevelopment Plan and its design for development standards and would likely include site
24 design measures, such as buffering, landscaping, screening, and setbacks, to ensure high quality
25 development and compatibility between land uses.

26 *Not Significant Impacts*

27 Land use policy (Factor 1). Implementing Alternative 2 would increase public access to existing
28 open space areas, including the San Francisco Bay shoreline, and would allow development of
29 recreational facilities, which would be substantially consistent with the anticipated priority use
30 designations for NSTI in the San Francisco Bay Plan. Specific development plans for reuse of
31 NSTI would be subject to BCDC permit authority, which would ensure consistency with the
32 Bay Plan. Alternative 2 would be in accordance with the Draft Reuse Plan guidelines and
33 would not conflict with Sustainability Plan objectives.

34 Land use compatibility–Treasure Island (Factor 2). This alternative would affect the vicinity
35 character by increasing the amount of land devoted to open space and recreation, decreasing
36 the amount of land used for institutional purposes, eliminating former military housing, and
37 introducing new publicly oriented uses. Land use changes would include constructing an
38 approximately 150-acre (61-ha) golf course, approximately 20-acre (8-ha) wildlife habitat and
39 observation area or possible wetlands, amphitheater, entertainment center, 2 hotels, a

1 conference center, and an expanded marina. This alternative would involve more demolition
2 than Alternative 1.

3 With the exception of Building 1, the wedding chapel, firefighter training school, brig, fitness
4 center, and gym, the buildings on Treasure Island would be demolished to accommodate
5 proposed reuses. Implementing this alternative would involve more building demolition and,
6 with the proposed golf course and wildlife area, would create more open space and recreation
7 areas than Alternative 1. As with Alternative 1, proposed reuse of Treasure Island would
8 provide additional opportunities for public access to open space and recreational resources,
9 publicly oriented attractions, and access to the Bay. These land use changes would be
10 consistent with applicable Draft Reuse Plan policies, which guide future development to ensure
11 land use compatibility under reuse, and therefore would not be considered a significant land
12 use impact. No mitigation is proposed.

13 As with Alternative 1, proposed land uses would provide a compatible land use relationship
14 with the Job Corps facility and would provide trainees with employment opportunities.
15 Proposed reuse of Treasure Island would therefore not result in a significant land use impact to
16 the Job Corps facility. No mitigation is proposed.

17 Land use compatibility—Yerba Buena Island (Factor 2). As a result of implementing this alternative,
18 proposed reuse of Yerba Buena Island would affect the vicinity character by converting the
19 senior officers quarters to publicly oriented facilities, by developing new residential areas and
20 infilling existing residential areas, and by developing a bed and breakfast in place of existing
21 residential units on the Yerba Buena Island hilltop.

22 Proposed Yerba Buena Island development would be similar to Alternative 1, but more land
23 would be set aside for publicly oriented uses (i.e., hotel or bed and breakfast, conference center,
24 or restaurant facilities), and less would be devoted to residential uses. This development would
25 involve more demolition and construction than under Alternative 1. As with Alternative 1, the
26 proposed reuse of Yerba Buena Island would provide additional opportunities for public access
27 to open space and recreational resources, publicly oriented attractions, and access to the Bay.
28 These land use changes would be consistent with applicable Draft Reuse Plan policies, which
29 guide future development to ensure land use compatibility under reuse, and therefore would
30 not be considered a significant land use impact. No mitigation is proposed.

31 As with Alternative 1, proposed land use changes on Yerba Buena Island would be separate
32 and distinct from existing uses, and as such, implementing this alternative would not disrupt or
33 divide the physical arrangement of existing uses. The existing SFOBB or the proposed
34 realignment would not be affected by changes in land use that are part of community reuse.
35 Land on Yerba Buena Island permanently conveyed in fee to Caltrans to accommodate the
36 SFOBB realignment is no longer available for transfer and reuse and consequently no land use
37 conflict exists. Cumulative impacts from community reuse and the SFOBB are discussed in
38 Chapter 5. Please refer to the EIS for the east spans realignment for discussion of impacts of
39 that project (see <http://www.dot.ca.gov/dist4/sfobb/sfobbfeis.htm>). Therefore, there would
40 be no significant land use impact, and no mitigation is proposed.

1 **4.1.3 Alternative 3**

2 *Significant and Mitigable Impact*

3 Impact: Land use policy (Factor 1). The City and County of San Francisco General Plan land use
4 designation for NSTI is Military. The zone classifications that would be required for Alternative
5 3 (i.e., Public, Residential, Mixed Use) would be inconsistent with the existing general plan
6 designation and zoning classification.

7 *Mitigation.* To achieve consistency between the selected reuse alternative and city policies, it
8 will be necessary to amend the San Francisco General Plan to include land use designations for
9 surplus property on Treasure Island and Yerba Buena Island prior to approving future land use
10 actions. NSTI would not be rezoned until the final reuse plan is adopted, at which time the City
11 and County of San Francisco should amend its Planning Code to be consistent with planned
12 land uses. Upon receiving a zoning designation, the area would be subject to the land use and
13 height and bulk regulations established by the zoning. These controls would be subject to the
14 Redevelopment Plan and its design for development standards and would likely include site
15 design measures, such as buffering, landscaping, screening, and setbacks, to ensure high quality
16 development and compatibility between land uses.

17 *Not Significant Impacts*

18 Land use policy (Factor 1). Implementing Alternative 3 would increase public access to existing
19 open space areas, including the San Francisco Bay shoreline, and would allow development of
20 recreational facilities, which would be substantially consistent with the anticipated priority use
21 designations for NSTI in the San Francisco Bay Plan. Specific development plans for reuse of
22 NSTI would be subject to BCDC permit authority, which would ensure consistency with the
23 Bay Plan. Alternative 3 would be in accordance with the Draft Reuse Plan guidelines and
24 would not conflict with Sustainability Plan objectives.

25 Land use compatibility—Treasure Island (Factor 2). With the exception of the themed attraction
26 and sports complex, proposed reuse of Treasure Island under Alternative 3 would be
27 accommodated within existing facilities. Existing city leases on Treasure Island, including
28 leases for film production, a firefighting school, brig, marina, and elementary school, would
29 continue through 2015 under this alternative. Implementing this alternative would require
30 minimal demolition and construction. As with Alternative 1, proposed reuse of Treasure Island
31 would provide additional opportunities for public access to open space and recreational
32 resources, publicly oriented attractions, and access to the Bay. Proposed land uses under
33 Alternative 3 would be less responsive to the objectives of the Draft Reuse Plan than those of
34 Alternatives 1 and 2; however, land use changes would be consistent with applicable Draft
35 Reuse Plan policies, which guide future development to ensure land use compatibility under
36 reuse, and therefore would not be considered a significant land use impact on the vicinity
37 character of Treasure Island. No mitigation is proposed.

38 As with Alternatives 1 and 2, proposed land uses would provide a compatible land use
39 relationship with the Job Corps facility and would provide trainees with employment
40 opportunities. Proposed reuse of Treasure Island would therefore not result in a significant
41 land use impact to the Job Corps facility. No mitigation is proposed.

1 Land use compatibility—Yerba Buena Island (Factor 2). As a result of implementing this alternative,
2 proposed reuse of Yerba Buena Island would represent a change in the intensity of some land
3 uses and would introduce publicly oriented use of the island. Proposed land use changes
4 would affect the vicinity character by converting the senior officer quarters to publicly oriented
5 facilities, by developing new residential areas and infilling existing residential areas, and by
6 developing a bed and breakfast in place of existing residential units on the Yerba Buena hilltop.
7 New uses would require expanding some existing buildings, demolition, and new construction.
8 Using the Nimitz House (Quarters 1), a NRHP listed property, as a conference center would
9 continue through 2015 under this alternative.

10 At full buildout, overall land uses would be similar to Alternative 1 at a reduced scale. Fewer
11 residential units would be constructed, and only the senior officers quarters would be
12 developed as a conference facility. As with Alternative 1, proposed reuse of Yerba Buena Island
13 would provide additional opportunities for public access to open space and recreational
14 resources, publicly oriented attractions, and access to the Bay. These land use changes would
15 be consistent with applicable Draft Reuse Plan policies, which guide future development to
16 ensure land use compatibility under reuse, and therefore would not be considered a significant
17 land use impact on the vicinity character of Yerba Buena Island. No mitigation is proposed.

18 As with Alternatives 1 and 2, proposed land use changes on Yerba Buena Island would be
19 separate and distinct from existing uses, and as such, implementing this alternative would not
20 disrupt or divide the physical arrangement of existing uses. The existing SFOBB or the
21 proposed realignment would not be affected by changes in land use that are part of community
22 reuse. Land on Yerba Buena Island permanently conveyed in fee to Caltrans to accommodate
23 the SFOBB realignment is no longer available for transfer and reuse and consequently no land
24 use conflict exists. Cumulative impacts from community reuse and the SFOBB are discussed in
25 Chapter 5. Please refer to the EIS for the east spans realignment for discussion of impacts of
26 that project (see <http://www.dot.ca.gov/dist4/sfobb/sfobbfeis.htm>). There would be no
27 significant land use impact, and no mitigation is proposed.

28 4.1.4 No Action Alternative

29 The No Action Alternative would retain NSTI in a caretaker status under Navy control. No
30 disposal action would occur. Existing structures and grounds would be maintained to
31 minimize deterioration. Environmental cleanup would continue in conformance with federal
32 requirements and ongoing military programs, but cleanup would occur over a longer period of
33 time than Alternatives 1 through 3, as no reuse requirements would need to be met.

34 Land use policy (Factor 1). The No Action Alternative would be consistent with the existing
35 General Plan and zoning designation (Military). There would be no need for the City and
36 County of San Francisco to amend its General Plan. There would be no land use impact.

37 Land use compatibility—Treasure Island (Factor 2). Continuing use of Treasure Island would be
38 accommodated within existing facilities. Existing city leases on Treasure Island, including
39 leases for film production, a firefighting school, brig, marina, and elementary school, would
40 continue through 2015 under this alternative. These leases would continue until expired or
41 terminated. Implementing this alternative would require minimal demolition and construction

4.1 Land Use

1 by Navy to comply with safety standards. There are no proposed land use changes, and there
2 would be no impact on the vicinity character of Treasure Island.

3 As there are no proposed land use changes, this alternative would provide a compatible land
4 use relationship with the Job Corps. There would be no land use impact.

5 Land use compatibility—Yerba Buena Island (Factor 2). Continuing use of Yerba Buena Island
6 would be accommodated within existing facilities. Existing leases on Yerba Buena Island
7 would continue until expired or terminated. Implementing this alternative would require
8 minimal demolition and construction by Navy to comply with safety standards. There are no
9 proposed land use changes, and there would be no impact on the vicinity character of Yerba
10 Buena Island.

4.2 VISUAL RESOURCES

Visual resources impacts may be associated with changes in either the built or natural environment and can be short-term or long-term. The presence of heavy machinery during construction of buildings and infrastructure is considered a short-term impact. Large trucks, bulldozers, and other construction equipment would be visible within the construction/demolition zone. Long-term visual changes are associated with demolishing existing buildings and structures and constructing new buildings and structures. The significance of visual effects is very subjective and depends upon the degree of alteration, the scenic quality of the area disturbed, the sensitivity of the viewers, and the viewer perception of features in the viewshed.

Visual resources impacts have been qualitatively evaluated by assessing the nature and extent of change in landscape character that would occur under each disposal and reuse alternative. The visual analysis addresses landscape modifications as seen from notable public viewpoints within the viewshed.

Factors considered in determining whether an alternative would have a significant impact on visual resources included the extent or degree to which its implementation would:

1. Degrade scenic quality within the region of influence (defined as Treasure Island, as seen from any public view or viewpoint);
2. Damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings; or
3. Create a new source of substantial light or glare that might adversely affect day or nighttime views in the area.

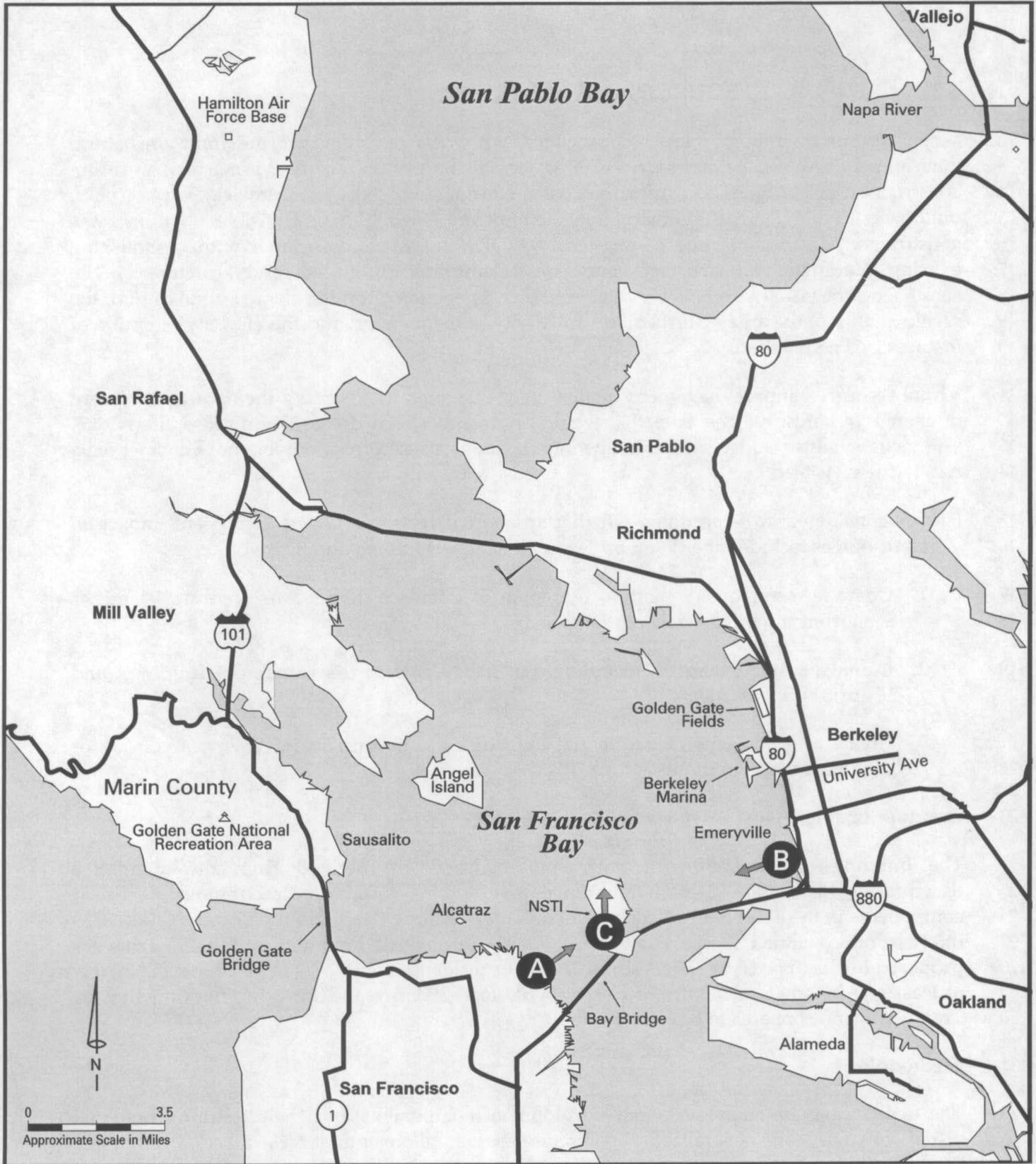
Assumptions for Visual Analysis

The building or development components analyzed are derived from the alternative descriptions in Chapter 2, with additional assumptions based on descriptions of similar components in the Draft Reuse Plan and consultation with city staff and the EIS team. Based on information contained in the Draft Reuse Plan, the analysis assumed building heights for proposed hotels to be 65 to 75 feet (20 to 23 m), for residential buildings to be 40 feet (12 m), for at least one landmark structure to be up to 100 feet (30.5 m), and for other buildings in the Treasure Island core area to be 60 feet (18 m).

Methodology

The descriptions of major proposed development components and their resulting potential visual impacts are generalized. Computer-based photosimulations, taken from three viewpoints identified in Figure 4-1, have been used to supplement the analysis.

These three viewpoints were selected because they are representative public viewpoints from the East Bay, West Bay, and NSTI that are used intensively and that could be affected by the reuse alternatives. The simulations are based on three dimensional (3D) computer-aided



A, B, and C show the vantage point for the visual simulations in this

Legend

- A** End of Pier 7, San Francisco (Figure 4-2)
- B** Emeryville Shoreline Park (Figure 4-3)
- C** Public Parking at the Gate to Treasure Island (Figure 4-4)

Map Viewpoint Used in Photosimulations

Bay Area, California

Figure 4-1

1 design (CAD) data provided by Navy from photogrammetry of the site, with limited digitizing
2 and 3D modeling of proposed building heights based on the data sources and assumptions
3 discussed above. The simulations show the maximum volume, or extent, of possible
4 development. Because the alternatives are conceptual at this time, the simulations do not show
5 design detail. However, the simulations do provide a conservative estimate of the extent of
6 development.

7 Major reuse alternative development components considered in this analysis include new
8 buildings (at least two stories high), new larger structures, loss of visually prominent buildings
9 or large areas of buildings by demolition, creation or loss of large areas of open space, and
10 establishment or loss of major tree groups/canopy. The proposed reuse of buildings and
11 facilities without substantial modification would not be identified as having an effect on visual
12 resources or urban design.

13 4.2.1 Alternative 1

14 This alternative would alter visual resources in primary views from the San Francisco
15 waterfront, East Bay shore, SFOBB, and in more background views from other locations around
16 San Francisco Bay. Significant adverse impacts are not anticipated, and some of the potential
17 anticipated effects could be beneficial. Beneficial effects could result from aesthetic
18 enhancements of Treasure Island areas and increased opportunities for public access to
19 panoramic views of the San Francisco Bay Area.

20 *Not Significant Impacts*

21 *Views from Surrounding Viewshed*

22 San Francisco waterfront and open space (Factors 1 and 2). The principal development components
23 of this alternative visible from the San Francisco waterfront area would include the proposed
24 hotels on Treasure Island, a landmark structure, the themed attraction and other mid-rise
25 buildings, and development on the top and west-facing slopes of Yerba Buena Island. Figure
26 4-2 shows the view from Pier 7 on The Embarcadero, which is a conservative-case
27 representation of other Embarcadero and waterfront views; at locations to the south (e.g., the
28 Ferry Building area and its nearby promenade), similar but slightly more distant views would
29 be obtained. These are considered highly sensitive viewing locations, where the most viewers
30 come to sightsee or to enjoy the scenic views during breaks in their workday.

31 The proposed hotel development and a landmark structure in particular would alter the profile of
32 Treasure Island and Yerba Buena Island from this viewpoint, with the potential for visual contrast
33 to be similar in prominence to other landscape features in the panoramic field of view. The hotels,
34 if extending up to approximately 75 feet (23 m) tall along much of their frontage, would introduce
35 a visual mass nearly 2 times that of the existing 40-foot (12-m) prominent Building 1. The
36 landmark structure, assumed to be up to 100 feet (30.5 m), would also create a higher profile but
37 may not have the visual mass of the hotels. However, the existing landscape is dominated by
38 nearby Buildings 2 and 3, originally constructed as aircraft hangers, because their scale and mass
39 exceed that of any other existing or proposed buildings on the island.

1 The hotels and the landmark structure, in combination with these other large buildings, would,
2 therefore, be prominent above existing and newly established landscaping, especially if painted
3 in pale colors. From The Embarcadero between the SFOBB and approximately Pier 39, the
4 proposed hotel buildings and landmark structure would partially block views of the East Bay
5 hills, although the hotels would be low in comparison with Yerba Buena Island. From more
6 elevated viewpoints such as Coit Tower in San Francisco, the taller buildings would partially
7 block views of the water beyond Treasure Island.

8 A small hotel (up to approximately 60 feet [18 m] high) on Yerba Buena Island would be clearly
9 visible if located in a prominent location, but it would be visually subordinate to the rest of the
10 island in most viewing conditions, assuming that it is designed with a tapering profile (setbacks
11 at higher stories), as proposed in the Reuse Plan Urban Design policies for the hillside at Yerba
12 Buena Island. Furthermore, the elevation at the proposed hotel location would be below the
13 summit of Yerba Buena Island.

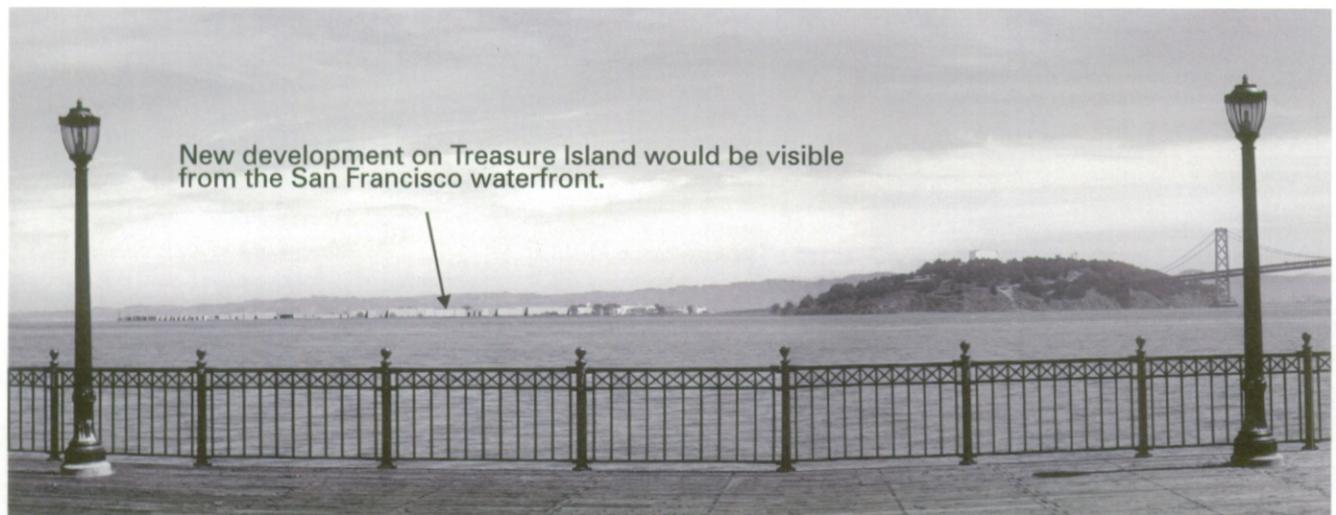
14 These visual effects are identified as not significant because, although there could be new visual
15 contrasts, the scale and urban design of the development, as proposed in the Reuse Plan Urban
16 Design policies, such as protecting natural character and stepping of buildings following the
17 slope, would not be expected to substantially degrade existing scenic quality. In terms of view
18 blockage, similar views of the East Bay hills could still be obtained elsewhere in the same
19 panorama and from other locations along the waterfront. No mitigation is proposed.

20 Views from Bay Islands and Marin County (Factors 1 and 2). In views from Alcatraz, Angel Island,
21 and background locations, such as the Golden Gate Bridge and Sausalito, the same components
22 as described for the San Francisco waterfront views would be the most prominent. However,
23 greater viewing distances between Treasure Island and these Bay islands and Marin County
24 would reduce the visual effects of proposed development compared to other landscape features
25 in view. At these long viewing distances, the development would not substantially block views
26 of the East Bay hills or SFOBB. Visual impacts also would not be significant from these
27 viewpoints. No mitigation is proposed.

28 Views from East Bay shoreline (Factors 1 and 2). The principal components of Alternative 1 that
29 would be visible from the East Bay shoreline parks and open space include the proposed hotels
30 on Treasure Island, landmark structure, themed attraction, and other mid-rise buildings (Figure
31 4-3). Some screening of new buildings provided by mature trees and lower buildings on the
32 east side of Treasure Island would reduce the degree of change. The higher buildings on
33 Treasure Island would introduce a visual mass approximately seven times that of the existing
34 hangars seen from this location. Because the island is seen against the taller backdrop of the
35 San Francisco skyline from most viewpoints, such as the Emeryville and Watergate shoreline,
36 Berkeley Marina, and Golden Gate Fields on the Berkeley and Albany border, the resulting
37 visual contrast would remain subordinate to other landscape features in the panoramic field of
38 view. The proposed buildings would not block views of the Golden Gate and would only
39 partially block views of lower elevations of San Francisco without interrupting the skyline. A
40 somewhat different situation would occur at the publicly accessible open space near the radio
41 station facilities near the eastern landfall of the SFOBB. From here, partial blockage of views of
42 the Golden Gate Bridge would be increased by the taller buildings and themed attraction, in



Existing View



Simulated View

Pier 7, a public open space pier, is a popular spot for pedestrians along Herb Caen Way, and is closer to Treasure Island than other San Francisco waterfront points.

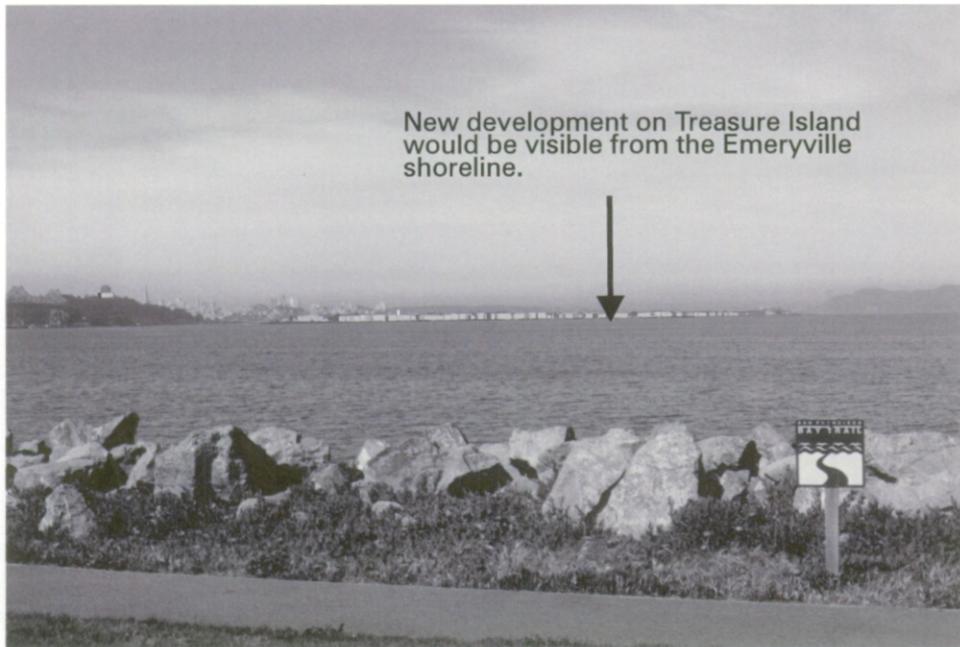
***Existing View/Simulated View of Alternative 1,
Seen from the End of Pier 7, San Francisco***

San Francisco, California

Figure 4-2



Existing View



Simulated View

The point of Emeryville Shoreline Park is closest to Treasure Island of the East Bay vantage points.

***Existing View/Simulated View
of Alternative 1,
Seen from the Emeryville Shoreline Park***

Emeryville, California

Figure 4-3

1 addition to some existing view obstruction of the Golden Gate Bridge deck from this angle by
2 vegetation on Treasure Island. The impact is not significant because of the relatively low levels
3 of use experienced at this location in comparison with the major eastshore parks and the
4 availability of other unobstructed views from similar locations northward along the shoreline.
5 However, should the Bay Trail bring substantially increased levels of use to the area, this partial
6 view blockage from this alternative could be experienced by more people. No mitigation is
7 proposed.

8 Views from vessels on San Francisco Bay (Factors 1 and 2). In views from ferries and recreational
9 vessels on the Bay, the main components that would be visible include the taller buildings
10 (primarily hotels), development on Yerba Buena Island, and shoreline open space. Visual
11 contrasts of proposed development would be similar in prominence to other existing features
12 (notably Yerba Buena Island, the SFOBB, and hangar buildings) in most views. Some beneficial
13 effects could occur with improved landscaping and new nonindustrial development. View
14 blockage is not a major concern because of the mobility of the viewing position and the free
15 access to views over open water. No mitigation is proposed.

16 Views from eastshore highway and SFOBB (Factors 1 and 2). In views from the eastshore highway
17 and SFOBB, the buildings at the heights proposed in the Draft Reuse Plan would not project
18 substantially above the San Francisco skyline and therefore would not block the skyline from
19 view. Further, because the viewer would be in vehicles moving in traffic and because the views
20 are either partially blocked by SFOBB railings, other highway structures, or trees on Yerba
21 Buena Island, or are at almost a 90 degree angle from the direction of travel (on the eastshore
22 highway), the views are considered less sensitive and the impacts less significant than the
23 pedestrian views from open space. It is estimated that the proposed hotel buildings would be
24 visible and would at least partially block the views of the Golden Gate Bridge for up to two
25 minutes for passengers of vehicles traveling westward on the SFOBB, but this would occur only
26 from more distant portions of the bridge nearer sea level. Some views of Alcatraz Island from
27 the SFOBB also could be blocked. No mitigation is proposed.

28 Views from urban and residential areas (Factors 1 and 2). Off-site urban and residential areas with
29 views to Treasure Island are principally at background viewing distances from both the East
30 Bay hills (8 miles) and from higher elevations in San Francisco (under 2 miles). View blockage
31 is not considered a major issue at this viewing distance, and scenic qualities would not be
32 reduced by the proposed hotel and mid-rise buildings. Depending on the design of the themed
33 attraction and the landmark structure, there is the potential for either beneficial or adverse
34 visual impacts because of the introduction of a new visual structure in the center of the Bay.
35 Design of any themed attraction or landmark structure would undergo further public review.
36 No mitigation is proposed.

37 *Views from Within the Reuse Plan Area*

38 On-site views and visual access (Factors 1 and 2). Development on Treasure Island would replace
39 aging industrial and military facilities with urban design elements intended to be more
40 attractive and in closer character with the rest of the San Francisco waterfront. Scenic quality
41 could be enhanced through additional landscaping and attention to aesthetic design in
42 developing new buildings, the themed attraction, and other visitor-serving facilities, according
43 to design guidelines in the Reuse Plan and Urban Design policies of the General Plan.

1 It is assumed that existing view corridors to the Bay would be kept open, with additional open
2 space perimeter opportunities and public access opportunities provided along the waterfront
3 open space. The hotel complex would block some existing view corridors. In scenic views at
4 public locations, such as the gateway area, and in views around Clipper Cove, most existing
5 scenic features would be retained. The expanded marina with approximately 300 slips and 100
6 tie-up buoys, compared to the existing 100 slips, would add new visual elements to what is now
7 a relatively undisturbed cove with primarily open water, although the expanded marina would
8 be to some extent visually consistent with the existing marina and pier features along Clipper
9 Cove. The proposed hotels and themed attraction buildings would alter the setting for the
10 older buildings (Figure 4-4), but are intended to be compatible with the existing features.
11 Assuming compatibility in design with the older structures in on-site views, this reuse
12 alternative would not result in significant visual impacts. No mitigation is proposed.

13 *Light and Glare*

14 Night lighting and glare (Factor 3). The proposed development under Alternative 1 would
15 include placement of light sources for safety, identification, and security. Proposed
16 development, including the hotels, lighting along the Treasure Island waterfront, themed
17 attraction lighting, and lighting of other buildings or features would be prominent at night from
18 closer views, such as the San Francisco waterfront and SFOBB. Themed attraction lighting also
19 may be visible from more distant viewpoints, such as from the East Bay. However, assuming
20 lighting levels are similar to urban lighting at the San Francisco waterfront, with shielding to
21 prevent upward glare visible to SFOBB drivers, this alternative is not expected to introduce
22 light and glare at nuisance levels. Lighting could visually enhance the island at night.

23 Glare, a condition where light is uncomfortably harsh, could impact effective vision or even
24 temporarily blind an individual and is therefore a safety concern. Glare could be generated
25 from new buildings that are composed of reflective materials, such as glass or polished metal.
26 Glare can be controlled through design controls and building material restrictions as part of the
27 standard design review and approval processes of the City and County of San Francisco. For
28 example, City Planning Commission Resolution 9212 generally prohibits use of mirrored or
29 reflective glass in new buildings. Compliance with this resolution would avoid related glare
30 impacts. No mitigation is proposed.

31 **4.2.2 Alternative 2**

32 Under this alternative a mix of land uses would be established, with emphasis on publicly
33 oriented development and open space and recreation. It mainly differs from Alternative 1 by
34 including more open space, especially by replacing residential uses on the northern half of
35 Treasure Island with a golf course and wildlife observation or potential wetlands area. It also
36 would provide for a wider open space strip along the southern and eastern waterfront of
37 Treasure Island, more marina development in Clipper Cove, and an expanded hotel and bed
38 and breakfast area on the western end of Yerba Buena Island.

39 This alternative would in many respects be visually similar to Alternative 1. The most
40 prominent development components (hotels and themed attraction structures) would alter
41 visual resources in views from the San Francisco waterfront, East Bay shoreline, SFOBB, and in



Existing View



Simulated View

This view would greet the motorist approaching Treasure Island from the causeway and arriving ferryboat passengers.

***Existing View/Simulated View of
Alternative 1 Seen from Public Parking
at the Gate to Treasure Island***

Treasure Island, California

Figure 4-4

1 more background views from other locations around San Francisco Bay. These impacts would
2 not be significant. Beneficial effects could include those that result from aesthetic enhancement
3 of existing areas with strong industrial or utilitarian character on Treasure Island and increased
4 opportunities for the public to experience panoramic views of the San Francisco Bay Area.

5 *Not Significant Impacts*

6 Not significant impacts would be similar to those described for Alternative 1 because of the
7 similarity in major visual development components. Specific visual effects that would be
8 similar to or less than those described for Alternative 1 include views from Bay islands and
9 Marin County, views from the East Bay shoreline, views from vessels on San Francisco Bay,
10 views from urban and residential areas, and night lighting and glare. The greater open space
11 and wildlife habitat on Treasure Island in this alternative would not alter its current appearance
12 from most viewpoints in the surrounding Bay Area since the existing housing is of low profile
13 and not conspicuous at greater viewing distances; this impact would, therefore, be less than
14 with Alternative 1. Those visual effects that would be different from Alternative 1 are described
15 below.

16 Views from San Francisco waterfront and open space (Factors 1 and 2). The proposed hotel complex
17 on Yerba Buena Island would be of lower height than in Alternative 1 and therefore would be
18 less visible and more similar to existing conditions. In other respects, this alternative would
19 have similar not significant impacts to those described for Alternative 1. No mitigation is
20 proposed.

21 Views from eastshore highway and SFOBB (Factors 1 and 2). The expanse of open space at the
22 north end of Treasure Island would be apparent to passengers of buses and other vehicles with
23 seating raised above the level of the bridge railing. The extent of green space would be
24 conspicuous from this elevated vantage point and would represent a change in comparison
25 with the existing military and industrial character of NSTI. In other respects, this alternative
26 would have similar not significant impacts to those described for Alternative 1. No mitigation
27 is proposed.

28 On-site views and visual access (Factors 1 and 2). Development on Treasure Island under this
29 alternative would replace aging industrial and military facilities with elements and open space
30 intended to be in character with the rest of the Bay Area shoreline. Effects compared to
31 Alternative 1 would include greater extent and visibility of open space on Treasure Island. The
32 wider open space corridor along the waterfront around the themed attraction also would
33 enhance views to and from the shoreline. Compared to the existing 100-slip marina, the
34 expanded marina would accommodate between 500 to 675 slips and tie-up buoys and would
35 add new visual elements to what is now a relatively undisturbed cove with primarily open
36 water. However, these additional boat slips would not result in a significant visual impact
37 because they would not substantially degrade or obstruct views to and from NSTI and would
38 be to some extent visually consistent with the existing marina and pier features along Clipper
39 Cove.

40 Light and glare (Factor 3). Urban Design policies in the Reuse Plan and General Plan, and City
41 Planning Commission Resolution 9212 regarding use of mirrored or reflective glass, also would

1 apply to this alternative. Less development under this alternative would result in even less
2 glare than under Alternative 1. No mitigation is proposed.

3 **4.2.3 Alternative 3**

4 Under Alternative 3, a mix of land uses would be established, but with many of the structures
5 remaining. Compared to Alternative 1, Alternative 3 would have slightly more designated open
6 space (approximately 157 acres [64 ha] versus approximately 135 acres [55 ha]) and would be
7 more similar to existing conditions. Other differences from Alternative 1 include no new hotel
8 buildings, no marina expansion in Clipper Cove, and a greatly reduced area for the themed
9 attraction (approximately 39 acres [16 ha] compared with approximately 59 acres [24 ha] for
10 Alternative 1).

11 This alternative generally would have less visual impact than Alternatives 1 and 2. This
12 alternative would not include the taller and most prominent project components of the other
13 two reuse alternatives. Views of Treasure Island under this alternative would not appear very
14 different from the island's existing appearance, except for the prominent themed attraction
15 structure and some visible development on Yerba Buena Island. The latter features would
16 appear as described in Alternative 1.

17 Although the proposed themed attraction structures may still be visible in closer-range and
18 background views, this alternative would have more limited effects on visual resources in views
19 from the San Francisco waterfront, East Bay shoreline, SFOBB, and in more background views
20 from other locations around San Francisco Bay because of its reduced development scale. Other
21 effects could be beneficial, such as those that would result from limited aesthetic enhancement
22 of existing areas on Treasure Island and increased opportunities for the public to experience
23 panoramic views of the San Francisco Bay Area.

24 ***Not Significant Impacts***

25 Specific visual effects that would be less than those described for Alternative 1 include views
26 from Bay islands and Marin County, views from vessels on San Francisco Bay, views from the
27 eastshore highway and the SFOBB, views from urban and residential areas, and night lighting
28 and glare. Those visual effects that would be different than Alternatives 1 and 2 are described
29 below.

30 Views from San Francisco waterfront and open space (Factors 1 and 2). The profile of development
31 on Treasure Island would not appear very different from its existing appearance, with the
32 exception of the prominent themed attraction structure and the hotel on Yerba Buena Island.
33 The latter features would appear as described in Alternative 1. No mitigation is proposed.

34 Views from East Bay shoreline (Factors 1 and 2). Treasure Island would not appear very different
35 from its existing appearance, except for the prominent themed attraction structure and some
36 visible development at the east end of Yerba Buena Island. The latter features would appear as
37 described in Alternative 1. No mitigation is proposed.

38 On-site views and visual access (Factors 1 and 2). New development in the themed attraction area
39 would replace aging industrial and military facilities with elements and open space intended to

1 be in character with the rest of the public Bay Area shoreline. Clipper Cove would remain in its
2 existing condition and therefore would retain the scenic features of this undisturbed open water
3 area compared to the other reuse alternatives that propose expansion of this facility. It is
4 assumed that public access would be provided around the entire perimeter of Treasure Island,
5 offering some of the same beneficial effects of increased visual access as the other alternatives.

6 Light and glare (Factor 3). Urban Design policies in the Reuse Plan and General Plan, and City
7 Planning Commission Resolution 9212 regarding use of mirrored or reflective glass, also would
8 apply to this alternative. No mitigation is proposed.

9 4.2.4 No Action Alternative

10 The No Action Alternative would be a continuation of the caretaker status of NSTI surplus
11 property. Existing interim leases would be allowed to expire. No existing buildings would be
12 rehabilitated or demolished, and no new buildings would be constructed. The only activity on
13 the site would be from maintenance personnel and security staff. Although modification of
14 appearance due to boarding up of some windows and doors may occur, the general physical
15 character of the property would remain the same. This change in appearance would not be
16 visible from off-site views in San Francisco and the East Bay and therefore would be no impact.
17 In addition, access to NSTI under caretaker status would be limited; therefore, no on-site visual
18 impacts would occur. Reduced staffing and the lower level of activity could affect the character
19 of the site; however, the visual contrast would be weak, and impacts would be less than
20 significant. Existing views would not be disrupted or blocked. There would be no substantial
21 visual changes to the site as a result of the No Action Alternative; therefore, no visual impacts
22 would occur.

23

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1 **4.3 SOCIOECONOMICS**

2 Potential direct and indirect impacts on employment, population, housing, and schools
3 resulting from disposal and reuse of NSTI are discussed in this section. Factors considered in
4 determining whether an alternative would have significant socioeconomic impacts include the
5 extent or degree to which its implementation would:

- 6 1. Cause a decrease in local or region of influence employment;
- 7 2. Induce growth or concentrations of population;
- 8 3. Create a demand for additional housing in San Francisco, Oakland, or the surrounding
9 communities; or
- 10 4. Generate student enrollment that exceeds the capability of responsible authorities to
11 accommodate.

12 The significance of socioeconomic impacts is related to the social and economic characteristics
13 of the region. In general, the more jobs generated, the more beneficial the socioeconomic effects
14 that may occur. Population and housing growth may have ramifications for other
15 environmental issues, such as potential traffic increases and the need for additional
16 infrastructure improvements. The significance of these other impacts is defined in pertinent
17 sections of this document.

18 Table 4.3-1 summarizes the estimated number of jobs, housing units, and residents that would
19 be associated with each reuse alternative. Assumptions used to generate the population and
20 employment estimates are provided in Appendix F, Socioeconomics.

21 The impacts presented in this section have been evaluated against the baseline environmental
22 conditions presented in Chapter 3. Navy recognizes that changes in the environmental
23 conditions may have occurred in the period between the baseline years and the present.
24 Although these changes may result in different, and in many cases, lesser impacts to certain
25 resources, changes to the impact analysis based on any interim change in resource conditions is
26 not appropriate.

27 **4.3.1 Alternative 1**

28 *Not Significant Impacts*

29 Employment (Factor 1). Alternative 1 would create approximately 4,920 full-time equivalent jobs
30 (information on employment generation factors is provided in Appendix F). Generation of this
31 employment would occur over a period of 15 or more years, dependent on market conditions,
32 land availability, and other factors.

33 Most of the jobs associated with this alternative would be created through reuse of parts of
34 Treasure Island for a themed attraction, hotel and conference facilities, restaurants, film studios,
35 community services, and a variety of recreational facilities. The largest employment generator
36 would be the themed attraction, which would employ approximately 3,500 persons, although
37 some of these jobs would be seasonal. Of the approximately 4,920 full-time equivalent jobs
38 created, full-time equivalent employment associated with the themed attraction is estimated to

1 be approximately 1,750. After the themed attraction, the next largest employment generators
2 would be hotel facilities, the film industry, and restaurants.

3 **Table 4.3-1. Estimated Jobs, Population, and Housing Units for**
4 **Baseline Conditions and Reuse Alternatives**

	<i>Baseline Conditions (Year)</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>
EMPLOYMENT¹				
Treasure Island	-	4,740	2,640	2,015
Yerba Buena Island	-	180	180	180
Total employment	3,635 ^{3,4} (1988)	4,920	2,820	2,195
RESIDENT POPULATION				
Treasure Island ²	-	6,020	90	3,060
Yerba Buena Island	-	875	620	450
Total population	4,500 ^{3,4} (1990)	6,895	710	3,510
HOUSING UNITS				
Treasure Island	-	2,500	0	905
Yerba Buena Island	-	350	250	160
Total housing units	1,045 ^{3,4} (1990)	2,850	250	1,065
<p>1 Jobs are reported as full-time equivalent jobs; seasonal jobs would increase the total number of jobs.</p> <p>2 Treasure Island resident population includes brig inmates in all scenarios.</p> <p>3 Numbers represent totals for 1988 (military employment) and 1990 (civilian employment, population, and housing); data were not available for Treasure Island and Yerba Buena Island separately.</p> <p>4 Data are reported for Census Tract 179.02, which encompasses both Treasure Island and Yerba Buena Island, and therefore includes US Coast Guard data, but are representative of NSTI baseline conditions.</p> <p>Note: A "-" indicates that information was not available.</p> <p>Sources: DON 1988b; US Department of Commerce 1990; DON 1997I.</p>				

5 The number of civilian jobs created under Alternative 1 would offset the 750 jobs lost to closure
6 and would result in a net gain of 4,170 jobs. Therefore, the projected increase in employment
7 under Alternative 1 would be a beneficial impact. No mitigation is proposed.

8 Population (Factor 2). The development of the reuse plan area would result in an increase in San
9 Francisco's population through the provision of new housing units. As shown in Table 4-1,
10 development under Alternative 1 would result in an estimated total population of about 6,895
11 people. This estimate is based on the assumption that the average household size for existing
12 and newly constructed housing units is 3.2 and 2.3 persons, respectively (see Appendix F.2,
13 Socioeconomics). Subtracting the baseline residential population of approximately 4,500 in
14 1990, the net population increase would be approximately 2,395 persons. This increase of 2,395
15 persons represents 0.3 percent of the projected population in San Francisco by 2015 and is
16 accounted for in ABAG's projected population increases; therefore, this is not considered a
17 significant impact (ABAG 2001). No mitigation is proposed.

1 Housing (Factor 3). Alternative 1 would provide up to 2,850 housing units on the site at
2 buildout (Table 4-1). Approximately 290 units (200 on Treasure Island and 90 on Yerba Buena
3 Island) are existing military housing that would be converted to civilian use. Because none of
4 the NSTI housing units were previously available to the general public, the total contribution to
5 the City and County of San Francisco housing market would be 2,850 units.

6 Alternative 1 also addresses housing needs of the homeless. TIHDI initially would manage the
7 leasing of 375 units (285 units on Treasure Island and 90 units on Yerba Buena Island) from the
8 existing housing stock on the two islands, with promise of additional land for TIHDI housing if
9 new housing is developed. As stated in the Draft Reuse Plan, TIHDI would be provided one
10 acre for every 1,000 new residential units developed (San Francisco 1996e). The buildout
11 housing mix would range from affordable to market-rate under this agreement.

12 Given San Francisco's lack of affordable housing and its lack of housing for those employed in San
13 Francisco, Alternative 1 would have a beneficial impact on housing by providing housing for all
14 income levels and by increasing the number of housing units within the San Francisco housing
15 market (ABAG 1995b). No mitigation is proposed.

16 Jobs-housing balance (Factor 3). In regional terms, Alternative 1 would add both housing (2,850
17 units) and jobs (4,920 employees) to the City and County of San Francisco. Assuming that 55
18 percent of people working in San Francisco are expected to live in the city in 2015, and given
19 that the average number of San Francisco workers in households with workers is 1.6 (MTC
20 undated in San Francisco 1998b; Keyser Marston Associates and Gabriel Roche 1997 in San
21 Francisco 1998b), projected employment growth under Alternative 1 translates to about 1,690
22 San Francisco households. The housing units provided under Alternative 1 can easily
23 accommodate this demand. Because Alternative 1 provides housing units in excess of the
24 demand generated by employment under this alternative, Alternative 1 would not create a
25 demand for additional housing in San Francisco. Alternative 1 would not result in an adverse
26 jobs-housing balance or a significant impact. No mitigation is proposed.

27 Schools (Factor 4). As described in section 3.3, enrollment at elementary schools throughout the
28 SFUSD is at or near capacity; at the middle school and high school levels, some schools are at
29 capacity, while others are underenrolled. Enrollment in the district has remained constant since
30 1990, averaging approximately 63,000 to 64,000 students.

31 Under Alternative 1, the Treasure Island Elementary School would continue to operate. The
32 middle school and high school students at NSTI would be bussed to San Francisco schools. As
33 demonstrated by US Census data, San Francisco households have fewer children compared to
34 Navy households on NSTI. In 1990, there were 1,134 school-aged children (5 to 19 years of age)
35 at NSTI, representing 25 percent of the total NSTI population. In comparison, 96,173 school-
36 aged children lived in San Francisco in 1990, only 13 percent of the total citywide population
37 (US Department of Commerce 1990). Given the population figure of 6,895 derived in the
38 previous section, the number of school-aged children living at NSTI under this alternative is
39 estimated to be approximately 896 in 2015, or about 80 percent of the number of school-aged
40 children who resided there in 1990. This would lead to an overall decrease in enrollment for the
41 San Francisco school system. This is not considered a significant impact. No mitigation is
42 proposed.

1 4.3.2 Alternative 2

2 *Not Significant Impacts*

3 Employment (Factor 1). Alternative 2 would create approximately 2,820 full-time equivalent jobs
4 (information on employment generation factors is provided in Appendix F). This alternative
5 would generate this level of employment over a period of roughly 15 or more years, dependent
6 on market conditions, land availability, and other factors.

7 As in Alternative 1, many new jobs would be associated with a themed attraction or similar
8 visitor attraction. This facility would create about 1,400 seasonal and permanent jobs, or
9 approximately 700 full-time equivalent jobs. The remaining new jobs would be created through
10 the development of a major hotel and conference facility on Treasure Island, as well as smaller
11 scale bed-and-breakfast and reception facilities on Yerba Buena Island.

12 The number of civilian jobs created under Alternative 2 would offset the 750 jobs lost to closure
13 and would result in a net gain of 2,070 jobs. Therefore, the projected increase in employment
14 under Alternative 2 would be a beneficial impact, and no mitigation is proposed.

15 Population (Factor 2). The development of the reuse plan area would result in an increase in San
16 Francisco's population through the provision of new housing units. As shown in Table 4-1,
17 development under Alternative 2 would result in an estimated total population of about 710
18 people; this is because no housing other than the brig is proposed on Treasure Island.
19 Subtracting the baseline residential population of approximately 4,500 in 1990, there would be a
20 net population decrease of approximately 3,790 persons. This decrease represents 0.5 percent of
21 the projected citywide population of 810,500 residents by 2015 and would not be a significant
22 impact. No mitigation is proposed.

23 Housing (Factor 3). Alternative 2 would provide up to 250 housing units on Yerba Buena Island
24 at build-out (Table 4-1); no housing other than the brig is proposed on Treasure Island.
25 Approximately 50 units on Yerba Buena Island are existing military housing that would be
26 converted to civilian use. Because none of the NSTI housing units were previously available to
27 the general public, the total gain would be 250 units. There may be replacement homeless
28 housing for TIHDI to manage and lease elsewhere off-island. By increasing the number of
29 housing units, Alternative 2 would provide a beneficial impact. No mitigation is proposed.

30 Jobs-housing balance (Factor 3). In regional terms, Alternative 2 would add both housing and
31 jobs to the City and County of San Francisco. However, only 250 housing units would be
32 provided for 2,820 full-time equivalent jobs. Assuming that 55 percent of people working in
33 San Francisco are expected to live in the city in 2015, and given that the average number of San
34 Francisco workers in households with workers is 1.6 (MTC undated in San Francisco 1998b;
35 Keyser Marston Associates and Gabriel Roche 1997 in San Francisco 1998b), projected
36 employment growth under Alternative 2 translates to about 970 San Francisco households.
37 Therefore, implementing Alternative 2 would create a demand for additional housing in San
38 Francisco. Based on current vacancy rates, this increased housing demand could be
39 accommodated by existing vacant housing units in San Francisco.

1 An imbalance of housing to jobs is not a physical environmental effect but rather a regional
2 economic and social issue. Certain indirect project and cumulative effects caused by the
3 imbalances in local employment and housing opportunities would be physical environmental
4 impacts, primarily transportation and related air quality impacts created by increased
5 commuting distances for employees living farther from their place of employment. The
6 physical impacts of NSTI's housing supply shortfall under Alternative 2 relate primarily to
7 project-induced and cumulative traffic and air quality effects. These impacts can be reduced
8 through proposed transportation demand management measures (see section 4.5,
9 Transportation and Chapter 5, Cumulative Projects and Impacts).

10 It is expected that demands for new employees on Treasure Island and Yerba Buena Island
11 under Alternative 2 would be met by the local Bay Area population. Outside of San Francisco,
12 it would be reasonable to presume that any additional housing demand not met locally would
13 be dispersed over the regional housing market and would not be concentrated in any particular
14 location. This additional demand would therefore not have a significant impact on regional
15 housing conditions and land development. No mitigation is proposed.

16 Schools (Factor 4). Under Alternative 2, the Treasure Island Elementary School would be closed.
17 Based on a residential population of 710, the population of school-aged children associated with
18 Alternative 2 would be approximately 92 children in 2015, or less than a tenth the number who
19 resided at NSTI in 1990. These children would be bussed to San Francisco elementary, middle,
20 and high schools. The 80 children represent about 13 percent of the population projected to be
21 living in the 250 units on Yerba Buena Island. Because the 1,042-person decrease in the
22 population of school-aged children at NSTI would more than offset the loss of the 852-student
23 capacity elementary school, there would be an overall decrease in enrollment for San Francisco
24 schools. The impact on schools would be less than significant. No mitigation is proposed.

25 4.3.3 Alternative 3

26 *Not Significant Impacts*

27 Employment (Factor 1). Alternative 3 would create approximately 2,195 full-time equivalent jobs
28 (information on employment generation factors is provided in Appendix F). Generation of this
29 employment would occur over a period of 15 or more years, dependent on market conditions,
30 land availability, and other factors.

31 The majority of new jobs would be associated with mixed use/office space and film production
32 on Treasure Island. The themed attraction would create about 700 seasonal and permanent
33 jobs, or approximately 350 full-time equivalent jobs. The remaining new jobs would be created
34 through the development of smaller scale bed-and-breakfast and reception facilities on Yerba
35 Buena Island.

36 The number of civilian jobs created under Alternative 3 would offset the 750 jobs lost to closure
37 and would result in a net gain of 1,445 jobs. Therefore, the projected increase in employment
38 under Alternative 3 would be a beneficial impact, and no mitigation is proposed.

39 Population (Factor 2). The development of the reuse plan area would result in an increase in San
40 Francisco's population through the provision of new housing units. As shown in Table 4-1,

1 development under Alternative 3 would result in an estimated total population of about 3,510
2 people. Subtracting the baseline residential population of approximately 4,500 in 1990, there
3 would be a net population decrease of approximately 990 persons. This decrease represents 0.1
4 percent of the projected citywide population of 810,500 residents by 2015 and would not be a
5 significant impact. No mitigation is proposed.

6 Housing (Factor 3). Alternative 3 would provide up to 1,065 housing units on the site at build-
7 out (Table 4-1). Approximately 995 units (905 on Treasure Island and 90 on Yerba Buena Island)
8 are existing military housing that would be converted to civilian use. Since the military housing
9 units were not previously available to the civilian market, the total gain would be 1,065 units.

10 Alternative 3 also addresses housing needs of the homeless. The 200 units of the existing housing
11 units on Treasure Island would be made available to TIHDI for leasing. The buildout housing mix
12 would range from affordable to market-rate under this agreement. Through provision of housing
13 for all income levels and by increasing the number of housing units, Alternative 3 would provide
14 a beneficial impact. No mitigation is proposed.

15 Jobs-housing balance (Factor 3). In regional terms, Alternative 3 would add both housing (1,065
16 units) and jobs (2,195 employees) to the City and County of San Francisco. Assuming that 55
17 percent of people working in San Francisco are expected to live in the city in 2015, and given
18 that the average number of San Francisco workers in households with workers is 1.6 (MTC
19 undated in San Francisco 1998b; Keyser Marston Associates and Gabriel Roche 1997 in San
20 Francisco 1998b), projected employment growth under Alternative 1 translates to about 755 San
21 Francisco households. The housing units provided under Alternative 3 can easily accommodate
22 this demand. Because Alternative 3 provides housing units in excess of the demand generated
23 by employment under this alternative, Alternative 3 would not create a demand for additional
24 housing in San Francisco. Alternative 3 would not result in an adverse jobs-housing balance or
25 a significant impact. No mitigation is proposed.

26 Schools (Factor 4). Under Alternative 3, the Treasure Island Elementary School would continue
27 to operate. The projected 2015 population described above would include approximately 456
28 school-aged children, or about 40 percent of the school-aged children who resided on NSTI in
29 1990. The middle school and high school students at NSTI would be bussed to San Francisco
30 schools. Because the number of school-aged children at NSTI, and also in San Francisco, would
31 decline, the schools impact would be less than significant. No mitigation is proposed.

32 4.3.4 No Action Alternative

33 Employment (Factor 1). Under this alternative, property available for disposal at NSTI would
34 continue under federal ownership in an inactive caretaker status, and existing interim leases
35 would be allowed to expire. There would be minimal use of the property and facilities under
36 this alternative. Ongoing activities would include maintenance, to minimize deterioration, and
37 essential security operations.

38 The caretaker program would provide employment for approximately 50 personnel on the site.
39 This basewide level of employment represents a decrease of 700 jobs from the operational
40 baseline. Employment generated by existing leases to nonfederal agencies would cease,

1 because these leases would be allowed to expire and would not be renewed or extended. Given
2 the number of jobs available in the region, this would be a less than significant impact.

3 Population, housing, jobs-housing balance, and schools (Factors 2, 3, and 4). Under the No Action
4 Alternative, the population would decrease to zero once the interim leases expire and the
5 existing military housing would no longer be used. In addition, the No Action Alternative
6 would mean no additional school children enrolling in the SFUSD. No impacts would occur
7 under the No Action Alternative.

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1 **4.4 CULTURAL RESOURCES**

2 Potential impacts to cultural resources, including historical and archaeological resources,
3 resulting from disposal and reuse of NSTI are discussed in this section. Factors considered in
4 determining whether an alternative would have a significant impact on cultural resources
5 include the extent or degree to which implementation would cause either of the following:

- 6 • a substantial and adverse change in the characteristics that qualify a historic resource for
7 listing on the NRHP; or
- 8 • a substantial and adverse change in the characteristics that qualify an archaeological
9 resource for listing on the NRHP.

10 Under Section 106 of the NHPA, an undertaking has an effect on a historic property when it
11 alters characteristics of the property that may qualify it for inclusion in the NRHP. The
12 regulations implementing the NHPA define the term "adverse effect" to include the transfer,
13 lease, or sale of the property out of federal ownership, in the absence of adequate and legally
14 enforceable restrictions or conditions, to ensure the long-term preservation of the property.

15 As discussed in section 3.4, the Navy's analysis of the impacts to cultural resources of disposal
16 and reuse of federal property is limited to the Navy property that is suitable for transfer.
17 Treatment, preservation, and compliance with applicable federal legislation for the properties
18 determined to be historically significant and potentially affected by the undertaking will be
19 accomplished through the agreement and consultation with the SHPO, and through specific
20 measures contained in the MOA discussed below.

21 **Identified Cultural Resources**

22 Yerba Buena Island. On Yerba Buena Island, Navy property suitable for transfer contains the
23 following Navy structures that are listed in or eligible for listing in the NRHP: the Torpedo
24 Building (Building 262), the Senior Officers Quarters Historic District, which consists of
25 Quarters 1 through 7, three garages (Buildings 83, 205, and 230), and the associated landscaping
26 elements. Quarters 1, the Nimitz House, was listed in the NRHP in 1991. Landscaping
27 elements and the setting of the properties are considered qualities that contribute to the
28 significance of the structures. In addition to these properties, there are areas on the island that
29 have been identified as archaeologically sensitive zones. These areas could contain unrecorded
30 sites below the ground surface or underwater adjacent to the island. Sites in these areas may be
31 discovered during construction or some other activity requiring deep excavations (see Figure 3-
32 3 in section 3.4).

33 Treasure Island. On Treasure Island, the following Navy structures are listed in or eligible for
34 listing in the NRHP: Building 1 (Administration Building), Building 2 (Hall of Transportation),
35 and Building 3 with Building 111 as a structural element (the former Palace of Fine and
36 Decorative Arts).

1 **The Memorandum of Agreement**

2 Navy must comply with Section 106 of the NHPA, which requires consultation among federal
 3 agencies, the SHPO, the ACHP, and other interested parties. Navy and the SHPO have
 4 prepared an MOA in order to ensure Section 106 compliance with regard to historic properties
 5 (a copy of the signed MOA is included as Appendix H). Compliance with the MOA is intended
 6 to ensure that project effects are not significant and that preservation measures are
 7 implemented. The MOA includes preservation provisions concerning Navy actions prior to
 8 disposal and long-term preservation plans following Navy disposal. For example, upon
 9 conveyance all historic properties identified in the MOA shall be subject to the City of San
 10 Francisco Planning Code, Article 10, Preservation of Historical, Architectural, and Aesthetic
 11 Landmarks. Signatories to the MOA include Navy and the SHPO. Following an invitation to
 12 participate, the ACHP has declined their opportunity to comment. The City and County of San
 13 Francisco is included as an invited signatory. The Bay Band of Miwok Indians, the California
 14 Preservation Foundation, and the San Francisco Historic Architecture Heritage (society) are
 15 included as concurring parties.

16 **4.4.1 Alternative 1**

17 The proposed reuse for the NRHP-listed and NRHP-eligible buildings under Alternatives 1-3 is
 18 summarized in Table 4.4-1.

19 **Table 4.4-1. Reuse Plans for NRHP-listed and NRHP-eligible Buildings on NSTI**

<i>Property</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>
Senior Officers Quarters Historic District, Yerba Buena Island	Conference/reception/restaurant, possible residential	Conference/reception/restaurant, possible residential	Conference/reception/restaurant, possible residential
Torpedo Building (Building 262), Yerba Buena Island	Residential live/work units	Restaurant	Restaurant
Building 1, Treasure Island	Mixed use, including museum, office, retail	Mixed use, including museum	Mixed use, including museum
Building 2, Treasure Island	Film production	Demolition for construction of themed attraction	Film production
Building 3 (including related Building 111), Treasure Island	Film production	Demolition for construction of themed attraction	Film production
<i>Source: San Francisco 1996e</i>			

20 **Not Significant Impacts**

21 Loss of potentially significant historic resources (Factor 1). To accommodate planned reuse of
 22 historic properties, as described in Table 4.4-1, the buildings would likely need to be
 23 rehabilitated. Alternative 1 would include a substantial level of rehabilitation and construction
 24 on Treasure Island. Construction in the vicinity of the historic properties at NSTI, particularly
 25 Building 1, Building 2, and Building 3/111, may be out of character with the historic buildings

1 and their setting and could have an adverse effect on these properties. Although the proposed
2 themed attraction may restore Building 1, Building 2, and Building 3/111, such construction
3 could alter the character-defining features of Treasure Island (i.e., the setting in which these
4 historic properties are located).

5 The prepared MOA requires that any rehabilitation work performed prior to final Navy
6 disposal conform to the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for*
7 *Rehabilitating Historic Buildings* (US Department of the Interior 1996). Following Navy disposal,
8 the MOA stipulates that the properties would be subject to San Francisco Planning Code,
9 Article 10, Preservation of Historical and Aesthetic Landmarks, to insure long-term protection
10 of the properties and their setting. The impact, therefore, would not be significant.

11 Loss of potentially significant archaeological resources (Factor 2). Implementing Alternative 1 could
12 result in the repair, relocation, or construction of supporting infrastructure on Yerba Buena
13 Island in archaeologically sensitive zones (Figure 3-3). The MOA identifies required measures
14 to guard against the potential loss of important information about the prehistoric or historic
15 occupation of the island and for the unexpected discovery of archaeological remains.
16 Implementing the MOA would insure that archaeological resources would not be significantly
17 affected.

18 4.4.2 Alternative 2

19 A summary of the proposed reuse for the NRHP-listed and NRHP-eligible buildings under
20 Alternative 2 appears in Table 4.4-1.

21 *Significant and Not Mitigable Impact*

22 Impact: Demolition of historic resources (Factor 1). Alternative 2 involves the demolition of
23 Building 2 and Building 3 on Treasure Island, both of which are eligible for listing on the
24 NRHP. This demolition would result in the loss of significant historic resources.

25 *Mitigation.* This adverse effect can be lessened by recording the affected resources to the
26 standards of either the Historic American Buildings Survey (HABS) or the Historic American
27 Engineering Record (HAER). HABS/HAER recordation would reduce but would not eliminate
28 the adverse effect caused by demolishing NRHP-eligible resources. Available mitigation
29 measures, short of preservation, would not reduce impacts of demolition below the threshold of
30 significance. This mitigation measure is consistent with recordation requirements stipulated by
31 the MOA.

32 *Not Significant Impacts*

33 Loss of potentially significant historic resources (Factor 1). Alternative 2 proposes alteration of
34 historic properties for reuse, as described in Table 4.4-1, construction in the vicinity of the
35 historic properties, or deterioration of vacant buildings after transfer. As described above for
36 Alternative 1, the MOA requires that any rehabilitation work performed or any construction in
37 the vicinity of historic structures prior to Navy disposal conform to the Secretary of the
38 Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US
39 Department of the Interior 1996).

4.4 Cultural Resources

1 Following Navy disposal, the MOA stipulates that the properties would be subject to San
2 Francisco Planning Code, Article 10, Preservation of Historical and Aesthetic Landmarks, to
3 insure long-term protection and historically appropriate rehabilitation of the structures and
4 their setting. Following provisions in the MOA, rehabilitation of historic properties would not
5 constitute a significant impact.

6 Loss of potentially significant archaeological resources (Factor 2). Implementing Alternative 2 could
7 result in the repair, relocation, or construction of supporting infrastructure on Yerba Buena
8 Island in archaeologically sensitive zones (Figure 3-3). The MOA identifies measures that guard
9 against the potential loss of important information about the prehistoric or historic occupation
10 of the island and for the unexpected discovery of archaeological remains. Implementing the
11 MOA would insure that archaeological resources would not be significantly affected.

12 4.4.3 Alternative 3

13 A summary of the proposed reuse for the NRHP-listed and NRHP-eligible buildings under
14 Alternative 3 appears in Table 4.4-1. The projected reuse of NRHP-listed or NRHP-eligible
15 buildings would be identical to that of Alternative 1, although on a smaller scale.

16 *Not Significant Impacts*

17 Loss of potentially significant historic resources (Factor 1). Similar to Alternative 1, Alternative 3
18 proposes alteration of historic properties for reuse, as described in Table 4.4-1, construction in
19 the vicinity of the historic properties that affects the character of those properties, or
20 deterioration of vacant buildings after transfer. As described above for Alternative 1, the
21 prepared MOA requires that any rehabilitation work performed or any construction in the
22 vicinity of historic structures prior to Navy disposal conform to the Secretary of the Interior's
23 *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (US Department of
24 the Interior 1996).

25 Following Navy disposal, the MOA stipulates that the properties would be subject to San
26 Francisco Planning Code, Article 10, Preservation of Historical and Aesthetic Landmarks.
27 Article 10, which includes preservation measures that protect the character of historic districts.
28 The MOA ensures that potential reuse activities would not result in construction that
29 diminishes the character of historic resources.

30 Loss of potentially significant archaeological resources (Factor 2). Similar to Alternative 1,
31 implementing Alternative 3 could result in the repair, relocation, or construction of supporting
32 infrastructure on Yerba Buena Island in archaeologically sensitive zones (Figure 3-3). The MOA
33 identifies measures that guard against the potential loss of important information about the
34 prehistoric or historic occupation of the island and for the unexpected discovery of
35 archaeological remains. Following the measures within the MOA would eliminate any
36 potential significant impacts.

37 4.4.4 No Action Alternative

38 Deterioration of historic property and archaeologically sensitive areas (Factors 1 and 2). The No
39 Action Alternative would be a continuation of the caretaker status of NSTI surplus property.

1 There would be minimal use of the property and facilities under this alternative. Ongoing
2 activities would include maintenance to minimize deterioration and essential security
3 operations. No structures would be demolished or reused, and NRHP-listed and NRHP-eligible
4 buildings would not be affected. Archaeologically sensitive areas would remain under the control
5 and jurisdiction of Navy and would be afforded the protection of federal historic and
6 archaeological preservation laws and regulations.

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1 4.5 TRANSPORTATION

2 Potential transportation impacts resulting from disposal and reuse of NSTI are discussed in this
3 section. Potential impacts are characterized by the changes in the movement of vehicles on
4 freeways, ramps, and intersections, changes in demand for transit services, changes in delivery
5 and loading operations (truck traffic), parking availability, and emergency access on and off the
6 site. A summary of the transportation features assumed for the reuse alternatives is included in
7 Appendix F.3-B. Factors considered in determining whether an alternative would have a
8 significant transportation, traffic, and circulation impact included the extent or degree to which
9 its implementation would:

- 10 1. Exceed the capacity of on- and off-ramps, cause LOS at intersections and freeway
11 mainline segments to deteriorate from LOS A through D to LOS E or F, cause LOS to
12 deteriorate from LOS E to LOS F, or increase congestion at intersections currently
13 operating at (or anticipated to operate at) LOS F (San Francisco 2000);
- 14 2. Increase demand on public transportation in excess of planned or anticipated capacity at
15 time of increase;
- 16 3. Increase demand for bicycle and pedestrian facilities in excess of planned or anticipated
17 capacity at time of increase;
- 18 4. Increase truck traffic;
- 19 5. Result in parking demand exceeding the supply; or
- 20 6. Impede emergency access on or off the site.

21 **Traffic Analysis Methodology**

22 Traffic impacts of the reuse alternatives are described for 2010, which is representative of year
23 2015 conditions (the assumed build out year for all the reuse alternatives). The year 2010 was
24 selected since it is a common benchmark for long-range planning by regional agencies such as
25 ABAG and MTC, including planning for regional transportation improvements. The MTC has
26 developed forecasts of year 2010 travel demand based on anticipated land use and
27 demographic patterns developed by ABAG (Projections '94), and the planned and funded
28 transportation improvements identified by the nine Bay Area counties, Caltrans and MTC. An
29 update of the year 2025 conditions is presented in Appendix F.3-A.

30 NSTI is connected to the region by only one route—the SFOBB/I-80. SFOBB/I-80 traffic
31 volumes are controlled by metering lights in the westbound approach and are constrained by
32 the number of traffic lanes on the SFOBB in the eastbound approach. Further, as described in
33 section 3.5.2, the SFOBB has operated and is expected to continue to operate at capacity during
34 peak periods. (The SFOBB replacement alternative may improve traffic operations but
35 congestion is unlikely to be affected [Caltrans and FHWA 2000]). Therefore, traffic at NSTI
36 would not be substantially affected by changes in the regional growth or transportation systems
37 and so, the established regional growth and transportation projections for 2010 are therefore
38 taken to be an accurate representation of year 2015 conditions (see Appendix F.3-B, Future
39 Travel Forecasts).

1 Typical traffic conditions were evaluated for weekday A.M. and P.M. peak hours (during the
2 morning and evening commute periods). In addition, because some of the reuse alternatives
3 would generate a large amount of weekend traffic and because the SFOBB has high traffic
4 volumes during the weekend midday period, the weekend midday peak hour also was
5 evaluated.

6 Impacts from each reuse alternative to SFOBB/I-80 freeway operations and local intersections
7 on Treasure Island were determined by the increase in delay caused by the addition of reuse-
8 generated traffic. Impacts on SFOBB/I-80 operations were evaluated using the FREQ11
9 freeway travel operations model. Impacts at local intersections were evaluated using the
10 TRAFFIX software program, which incorporates methodologies from the 1994 update to the
11 Highway Capacity Manual (Transportation Research Board 1994). Traffic impacts at the SFOBB
12 ramps were evaluated by comparing projected demand under the reuse alternatives (expressed
13 in number of vph) to existing ramp capacity and queuing. The SFOBB East Span is currently
14 under construction. As a part of this project, the eastbound on-ramp on the east side of the
15 tunnel will be reconstructed with standard merging distance, and the traffic impact analysis for
16 this ramp incorporates this change.

17 Traffic impact analyses for closing military installations typically compare traffic conditions for
18 each reuse alternative to baseline traffic conditions (traffic levels at or just prior to the decision
19 to close NSTI [1993]) under projected build out time frames (year 2010). However, because the
20 SFOBB has operated, does operate, and will continue to operate at or above capacity, comparing
21 peak period traffic generated by the reuse alternatives to a traffic condition that combines
22 baseline trip generation for the reuse plan area with projected year 2010 traffic generation in the
23 region would not change either the SFOBB/I-80 mainline or ramp impact analysis or
24 conclusions. The following analysis presents average daily trip (ADT) traffic and peak-hour
25 vehicle-trip volumes for each of the three reuse alternatives and compares these volumes to
26 future (year 2010) background conditions without the project (No Action Alternative). Reuse
27 traffic volumes also are compared to a fully operational baseline (representing conditions at the
28 time of or prior to closure [1993]) for informational purposes. Table 4.5-1 identifies vehicle-trips
29 generated by the three reuse alternatives and a fully operational baseline; these trips form the
30 basis of the transportation impact analysis on the SFOBB/I-80 corridor and its associated ramps.

31 **Future Travel Forecasts**

32 The development of year 2010 travel forecasts used the regional MTC model to identify traffic
33 growth in the region and the land use components of the reuse alternatives to determine travel
34 demand to and from NSTI. A detailed description of the methodology and assumptions is
35 presented in Appendix F.3-B. This approach includes a cumulative impacts assessment for
36 2010, taking into account both the growth expected at NSTI and the growth forecasts for San
37 Francisco and the Bay Area.

**Table 4.5-1. Estimated NSTI Vehicle-trip Generation¹
Weekday Daily, A.M. and P.M. Peak Hour (2010)²**

	1993 EXISTING (OPERATIONAL BASELINE) ⁴			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
	Weekday Daily	A.M. Peak Hour	P.M. Peak Hour	Weekday Daily	A.M. Peak Hour	P.M. Peak Hour	Weekday Daily	A.M. Peak Hour	P.M. Peak Hour	Weekday Daily	A.M. Peak Hour	P.M. Peak Hour
Total Vehicle Trips ³	6,480	442	475	10,525	960	1,555	6,140	385	775	5,390	610	800
1	Includes inbound and outbound trips. Does not include vehicle-trips for persons arriving at ferry terminals in San Francisco and the East Bay by auto (see Tables 4.5-2 and 4.5-3 for total vehicle-trip numbers).											
2	The A.M. peak hour of 8:00 to 9:00 A.M. occurs within the A.M. peak period of 6:00 to 9:00 A.M. The P.M. peak hour of 5:00 to 6:00 P.M. occurs within the P.M. peak period of 3:00 to 7:00 P.M.											
3	Total vehicle-trips do not include any internal trips since they would be walking, bicycle, or shuttle trips.											
4	Trips are presented for 6:00 A.M. to 6:00 P.M. period.											
<i>Source:</i> DON 1997d; DON 1986.												

1 4.5.1 Alternative 1

2 *Vehicle Trips*

3 Weekday and weekend vehicle-trips projected to be generated in 2010 under Alternative 1 are
4 shown in Tables 4.5-2 and 4.5-3, respectively. This alternative is estimated to generate
5 approximately 960 vehicle-trips during the weekday A.M. peak hour, 1,555 vehicle-trips during
6 the weekday P.M. peak hour, and 1,440 vehicle-trips during the weekend midday peak hour.
7 Vehicle-trips would be by private auto, carpool vehicles, taxis, limousines, vanpools, and buses,
8 including tour buses and public transit buses. In comparison, there were approximately 442
9 vehicle-trips during the weekday A.M. peak hour and 475 vehicle-trips during the weekday P.M.
10 peak hour under fully operational baseline conditions (Table 4.5-2).

11 *Significant and Mitigable Impacts*

12 Impact: Increased volumes and queuing on two SFOBB/I-80 Yerba Buena Island ramps (Factor 1).
13 Alternative 1 would result in traffic volumes that exceed the capacities of two ramps: the
14 SFOBB/I-80 Yerba Buena Island westbound on-ramp on the west side of Yerba Buena Island,
15 and the eastbound off-ramp on the west side of Yerba Buena Island. The remainder of the on-
16 and off-ramps would operate within their given capacities, as discussed below under Not
17 Significant Impacts. Figure 3-5 in section 3.5 shows on- and off-ramp locations, while Table
18 4.5-4 summarizes ramp volumes and queuing. The ramps are discussed separately below.

19 SFOBB/I-80 Yerba Buena Island westbound on-ramp (west side). The projected traffic
20 demands during the A.M., P.M., and weekend midday peak hours would exceed the current
21 ramp capacity of 330 vph. The projected demands on the westbound on-ramp

Table 4.5-2
Estimated Vehicle-trip Generation by Travel Mode¹
Weekday Daily, A.M. and P.M. Peak Hour (2010)²

<i>Mode</i>	<i>Alternative 1</i>			<i>Alternative 2</i>			<i>Alternative 3</i>		
	Daily	A.M.	P.M.	Daily	A.M.	P.M.	Daily	A.M.	P.M.
Auto	9,210	875	1,390	5,200	330	660	4,790	545	715
Vanpool/Other	995	60	120	700	45	85	470	50	65
Bus	320	25	45	240	10	30	130	15	20
<i>Total NSTI Vehicle-trips</i>	10,525	960	1,555	6,140	385	775	5,390	610	800
Auto trips to Ferry Terminals ³	7,575	450	975	6,945	150	900	1,310	100	175
<i>Total Vehicle-trips</i> ⁴	18,100	1,140	2,530	13,085	535	1,675	6,700	710	975

¹ Includes inbound and outbound trips.

² The A.M. peak hour of 8:00 to 9:00 A.M. occurs within the A.M. peak period of 6:00 to 9:00 A.M. The P.M. peak hour of 5:00 to 6:00 P.M. occurs within the P.M. peak period of 3:00 to 7:00 P.M.

³ Ferry vehicle-trips include persons arriving at ferry terminals in San Francisco and the East Bay by auto.

⁴ Total vehicle-trips do not include any internal trips since they would be walking, bicycle, or shuttle trips.

Source: DON 1997d.

Table 4.5-3
Estimated Vehicle-trip Generation by Travel Mode¹
Weekend Daily and Midday Peak Hour (2010)²

<i>Mode</i>	<i>Alternative 1</i>		<i>Alternative 2</i>		<i>Alternative 3</i>	
	Daily	Midday	Daily	Midday	Daily	Midday
Auto	7,795	1,300	6,210	670	5,340	695
Vanpool/Other	980	100	1,020	85	745	55
Bus	295	40	275	30	155	20
<i>Total NSTI Vehicle-trips</i>	9,070	1,440	7,505	785	6,240	770
Auto trips to Ferry Terminals ³	6,465	780	6,830	820	1,210	130
<i>Total Vehicle-trips⁴</i>	15,535	2,220	14,335	1,605	7,450	900

¹ Includes inbound and outbound trips.

² The midday peak hour of 12:00 to 1:00 P.M. occurs within the midday peak period of 10:00 A.M. to 1:00 P.M..

³ Ferry vehicle-trips include persons arriving at ferry terminals in San Francisco and the East Bay by auto.

⁴ Total vehicle-trips do not include any internal trips since they would be walking, bicycle or shuttle trips.

Source: DON 1997d.

Table 4.5-4
SFOBB/I-80 Yerba Buena Island Ramp Demand Volumes and Maximum Queue
Existing and Year 2010 Weekday and Weekend Peak Hour Conditions

<i>Peak Hour/Ramp³</i>	<i>1993 Existing (Operational Baseline)</i>		<i>2010 Background Conditions (No Action)</i>		<i>2010 Alternative 1</i>		<i>2010 Alternative 2</i>		<i>2010 Alternative 3</i>	
	Volume	Queue⁴	Volume	Queue⁴	Volume	Queue⁴	Volume	Queue⁴	Volume	Queue⁴
Weekday A.M. Peak Hour										
westbound on-ramp ¹ (east side)	40	--	15	--	145	--	40	--	75	--
westbound on-ramp ² (west side)	90	--	35	--	335	7	90	--	170	--
westbound off-ramp (east side)	190	--	45	--	160	--	145	--	160	--
eastbound on-ramp (east side)	215	--	80	--	300	--	135	--	190	--
eastbound off-ramp (west side)	120	--	95	--	235	--	205	--	235	--
eastbound off-ramp (east side)	20	--	5	--	145	--	135	--	145	--
<i>Total ramp volumes</i>	675		275		1,320		750		975	
Weekday P.M. Peak Hour										
westbound on-ramp (east side)	25	--	15	--	85	--	70	--	65	--
westbound on-ramp (west side)	135	--	60	--	355	22	295	--	270	--
westbound off-ramp (east side)	240	--	35	--	375	--	145	--	160	--
eastbound on-ramp (east side)	250	--	80	--	300	--	275	--	250	--

Table 4.5-4
SFOBB/I-80 Yerba Buena Island Ramp Demand Volumes and Maximum Queue
Existing and Year 2010 Weekday and Weekend Peak Hour Conditions
 (continued)

<i>Peak Hour/Ramp³</i>	<i>1993 Existing (Operational Baseline)</i>		<i>2010 Background Conditions (No Action)</i>		<i>2010 Alternative 1</i>		<i>2010 Alternative 2</i>		<i>2010 Alternative 3</i>	
	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>
Weekday P.M. Peak Hour (continued)										
eastbound off-ramp (west side)	60	--	55	--	535	36	190	--	240	--
eastbound off-ramp (east side)	20	--	5	--	145	--	45	--	60	--
<i>Total ramp volumes</i>	<i>730</i>		<i>250</i>		<i>1,795</i>		<i>1,020</i>		<i>1,045</i>	
Weekend Midday Peak Hour										
westbound on-ramp (east side)	20	--	15	--	195	--	90	--	110	--
westbound on-ramp (west side)	125	--	35	--	570	239	260	--	320	--
westbound off-ramp (east side)	130	--	45	--	175	--	150	--	100	--
eastbound on-ramp (east side)	155	--	80	--	480	--	295	--	320	--
eastbound off-ramp (west side)	75	--	95	--	230	--	210	--	160	--
eastbound off-ramp (east side)	20	--	5	--	60	--	50	--	30	--
<i>Total ramp volumes</i>	<i>525</i>		<i>275</i>		<i>1,710</i>		<i>1,055</i>		<i>1,040</i>	

¹ Ramp located east of Yerba Buena Island tunnel.

² Ramp located west of Yerba Buena Island tunnel.

³ Maximum on-ramp capacity = 330 vehicles per hour per ramp; Maximum off-ramp capacity = 500 vehicles per hour per ramp. Total on-ramp capacity = 990 vehicles per hour and total off-ramp capacity = 1,500 vehicles per hour.

⁴ Number of vehicles.

Source: DON 1997d.

4.5 Transportation

1 west of the Yerba Buena Island tunnel would result in a queue of 7 vehicles during the A.M.
2 peak hour, 22 vehicles during the P.M. peak hour, and 239 vehicles during the weekend midday
3 peak hour. A queue of 239 vehicles would be approximately 4,800 feet (1,463 m) in length and
4 would constrain vehicular and bus movements throughout Yerba Buena Island and onto
5 Treasure Island. The wait time for vehicles in a queue of this length would be substantial. This
6 would be a significant and mitigable impact.

7 *Mitigation.* The following mitigation measures are recommended:

- 8 • As described in section 3.5, the SFOBB/I-80 Yerba Buena Island on-ramps are
9 substandard by current Caltrans standards, primarily in acceleration/deceleration
10 lengths, ramp radii, and sight distances. Upgrading the on-ramps would increase ramp
11 capacity and level of operation and decrease queuing impacts. However, upgrades to
12 the on-ramps may be constrained by the geology of the site (elevation change and
13 bedrock) and structural limitations due to the viaduct. Implement measures, including
14 signage and notices to residents, to encourage residents and visitors to use the second
15 westbound on-ramp east of the Yerba Buena Island tunnel. These measures would
16 reduce the queue at most times of the day and week except for the weekend midday
17 peak hour.
- 18 • Redirecting traffic during the weekend midday peak hour to the second on-ramp east of
19 the Yerba Buena Island tunnel could reduce the queue at the first westbound on-ramp
20 from 4,800 feet to approximately 3,225 feet (977 m). A queue of this length still would
21 extend beyond the Treasure Island Road southbound "Y" split and the intersection of
22 Macalla Road and Treasure Island Road but would not extend to the Treasure Island
23 Main Gate. Mitigation measures to reduce the volume of ramp traffic and thus further
24 reduce the queue length are described below.
- 25 • Implement a Travel Demand Management (TDM) program to further reduce traffic
26 generation during peak hours, especially during weekend peak hours. TDM measures
27 encourage individuals to travel during off-peak times or to use alternative means of
28 transportation to reduce the number of vehicles on area roadways during high-volume
29 periods. TDM measures may include flextime, employer-provided shuttles, subsidy of
30 transit services, limiting available visitor parking, and implementing tolls (see TDM
31 assumptions described in Appendix F.3-B). Based on nationwide averages, aggressively
32 implemented TDM measures are anticipated to reduce traffic volumes on these on-
33 ramps by between 6 and 12 percent during the weekday A.M. and P.M. peak hour
34 commute times.
- 35 • Implement additional or enhanced TDM measures, such as discounted ferry passes, flex-
36 time, public relations campaigns, and giving employees working on Treasure Island or
37 Yerba Buena Island preferential access to housing on NSTI, to encourage ferry use or to
38 encourage vehicle-trips during the nonpeak period to reduce queues on both westbound
39 on-ramps to tolerable levels.
- 40 • Monitor NSTI ramp traffic volumes to ensure that the transportation goals and
41 objectives established by the Draft Reuse Plan are successfully implemented.
42 Monitoring traffic volumes would inform San Francisco whether westbound on-ramp
43 traffic demand would reach capacity at each phase of development. If at some point it is

1 determined that demand on the westbound on-ramps would approach capacity, either
2 more aggressive TDM and transit improvements must be implemented or additional
3 developments should be delayed until such improvements are implemented.

- 4 • Monitor NSTI bus transit demand on an annual basis (or at each phase of development)
5 and ensure that planned services are implemented to meet or exceed demand. If the
6 results of this monitoring program indicate that there is an imbalance between transit
7 service and demand, the planned land use development on NSTI could be limited by
8 San Francisco (which has permit approval authority) until required services are funded
9 and implemented. Limiting land use development at NSTI would ensure that major
10 development would not occur until adequate transit service is provided. Implement a
11 similar monitoring program for ferry demand.
- 12 • Restripe the portion of Treasure Island Road between the Main Gate and the westbound
13 on-ramp on the west side of the Yerba Buena Island tunnel from two lanes to
14 accommodate three traffic lanes. The narrowest segment of the roadway is
15 approximately 32.5 feet (9.9 m) wide and could accommodate three 10-foot (3-m) lanes,
16 one in the northbound direction (inbound to Treasure Island) and two in the
17 southbound direction (outbound from Treasure Island). Reconfiguring this portion of
18 Treasure Island Road to accommodate two southbound lanes would ensure that
19 southbound vehicles traveling to the southern half of Yerba Buena Island would not be
20 impeded by vehicles queuing to enter the westbound on-ramp on the west side of the
21 tunnel.

22 Implementing all of these measures would reduce this impact to a not significant level.

23 SFOBB/I-80 Yerba Buena Island eastbound off-ramp (west side). The projected traffic increase
24 during the P.M. peak hour would exceed the current ramp capacity of 500 vph. The projected
25 demand of 535 vph would result in a maximum queue of 36 vehicles, or about 720 feet (219 m)
26 on the SFOBB. This could result in a significant impact if vehicles destined to exit the SFOBB/I-
27 80 were to queue along the left (fast-moving) lane of the freeway. This would be a significant
28 and mitigable impact.

29 *Mitigation*. The following mitigation measures are recommended:

- 30 • Use traffic control measures, such as signage, to encourage eastbound motorists to use
31 the second Yerba Buena off-ramp (the off-ramp on the east side of Yerba Buena Island).
32 By shifting demand to the off-ramp on the east side of Yerba Buena Island, projected
33 traffic volumes on each off-ramp could be reduced to approximately 340 vph, well
34 below the off-ramp capacities of 500 and 560 vph for the west side and east side off-
35 ramps, respectively.
- 36 • Implement TDM and monitoring measures to reduce traffic volumes on this off-ramp by
37 between 6 and 12 percent, as described above for increased volumes on the westbound
38 on-ramp on the west side of Yerba Buena Island. Even without shifting demand to the
39 eastbound off-ramp on the east side of Yerba Buena Island, this level of decrease by
40 TDM measures would lower traffic volumes on the eastbound off-ramp on the west side
41 of the tunnel to between approximately 503 and 471 vph. These reduced traffic volumes
42 would slightly exceed or be below the off-ramp capacity of 500 vph and would not
43 substantially constrain access to NSTI or substantially affect SFOBB traffic operations.

4.5 Transportation

1 Implementing both of these measures would reduce this impact to a not significant level.

2 Impact: Increased volume on SFOBB/I-80 Yerba Buena Island eastbound on-ramp (east side) (Factor 1).

3 The eastbound on-ramp on the east side of the tunnel will be upgraded as part of the SFOBB
4 East Span project. This ramp upgrade would significantly increase the ramp capacity from the
5 current 330 vph to approximately 900 vph, and, therefore, could accommodate the projected
6 demand in number of vehicles getting onto SFOBB East Span. While this ramp upgrade could
7 significantly reduce queuing impacts, it could potentially cause a secondary impact in terms of
8 potential impacts on SFOBB mainline operation.

9 *Mitigation.* Caltrans should consider the installation of a ramp metering device on this ramp in
10 the future. A ramp metering device would restrict the number of vehicles getting on the SFOBB
11 for the benefits of maintaining free flow conditions on the SFOBB.

12 Impact: Increased peak spreading on SFOBB/I-80 (Factor 1). Under Alternative 1, increased traffic
13 onto and off of the SFOBB during the A.M. peak period (6:30 to 9:30) and P.M. peak period (3:30
14 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from
15 LOS D to LOS F during the last hour of the A.M. peak period (8:30 to 9:30) and to deteriorate
16 from LOS B to LOS E or LOS F during the first hour of the P.M. peak period (3:30 to 4:30) (Table
17 F-22). The increase in other connecting regional freeways would likely be less.

18 *Mitigation.* Monitor traffic volumes to ensure that the transportation goals and objectives
19 established by the Draft Reuse Plan are successfully implemented. Monitoring traffic volumes
20 would inform San Francisco whether traffic onto or off of the SFOBB at each phase of
21 development is resulting in deterioration of traffic conditions on the SFOBB. If at some point it is
22 determined that traffic from NSTI is constraining the capacity of the SFOBB, either more
23 aggressive TDM and transit improvements must be implemented or additional developments
24 should be delayed until such improvements are implemented. Implementing this mitigation
25 measure would reduce this impact to a not significant level.

26 Impact: Transit operations – bus service to East Bay (Factor 2). Lack of direct bus service between
27 NSTI and the East Bay is a significant and mitigable impact (bus service between San Francisco
28 and Treasure Island is provided by MUNI). Approximately 4,290 weekday daily and
29 approximately 4,000 weekend daily bus transit patrons are estimated between NSTI and the
30 East Bay (Table 4.5-5). Without direct service, bus patrons would be required to travel to San
31 Francisco using the MUNI service, and transfer at the Transbay Terminal to AC Transit service
32 to the East Bay or to drive, which would add to the vehicular demand and congestion at the
33 Yerba Buena Island ramps and would be a significant and mitigable impact.

34 *Mitigation.* The following mitigation measures are recommended:

- 35 • Establishing direct transit service between NSTI and the East Bay would mitigate this
36 impact to a not significant level. To meet the estimated demand, bus service for
37 Alternative 1 would need to be at 10-minute headways (the interval between the trips of

**Table 4.5-5
Estimated Bus Transit Person-Trips
Weekday and Weekend Conditions**

<i>Origin/Destination</i>	<i>Alternative 1</i>			<i>Alternative 2</i>			<i>Alternative 3</i>		
Weekday Conditions	Daily	A.M.	P.M.	Daily	A.M.	P.M.	Daily	A.M.	P.M.
San Francisco ¹	5,310	440	750	3,620	135	460	2,140	240	325
East Bay	4,290	260	530	3,480	150	450	1,785	190	260
Total	9,600	700	1,280	7,100	285	910	3,925	430	585
Weekend Conditions	Daily		Midday	Daily		Midday	Daily		Midday
San Francisco ¹	4,760		670	3,960		455	2,255		300
East Bay	4,000		440	4,210		420	2,395		210
Total	8,760		1,110	8,170		875	4,650		510

¹ Transit trips from the South Bay and North Bay included with San Francisco.

Source: DON 1997d.

1 2 successive vehicles) throughout the day during the weekday and at 15-minute
2 headways throughout the day during the weekend.

- 3 • Monitor NSTI bus transit demand on an annual basis (or at each phase of development)
4 and ensure that planned services are implemented to meet or exceed demand. If the
5 results of this monitoring program indicate that there is an imbalance between transit
6 service and demand, the planned land use development on NSTI could be limited by
7 San Francisco (which has permit approval authority) until required services are funded
8 and implemented. Limiting land use development at NSTI would ensure that major
9 development would not occur until adequate transit service is provided. Implement a
10 similar monitoring program for ferry demand.
- 11 • Implement TDM measures to encourage transit rather than auto use. Such measures
12 include placing limits on parking and tolls (see TDM assumptions described in
13 Appendix F.3-B). Additional TDM measures, such as discounted ferry passes, public
14 relations campaigns, and housing preferences for NSTI employees, are described under
15 the mitigation for increased volumes on the SFOBB/I-80 westbound on-ramp and
16 eastbound off-ramp west of Yerba Buena Island.

17 Implementing all of these measures would reduce this impact to a not significant level.

18 ***Not Significant Impacts***

19 SFOBB/I-80 operations (Factor 1). Access to the SFOBB/I-80 from the East Bay at the toll plaza
20 metering lights and from San Francisco at the approach to the SFOBB would remain
21 constrained. Traffic volumes and operating conditions in 2010 are anticipated to be similar to
22 both fully operational base conditions and future year 2010 background conditions (No Action
23 Alternative) and are therefore considered not significant (Table 4.5-6). Since the SFOBB
24 westbound traffic volumes are controlled by signal lights west of the toll booth, westbound traffic
25 volumes on the bridge structure would not change (the metering lights only allow a sufficient
26 number of vehicles on the bridge to have a free flow operation) regardless of what level of
27 development occurs at Treasure Island.

28 Other ramp operations (Factor 1). The vehicle-trips generated by Alternative 1 would increase
29 ramp volumes (Table 4.5-4). Except for the westbound on-ramp (west of Yerba Buena Island)
30 and eastbound off-ramp (west of Yerba Buena Island), all other on- and off-ramps would
31 operate with the ramp demand less than the capacity during the weekday peak hour conditions
32 and would therefore not result in any significant queuing impacts.

33 Delivery/goods movement/loading (Factor 4). A guiding policy of the Draft Reuse Plan is to limit
34 truck service and freight delivery to off-peak hours (generally between 10:00 A.M. and 3:00 P.M.
35 and after 7:00 P.M. on weekdays). It is estimated that Alternative 1 typically would generate
36 approximately 57 service and freight delivery trips (18 inbound and 39 outbound) during the
37 A.M. peak hour and 39 service and freight delivery trips (24 inbound and 15 outbound) during
38 the P.M. peak hour. Since service and delivery vehicles would occur during the off-peak hours
39 to reduce potential conflicts with peak period SFOBB/I-80 traffic, increases in truck traffic
40 would not result in a significant impact.

**Table 4.5-6
SFOBB/I-80 Operations
Existing and Year 2010 Weekday and Weekend Peak Hour Conditions**

<i>Peak Hour/Direction</i>	<i>Existing (Operational Base)</i>		<i>2010 Background Conditions (No Action)</i>		<i>2010 Alternative 1</i>		<i>2010 Alternative 2</i>		<i>2010 Alternative 3</i>	
	<i>Speed³</i>	<i>LOS⁴</i>	<i>Speed³</i>	<i>LOS⁴</i>	<i>Speed³</i>	<i>LOS⁴</i>	<i>Speed³</i>	<i>LOS⁴</i>	<i>Speed³</i>	<i>LOS⁴</i>
Weekday A.M. peak hour⁵										
Eastbound ¹	57	B	57	B	57	B	57	B	57	B
Westbound ²	45	D	23	F	22	F	23	F	23	F
Weekday P.M. peak hour⁶										
Eastbound ¹	46	D	46	D	46	D	46	D	46	D
Westbound ²	56	B	18	F	17	F	17	F	17	F
Weekend midday peak hour⁷										
Eastbound ¹	57	B	57	B	56	B	57	B	56	B
Westbound ²	57	B	57	B	57	B	57	B	57	B

¹Eastbound SFOBB/I-80 east of Yerba Buena Island tunnel.

²Westbound SFOBB/I-80 west of Yerba Buena Island tunnel.

³Speed is expressed in miles per hour.

⁴LOS is based on mainline travel speeds, consistent with San Francisco Congestion Management LOS designations.

⁵The A.M. peak hour of 8:00 to 9:00 A.M. occurs within the A.M. peak period of 6:00 to 9:00 A.M..

⁶The P.M. peak hour of 5:00 to 6:00 P.M. occurs within the P.M. peak period of 3:00 to 7:00 P.M..

⁷The midday peak hour of 12:00 to 1:00 P.M. occurs within the midday peak period of 10:00 A.M. to 1:00 P.M..

Note: Degraded operating conditions on the SFOBB/I-80 in 2010 (without reuse) would be attributable to regional growth. The additional vehicle-trips associated with each reuse alternative would contribute to increases in queues at the SFOBB toll plaza, congestion and queues in downtown San Francisco, and in the duration of the peak periods.

Source: DON 1997d.

1 The eastbound off-ramp at the east side of the Yerba Buena Island tunnel has a 12-foot (3.5-m)
2 height restriction, thereby limiting larger trucks to the off-ramp on the west side of the Yerba
3 Buena Island tunnel. The existing ramp geometry can accommodate any California highway-
4 legal trucks. However, due to the constrained ramp geometries and slower acceleration
5 capabilities of trucks, trucks would take longer to enter the traffic stream than autos. During
6 peak periods, trucks merging with mainline traffic could cause short-term disruptions in traffic
7 flow. Water transportation of goods delivery to NSTI also would be an option. However,
8 unless truck access to NSTI from the SFOBB/I-80 is limited to late night/early morning hours,
9 truckers would likely find ferry access to be inconvenient and expensive. No mitigation is
10 proposed.

11 Construction activities (Factors 1 and 4). Construction impacts are generally short-term in nature.
12 They usually can be managed through proper phasing, sequencing, and scheduling of the
13 construction activities. However, construction would cause a temporary inconvenience to
14 motorists. Due to the short-term nature of construction-related impacts, they are usually not
15 considered significant. Construction activities on NSTI would include existing roadway work,
16 buildings, the causeway, dike improvements and other seismic work, utility lines, and piers.
17 For each, the following phases generally would or could be included – demolition, excavation,
18 foundation, and for buildings, construction of building structure, and finishing. Construction
19 vehicles would include trucks removing demolition debris and delivering materials and
20 supplies, as well as construction worker vehicles. The volume of construction vehicles
21 accessing NSTI would vary, depending on the specific construction activity and construction
22 schedules for the various components of the alternatives.

23 Existing ramp geometry would allow all size construction vehicles to enter or exit the SFOBB/I-
24 80 ramps. However, due to the slower acceleration capabilities and larger turning radii, large
25 construction trucks would take longer to enter the SFOBB traffic stream. The additional
26 construction-related traffic would add to traffic at East Bay and San Francisco approaches to the
27 SFOBB and could conflict with SFOBB/I-80 and NSTI traffic; this effect could be reduced by
28 shuttling workers to NSTI from parking areas off of NSTI, such as in San Francisco or the East
29 Bay.

30 Water transportation of demolition and construction materials could avoid transporting
31 materials on the SFOBB/I-80. There are two possible approaches include a roll-on, roll-off
32 vehicular ferry or a barge. No mitigation is proposed.

33 Transit operations – ferry and bus service (Factors 2 and 5). This alternative includes a
34 comprehensive transportation program that relies on passenger ferries and buses to transport
35 most residents and visitors between NSTI, San Francisco, and the East Bay. The ferry plan
36 identified for phase three of the Draft Reuse Plan would adequately serve the ferry trip daily
37 demand of approximately 34,635 person-trips on weekdays (Table 4.5-7) and approximately
38 32,120 person-trips on weekends (Table 4.5-8). The Draft Reuse Plan includes two new ferry
39 terminals (at Candlestick Point in San Francisco and at Golden Gate Fields on the
40 Berkeley/Albany border). The new terminals would provide sufficient capacity to
41 accommodate the ferry demand and would include parking for those ferry patrons arriving by
42 auto. Under Alternative 1, a new ferry terminal would be built on the west side of Treasure
43 Island. Pier 1 would be retrofitted to serve as a ferry landing on the east side of the island.

Table 4.5-7
Estimated Ferry Person-Trips by Mode of Access
Weekday Daily, A.M. and P.M. Peak Hour

FERRY TERMINAL LOCATION	ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
	<i>Daily</i>	<i>A.M.</i>	<i>P.M.</i>	<i>Daily</i>	<i>A.M.</i>	<i>P.M.</i>	<i>Daily</i>	<i>A.M.</i>	<i>P.M.</i>
TRANSIT/PEDESTRIAN ACCESS TO TERMINAL									
Downtown San Francisco/ Ferry Building									
Transit	5,615	535	905	3,955	135	535	3,390	440	595
Pedestrian	6,940	170	635	7,785	95	955	2,545	115	255
Marin County	550	20	60	550	10	70	165	10	20
Candlestick Point	1,450	80	180	1,345	30	170	0	0	0
Jack London Square/Alameda/ Golden Gate Fields	3,020	70	285	3,495	30	435	685	25	70
Total	17,575	875	2,065	17,130	300	2,165	6,735	590	940
VEHICULAR ACCESS TO TERMINAL									
Downtown San Francisco/ Ferry Building	1,395	80	170	1,305	25	165	655	60	95
Marin County	450	15	50	450	10	60	135	10	15
Candlestick Point	6,150	350	765	5,665	125	715	0	0	0
Jack London Square/Alameda/ Golden Gate Fields	9,065	210	850	10,490	95	1,305	2,055	75	210
Total	17,060	655	1,835	17,910	255	2,245	2,845	145	320
TOTAL FERRY PERSON-TRIPS									
Downtown San Francisco/ Ferry Building	13,950	785	1,710	13,045	255	1,655	6,540	615	945
Marin County	1,000	35	110	1,000	20	130	300	20	35
Candlestick Point	7,600	430	945	7,010	155	885	0	0	0
Jack London Square/Alameda/ Golden Gate Fields	12,085	280	1,135	13,985	125	1,740	2,740	100	280
Total	34,635	1,530	3,900	35,040	555	4,410	9,580	735	1,260
<i>Source: DON 1997d.</i>									

**Table 4.5-8
Estimated Ferry Person-trips by Mode of Access
Weekend Daily and Midday Peak Hour**

FERRY TERMINAL LOCATION	ALTERNATIVE 1		ALTERNATIVE 2		ALTERNATIVE 3	
	<i>Daily</i>	<i>Midday</i>	<i>Daily</i>	<i>Midday</i>	<i>Daily</i>	<i>Midday</i>
TRANSIT/PEDESTRIAN ACCESS TO TERMINAL						
Downtown San Francisco/Ferry Building						
Transit	4,070	770	3,795	475	2,550	465
Pedestrian	7,140	505	8,505	955	155	15
Marin County	525	45	525	65	3,375	225
Candlestick Point	1,285	145	1,395	160	0	0
Jack London Square/Alameda/Golden Gate Fields	3,000	215	3,580	425	730	55
Total	16,020	1,680	17,800	2,080	6,810	760
VEHICULAR ACCESS TO TERMINAL						
Downtown San Francisco/Ferry Building	1,245	140	1,365	160	645	75
Marin County	430	35	430	50	125	10
Candlestick Point	5,430	620	5,835	675	0	0
Jack London Square/Alameda/Golden Gate Fields	8,995	640	10,740	1,270	2,195	160
Total	16,100	1,435	18,370	2,155	2,965	245
TOTAL FERRY PERSON-TRIPS						
Downtown San Francisco/Ferry Building	12,455	1,415	13,665	1,590	6,470	765
Marin County	955	80	955	115	280	25
Candlestick Point	6,715	765	7,230	835	0	0
Jack London Square/Alameda/Golden Gate Fields	11,995	855	14,320	1,695	2,925	215
Total	32,120	3,115	36,170	4,235	9,675	1,005
<i>Source: DON 1997d.</i>						

1 Ferry service also would be provided between NSTI and the Ferry Building in San Francisco
2 and between NSTI and Jack London Square area in Oakland. The ferry terminal at the Ferry
3 Building in downtown San Francisco does not provide dedicated parking for ferry patrons.
4 Under Alternative 1, a daily demand of approximately 540 spaces is estimated (Table 4.5-9).
5 This demand represents daily pick-up/drop-off activities in front of the Ferry Building; it
6 translates into about two to three on-street pick-up and drop-off spaces. Although a substantial
7 supply of parking is available within half a mile (0.8 km) of the Ferry Building (approximately
8 16,500 off-street spaces on weekdays and approximately 11,500 spaces on weekends within a 7-
9 block radius), these spaces are generally occupied during the weekday. NSTI visitors who
10 would drive to the Ferry Building may not find readily available parking in the vicinity or may
11 not be willing to pay the cost of parking in downtown San Francisco. However, in San
12 Francisco, with its "Transit First" policy, parking shortfalls are not considered significant
13 impacts because ferry patrons could park farther away or could switch travel modes. In
14 practice, existing ferry patrons regularly use public transit from their homes or places of
15 business to access the ferry terminal because parking in San Francisco is scarce and often costly.
16 No mitigation is proposed.

17 The Jack London Square area in Oakland has approximately 1,110 parking spaces, the Alameda
18 Main Street terminal has approximately 250 parking spaces, and Golden Gate Fields has
19 approximately 5,000 parking spaces (the existing racetrack operates 110 days a year, and
20 parking lots are not completely filled during typical events). If sufficient parking could not be
21 provided at the Jack London Square or Alameda Main Street terminals, the terminal at Golden
22 Gate Fields would need to serve a greater portion of the East Bay demand. Ferry riders driving
23 to the ferry terminals would add to cumulative traffic volumes and congestion in the vicinity of
24 these East Bay terminals (see Chapter 5, Cumulative Projects and Impacts).

25 The number of transit-trips on bus lines connecting with the ferry terminals would increase.
26 Public transit access to the Ferry Building is via MUNI, Golden Gate Transit, San Mateo County
27 Transit District (SamTrans), BART, and California Train (Caltrain). During the peak periods,
28 the greatest number of additional transit riders destined to the San Francisco Ferry Building
29 would be during the weekday P.M. peak-hour condition, when approximately 905 new trips
30 would be made (Table 4.5-7). Transit access to Candlestick Point would be via MUNI and
31 shuttle buses, with a shuttle between the transit stations and ferry terminals. The weekday P.M.
32 peak-hour trips would be approximately 180 transit-trips to the ferry at Candlestick Point.
33 Access to Jack London Square/Alameda and Golden Gate Fields would be via AC Transit
34 (BART access with an AC Transit connection is also possible to the Jack London Square
35 terminal), with a total of approximately 285 weekday P.M. trips destined to and from both these
36 terminals. In general, the additional transit demand destined to the ferry terminals would be
37 spread over a number of lines and would include inbound and outbound trips.

38 Approximately 700 bus transit-trips during the weekday A.M. peak, approximately 1,280 trips
39 during the weekday P.M. peak, and about 1,110 trips during the weekend midday peak are
40 estimated for this alternative (Table 4.5-5). Headways (the wait time between two scheduled
41 bus runs) of 10 minutes would be required throughout the day for weekday service to both San
42 Francisco and the East Bay, and 15-minute headways would be required throughout the day
43 during the weekends.

44

**Table 4.5-9
Estimated Parking Demand at Ferry Terminals
Weekday and Weekend Conditions**

<i>Ferry Terminal Location</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>
WEEKDAY CONDITIONS (DAILY)			
Downtown SF/Ferry Building ¹	540	345	340
Marin County	190	165	75
Candlestick Point ²	2,640	1,745	0
Jack London Sq./Alameda/Albany/ Berkeley ^{3,4}	1,835	1,950	510
Total	5,205	4,205	925
WEEKEND CONDITIONS (DAILY)			
Downtown SF/Ferry Building ¹	365	315	230
Marin County	160	140	65
Candlestick Point ²	1,815	1,550	0
Jack London Sq./Alameda/Albany/ Berkeley ^{3,4}	1,715	1,940	475
Total	4,055	3,945	770
<p>¹ This demand represents needs for pick-up/drop-off activities in front of the Ferry Building. In the San Francisco downtown (bounded by Bryant Street, Second/Sansome, and Broadway) there is a supply of approximately 16,500 off-street parking spaces during the weekday and 11,500 off-street spaces during the weekend. Most of these spaces are occupied by workers and visitors to the area.</p> <p>² Candlestick Point currently has approximately 18,000 parking spaces in paved and dirt lots that could be used throughout the week. During twelve days during football games, these parking spaces would not be available for ferry parking.</p> <p>³ The Jack London Square area has approximately 1,110 parking spaces, and the Alameda Main Street terminal has approximately 250 spaces.</p> <p>⁴ Golden Gate Fields on the Albany/Berkeley border has approximately 5,000 parking spaces. The existing horsetrack operates 110 days per year. The parking lots are not completely filled during typical event operations.</p> <p>Source: DON 1997d.</p>			

1 A condition of the Draft Reuse Plan is that transit service would be provided to accommodate
2 the demand; therefore, transit requirements would not result in a significant impact.
3 Traditionally MUNI has provided services to areas where warranted. Increasing frequency on
4 MUNI line 108, which serves Treasure Island, would require additional funding. MUNI has
5 been subject to increasingly severe funding constraints and thus has limited ability to expand.
6 Without additional funding to pay for further needed service expansion, service may need to be
7 reduced elsewhere in San Francisco or additional funding sources found. The City and County
8 of San Francisco Transportation Commission holds regular public hearings on service
9 modifications. MUNI also prepares short-range transit plans to assess the need for changes in
10 service deployment. Mitigation for transit operations to the East Bay would ensure that major
11 development would not occur until adequate transit service is provided.

12 Intersection LOS (Factors 1 and 3). Tables 4.5-10 and 4.5-11 present the results of the intersection
13 level of service analysis at the five study intersections within Treasure Island for weekday and
14 weekend conditions, respectively. Under Alternative 1, all five study intersections, except
15 Avenue of Palms/California Street, would operate at LOS A and B during the weekday A.M.
16 and P.M. peak and weekend midday peak hours. Traffic analysis intersections are shown in
17 Figure 4-5. The intersection of Avenue of Palms/California Street would operate at LOS D
18 during the weekday P.M. peak and weekend midday peak hours; LOS D and better are
19 considered acceptable service levels. All intersections would operate as unsignalized
20 intersections.

21 The intersection of Avenue of Palms/California Street serves as the gateway to Treasure Island;
22 therefore, heavy pedestrian traffic is anticipated at this location. However, projected traffic
23 volumes are not at levels to warrant a traffic signal. This alternative would include sidewalks,
24 crosswalks, and a system of pedestrian and bicycle paths, lanes, and routes. These facilities
25 would allow for convenient and safe travel among the various uses and travel modes on NSTI.
26 A shuttle service, operating between Treasure Island and Yerba Buena Island, would further
27 facilitate internal trips. No mitigation is required.

28 Parking (Factor 5). Table 4.5-12 presents the parking demand calculations for NSTI. It is
29 estimated that there would be a daily parking demand of approximately 6,820 spaces during
30 the weekday, including about 2,560 nonresidential spaces and 4,260 residential spaces. During
31 the weekend, the total parking demand would be approximately 6,660 spaces (2,300
32 nonresidential spaces and 4,360 residential spaces). As these estimates show, a substantial
33 portion of the demand would be attributed to the residential component of this alternative.

34 Alternative 1 would include parking facilities to accommodate the vehicular demand, and
35 approximately 2,560 spaces would need to be provided to accommodate the nonresidential
36 demand during the weekday. Residential parking would be provided, and nonresidential
37 parking would be provided in parking lots.

38 In San Francisco, which has a "Transit First" policy, parking shortfalls are not considered a
39 significant impact. However, an implementing ordinance would limit the parking demand by
40 encouraging use of transit and discouraging use of private autos. No mitigation is proposed.

41

Table 4.5-10
Intersection Level of Service—Weekday A.M. and P.M. Peak Hours
2010 Conditions

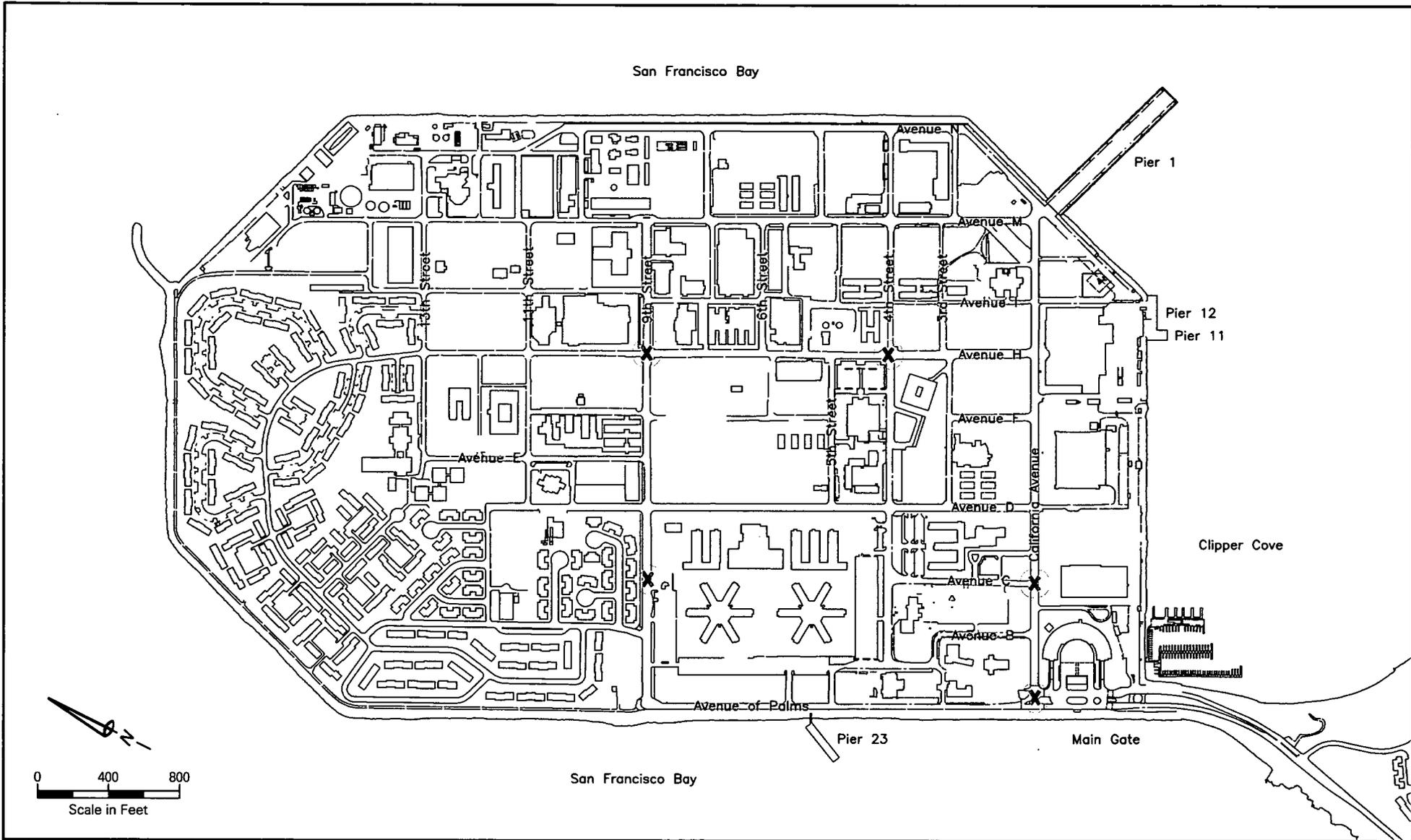
	ALTERNATIVE 1				ALTERNATIVE 2				ALTERNATIVE 3			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
<i>Study Intersection</i>	<i>Delay¹</i>	<i>LOS</i>	<i>Delay</i>	<i>LOS</i>	<i>Delay¹</i>	<i>LOS</i>	<i>Delay</i>	<i>LOS</i>	<i>Delay¹</i>	<i>LOS</i>	<i>Delay</i>	<i>LOS</i>
Avenue of Palms/ California	6.2	B	28.9	D	0.7	A	3.4	A	2.8	B	3.8	A
Avenue C/California Street	0.1	A	0.9	A	0.1	A	0.0	A	0.1	A	1.2	A
Avenue C/9 th Street	0.2	A	2.4	B	0.2	A	0.1	A	0.3	A	2.5	A
Avenue H/4 th Street	0.3	A	0.3	B	0.4	A	0.6	A	0.5	A	0.4	A
Avenue H/9 th Street	2.5	A	4.5	A	1.1	A	1.3	A	1.2	A	1.2	A

¹ Delay is expressed in seconds per vehicle.
Source: DON 1997d.

Table 4.5-11
Intersection Level of Service—Weekend Midday Peak Hour
2010 Conditions

<i>Intersection</i>	ALTERNATIVE 1		ALTERNATIVE 2		ALTERNATIVE 3	
	<i>Delay¹</i>	<i>LOS</i>	<i>Delay¹</i>	<i>LOS</i>	<i>Delay¹</i>	<i>LOS</i>
Avenue of Palms/California Street	21.9	D	3.4	A	3.5	A
Avenue C/California Street	0.1	A	0.0	A	0.1	A
Avenue C/9 th Street	0.2	A	0.2	A	0.5	A
Avenue H/4 th Street	0.0	A	0.2	A	0.1	A
Avenue H/9 th Street	4.1	A	1.1	A	1.1	A

¹ Delay is expressed in seconds per vehicle.
Source: DON 1997D.



Traffic at these five key intersections would continue to operate at acceptable service levels under Alternative 1.

Legend:



Analysis Intersections

Traffic Analysis Intersections

Treasure Island, California

Figure 4-5

**Table 4.5-12
Estimated Parking Demand at NSTI
Weekday and Weekend Conditions**

Origin/Destination	Alternative 1			Alternative 2			Alternative 3		
	NONRESIDENTIAL	RESIDENTIAL	TOTAL	NONRESIDENTIAL	RESIDENTIAL	TOTAL	NONRESIDENTIAL	RESIDENTIAL	TOTAL
Weekday Conditions									
Short-term ¹	845	0	845	590	0	590	390	0	390
Long-term	1,715	4,260	5,975	1,355	375	1,730	945	1,710	2,655
<i>Total</i>	2,560	4,260	6,820	1,945	375	2,320	1,335	1,710	3,045
Weekend Conditions									
Short-term ¹	930	0	930	1,045	0	1,045	800	0	800
Long-term	1,370	4,260	5,630	1,025	375	1,400	710	1,710	2,420
<i>Total</i>	2,300	4,260	6,560	2,070	375	2,445	1,510	1,710	3,220

¹ Residential assumes that no short-term parking would be required.

Source: DON 1997d.

1 Emergency access (Factor 6). A guiding policy of the Draft Reuse Plan is to prepare an
2 emergency response plan for all reuse alternatives to identify critical facilities, roles and
3 responsibilities, and procedures during emergencies. Also, in accordance with the Draft Reuse
4 Plan, an updated emergency response plan (including alternative emergency evacuation
5 scenarios) would be required prior to approving new development. Alternative 1 includes fire
6 stations and medical facilities at NSTI that would handle day-to-day emergencies and
7 participate in larger emergency responses. If emergency evacuation from NSTI could not be
8 made via the SFOBB/I-80, emergency access would be possible by ferry or helicopter.
9 Implementing this plan would assure that there are no significant impacts impeding emergency
10 access to NSTI. No mitigation is proposed.

11 **4.5.2 Alternative 2**

12 Traffic generated on NSTI by Alternative 2 would be 6,140 weekday ADT compared to 10,525
13 weekday ADT under Alternative 1 (Table 4.5-1). Under Alternative 2, approximately 385
14 vehicle-trips would be generated during the weekday A.M. peak hour, 775 vehicle-trips during
15 the P.M. peak hour (Table 4.5-2), and 785 vehicle-trips during the weekend midday peak hour
16 (Table 4.5-3). In comparison, there were approximately 442 vehicle-trips during the weekday
17 A.M. peak hour and 475 vehicle-trips during the weekday P.M. peak hour under fully
18 operational base conditions (Table 4.5-1). There would be more trips during the P.M. peak hour
19 and fewer trips during the A.M. peak hour, compared to fully operational base conditions,
20 because the type of reuse land uses (i.e., fewer housing units and jobs and more recreational
21 land use) would generate fewer trips. The number of daily and peak-hour vehicle-trips
22 generated by Alternative 2 would be less than the number generated by Alternative 1.

23 ***Significant and Mitigable Impact***

24 Impact: Increased peak spreading on SFOBB/I-80 (Factor 1). Under Alternative 2, increased traffic
25 onto and off of the SFOBB during the A.M. peak period (6:30 to 9:30) and P.M. peak period (3:30
26 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from
27 LOS D to LOS E or LOS F during the last hour of the A.M. peak period (8:30 to 9:30) and to
28 deteriorate from LOS B to LOS E or LOS F during the first hour of the P.M. peak period (3:30 to
29 4:30) (Table F-22). The increase in other connecting regional freeways would likely be less.

30 Mitigation. Monitor traffic volumes to ensure that the transportation goals and objectives
31 established by the Draft Reuse Plan are successfully implemented. Monitoring traffic volumes
32 would inform San Francisco whether traffic onto or off of the SFOBB at each phase of
33 development is resulting in deterioration of traffic conditions on the SFOBB. If at some point it
34 is determined that traffic from NSTI is constraining the capacity of the SFOBB, either more
35 aggressive TDM and transit improvements must be implemented or additional developments
36 should be delayed until such improvements are implemented. Implementing this mitigation
37 measure would reduce this impact to a not significant level.

38 Impact: Transit operations – bus service to East Bay (Factor 2). Approximately 3,480 weekday daily
39 and approximately 4,210 weekend daily bus transit patrons are estimated between NSTI and
40 the East Bay under Alternative 2 (Table 4.5-5). The impact associated with increased demand
41 for bus service to the East Bay would be similar to that described under Alternative 1 and
42 would be significant and mitigable.

1 *Mitigation.* Mitigation measures would be the same as those described for Alternative 1.
2 However, at build-out, bus service for Alternative 2 would need to be at 15-minute headways
3 (rather than 10-minute headways for weekdays under Alternative 1) throughout the day during
4 the weekdays and weekends. Implementing these mitigation measures would reduce the
5 impact to a not significant level.

6 *Not Significant Impacts*

7 *Traffic operations (Factor 1).* Similar to Alternative 1, traffic volumes on SFOBB would not have a
8 significant change due to the metering lights at the toll plaza. In addition, there would be no
9 significant traffic impacts at the six on-ramps and off-ramps that serve NSTI and NSTI internal
10 intersections during both weekday and weekend conditions because estimated demand on
11 these ramps would be less than capacity during these periods (Table 4.5-4), and no intersection
12 would operate at LOS E and F conditions (Tables 4.5-10 and 4.5-11). Under Alternative 2, traffic
13 volumes would be greater than fully operational baseline (1993) traffic volumes and 2010
14 background conditions (No Action Alternative). Under Alternative 2, total ramp volumes for
15 the weekday A.M. peak hour would be 750 vph, the weekday P.M. peak hour would be 1,020
16 vph, and the weekend midday peak hour would be 1,055 vph (Table 4.5-4).

17 *Delivery/goods movement/loading (Factor 4).* The estimated delivery vehicle trips would be less
18 than those identified under Alternative 1; similarly, Alternative 2 would not generate significant
19 delivery vehicle-related impacts.

20 *Transit operations - ferry and bus service (Factor 2).* Under Alternative 2, a new ferry terminal
21 would be built on the west side of Treasure Island, and Pier 1 would be retrofitted to serve as a
22 ferry landing on the east side of the island. Alternative 2 would generate marginally higher
23 ferry ridership than Alternative 1 on a typical weekday (approximately 1.2 percent), but
24 modestly higher ferry ridership than Alternative 1 on a typical weekend (approximately 13
25 percent) due to the differences in land use mixes. These changes would not increase the
26 impacts on ferry services (Tables 4.5-7 and 4.5-8). Alternative 2 would generate less bus
27 ridership than Alternative 1 (Table 4.5-5); therefore, it would have less impacts than Alternative
28 1.

29 *Parking (Factor 5).* Parking demand would be approximately 35 percent of Alternative 1;
30 therefore, no significant parking-related impacts would occur.

31 *Construction impacts (Factors 1 and 4).* Impacts associated with construction activities would be
32 similar to those identified under Alternative 1. Construction activities would cause
33 inconvenience to motorists, but they can be managed by proper phasing and sequencing to
34 reduce the short-term impacts.

35 *Emergency vehicle impacts (Factor 6).* Impacts associated with emergency vehicle access would be
36 similar to those identified under Alternative 1. Day-to-day emergency needs would be
37 accommodated by the on-site fire and medical facilities. Major evacuation would be
38 accommodated by the SFOBB or ferry and helicopters.

1 **4.5.3 Alternative 3**

2 Traffic generated on NSTI by Alternative 3 would be 5,390 weekday ADT compared to 10,525
3 weekday ADT under Alternative 1 (Table 4.5-1). Alternative 3 would generate about 610
4 vehicle-trips during the weekday A.M. peak hour, 800 vehicle-trips during the weekday P.M.
5 peak hour (Table 4.5-2), and 770 vehicle-trips during the weekend midday peak hour (Table 4.5-
6 3). In comparison, there were approximately 442 vehicle-trips during the weekday A.M. peak
7 hour and 475 vehicle-trips during the weekday P.M. peak hour under fully operational baseline
8 conditions (Table 4.5-1). In general, this alternative would generate fewer daily and peak hour
9 vehicle-trips than the other reuse alternatives. However, during the weekday A.M. peak hour,
10 the number of vehicle-trips would be greater than Alternative 2, reflecting this alternative's
11 greater number of residential dwelling units.

12 ***Significant and Mitigable Impact***

13 *Impact: Increased peak spreading on SFOBB/I-80 (Factor 1).* Under Alternative 3, increased traffic
14 onto and off of the SFOBB during the A.M. peak period (6:30 to 9:30) and P.M. peak period (3:30
15 to 6:30) would cause westbound traffic on certain segments of the SFOBB to deteriorate from
16 LOS D to LOS F during the last hour of the A.M. peak period (8:30 to 9:30) and to deteriorate
17 from LOS B to LOS E or LOS F during the first hour of the P.M. peak period (3:30 to 4:30) (Table
18 F-22). The increase in other connecting regional freeways would likely be less.

19 *Mitigation.* Monitor traffic volumes to ensure that the transportation goals and objectives
20 established by the Draft Reuse Plan are successfully implemented. Monitoring traffic volumes
21 would inform San Francisco whether traffic onto or off of the SFOBB at each phase of
22 development is resulting in deterioration of traffic conditions on the SFOBB. If at some point it
23 is determined that traffic from NSTI is constraining the capacity of the SFOBB, either more
24 aggressive TDM and transit improvements must be implemented or additional developments
25 should be delayed until such improvements are implemented. Implementing this mitigation
26 measure would reduce this impact to a not significant level.

27 *Impact: Transit operations – bus service to East Bay (Factor 2).* Approximately 1,785 weekday daily
28 and approximately 2,395 weekend daily bus transit patrons are estimated between NSTI and
29 the East Bay under Alternative 3 (Table 4.5-5). The impact associated with increased demand
30 for bus service to the East Bay would be similar to but less than that described under
31 Alternative 1 and would be significant and mitigable.

32 *Mitigation.* Mitigation measures would be the same as those described for Alternative 1.
33 However, at build-out, service for Alternative 3 would need to be at 20-minute headways
34 throughout the day during weekdays (rather than 10-minute headways) and 15-minute
35 headways throughout the day during weekends. Implementing these mitigation measures
36 would reduce the impact to a not significant level.

37 ***Not Significant Impacts***

38 *Traffic operations (Factor 1).* Similar to Alternative 1, traffic volumes on SFOBB as a result of this
39 alternative would not change significantly due to the metering lights at the toll plaza. In
40 addition, there would be no significant traffic impacts at the six on-ramps and off-ramps that

1 serve NSTI and NSTI internal intersections during both weekday and weekend conditions
2 because estimated demand on these ramps would be less than capacity during these periods
3 (Table 4.5-4), and no intersection would operate at LOS E and F conditions (Tables 4.5-10 and
4 4.5-11). Under Alternative 3, traffic volumes would be greater than fully operational baseline
5 (1993) traffic volumes and year 2010 background conditions (No Action Alternative). Under
6 Alternative 3, total ramp volumes for the weekday A.M. peak hour would be 975 vph, the
7 weekday P.M. peak hour would be 1,045 vph, and the weekend midday peak hour would be
8 1,040 vph.

9 Delivery/goods movement/loading (Factor 4). The estimated delivery vehicle trips would be less
10 than those identified under Alternative 1; therefore, Alternative 3 would not generate
11 significant delivery vehicle-related impacts.

12 Transit operations - ferry and bus service (Factor 2). Under Alternative 3, piers 1 and 12 would be
13 adapted to accommodate ferry service. Alternative 3 would generate substantially lower ferry
14 ridership than Alternative 1 on a typical weekday (approximately 28 percent) and a typical
15 weekend (approximately 30 percent) (Tables 4.5-7 and 4.5-8); therefore, Alternative 3 would not
16 generate significant impacts. Alternative 3 would generate substantially less bus ridership
17 (more than 50 percent lower) than Alternative 1 (Table 4.5-5) and subsequently would have less
18 impact than Alternative 1.

19 Parking (Factor 5). Parking demand under Alternative 3 would be approximately 50 percent of
20 Alternative 1; therefore, there would be no parking-related impacts.

21 Construction impacts (Factors 1 and 4). Impacts associated with construction activities would be
22 similar to those identified under Alternative 1. Construction activities would cause
23 inconvenience to motorists, but construction can be managed by proper phasing and
24 sequencing to reduce the short-term impacts.

25 Emergency vehicle impacts (Factor 6). Impacts associated with emergency vehicle access would be
26 similar to those identified under Alternative 1. Day-to-day emergency needs would be
27 accommodated by the on-site fire and medical facilities. Major evacuation would be
28 accommodated by the SFOBB or ferry and helicopters.

29 4.5.4 No Action Alternative

30 Under this alternative, property available for disposal at NSTI would continue under federal
31 ownership in caretaker status, and existing interim leases would be allowed to expire. There
32 would be minimal use of the property and facilities under this alternative. The year 2010
33 background conditions shown on Table 4.5-4 represent the No Action conditions. A minimal
34 number of trips would be directly generated by this alternative, and these trips would not affect
35 the local or regional transportation system. The SFOBB/I-80 ramps would remain open,
36 providing access to the US Coast Guard facilities and occasional sightseers. Traffic conditions
37 under the No Action Alternative on the SFOBB/I-80 are briefly described below.

1 *SFOBB/I-80 Operations*

2 Degraded operating conditions on the SFOBB/I-80 in 2010 (without reuse) would be
3 attributable to regional growth from projected development assumed to occur under the No
4 Action Alternative (but not caused by the No Action Alternative); therefore, no impact to traffic
5 would occur under this alternative.

6 During peak periods of operation, traffic demand projected for year 2010 conditions is expected
7 to exceed the current maximum volumes on the SFOBB of approximately 10,500 vph. However,
8 existing metering practices in the westbound direction at the toll plaza would limit the number
9 of vehicles that could access the SFOBB/I-80. Westbound traffic accessing the SFOBB/I-80 is
10 restricted to approximately 10,500 vehicles during the A.M. peak hour and approximately 9,000
11 vehicles during the P.M. peak hour. More vehicles are controlled with toll plaza metering lights
12 during the P.M. peak to prevent congestion and backups caused by traffic entering westbound I-
13 80.

14 As traffic increases, the peak period of delay and congestion would be extended over a longer
15 period. By 2010, during both the A.M. and P.M. peak hours, the westbound traffic on the
16 SFOBB/I-80 is projected to operate at capacity for more than 3 hours, compared to 2.5 hours
17 under existing conditions (MTC 1991; BCDC 1994).

18 In the eastbound direction, the capacity and congestion in downtown San Francisco segments of
19 I-80 restrict the number of vehicles accessing the SFOBB/I-80 to approximately 9,500 vph
20 during both A.M. and P.M. peaks. This condition is anticipated to continue under the No Action
21 Alternative, as there are no planned improvements on the San Francisco approach of the
22 SFOBB/I-80. As in the westbound direction, an increase in eastbound demand could extend the
23 duration of the peak period and could exacerbate queuing. The projected increase in traffic
24 congestion on the SFOBB during the weekday A.M. and P.M. peaks is attributable to regional
25 growth, not from trips generated under the No Action Alternative.

26 *Weekday A.M. peak.* During the A.M. peak period, year 2010 traffic demand on the SFOBB/I-80 is
27 anticipated to increase over 1994 conditions by approximately 6 percent (from 10,535 vph in
28 1994 to 11,135 vph in 2010) in the westbound direction and approximately 14 percent (from
29 8,320 vph in 1994 to 9,470 vph in 2010) in the eastbound direction. In the morning, the peak
30 direction of travel is westbound into San Francisco. In this direction, travel speeds would drop
31 (from about 45 mph to 23 mph [72 km/hour to 37 km/hour]) east of the Yerba Buena Island
32 tunnel (from LOS E to LOS F). More aggressive metering at the toll plaza would be required to
33 maintain travel speeds at about 45 mph (72 km/hour). Additional metering would result in
34 longer queues at the toll plaza. In the eastbound direction, travel speeds would generally
35 remain the same as under existing conditions (57 mph [92 km/hour], LOS B).

36 *Weekday P.M. peak.* By 2010, overall increases in traffic demand over existing conditions during
37 the P.M. peak period are anticipated to be approximately 13 percent in the westbound direction
38 (8,235 vph in 1994 to 9,310 vph in 2010) and 13 percent in the eastbound direction (8,235 vph in
39 1994 to 9,310 vph in 2010). During the P.M. peak hour, travel speed in the westbound direction
40 would drop east of the Yerba Buena Island tunnel from about 56 mph to 18 mph (90 km/hour
41 to 29 km/hour), and thus operating conditions on the SFOBB/I-80 would drop from LOS B to
42 LOS F. This decrease is due to the extension of the duration of congestion from San Francisco

1 across the SFOBB/I-80. While this change is significant, it would be caused by future traffic
2 conditions in 2010; it would not be generated by the No Action Alternative.

3 As identified for the A.M. peak conditions, more aggressive metering at the toll plaza would be
4 required to maintain operating conditions at 1994 levels. More aggressive metering would
5 result in longer queues at the toll plaza. In the eastbound (nonpeak) direction, travel speeds
6 generally would remain the same (about 46 mph [74 km/hour]) as existing 1994 levels (LOS D).
7 The existing constraint to traffic accessing the SFOBB/I-80 at the downtown San Francisco
8 approach would continue to restrict traffic accessing the SFOBB/I-80, would extend the peak
9 period, and would exacerbate queuing at SFOBB/I-80 ramps and connecting arterial roads in
10 San Francisco.

11 *Weekend midday.* During the weekend midday peak hour, the anticipated growth in traffic
12 volumes would be similar to the weekday A.M. peak hour (approximately 6 percent in the
13 westbound direction and approximately 14 percent in the eastbound direction). Since the
14 SFOBB/I-80 has available capacity on weekends under existing conditions, the increase in
15 traffic volumes during the weekend due to regional growth could be accommodated without
16 substantially affecting traffic operating conditions. Under No Action Alternative conditions,
17 travel speeds on the SFOBB/I-80 would remain similar to 1994 conditions in both eastbound
18 and westbound directions (about 57 mph [92 km/hour], LOS B).

19 *Other ramp operations.* As a result of the closure of NSTI, traffic volume on the ramps connecting
20 the SFOBB/I-80 with Yerba Buena Island has decreased. During both the weekday A.M. and
21 P.M. peak hours, the ramp volumes are anticipated to be approximately a third of the 1993/1994
22 levels and would not have a significant impact on ramp operations. Under No Action
23 Alternative conditions, total traffic entering and exiting NSTI in both the eastbound and
24 westbound directions would decrease from about 675 vph under 1993/1994 conditions to
25 approximately 275 vph during the A.M. peak hour and from approximately 730 vph to 250 vph
26 during the P.M. peak hour. During the weekend midday peak hour, total ramp volumes are
27 estimated to be similar to weekday A.M. conditions (approximately 275 vph). These vehicles
28 would include trips to and from the US Coast Guard Station.

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1 **4.6 AIR QUALITY**

2 Potential air quality impacts resulting from disposal and reuse of NSTI are discussed in this
3 section. Factors considered in determining whether an alternative would have significant air
4 quality impacts included the extent or degree to which its implementation would:

- 5 1. Conflict with or obstruct implementation of the applicable air quality attainment plan;
6 2. Exceed an ambient air quality standard or substantially contribute to an existing or
7 projected air quality violation;
8 3. Create or contribute to a non-stationary source "hot spot;" or
9 4. Expose sensitive receptors (e.g., children, elderly, or persons with respiratory
10 conditions) to substantial pollutant concentrations.

11 Dispersion modeling analyses have been performed and are documented in Appendix F.

12 **General Conformity**

13 On November 30, 1993, EPA published the federal General Conformity Rule (40 C.F.R. §§
14 51.850-51.860 and 40 C.F.R. Part 93). The US Navy document *Chief of Naval Operations Interim*
15 *Guidance on Compliance with the Clean Air Act General Conformity Rule* (DON 1994c) provides
16 policies and procedures for conformity evaluations.

17 As specified in 40 C.F.R. § 51.853 and 40 C.F.R. § 93.153, certain actions are exempt from general
18 conformity determinations, including the action to dispose of NSTI. This finding is based on the
19 following exemption as stated in 40 C.F.R. § 51.853(c)(2)(xix) and 40 C.F.R. § 93.153(c)(2)(xix):
20 "Actions (or portions thereof) associated with transfers of land, facilities, title, and real
21 properties through an enforceable contract or lease agreement where the delivery of the deed is
22 required to occur promptly after a specific, reasonable condition is met, such as promptly after
23 the land is certified as meeting the requirements of CERCLA, and where the federal agency
24 does not retain continuing authority to control emissions associated with the land, facilities,
25 title, or real properties." This is further explained in Volume 58 Number 228 of the Federal
26 Register, "Supplementary Information on the Final Rule." Subsection III.J(3)(e) states that
27 "Federal land transfers are included in the regulatory list of actions...exempt from the final
28 conformity rules." The Navy's Record of Non-Applicability (RONA) is included in Appendix F.

29 **4.6.1 Alternative 1**

30 Buildout of Alternative 1 would result in short-term air pollutant emissions from construction
31 activities, long-term emissions from operation of new uses, and potential long-term emissions
32 from hazardous air pollutants.

33 ***Not Significant Impacts***

34 Construction and demolition (Factors 1 and 2). Clearing and grading of sites and construction,
35 demolition, and remodeling activities within the reuse plan area would generate fugitive dust
36 (PM10) and combustive emissions from equipment and from workers' vehicles. Building
37 demolition, site preparation for new building construction, and roadway reconstruction would

4.6 Air Quality

1 be the primary emission-generating activities. Construction-related emissions would be
2 temporary and limited to the construction period.

3 Development is expected to occur in phases (see section 2.4). Each phase would include some
4 demolition and construction activities and would lead to additional employment and housing
5 development. In this way, construction and demolition activities at NSTI are expected to occur
6 incrementally, and the inconveniences and impacts associated with construction would be
7 spread out in terms of time and location.

8 The impact of combustive emissions from proposed construction sources would be insignificant,
9 as construction emissions from land use development projects have been included in the regional
10 air quality attainment plans and they are not expected to delay attainment or maintenance of the
11 O₃ and CO standards within the SFBAAB (BAAQMD 1996). Therefore, fugitive dust is the
12 pollutant of greatest concern with respect to construction activities. The BAAQMD's approach
13 to CEQA analyses of construction impacts is to emphasize implementation effective and
14 comprehensive fugitive dust control measures rather than on detailed emissions quantification.
15 Implementation of feasible control measures would ensure that emissions from construction
16 activities would produce less than significant impacts to air quality (BAAQMD 1996).

17 Since the proposed reuse construction activities would disturb more than 4 acres of ground,
18 implementation of the following BAAQMD "basic" and "enhanced" PM₁₀ control measures
19 would ensure that proposed construction would produce less than significant impacts to air
20 quality:

- 21 • Minimize the area disturbed by clearing, earthmoving, or excavation activities at all
22 times;
- 23 • Sufficiently water all areas to be excavated or graded to prevent excessive dust
24 generation;
- 25 • Seed and water all unpaved, inactive portions of the construction site to maintain a grass
26 cover if they are to remain inactive for a long period during building construction;
- 27 • Water or treat all unpaved active portions of the construction site with dust control
28 solutions, twice daily, to minimize windblown dust and dust generation by vehicle
29 traffic;
- 30 • Sweep paved portions of the construction site daily or as necessary to control wind-
31 blown dust and dust generation by vehicle traffic;
- 32 • Limit on-site vehicle speeds on unpaved areas on the construction site to 15 mph (24
33 km/hour) or less;
- 34 • Sweep streets adjacent to the construction site as necessary to remove accumulated dust
35 and soil;
- 36 • Halt all clearing, grading, earthmoving, and excavating activities during periods of
37 sustained strong winds (hourly average wind speeds of 25 mph [40 km/hour] or
38 greater);
- 39 • Use tarpaulins or other effective covers for piles stored onsite and for haul trucks that
40 travel on streets; and

- On haul trucks, maintain at least 6 inches (15 centimeters [cm]) of freeboard between the top of the load and the top of the trailer.

Transportation-related air pollutant emissions (Factors 1 and 2). By providing for increased employment and housing, Alternative 1 would result in increased travel, including personal vehicle travel, travel to and from off-site ferry terminals, bus travel, and ferry vessel travel. Travel associated with buildout under Alternative 1 would result in an increase in ozone precursor emissions (reactive organic compounds and nitrogen oxides) and PM₁₀ (direct PM₁₀ emissions plus organic compounds and nitrogen oxides, which are precursors of the portion of PM₁₀ formed through chemical reactions). However, the increase in these emissions would not contribute to an exceedance of any ambient air quality standard for ozone or PM₁₀.

The 2000 Clean Air Plan for the San Francisco Bay Area estimates that regional emissions in 2006 (the last year for which a projection is available) would be approximately 460 tons (383 metric tons) per day for reactive organic compounds and nitrogen oxides and 185 tons (154 metric tons) per day for PM₁₀ (BAAQMD 2000). Compared to operational (baseline) activity levels, the net addition of less than 0.2 tons (0.18 metric tons) per day of either ozone precursor or PM₁₀ emissions by 2010 under Alternative 1 (Table 4.6-1) would not cause a measurable change in the location, magnitude, or frequency of high ozone or PM₁₀ concentrations. Consequently, the change in land use and vehicle travel patterns resulting from buildout of Alternative 1 would not lead to additional violations of ambient air quality standards for ozone or PM₁₀. No mitigation is proposed.

Potential carbon monoxide hot spots (Factors 1 and 2). Implementation of Alternative 1 would add vehicular trips to the local roadways. Therefore, the potential exists for localized carbon monoxide hot spots. A carbon monoxide hot spot is created when sensitive receptors are exposed to carbon monoxide levels that exceed either federal or state ambient carbon monoxide standards. The federal standards for carbon monoxide are an average of 9.0 ppm (parts per million) over an 8-hour period, and an average of 35 ppm over a 1-hour period. The state standards for carbon monoxide are an average of 9.0 ppm over an 8-hour period, and an average of 20 ppm over a 1-hour period.

Areas on Yerba Buena Island in the vicinity of the SFOBB corridor, which would support the highest peak hour traffic volumes, were chosen for analysis. The CALINE4 dispersion model (Caltrans 1989) was used to estimate the carbon monoxide concentrations from vehicular exhaust at three locations: near Macalla Road at the eastern end of Yerba Buena Island, about 300 feet (91 m) east of the eastern SFOBB tunnel opening, and about 160 feet (49 m) west of the western SFOBB tunnel opening. Receptor locations were established at 50, 75, 100, 200, and 300 feet (15, 23, 30.5, 61, and 91 m) from the centerline of the SFOBB. Vehicle emission rates were estimated for 2010 conditions using the California Air Resources Board's EMFAC7F model (California Air Resources Board 1993). Emission rates produced by the EMFAC7F model were adjusted to account for vehicle idling during peak period traffic periods.

As shown in Table 4.6-2, the CALINE4 model demonstrates that carbon monoxide levels would not be expected to exceed federal or state standards at 50 feet (15 m) from the centerline of the SFOBB. Carbon monoxide concentrations would be less at distances greater than 50 feet (15 m). Because no sensitive receptor would be located closer than 50 feet (15 m) from the center of the SFOBB, no sensitive receptors in this area would be exposed to carbon monoxide hot spots in

4.6 Air Quality

1 2010. Therefore, carbon monoxide impacts would be less than significant. No mitigation is
 2 proposed.

Table 4.6-1
Summary of Transportation-Related Air Pollutant Emissions for the Reuse Alternatives
 (page 1 of 2)

Alternative	Component	Amount		ESTIMATED 2010 EMISSIONS (TONS PER YEAR)				
				ROG	NO _x	CO	SO _x	PM ₁₀
NSTI Operational Activity	Vehicle Traffic	21,677,000	annual VMT	7.6	14.5	61.0	0.7	22.3
	Mobile Equipment			1.6	0.5	6.6	0.01	0.04
	Ships			0.2	1.4	0.7	0.5	0.1
	Small Craft			17.7	87.1	19.8	12.3	3.0
	Totals			27.1	103.4	88.0	13.5	25.4
Alternative 1	Vehicle Traffic	72,800,428	annual VMT	32.8	58.7	316.9	2.4	74.8
	Bus System Travel	1,059,503	annual VMT	4.6	20.4	19.5	0.7	4.0
	To/From Terminals	15,476,203	annual VMT	6.1	8.5	67.9	0.5	15.6
	Ferry Vessel Trips	41,170	annual trips	1.5	18.4	3.7	7.7	1.0
		Totals			45.0	105.9	408.1	11.3
Alternative 2	Vehicle Traffic	36,413,204	annual VMT	15.0	31.7	138.5	1.2	37.8
	Bus System Travel	852,113	annual VMT	3.7	16.4	15.7	0.6	3.2
	To/From Terminals	14,813,005	Annual VMT	5.8	8.1	65.0	0.5	14.9
	Ferry Vessel Trips	42,800	Annual trips	1.5	19.1	3.9	8.0	1.1
		Totals			26.0	75.3	223.1	10.3
Alternative 3	Vehicle Traffic	35,725,521	Annual VMT	16.8	29.3	149.6	1.2	36.8
	Bus System Travel	468,023	Annual VMT	2.1	9.0	8.6	0.3	1.8
	To/From Terminals	2,741,663	Annual VMT	1.1	1.5	12.0	0.1	2.8
	Ferry Vessel Trips	17,520	Annual trips	0.4	6.7	1.7	2.9	0.4
		Totals			20.4	46.6	172.0	4.5

Table 4.6-1
Summary of Transportation-related Air Pollutant Emissions for the Reuse Alternatives
 (page 2 of 2)

Alternative	Component	NET CHANGE COMPARED TO THE OPERATIONAL ACTIVITY SCENARIO (TONS PER YEAR) ¹				
		ROG	NO _x	CO	SO _x	PM ₁₀
Alternative 1	Total mobile source emissions	17.9	2.5	320.1	-2.2	70.0
Alternative 2	Total mobile source emissions	-1.1	-28.2	135.1	-3.3	31.6
Alternative 3	Total mobile source emissions	-6.7	-56.9	84.0	-9.0	16.3

Notes: ¹ All values rounded independently after calculation.

VMT = vehicle miles traveled

ROG = reactive organic compounds NO_x = nitrogen oxides

CO = carbon monoxide SO_x = sulfur oxides

PM₁₀ = inhalable particulate matter

Annual carbon monoxide emissions from motor vehicle traffic assume 8 months of summer temperature patterns and 4 months of winter temperature patterns.

SO_x emissions for vehicle traffic based on an average emission rate of 0.3 grams/vmt (BAAQMD 1996).

PM₁₀ emission estimates for motor vehicle and bus traffic include a resuspended dust component based on the BAAQMD recommended factor of 0.69 grams per vmt (BAAQMD 1996).

Emissions associated with the NSTI operational activity scenario based on Radian International (1997), with adjustment of motor vehicle emissions for emission rate changes between 2001 and 2010.

Mobile equipment under the operational activity scenario include forklifts, pile drivers, and mobile generators.

The operational activity scenario assumes 250 work days per year. The reuse alternatives assume 365 work days per year.

Motor vehicle and bus traffic emissions for reuse alternatives calculated for 2010 using emission factors from the California Air Resources Board's EMFAC7F vehicle emission rate program.

Ferry trip estimates assume average passenger loads of 200 per trip for Alternative 3 and 300 per trip for Alternatives 1 and 2.

Ferry vessel emissions based on data in California Air Resources Board 1991a assuming diesel-fueled ferry vessels and an average run time of 15 minutes per trip.

- 1 The maximum CO impact from project and future traffic in the year 2010 was estimated to
 2 occur just north of I-80 near the vicinity of Macalla Road at eastern end of Yerba Buena Island.
 3 In the year 2025, traffic volumes/speeds within this portion of I-80 would be about 6 percent
 4 greater/less than those considered in the CALINE4 dispersion modeling analysis for year 2010.
 5 A comparison of applicable emission factors for years 2010 and 2025 shows that CO emissions
 6 would decrease by approximately 69 percent during this time period within this portion of I-80
 7 (California Air Resources Board 2002). As a result, the project CO impacts analyzed for year
 8 2010 would be greater than those analyzed for year 2025 conditions. Therefore, the current
 9 analysis represents a worst-case analysis compared to conditions beyond year 2010.
- 10 Potential toxic air emissions (Factors 3 and 4). Some land uses that may be developed in
 11 Alternative 1 may generate air contaminants (other than the criteria pollutants discussed above)
 12 that have the potential to harm human health and the environment. Toxic air contaminants

Table 4.6-2
Summary of Dispersion Modeling Results For Yerba Buena Island
 (page 1 of 2)

Location and Distance From the Centerline of the SFOBB	Modeled Peak Hour CO Value (ppm)	1-hour Background CO Value (ppm)	Total Peak Hour CO Value (ppm)	Estimated 8-hour CO Value (ppm) By Reuse Alternative		
				ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
NEAR MACALLA ROAD AT EASTERN END OF YERBA BUENA ISLAND						
50 ft N of I-80	5.0	1.0	6.0	5.1	5.0	4.8
75 ft N of I-80	3.4	1.0	4.4	3.7	3.7	3.5
100 ft N of I-80	3.0	1.0	4.0	3.4	3.3	3.2
200 ft N of I-80	2.0	1.0	3.0	2.6	2.5	2.4
300 ft N of I-80	1.6	1.0	2.6	2.2	2.2	2.1
50 ft S of I-80	2.5	1.0	3.5	3.0	2.9	2.8
75 ft S of I-80	2.1	1.0	3.1	2.6	2.6	2.5
100 ft S of I-80	1.8	1.0	2.8	2.4	2.3	2.2
200 ft S of I-80	1.5	1.0	2.5	2.1	2.1	2.0
300 ft S of I-80	1.3	1.0	2.3	2.0	1.9	1.8
ABOUT 300 FEET EAST OF EASTERN TUNNEL OPENING, YERBA BUENA ISLAND						
50 ft N of I-80	4.3	1.0	5.3	4.5	4.4	4.2
75 ft N of I-80	3.4	1.0	4.4	3.7	3.7	3.5
100 ft N of I-80	2.8	1.0	3.8	3.2	3.2	3.0
200 ft N of I-80	1.9	1.0	2.9	2.5	2.4	2.3
300 ft N of I-80	1.8	1.0	2.8	2.4	2.3	2.2
50 ft S of I-80	3.6	1.0	4.6	3.9	3.8	3.7
75 ft S of I-80	2.7	1.0	3.7	3.1	3.1	3.0
100 ft S of I-80	2.2	1.0	3.2	2.7	2.7	2.6
200 ft S of I-80	1.5	1.0	2.5	2.1	2.1	2.0

Table 4.6-2
Summary of Dispersion Modeling Results For Yerba Buena Island
 (page 2 of 2)

Location and Distance From the Centerline of the SFOBB	Modeled Peak Hour CO Value (ppm)	1-hour Background CO Value (ppm)	Total Peak Hour CO Value (ppm)	Estimated 8-hour CO Value (ppm) By Reuse Alternative		
				ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
300 ft S of I-80	1.2	1.0	2.2	1.9	1.8	1.8
ABOUT 160 FEET WEST OF WESTERN TUNNEL OPENING, YERBA BUENA ISLAND						
50 ft N of I-80	4.1	1.0	5.1	4.3	4.2	4.1
75 ft N of I-80	3.1	1.0	4.1	3.5	3.4	3.3
100 ft N of I-80	2.6	1.0	3.6	3.1	3.0	2.9
200 ft N of I-80	1.9	1.0	2.9	2.5	2.4	2.3
300 ft N of I-80	1.6	1.0	2.6	2.2	2.2	2.1
50 ft S of I-80	3.5	1.0	4.5	3.8	3.7	3.6
75 ft S of I-80	2.6	1.0	3.6	3.1	3.0	2.9
100 ft S of I-80	2.2	1.0	3.2	2.7	2.7	2.6
200 ft S of I-80	1.5	1.0	2.5	2.1	2.1	2.0
300 ft S of I-80	1.0	1.0	2.0	1.7	1.7	1.6

Notes: CO = carbon monoxide.
ppm = parts per million by volume.

Modeling analyses were performed with the CALINE4 dispersion model, assuming poor dispersion conditions (1 meter per second wind speeds, mild inversion conditions [Class E stability], a 50-meter mixing height limit, and a horizontal wind fluctuation parameter of 10 degrees. Wind directions were varied in 10-degree increments. This table presents only the highest modeled CO concentration for each receptor location.

Emission rates were calculated for 2010 using the EMFAC7F vehicle emission rate program, with additional idling emissions added to account for peak period congestion conditions.

Due to SFOBB capacity limitations, peak hour traffic volumes are nearly identical for each alternative, resulting in identical peak 1-hour CO levels. Background CO values represent contributions from unmodeled sources (minor roadways, parking facilities, etc.).

Potential 8-hour CO values are estimated by applying a persistence (extrapolation) factor to the total peak hour CO value. The duration of near capacity traffic flows varies among reuse alternatives, resulting in somewhat larger persistence factors for higher intensity reuse alternatives.

Persistence factors assumed for this analysis are: 78% for the No Action Alternative, 85% for Alternative 1, 83% for Alternative 2, and 80% for Alternative 3.

The federal 1-hour CO standard is 35 ppm. The state 1-hour CO standard is 20 ppm. The federal and state 8-hour CO standards are 9 ppm.

4.6 Air Quality

1 (TACs) could be generated from stationary sources. Although no industrial land use is
2 proposed on NSTI, certain retail establishments could be potential sources of TACs. However,
3 the actual amount of these air contaminants cannot be quantified due to a lack of information
4 about specific business uses that may be located in the reuse plan area.

5 The BAAQMD limits emissions of and public exposure to TACs through a number of programs.
6 TAC emissions from new and modified stationary sources are limited through an air toxics new
7 source review program, which implements the district's Risk Management Policy via the
8 district's permitting process for stationary sources. These analyses help to establish buffer
9 zones around proposed new uses, preventing the exposure of sensitive receptors to TACs.

10 Evaluation of potential impacts attributable to TAC emissions from stationary sources would be
11 speculative because no specific types or sizes of stationary sources have been proposed.
12 Therefore, at this time, there is not sufficient information to evaluate the significance of
13 stationary source emissions from future individual projects. Future air permit review (for both
14 construction and operation) required by the BAAQMD would determine the significance of
15 these potential impacts and could require new stationary sources to adopt specific mitigations
16 as a condition for new permits.

17 In addition to stationary sources, vehicle trips generated under Alternative 1 would cause
18 motor vehicle exhaust and evaporative emissions, known mobile sources of TACs. Exposure of
19 TAC emissions from mobile sources would be roughly proportional to traffic volumes on the
20 area roadway network. The further away from high-volume traffic arteries, the lower the
21 exposure to all mobile source emissions. Reuse of NSTI would not result in traffic volumes on
22 the local roadway network that would be unusually high in comparison to traffic volumes on
23 comparable types of roadways elsewhere in the urbanized portions of the Bay Area.
24 Furthermore, the BAAQMD's Impact Assessment Guidelines (BAAQMD 1996) do not include a
25 requirement for including mobile sources of TACs when evaluating impacts. Therefore,
26 exposure to TAC emissions from mobile sources is considered not significant. No mitigation is
27 proposed.

28 4.6.2 Alternative 2

29 *Not Significant Impacts*

30 Construction and demolition (Factors 1 and 2). Construction emissions from the development of
31 Alternative 2 would be less than but similar in nature to those that would result from the
32 development of Alternative 1. These activities would occur incrementally over an extended
33 build-out period, making it impossible to estimate specific numbers for any particular year.
34 Construction-generated dust would be reduced to a less than significant level by implementing
35 dust control measures as required by the BAAQMD. No mitigation is proposed.

36 Transportation-related air pollutant emissions (Factors 1 and 2). Development of Alternative 2
37 would generate air pollutants from transportation-related emissions (Table 4.6-1). Under this
38 alternative, reactive organic compound emissions in 2010 (26 tons/year [23.5 metric tons/year])
39 would be a little more than half of those projected under Alternative 1 (45 tons/year [41 metric
40 tons/year]).

1 The 2000 Clean Air Plan for the San Francisco Bay Area estimates that regional emissions in
2 2006 (the last year for which a projection is available) would be approximately 460 tons (383
3 metric tons) per day for reactive organic compounds and nitrogen oxides and 185 tons (154
4 metric tons) per day for PM₁₀ (BAAQMD 2000). Compared to operational (baseline) activity
5 levels, the net decrease of approximately 0.07 tons per day (0.06 metric tons per day) of ozone
6 precursor emissions and the net increase of about 0.08 tons per day (0.07 metric tons per day) of
7 PM₁₀ emissions by 2010 under Alternative 2 would not cause a measurable change in the
8 location, magnitude, or frequency of high ozone or PM₁₀ concentrations. Consequently, the
9 change in land use and vehicle travel patterns resulting from buildout of Alternative 2 would
10 not lead to additional violations of ambient air quality standards for ozone or PM₁₀. No
11 mitigation is proposed.

12 Potential carbon monoxide hot spots (Factors 1 and 2). Traffic associated with Alternative 2 would
13 produce carbon monoxide concentrations that are well within the limits of the federal and state
14 air quality standards (Table 4.6-2). Consequently, this impact is considered not significant. No
15 mitigation is proposed.

16 Potential toxic air emissions (Factors 3 and 4). Unlike Alternative 1, Alternative 2 does not
17 propose to develop any land uses that are anticipated to be major generators of TAC emissions.
18 However, weekday daily vehicle trips generated under Alternative 2, although fewer than
19 under Alternative 1, would cause motor vehicle exhaust and evaporative emissions, known
20 mobile sources of toxic air contaminants. This potential impact is similar to, but less than, the
21 not significant impact described for Alternative 1. No mitigation is proposed.

22 4.6.3 Alternative 3

23 *Not Significant Impacts*

24 Construction and demolition (Factors 1 and 2). Construction emissions from the development of
25 Alternative 3 would be substantially less than but similar in nature to those that would result
26 for Alternative 1. Lower emissions are expected because several existing buildings would be
27 reused and there would be limited new construction. These activities would occur
28 incrementally over an extended build-out period, making it impossible to estimate specific
29 numbers for any particular year. Construction-generated dust would be reduced to a not
30 significant level by implementing dust control measures as required by the BAAQMD. No
31 mitigation is proposed.

32 Transportation-related air pollutant emissions (Factors 1 and 2). Development of Alternative 3
33 would generate air pollutants from transportation-related emissions (Table 4.6-1). Under this
34 alternative, ozone precursor and PM₁₀ emissions in 2010 would be less than half of those
35 projected under Alternative 1.

36 The 2000 Clean Air Plan for the San Francisco Bay Area estimates that regional emissions in
37 2006 (the last year for which a projection is available) would be approximately 460 tons (383
38 metric tons) per day for reactive organic compounds and nitrogen oxides and 185 tons (154
39 metric tons) per day for PM₁₀ (BAAQMD 2000). Compared to operational (baseline) activity
40 levels, the net decrease of approximately 0.2 tons per day (0.18 metric tons per day) of ozone
41 precursor emissions and the net increase of about 0.04 tons per day (0.04 metric tons per day) of

4.6 Air Quality

1 PM₁₀ emissions by 2010 under Alternative 3 would not cause a measurable change in the
2 location, magnitude, or frequency of high ozone or PM₁₀ concentrations. Consequently, the
3 change in land use and vehicle travel patterns resulting from buildout of Alternative 3 would
4 not lead to additional violations of ambient air quality standards for ozone or PM₁₀. No
5 mitigation is proposed.

6 Potential carbon monoxide hot spots (Factors 1 and 2). Traffic associated with Alternative 3 would
7 produce carbon monoxide concentrations that are well within the limits of the federal and state
8 air quality standards (Table 4.6-2). Consequently, this impact is considered not significant. No
9 mitigation is proposed.

10 Potential toxic air emissions (Factors 3 and 4). Similar to Alternative 2, Alternative 3 does not
11 propose to develop any land uses that are anticipated to be major generators of TAC emissions.
12 However, weekday daily vehicle trips generated under Alternative 3, although fewer than
13 under both Alternatives 1 and 2, would cause motor vehicle exhaust and evaporative emissions,
14 known mobile sources of toxic air contaminants. This potential impact is similar to, but less
15 than, the impact described for Alternative 1. No mitigation is proposed.

16 4.6.4 No Action Alternative

17 The No Action Alternative would not result in an increase in air pollutant emissions. The site
18 would be retained under federal ownership under a caretaker maintenance program. No
19 operations other than minimal maintenance and security would occur. Existing interim leases
20 would be allowed to expire. As a result, this alternative would have a beneficial impact on air
21 quality because it would eliminate the majority of existing air pollutant emissions associated
22 with the site and would not generate new emissions.

1 **4.7 NOISE**

2 Potential noise impacts from disposal and reuse of NSTI are discussed in this section. Existing
3 and future noise levels along roadways in the reuse plan area were projected using data from
4 the traffic analysis (see section 4.5). Noise impacts were analyzed considering a full build-out
5 condition for each reuse alternative. Technical terms used in this section are defined in section
6 3.7. Noise level calculations are indicated in tables to tenths of a dB; noise levels in the text are
7 rounded to the nearest whole dB.

8 Factors considered in determining whether an alternative would have significant noise impacts
9 included the extent or degree to which its implementation would:

- 10 1. Expose sensitive receptors to noise above standards or guidelines;
- 11 2. Permanently and noticeably increase ambient noise in a manner that could affect the use
12 and enjoyment of adjacent areas or facilities;
- 13 3. Locate a noise sensitive reuse such that it is negatively affected by existing or projected
14 noise levels; or
- 15 4. Result in temporary noise levels in excess of limits set by San Francisco's Noise
16 Ordinance.

17 Residences, schools, libraries, hospitals, and recreational areas generally are considered to be
18 noise sensitive receptors. New development within the reuse plan area would include noise
19 sensitive receptors, such as residences, schools, and recreation areas.

20 **4.7.1 Alternative 1**

21 ***Not Significant Impacts***

22 Noise generated by traffic associated with reuse (Factors 1 and 2). Implementation of Alternative 1
23 would result in minor additional vehicular noise from traffic generated by new development.
24 Projected vehicle noise levels along major roadways on Yerba Buena Island are summarized in
25 Table 4.7-1 and assume the existing SFOBB configuration.

26 As indicated in Table 4.7-1, traffic added to the SFOBB by Alternative 1 would not cause a
27 noticeable change in freeway noise levels; compared to future baseline conditions without the
28 project, noise levels would increase by less than one-tenth of an A-weighted decibel. Predicted
29 traffic volumes on most Treasure Island and Yerba Buena Island roadways would not generate
30 CNEL levels above 60 dB for locations approximately 50 feet (15 m) from the edge of the road
31 because traffic speeds generally would be low (25 mph [40 km/hour]). Even along major collector
32 road segments where traffic speeds would be about 35 mph (56 km/hour) with substantial shuttle
33 bus traffic, CNEL levels generally would be less than 61 dB at a distance of approximately 50 feet
34 (15 m) from the edge of the road. Predicted noise levels do not exceed any adopted land use
35 compatibility thresholds (see Table 3.7-1); therefore, the noise impact from on-site traffic would be
36 less than significant, and no mitigation is proposed.

37 Ferry service to and from Treasure Island would not be a significant noise source. Boat engines
38 and boat horns would be a minor localized noise source. Based on observations at the San

Table 4-7-1. Summary of Traffic Noise Modeling 24-hour Results for Yerba Buena Island (page 1 of 2)

Location and Distance From SFOBB	MODELED CNEL LEVELS (dBA) FOR WEEKDAY CONDITIONS								
	Existing Baseline	Future Baseline Without Project	Baseline Change from Existing	Alternative 1	Change due to Project	Alternative 2	Change due to Project	Alternative 3	Change due to Project
NEAR MACALLA ROAD AT EASTERN END OF YERBA BUENA ISLAND									
100 ft N of I-80	81.1	81.4	+0.3	81.5	+0.1	81.5	+0.1	81.3	-0.1
200 ft N of I-80	75.9	76.2	+0.3	76.3	+0.1	76.3	+0.1	76.1	-0.1
300 ft N of I-80	72.9	73.3	+0.3	73.3	+0.1	73.3	+0.1	73.1	-0.1
500 ft N of I-80	69.1	69.5	+0.3	69.5	+0.1	69.5	+0.1	69.3	-0.1
750 ft N of I-80	66.0	66.3	+0.3	66.4	+0.1	66.4	+0.1	66.2	-0.1
1000 ft N of I-80	63.7	64.1	+0.3	64.1	+0.1	64.1	+0.1	63.9	-0.1
100 ft S of I-80	81.1	81.4	+0.3	81.5	+0.1	81.5	+0.1	81.3	-0.1
200 ft S of I-80	76.3	76.6	+0.3	76.7	+0.1	76.7	+0.1	76.5	-0.1
300 ft S of I-80	73.5	73.9	+0.3	73.9	+0.1	73.9	+0.1	73.7	-0.1
500 ft S of I-80	70.0	70.4	+0.3	70.4	+0.1	70.4	+0.1	70.2	-0.1
750 ft S of I-80	67.1	67.5	+0.3	67.5	+0.1	67.5	+0.1	67.3	-0.1
1,000 ft S of I-80	65.0	65.3	+0.3	65.3	+0.1	65.3	+0.1	65.1	-0.1
ABOUT 300 FEET EAST OF EASTERN TUNNEL OPENING, YERBA BUENA ISLAND									
100 ft N of I-80	80.9	81.2	+0.3	81.3	+0.1	81.3	+0.1	81.1	-0.1
200 ft N of I-80	75.8	76.2	+0.3	76.2	+0.1	76.2	+0.1	76.0	-0.1
300 ft N of I-80	72.8	73.2	+0.3	73.2	+0.1	73.2	+0.1	73.0	-0.1
500 ft N of I-80	69.1	69.4	+0.3	69.5	+0.1	69.4	+0.1	69.2	-0.1
750 ft N of I-80	66.0	66.3	+0.3	66.4	+0.1	66.4	+0.1	66.2	-0.1
1,000 ft N of I-80	63.8	64.1	+0.3	64.2	+0.1	64.2	+0.1	64.0	-0.1
100 ft S of I-80	80.9	81.2	+0.3	81.3	+0.1	81.3	+0.1	81.1	-0.1
200 ft S of I-80	75.9	76.2	+0.3	76.2	+0.1	76.2	+0.1	76.0	-0.1
300 ft S of I-80	72.8	73.2	+0.3	73.2	+0.1	73.2	+0.1	73.0	-0.1
500 ft S of I-80	69.1	69.4	+0.3	69.5	+0.1	69.5	+0.1	69.3	-0.1
750 ft S of I-80	66.1	66.4	+0.3	66.5	+0.1	66.5	+0.1	66.3	-0.1
1,000 ft S of I-80	64.0	64.3	+0.3	64.4	+0.1	64.4	+0.1	64.2	-0.1

Table 4.7-1. Summary of Traffic Noise Modeling 24-hour Results for Yerba Buena Island (Page 2 of 2)

Location and Distance From SFOBB	MODELED CNEL LEVELS (dBA) FOR WEEKDAY CONDITIONS								
	Existing Baseline	Future Baseline Without Project	Baseline Change from Existing	Alternative 1	Change due to Project	Alternative 2	Change due to Project	Alternative 3	Change due to Project
ABOUT 160 FEET WEST OF WESTERN TUNNEL OPENING, YERBA BUENA ISLAND									
100 ft N of I-80	80.5	80.9	+0.3	81.0	+0.1	81.0	+0.1	80.7	-0.1
200 ft N of I-80	75.1	75.5	+0.3	75.6	+0.1	75.5	+0.1	75.3	-0.1
300 ft N of I-80	72.1	72.4	+0.3	72.5	+0.1	72.4	+0.1	72.2	-0.1
500 ft N of I-80	68.3	68.6	+0.3	68.7	+0.1	68.7	+0.1	68.5	-0.1
750 ft N of I-80	65.5	65.8	+0.3	65.8	+0.1	65.8	+0.1	65.6	-0.1
1,000 ft N of I-80	63.4	63.7	+0.3	63.8	+0.1	63.8	+0.1	63.6	-0.1
100 ft S of I-80	80.6	80.9	+0.3	81.0	+0.1	81.0	+0.1	80.7	-0.1
200 ft S of I-80	75.1	75.5	+0.3	75.5	+0.1	75.5	+0.1	75.3	-0.1
300 ft S of I-80	72.0	72.4	+0.3	72.4	+0.1	72.4	+0.1	72.2	-0.1
500 ft S of I-80	68.3	68.6	+0.3	68.7	+0.1	68.7	+0.1	68.5	-0.1
750 ft S of I-80	65.4	65.8	+0.3	65.8	+0.1	65.8	+0.1	65.6	-0.1
1,000 ft S of I-80	63.4	63.7	+0.3	63.8	+0.1	63.8	+0.1	63.6	-0.1
<p><i>Notes:</i> dBA = A-weighted decibels.</p> <p>CNEL = Community noise equivalent level (a 24-hour weighted average noise level, with evening noise weighted by 5 dBA and nighttime noise weighted by 10 dBA).</p> <p>Noise modeling performed using a spreadsheet version of the Federal Highway Administration Traffic Noise Prediction Model (FHWA 1978) to model a full 24-hour pattern of traffic volumes. Noise contributions from trucks modeled using Caltrans data (Caltrans 1984).</p> <p>Modeled CNEL values are about 3.3 dBA greater than the maximum 1-hour dBA value.</p> <p>Upper and lower decks of the SFOBB modeled as separate roadways; tunnel sections were treated as being completely shielded.</p> <p>Hourly traffic volumes were extrapolated from 1994 patterns, making adjustments to match traffic analysis predictions of peak period volumes, and total daily traffic based on future No Action volumes plus weekday vehicle traffic added by reuse alternatives.</p> <p>Modeled vehicle speeds adjusted according to estimated hourly volume/capacity ratios. Truck volumes set as fractions of the hourly total volume. Daily medium truck volume averages about 2%; daily heavy truck volume averages about 2.4%.</p> <p>Noise drop-off rate for the lower deck modeled as 4.5 dBA per doubling of distance; noise drop-off rate for the upper deck modeled as 5 dBA per doubling of distance.</p>									

1 Francisco Ferry Building, boat engine noise is about 70 to 75 dBA at approximately 50 feet (15
2 m) when boats are maneuvering away from the dock during ferry departures (Tetra Tech 2001).
3 Boat engine noise levels are lower while arriving ferry boats dock. Boat horn noise is about 85
4 dBA at approximately 50 feet (15 m), but this is a brief noise event. The ferry dock area on
5 Treasure Island would not contain noise-sensitive land uses, and these noise conditions would
6 not be a significant impact. No mitigation is proposed.

7 Noise-related land use compatibility on Treasure Island (Factor 3). The proposed themed attraction
8 would be a potential source of locally high noise levels. Potential impacts on nearby noise-
9 sensitive land uses, such as persons engaged in recreational activities, would be avoided by
10 appropriate site design. Reasonable attention to site planning and building design would
11 minimize the potential for noise problems in mixed-use zones. Future noise-sensitive uses on
12 Treasure Island would be developed in accordance with applicable regulations and would have
13 adequate noise protection. For example, the San Francisco Building Code includes standards
14 for noise insulation that would be met by new residential construction. In addition, the San
15 Francisco Noise Ordinance is an enforcement mechanism that would limit noise impacts from
16 construction activities and stationary sources. Existing on-site housing units planned for reuse
17 are separated from proposed uses that would be sources of high noise levels by approximately
18 0.25 mile and, therefore, are not anticipated to experience noise levels greater than 60 dBA.
19 Because predicted noise levels do not exceed any adopted land use compatibility thresholds
20 (see Table 3.7-1), no significant noise-related land use compatibility conflicts are anticipated on
21 Treasure Island. No mitigation is proposed.

22 Noise-related land use compatibility on Yerba Buena Island (Factor 3). Alternative 1 would include
23 noise-sensitive residential and commercial uses on portions of Yerba Buena Island that are
24 currently subject to high levels of noise from existing traffic on the SFOBB. Existing CNEL noise
25 levels of up to 81 dBA were found during computer modeling (see Table 4.7-1). Locations
26 within approximately 800 feet (244 m) of the freeway would be subject to CNEL levels above 65
27 dBA except where intervening topography provides noise shielding. Locations within
28 approximately 500 feet (152 m) of the freeway may be exposed to CNEL levels above 70 dBA.
29 These noise levels could pose land use compatibility problems for residential land uses and
30 some commercial land uses (such as restaurants, hotels, and conference centers) if they are not
31 addressed through building design and construction to minimize indoor noise levels. It is
32 difficult to mitigate outdoor noise levels for low-density residential development, especially
33 when noise sources are elevated with respect to residential areas. For residential and
34 commercial developments using tall buildings, the building structures can be used to mitigate
35 outdoor noise levels in relatively modest, largely enclosed outdoor spaces. Since precise site
36 design and building design plans are not known, it is speculative to draw conclusions regarding
37 the significance of outdoor noise impacts for locations relatively close to the SFOBB.

38 For development on the northern portion of Yerba Buena Island, the Draft Reuse Plan design
39 guidelines identify methods to reduce bridge noise effects (including arranging proposed
40 buildings to open away from the bridge and designing buildings with a "U" or courtyard
41 shape). In addition, state requirements for building insulation would reduce interior noise
42 levels to acceptable levels. If feasible, existing buildings that would be retained in areas of high
43 ambient noise levels (e.g., historic structures on Yerba Buena Island) could be retrofitted with
44 noise insulation features such as fixed windows and climate controls. These building insulation

1 requirements and the associated noise reduction benefits apply to all structures regardless of
2 interior noise levels. Land use compatibility conflicts, therefore, would be not significant, and
3 no mitigation is proposed.

4 Construction and demolition noise (Factor 4). Construction, demolition, and pile-driving activities
5 have the potential for causing temporary disturbance to adjacent land uses. Construction and
6 demolition activities would occur intermittently over an extended period; economic conditions
7 would influence the amount, duration, and location of construction activities.

8 Noise levels from typical construction and demolition activities are summarized in Table 4.7-2.
9 Most construction and demolition activity would result in CNEL levels above 70 dBA within
10 approximately 200 feet (61 m) of construction sites. Pile-driving equipment generates a highly
11 disturbing impulsive noise; over an 8-hour work day, CNEL increments would exceed 70 dBA
12 for locations within approximately 600 feet (183 m) of pile-driving sites. Most pile-driving
13 activity would occur on Treasure Island. Construction noise would become objectionable when
14 areas close to noise-sensitive land uses are developed. Under Alternative 1, proposed noise-
15 sensitive land uses include new residences, as well as parks, plazas, and other open space and
16 recreational areas.

17 Construction noise impacts would be reduced to acceptable levels by restricting construction
18 activities to normal daytime periods, by providing temporary noise barriers, such as heavy
19 plywood fencing where necessary, and by sequencing development, to the extent feasible and
20 practicable, such that noise-sensitive land uses are constructed last. Conditions would be
21 imposed through San Francisco's building permit process and would result in controlled and
22 reduced noise emissions. If pile driving during nighttime hours is required, it would be
23 necessary to obtain a work permit from the San Francisco Director of Public Works, pursuant to
24 San Francisco Noise Ordinance Section 2908. Construction noise, therefore, would not result in
25 a significant impact. No mitigation is proposed.

26 4.7.2 Alternative 2

27 *Not Significant Impacts*

28 Noise generated by traffic associated with reuse (Factors 1 and 2). Noise levels on NSTI roadways
29 and from ferry service to and from Treasure Island would not be significant, as described above
30 for Alternative 1.

31 Noise levels on Yerba Buena Island are dominated by existing freeway noise from the SFOBB.
32 Similar to Alternative 1, traffic added to the SFOBB by Alternative 2 would not cause a
33 noticeable change in freeway noise levels; compared to future baseline conditions without the
34 project, noise levels would increase by less than one-tenth of an A-weighted decibel (see Table
35 4.7-1). Consequently, Alternative 2 would not generate significant traffic noise impacts. No
36 mitigation is proposed.

37 Noise-related land use compatibility on Treasure Island (Factor 3). Similar to Alternative 1, the
38 proposed themed attraction would be a potential source of locally high noise levels from traffic,
39 visitors, and rides and attractions, but potential impacts would be avoided by appropriate site
40 design. In addition, noise-sensitive land uses such as residences or schools would not be

4.7 Noise

1 developed on Treasure Island. Consequently, no significant noise-related land use conflicts are
 2 anticipated on Treasure Island. No mitigation is proposed.

Table 4.7-2. Typical Construction Noise Impacts

Distance from Site (feet)	CNEL INCREMENTS (dBA) FROM TYPICAL CONSTRUCTION PHASES			
	Building Demolition	Site Preparation	Excavation	Pile Driving
50	85.1	84.7	85.7	92.0
100	79.0	78.6	79.6	85.9
200	72.8	72.5	73.5	79.7
400	66.5	66.2	67.2	73.4
600	62.7	62.3	63.4	69.6
800	59.9	59.6	60.6	66.8
1,000	57.6	57.3	58.4	64.5
1,500	53.3	53.1	54.1	60.2
2,000	50.1	49.9	50.9	56.9
2,500	47.4	47.3	48.3	54.2
3,000	45.1	45.1	46.1	51.8
4,000	41.3	41.3	42.3	47.7
5,280	37.2	37.3	38.3	43.3
7,500	31.5	31.6	32.7	36.8
9,000	28.3	28.4	29.5	32.9
10,560	25.2	25.3	26.5	29.1

Notes: dB = decibel. Decibel scales are a logarithmic index based on ratios between a measured value and reference value.
 dBA = A-weighted decibels.
 CNEL = Community noise equivalent level. Noise calculations incorporate both distance attenuation and atmospheric absorption effect. Noise estimates assume variable equipment use over a 10-hour work day with no nighttime construction activity. Building demolition assumed to be through use of heavy equipment rather than explosives. Building demolition assumed to require two bulldozers, one front end loader, two heavy trucks, and a water truck. Site preparation assumed to require one bulldozer, one backhoe, one front end loader, two heavy trucks, and one water truck. Foundation excavation assumed to require one power shovel, one front end loader, two heavy trucks, and one water truck. Pile driving assumed to require one heavy truck, one crane, one forklift, and one pile driver.

Sources: EPA 1971; Gharabegian, et al. 1985; Acoustical Society of America 1978.

3 Noise-related land use compatibility on Yerba Buena Island (Factor 3). Potential noise-related land
 4 use compatibility impacts and their remedies on Yerba Buena Island under Alternative 2 would
 5 be similar to those described for Alternative 1 and would be not significant. If feasible, existing
 6 buildings that would be retained in areas of high ambient noise levels (e.g., historic structures
 7 on Yerba Buena Island) could be retrofitted with noise insulation features, such as fixed
 8 windows and climate controls. No mitigation is proposed.

9 Construction and demolition noise (Factor 4). Noise impacts from construction, demolition, and
 10 pile driving would be similar for Alternative 2 to those discussed for Alternative 1. While the

1 amount of construction activity would be less than for Alternative 1, the nature and scale of
2 individual construction projects would probably be similar.

3 As indicated in Table 4.7-2, most construction and demolition activity would result in CNEL
4 levels above 70 dBA within approximately 200 feet (61 m) of construction sites. Pile driving
5 would result in CNEL levels above 70 dBA within approximately 600 feet (183 m) of the
6 construction site. Most pile-driving activity would occur on Treasure Island. Construction
7 noise would become objectionable if areas close to noise-sensitive land uses are developed. For
8 Alternative 2, noise-sensitive land uses include a golf course and other open space and
9 recreational areas. Construction noise impacts would be temporary, limited to the construction
10 period, and minimized by restricting construction activities to daytime periods, by providing
11 temporary noise barriers, by muffling and shielding construction equipment, where necessary,
12 and by sequencing development. No mitigation is proposed.

13 4.7.3 Alternative 3

14 *Not Significant Impacts*

15 Noise generated by traffic associated with reuse (Factors 1 and 2). Traffic generated by buildout of
16 Alternative 3 would not cause significant noise impacts on Treasure Island or Yerba Buena
17 Island.

18 Noise levels on Yerba Buena Island are dominated by existing freeway noise on the SFOBB.
19 Traffic added to the SFOBB by Alternative 3 would not cause a noticeable change in freeway
20 noise levels; compared to future baseline conditions without the project, noise levels would
21 actually decrease by approximately one-tenth of an A-weighted decibel (see Table 4.7-1).
22 Consequently, Alternative 3 would not generate traffic noise impacts and would provide a
23 beneficial impact. No mitigation is proposed.

24 Noise-related land use compatibility on Treasure Island (Factor 3). The proposed themed attraction
25 would be a potential source of locally high noise levels, but potential impacts would be avoided
26 by appropriate site design. Reasonable attention to site planning and building design would
27 minimize the potential for noise problems in mixed-use zones; consequently, no significant
28 noise-related land use conflicts are anticipated on Treasure Island. No mitigation is proposed.

29 Noise-related land use compatibility on Yerba Buena Island (Factor 3). Potential noise-related land
30 use compatibility impacts and their remedies on Yerba Buena Island under Alternative 3 would
31 be similar to those described for Alternative 1 and would not be significant. However, because
32 Alternative 3 calls for extensive reuse of existing buildings, the Draft Reuse Plan design
33 guidelines to reduce bridge noise effects in new construction and building design would not
34 apply. If feasible, existing buildings that would be retained in areas of high ambient noise
35 levels (e.g., historic structures on Yerba Buena Island) could be retrofitted with noise insulation
36 features, such as fixed windows and climate controls. No mitigation is proposed.

37 Construction and demolition noise (Factor 4). Although new construction under this alternative
38 would be substantially less than for the other reuse alternatives, the nature and scale of some
39 individual construction projects would be similar to those of the other reuse alternatives.
40 Construction noise would become objectionable if areas close to noise-sensitive land uses were

1 developed, such as residential and recreation uses. Construction noise impacts generally can be
2 reduced by restricting construction activities to daytime periods, by providing temporary noise
3 barriers, by muffling and shielding equipment, where necessary, and by sequencing
4 development. Noise impacts from construction and demolition activities, therefore, would not
5 be significant. No mitigation is proposed.

6 **4.7.4 No Action Alternative**

7 Under the No Action Alternative, NSTI would remain in federal government ownership under
8 a caretaker maintenance program, and existing interim leases would be allowed to expire.
9 Minimal use of the property and facilities would occur under this alternative, and no noise-
10 sensitive land uses would be introduced on NSTI. No new activity would occur on NSTI,
11 resulting in the elimination of traffic noise generated by vehicles traveling to and from the
12 islands. As a result, the No Action Alternative would have a beneficial impact of reducing
13 traffic noise.

1 **4.8 BIOLOGICAL RESOURCES**

2 Biological resources addressed in this section include sensitive species, sensitive habitats, and
3 wetlands. Factors considered in determining whether an alternative would have significant
4 impacts on biological resources included the extent or degree to which its implementation
5 would:

- 6 1. Damage wetlands or other special aquatic sites afforded protection under the CWA,
7 Section 404 (16 U.S.C. §1344) and the § 404(b)(1) guidelines (40 C.F.R. Part 230) or other
8 sensitive habitats;
- 9 2. Adversely affect sensitive species, including those listed or proposed for listing as
10 endangered or threatened under the ESA (16 U.S.C. §§ 1531-1544), marine mammals
11 afforded protection under the MMPA (16 U.S.C. §§ 1361-1421h), migratory birds
12 afforded protection by the MBTA (16 U.S.C. §§ 703-712) and Executive Order 13186, or
13 other species of concern; and,
- 14 3. Degrade or destroy designated critical habitat, as defined by the ESA, or Essential Fish
15 Habitat (EFH), as defined by the MSA.

16 **4.8.1 Alternative 1**

17 Under this alternative, the planned actions most affecting biological resources would be
18 dredging, increased boat traffic, and increased human presence. The biological resources of
19 concern are the mudflat/eelgrass habitat, shallow water marine habitat, and salmonids (and
20 associated critical habitat and EFH). There would be no significant impacts to ESA protected
21 marine mammal, bird or sea turtle species.

22 ***Significant and Mitigable Impacts***

23 ***Impacts to Sensitive Habitats***

24 ***Impact: Mudflat habitat disturbance (Factor 1).*** Significant impacts to mudflat habitat, including
25 eelgrass beds, may occur as a result of increased pedestrian and boating activity around Clipper
26 Cove (Figure 3-14). These impacts are not a direct consequence of the property transfer, but
27 could result from subsequent development. The eelgrass beds are the most sensitive habitats of
28 the designated EFH within the project area. Under Alternative 1, the proposed themed
29 attractions would attract approximately 13,700 daily visitors, which combined with residential
30 development on Treasure Island, would result in increased pedestrian activity in the area
31 adjacent to Clipper Cove. This is likely to result in more people exploring the mudflats during
32 low tide, which could disturb this sensitive habitat.

33 The enlarged marina under this alternative would add approximately 200 new boat slips and
34 100 new tie-up buoys to the existing 100 slips and would quadruple boat traffic in Clipper Cove.
35 This would increase the potential for mudflat habitat disturbance, especially during low tides
36 when recreational boating traffic could erode nearshore sediment, which could directly affect
37 invertebrate prey species in shallow water.

4.8 Biological Resources

1 Although the project area is not under BCDC jurisdiction as a Navy facility, conversion to a
2 nonfederal facility would place it within the jurisdiction of this agency. Expanding the marina
3 or constructing a yacht harbor, new docks, or other structures that would cover the surface of
4 the water would Waters of the United States and would require permits from the BCDC and the
5 COE.

6 *Mitigation.* Construction would require a permit from the COE under Section 404 of the CWA or
7 Section 10 of the Rivers and Harbors Act, as well as a permit from the BCDC. In conjunction
8 with the permitting process, the permittee (property recipient or developer) would be required
9 to minimize disturbance to mudflats and eelgrass beds during construction, and, in the long
10 term, to develop and implement a plan to minimize disturbance of these sensitive habitats from
11 recreational activity. Subject to COE and BCDC review and approval, the permittee could be
12 required to post signs along the shore adjacent to the mudflats and at the marina to inform
13 pedestrians and recreational boaters that the mudflats are a protected sensitive area and that
14 trespassing is not permitted. In addition, buoys could be placed in the bay to identify the
15 restricted mudflat area. A 5-mph (8 kph) zone could be established in Clipper Cove to
16 minimize shoreline and mudflat erosion from high-speed recreational boats in shallow near-
17 shore areas. Placing buoys to mark the channel and establishing a 5-mph (8 kph) zone to
18 regulate impacts from recreational boats would require a US Coast Guard aid to navigation
19 permit. Posting the shoreline with information signs and establishing a 5-mph (8 kph) zone
20 could minimize impacts from recreational boats to sensitive mudflats and eelgrass beds.

21 Complying with these mitigation procedures would eliminate or reduce impacts to less than
22 significant.

23 *Impacts to Sensitive Bird Species*

24 *Impact: Pedestrian and boating impacts on migratory birds (Factors 1 and 2).* Increased pedestrian
25 and boating activity around Clipper Cove could have a significant impact on shore- and water-
26 birds (migratory birds protected by the MBTA and Executive Order 13186) by affecting
27 mudflats and eelgrass beds where shorebirds forage. An increase in pedestrian activity near
28 Clipper Cove from new residents and visitors to the themed attractions would be expected
29 result in more people exploring the mudflats during low tide, which could disturb avian species
30 and sensitive habitat zones. In addition, the enlarged marina would quadruple boat traffic in
31 Clipper Cove, increasing the potential for disturbing mudflat habitat and for eroding nearshore
32 sediments, especially during low tides, which could affect invertebrate and fish populations in
33 shallow water. This could affect food resources for migratory birds, and could result in a
34 decrease in foraging success and thus an increase to the birds' energy expenditure. Breeding
35 areas of shorebirds and other resident and migratory species are not likely to be affected. The
36 federally listed western snowy plover is not expected to occur at the project area and therefore
37 would not be affected. Any individual plovers that may be present would be protected by the
38 measures described below.

39 *Mitigation.* In conjunction with permitting by the BCDC and COE, the property recipient or
40 developer could be required to post signs along the shore adjacent to the mudflats and at the
41 marina, informing pedestrians and boaters that the mudflats are a protected and sensitive area.
42 Placing buoys in the bay, identifying the mudflat area as restricted, and establishing a 5-mph (8
43 kph) zone in Clipper Cove could reduce impacts by decreasing both numbers of people and

1 boats in the area. Placing buoys and establishing a 5-mph (8 kph) zone would require a US
2 Coast Guard aid to navigation permit.

3 Implementing these mitigation measures would reduce the impacts on identified avian species
4 to a less than significant level.

5 The acquiring entity or entities would be responsible for implementing these mitigation
6 measures, which would reduce the impacts on migratory bird species to less than significant. It
7 is noted that the regional office of the USFWS, in a letter to the Navy (see Appendix C)
8 recommended that a covenant for the protection of birds protected under the Migratory Bird
9 Treaty Act be included in the deed transferring ownership of the property. The Navy, in the
10 absence of statutory authority, is without legal authority to impose such restrictions.

11 *Impacts to Mudflat and Eelgrass Habitat (EFH)*

12 Impact: Pedestrian and boating impacts on EFH (Factor 1). Increased boat and pedestrian activity
13 around Clipper Cove could have an indirect significant impact on EFH by degrading eelgrass
14 vegetated areas and shallow water and mudflat areas. These areas provide important fish
15 spawning, rearing, and foraging habitat. Impacts to EFH from pedestrian and boating activities
16 are the same as those described under the impact to sensitive habitats, described above.

17 *Mitigation.* Proposed mitigation measures are the same as those discussed under impacts to
18 sensitive habitat above. Complying with these mitigation procedures would eliminate impacts
19 or reduce impacts to less than significant.

20 *Not Significant Impacts*

21 Dredging and construction impacts to mudflat and eelgrass habitat (EFH) (Factor 1). Due to their
22 function as cover and feeding habitat for a number of species, eelgrass vegetated areas on the
23 southeastern side of Clipper Cove are considered the most sensitive aspect of EFH in the project
24 area. Herring are known to spawn and deposit their eggs in the eelgrass beds of the
25 surrounding shallow water. A decrease in the quantity of eelgrass around the islands could
26 result in a decrease in egg deposits and a subsequent decrease in the local population of herring,
27 thereby reducing available forage for harbor seals. Any reduction in eelgrass habitat also
28 would affect shorebirds, such as dowitchers and sandpipers, by reducing foraging
29 opportunities.

30 The lower limit of eelgrass growth is determined by the amount of available light, and plants at
31 the lower limits of growth areas may not have sufficient carbon reserves to withstand periods of
32 high turbidity (Zimmerman et al. 1991). Turbidity generated by dredging could significantly
33 lower the amount of light available to eelgrass at the lower limits and could make such areas
34 unsuitable as habitat for the species. If daily, monthly, and seasonal light requirements of the
35 species are not met, a die-off and reduction in the extent of eelgrass may occur (Zimmerman et
36 al. 1991). Dredging is not proposed in or near eelgrass beds.

37 Some dredging and construction is proposed on the northwestern side of Clipper Cove for
38 expanding and maintaining the marina. This dredging would occur at a significant distance,
39 approximately 1,200 feet, from eelgrass beds on the southeastern side of Clipper Cove (Figure 3-

14). Dredging, inserting pilings, or installing the seismic wall on the northwestern side of Clipper Cove is unlikely to affect these eelgrass beds due to the distance between construction areas and eelgrass beds.

The property recipient or developer would have to obtain required permits from the COE under section 404 of the CWA and Section 10 of the Rivers and Harbors Act. Also, the ESA and CEQA would require the property recipient or developer to consult and coordinate with the NMFS and CDFG before beginning any activities that may adversely affect sensitive habitats or species. The various permits and conditions resulting from consultations with state and federal resource agencies would address mitigation, avoidance, or minimization of potential adverse impacts. Required permits and consultations also would address impacts associated with disposal of dredge material.

Impacts to other sensitive habitats (Factor 1). Impacts to jurisdictional wetlands, open water habitats, and terrestrial habitats would be less than significant because most development would occur on lands previously developed or disturbed and would not affect any lands currently used or occupied by any sensitive species (Figure 3-14). Marsh gumplant, the only plant species of concern known to occur on or near the project area, occurs to the east of the main project area and would not be affected by project activities. Dredging could result in short-term localized impacts to water quality in open water habitats. These activities are unlikely to cause significant impacts to sensitive habitats because of the distance between these habitats and the dredging activities. No mitigation is proposed.

Under Alternative 1, the number of boat slips in the proposed marina would quadruple, increasing the risk of accidental oil or gas spills. Section 1321 of the CWA (33 U.S.C. § 1321) prohibits the discharge of oil or hazardous substances into or upon the navigable waters of the U.S. Very small quantities of oil or gasoline spilled on surface waters can adversely affect sensitive habitat, although in practice it is difficult to prevent the discharge of small quantities of oil from the many possible sources. Two types of discharges are recognized by the EPA: point discharges attributable to a single source, such as from a pipe or a vent, and nonpoint discharges, which include the many small, accidental, and difficult to account for sources of pollutants. Point discharges are prohibited except under an NPDES permit issued by the RWRQB. NPDES permitting requirements cover runoff discharged from point sources and would minimize potential impacts to sensitive habitats.

The EPA or the state implementing agencies also require that certain classes of industrial facilities and activities, including marinas, obtain permits to allow them to discharge stormwater, provided that they conduct monitoring and adopt best management practices designed to identify and reduce the potential for nonpoint pollution. Certain shoreline facilities that store oil or hazardous substances are required to prepare and implement spill prevention, control, and countermeasures (SPCC) plans, which address the training and readiness to prevent and respond to spills. Finally, accidental spills must be reported to the appropriate regulatory agencies with jurisdiction over the affected waterbody, such as the US Coast Guard and the RWQCB. The possibility of an accidental spill is unknown, as is the potential intensity, which would depend on the volume released, wind patterns, tides, and other physical features. While the potential for spills cannot be eliminated entirely, existing regulatory requirements minimize the potential for spills to occur, require timely response to accidental spills, and reduce the potential for nonpoint sources to cause significant adverse impacts on surface water

1 quality. The US Coast Guard would have a quick response time, given its proximity to the site;
2 any spills would be contained and would have less than significant impacts on biological
3 resources. Therefore, increased boat traffic, including from proposed ferry service, is not
4 expected to result in significant impacts to sensitive species.

5 Impacts to critical habitat (Factor 3). The project area is within designated critical habitat for two
6 fish species, the Sacramento River winter-run chinook salmon and the central California coast
7 coho salmon. Other listed salmonids can occur in the project area. However, the actual project
8 area is constitutes a very small portion of the specified habitat, and provides very limited food
9 or other habitat resources for these species. Potential impacts under this alternative would be
10 localized and would not adversely affect critical habitat in the area. No mitigation is proposed.
11 The Navy has initiated and concluded informal consultation with NOAA Fisheries (NMFS) on
12 this project. On August 8, 2002 NOAA Fisheries concurred that the proposed action is not
13 likely to adversely affect listed species or their critical habitats (Appendix C).

14 The project area falls within designated critical habitat for the endangered Steller sea lion, but
15 this critical habitat zone covers almost all of the west coast of the US, including Alaska. Because
16 the project area makes up such a small portion of that critical habitat and the species is rarely
17 seen in the bay, impacts from project activities would be less than significant. No mitigation is
18 proposed.

19 Impacts to sensitive marine mammal species (Factor 2). Increased boating activity from ferry service
20 or from expanding the marina would increase boat traffic and human presence in the project
21 vicinity and in the vicinity of the harbor seal haulout areas. Most impacts would come from
22 recreational boats because large vessels would not be found near the haulout area. The level of
23 boat traffic is the single strongest predictor of harbor seal haulout numbers; the more boat
24 traffic, the fewer seals at the haulout site (Lelli and Harris 2001). Wild animals must maintain a
25 balance between intake of nutrients and expenditure of energy to stay healthy. For example,
26 stress can be caused by too little food, or, conversely, too much energy expenditure. If the
27 harbor seals are overly disturbed while hauled out, which is generally a time of rest and
28 recovery, this could increase their energetic expenditure. Although this area is used as a
29 primary haulout site for seals in the bay, they are reasonably adaptable to disturbance from
30 noise and can tolerate some degree of continuous exposure to human-made sounds. Seals can
31 show short-term behavioral reactions to noise (Phillips 1999), especially at low tides or when
32 pups are present (Green 2001). An accurate prediction of the number of boaters in the vicinity
33 of the haulout area is not available; however, the level of potentially disturbing boat activity is
34 not expected to differ substantially from present conditions, in which there are more sailboats
35 than power boats, and in which boats have difficulty accessing the rocky shoreline in the
36 vicinity of the haulout. Additionally, there are signs posted presently warning boaters to keep
37 their distance from the harbor seal haulout site. Impacts to seals at the primary haulout and the
38 secondary haulout west of this site would not be significant.

39 Dredging could have an indirect impact on harbor seals by affecting herring, a preferred harbor
40 seal prey species that is a significant portion of their diet. Dredging also could have a direct
41 impact on harbor seals from noise associated with dredging to establish and maintain minimum
42 depths for the proposed marina and other boating activities. Dredging noise would be
43 comparable to the noise associated with ongoing vessel traffic in the vicinity and would not be
44 expected to increase the level of disturbance to harbor seals. These activities would occur on the

1 opposite side of the island from the haulout, affect a relatively small area temporarily, and are
2 unlikely to significantly affect the food resources or normal activities of harbor seals, and no
3 mitigation is proposed. . The property recipient or developer would have to obtain required
4 permits from the COE under sections 404 and 401 of the CWA and Section 10 of the Rivers and
5 Harbors Act. Also, the ESA and CEQA would require the property recipient or developer to
6 consult and coordinate with the NMFS and CDFG before beginning any activities that may
7 adversely affect sensitive habitats or species. The various permits and conditions resulting from
8 consultations with state and federal resource agencies would address mitigation, avoidance, or
9 minimization of potential adverse impacts. Required permits and consultations also would
10 address impacts associated with disposal of dredge material.

11 Impacts to all other marine mammals from dredging or increased boating and pedestrian
12 activity also would be less than significant. Other marine mammals species in the ROI occur on
13 an intermittent to rare basis and therefore are unlikely to be affected by dredging, increased
14 boating or pedestrian activities. No mitigation is proposed.

15 Impacts to benthic organisms (Factor 3). Dredging in Clipper Cove would have a short-term
16 adverse impact on benthic organisms and bottom-dwelling invertebrates found within the
17 shallow water habitat of the cove. This impact would affect local populations and is not
18 expected to affect the overall population of these species within the bay. Impacts to these
19 species would lead to impacts to fish and bird species that prey on them, in that the amount of
20 available prey in this area would be reduced temporarily. There are no sensitive aquatic species
21 within this area, except for eelgrass, described in the previous section. Invertebrates affected by
22 dredging are expected to reestablish themselves in the dredged zone over time. No mitigation
23 is proposed.

24 Impacts to sensitive bird species (Factors 1 and 2). Except for the pedestrian and boating impacts
25 on MBTA-protected shorebirds described previously, there would be no significant impacts to
26 sensitive bird species. Habitat degradation, human presence, and expansion of the marina,
27 including dredging, under this alternative would not have a significant impact on bird species
28 protected under ESA.

29 American peregrine falcons, a federally delisted but state-listed threatened species, forage in the
30 Central Bay and nest on the SFOBB and Golden Gate Bridge. As noted in section 3.8, two pairs
31 nest on SFOBB—one on the support structure east of Yerba Buena Island and one on the central
32 support structure between the island and San Francisco. This species may hunt over the water
33 and land portions of the site and is unlikely to be adversely affected by development proposed
34 under this alternative because the habitat of the falcon's common prey species (small birds)
35 would remain similar to existing conditions. The peregrine falcon has adapted to an urban
36 setting that includes SFOBB traffic noise and lights; therefore project-related noise and lighting
37 would not be expected to adversely affect this species. No mitigation is proposed.

38 The California brown pelican and California least tern, federally listed endangered species,
39 occasionally forage for fish in areas off NSTI. The California least tern generally forages in
40 shallow waters and mudflat areas; the California brown pelican generally forages in deeper
41 water on anchovies and sardines, both of which are abundant in the ROI and would not be
42 affected by project activities. Increased boat traffic is likely to be dispersed throughout deep
43 water surrounding NSTI and would not significantly affect foraging habitat or activities for the

1 California brown pelican. There would be no significant impacts to prey species of these birds
2 from boating or from dredging, as described previously. No mitigation is proposed.

3 The Alameda song sparrow is considered unlikely to be affected due to its low numbers and the
4 lack of preferred habitat (salt marsh with marsh gumplant) in the main project area. This
5 species would most likely not be affected and there would be no significant impacts to their
6 prey species from boating activity or human presence, as described above. No mitigation is
7 proposed.

8 There would be no impacts to the California clapper rail because this species is not found in the
9 project area. There also would be no impacts to the double-crested cormorant because no
10 nesting sites are within the project area.

11 Impacts to sensitive fish species (Factors 1 and 2). The Central California coast steelhead is the
12 only ESA species that occurs in moderate numbers in the project area. Adults of this steelhead
13 ESU are most likely to be in the area during their migration to South Bay spawning grounds.
14 Juveniles are likely to be found in the proximity of the Central Bay, as they move from
15 upstream habitats to the deeper waters of the bay and eventually the Pacific Ocean. Fish are
16 sensitive to high noise levels. Juvenile steelhead would be especially sensitive to noise and
17 elevated turbidity from dredging and in-water construction. Operational noise levels are
18 recommended to remain below 150 dB; noise levels above 200 dB are lethal to fish (Woodbury
19 2001). Dredging sounds are not expected to reach these levels, and would be comparable to
20 noise associated with ongoing vessel traffic. Dredging and in-water construction would require
21 permitting from the COE and consultation with the NMFS regarding potential effects on listed
22 fishes. Conditions agreed on in these consultations would be implemented as part of project
23 activities, ensuring that project activities would not adversely affect ESA species such as the
24 Central California coast steelhead. Navy has initiated and concluded informal consultation
25 with NMFS on this project, with the conclusion that the proposal disposal of NSTI would not
26 adversely affect listed species or their critical habitats (Appendix C).

27 In addition, four salmon ESUs, including the Sacramento River winter-run, fall/late fall-run,
28 and spring-run chinook salmon and the Central Valley steelhead, may occur in the Central Bay
29 in low numbers (Woodbury 2001). The project area is not along main migration routes used by
30 these ESUs, therefore these species are not likely to be affected by project activities. These
31 species have been observed in the Central Bay (Woodbury 2001; Hieb 2001) but are likely to
32 occur in the area in low numbers due to the distance between the project area and their known
33 migratory route. Of the low numbers of individuals that occur in the project area, the majority
34 are likely to be juveniles (Woodbury 2001).

35 Delta smelt are found in the South Bay, although in much smaller numbers in comparison to
36 North Bay populations (Ganssle 1966; Messersmith 1969). Movement of delta smelt and the
37 contiguous nature of these sections of the San Francisco Bay make it likely that individual smelt
38 would be found in the Central Bay. The delta smelt does not spawn in the area and is not
39 expected to be affected by proposed project activities.

40 Longfin smelt migrate from the ocean to the delta to spawn but are known to enter the Central
41 Bay. Longfin smelt are found in their largest numbers in San Francisco Bay during the spring

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1 and summer, when they are juveniles (Messersmith 1969; Aplin 1967). The longfin smelt does
2 not spawn in the area and would not be expected to be affected by proposed project activities.

3 Green sturgeon are anadromous and may be found in low numbers in the Central Bay before or
4 after spawning in the Delta. The green sturgeon does not spawn in the area and would not be
5 expected to be affected by proposed project activities.

6 Fish that are managed under the West Coast Groundfish FMP and the Coastal Pelagics FMP
7 could inhabit the Central Bay. While groundfish, such as the Pacific sand dab, and coastal
8 pelagics, such as the northern anchovy, are found in the project area, they are mobile and can
9 move into other portions of the bay; therefore, their populations would not be expected to be
10 affected by proposed project activities.

11 Impacts to EFH (Factor 3). Dredging, constructing a seismic wall, expanding the marina, and
12 implementing other in-water activities proposed under Alternative 1 would result in not
13 significant impacts to EFH. All of the bay waters surrounding NSTI are designated as EFH for
14 fish managed under the three FMPs—the Pacific Groundfish FMP, the Coastal Pelagics FMP,
15 and the Pacific Coast Salmon FMP (NMFS 2000). The most delicate component of the Central
16 Bay EFH is the eelgrass vegetated areas. These areas are sensitive to high turbidity and are an
17 important resource to fish, which use eelgrass for depositing eggs, for foraging, and for seeking
18 shelter. The closest eelgrass vegetated area to potential dredging and in-water activities is on
19 the southeastern side of Clipper Cover. It is approximately 1,200 feet away from the proposed
20 dredging area in Clipper Cove (Figure 3-14). This distance is great enough to prevent dredging
21 from disturbing eelgrass.

22 The property recipient or developer would have to obtain permits from the COE under Sections
23 404 and 401 of the CWA and Section 10 of the Rivers and Harbors Act, and from BCDC. Also,
24 the ESA and CEQA require the property recipient or developer to consult and coordinate with
25 the NMFS and CDFG before beginning any activities that may adversely affect sensitive
26 habitats or species. The various permits and conditions resulting from consultations with state
27 and federal resource agencies would address mitigation, avoidance, or minimization of
28 potential adverse impacts. Required permits and consultations also would address impacts
29 associated with disposing of dredge material and would incorporate measures consistent with
30 the LTMS.

31 4.8.2 Alternative 2

32 Under this alternative, the proposed actions most affecting biological resources would be
33 dredging, expanding the marina, and increasing boat traffic.

34 *Significant and Mitigable Impacts*

35 *Impacts to Sensitive Habitat*

36 Impact: Mudflat habitat disturbance (Factor 1). There could be significant impacts to mudflat
37 habitat, including eelgrass beds, because of increased pedestrian and boating activity around
38 Clipper Cove. Eelgrass beds are the most sensitive habitats of the designated EFH in the project
39 area. Treasure Island development under Alternative 2 would attract an estimated 5,000 daily

1 visitors, or approximately half the increase in pedestrian activity anticipated under Alternative
2 1. As a result, the impacts in the area of the themed attraction adjacent to Clipper Cove would
3 be less than half of that under Alternative 1. Unlike Alternative 1, Alternative 2 does not
4 include extensive residential development.

5 Expanding the marina to between approximately 500 and 675 slips and buoys would result in at
6 least a 500 percent increase in boat traffic in Clipper Cove over existing conditions and a 20
7 percent increase over that proposed under Alternative 1. This increases the potential for
8 recreational boating traffic to disturb the sensitive mudflat habitat, including eelgrass beds.
9 Most impacts would come from recreational boats because large vessels other than ferries
10 would not be found in the project area.

11 *Mitigation.* Mitigation measures related to disturbance of mudflat/eelgrass habitats would be
12 the same as those described for Alternative 1. Implementing these mitigation measures would
13 reduce the impact to a less than significant level.

14 *Impacts to Sensitive Bird Species*

15 Impact: Pedestrian and boating impacts on wading shorebirds (Factors 1 and 2). As described for
16 Alternative 1, increased pedestrian and boating activity around Clipper Cove could have a
17 significant impact on shorebirds by affecting mudflats and eelgrass beds where shorebirds
18 forage. Habitat degradation, human presence, and an enlarged marina under Alternative 2
19 could result in significant impacts to sensitive bird habitat and species. Although none of the
20 bird species are listed as endangered or threatened under the ESA, they are all protected under
21 the MBTA.

22 Development at Treasure Island under Alternative 2 would attract approximately half the
23 number of daily visitors proposed under Alternative 1. As a result, the impacts in the area of
24 the themed attraction adjacent to Clipper Cove also would be approximately half of those
25 described under Alternative 1. Expanding the marina to between 500 and 675 slips and buoys
26 would result in an approximately 500 percent increase in boat traffic in Clipper Cove over
27 existing conditions and a 20 percent increase over that proposed under Alternative 1. This
28 increases the potential for increased recreational boating to disturb the sensitive mudflat
29 habitat, including eelgrass beds.

30 *Mitigation.* Mitigation measures for disturbing mudflat habitat would be the same as those
31 described for Alternative 1. Implementing these mitigation measures would reduce the impact
32 to a less than significant level.

33 *Impacts to Mudflat and Eelgrass Habitat (EFH)*

34 Impact: Pedestrian and boating impacts on EFH (Factor 1). Increased pedestrian and boating
35 activity around Clipper Cove and along the perimeter of the islands could have a significant
36 impact on EFH in shallow water and mudflat areas, as described for sensitive habitats under
37 Alternative 1.

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1 *Mitigation.* Mitigation measures for disturbing EFH would be the same as those described for
2 sensitive habitats under Alternative 1. Implementing these mitigation measures would reduce
3 the impact to a less than significant level.

4 *Not Significant Impacts*

5 *Dredging Impacts to mudflat and eelgrass habitat (Factor 1).* Eelgrass vegetated areas on the
6 southeastern side of Clipper Cove are considered the most sensitive aspect of EFH in the project
7 area, due to their function as cover and feeding habitat for a number of species. As for
8 Alternative 1, impacts to eelgrass and mudflat habitat resulting from dredging would be not
9 significant. Dredging and other activities for maintaining Pier 1 for ferry service are not likely
10 to adversely affect any protected bird species. Dredging and disposal activities would require
11 permitting and related agency coordination in compliance with Section 404 of the Clean Water
12 Act, as described in Alternative 1.

13 *Impacts to other sensitive habitats (Factor 1).* Impacts to jurisdictional wetlands, open water
14 habitats, and terrestrial habitats would be less than significant. Most development would occur
15 on lands previously developed or disturbed and would not affect any lands currently used or
16 occupied by any sensitive species. Marsh gumplant, the only plant species of concern known to
17 occur on or near the project area, occurs to the east of the main project area and would not be
18 affected by project activities.

19 Any dredging would require a Section 404 permit. Placing pilings or expanding docks in
20 aquatic habitat would require a Section 10 permit from the COE. Impacts from these activities
21 would be addressed during the permitting process.

22 Short-term impacts to water quality in open water habitats near dredging areas could occur as a
23 result of dredging but are unlikely to cause significant impacts to sensitive habitats.

24 As described in Alternative 1, it is unlikely that increased boat traffic would affect sensitive
25 habitats, with the exception of eelgrass, discussed above. No mitigation is proposed.

26 Impacts to eelgrass beds from accidental oil releases from boats could have short-term impacts
27 on these habitats. Impacts of and prevention measures for accidental oil releases are discussed
28 under Impacts to Other Sensitive Habitats, Alternative 1.

29 Similar to Alternative 1, any shore-based spills that reach the bay via the stormwater system
30 would be regulated and monitored through the application of best management practices and
31 an SPCC Plan. These measures would reduce this impact to less than significant. Impacts
32 related to dredging to establish and maintain minimum depths for the proposed marina and
33 other boating activities would be the same as those described for Alternative 1 and would be
34 similarly less than significant.

35 *Impacts to critical habitat (Factor 3).* As for Alternative 1, the project area overlaps a small area of
36 designated critical habitat for the Sacramento River winter-run chinook salmon and central
37 California coast coho salmon, but the affected area is unlikely to provide important food or
38 habitat resources for these species. As such, there would be no significant impacts to critical
39 habitat.

1 The project area falls within designated critical habitat for the endangered Steller sea lion, but
2 this critical habitat zone covers almost all of the west coast of the US, including Alaska. Because
3 the project area makes up such a small portion of that critical habitat and the species is rarely
4 seen in the bay, impacts from project activities would be less than significant. No mitigation is
5 proposed.

6 Impacts to sensitive marine mammal species (Factor 2). Similar to Alternative 1, Alternative 2
7 would have less than significant impacts on the harbor seals at the basking and haulout area.
8 While expanding the marina to between approximately 500 and 675 slips and buoys would
9 substantially increase in boat traffic in Clipper Cove and would mean a 20 percent increase over
10 that proposed under Alternative 1, this increase would not be expected to affect conditions at
11 the seal haulout sites or the sensitive mudflat habitat (including eelgrass beds), which support
12 harbor seal prey. Dredging and other activities for maintaining Pier 1 for ferry service would
13 also have impacts on seals similar to those discussed for Alternative 1, which would be less than
14 significant and addressed through permit conditions and requirements identified by state and
15 federal resource agencies.

16 Impacts to benthic organisms (Factor 2). Dredging in Clipper Cove to accommodate a yacht
17 harbor would have a short-term adverse impact on benthic organisms and bottom-dwelling
18 invertebrates found within the shallow water habitat of the cove. This impact would be to local
19 populations and is not expected to affect the overall population of these species within the bay.
20 There are no sensitive species within this habitat type except for eelgrass, described in the
21 previous section, and invertebrates affected by dredging are expected to reestablish themselves
22 in the dredged zone over time. No mitigation is proposed.

23 Impacts to sensitive bird species (Factors 1 and 2). Impacts to the American peregrine falcon,
24 California brown pelican, California least tern, and Alameda song sparrow are expected to be
25 similar to, but proportionally less than, those described under Alternative 1. These not
26 significant impacts include those to special status species and prey and avian foraging habitat
27 and would be from dredging, in-water or near-shore construction, and increased vessel traffic.
28 No mitigation is proposed.

29 Impacts to sensitive fish species (Factor 2). Dredging, constructing a seismic wall, expanding the
30 marina, and engaging in other in-water activities proposed under Alternative 2 would result in
31 not significant impacts to sensitive fish species, similar to that described under Alternative 1.
32 No mitigation is proposed.

33 Impacts to EFH (Factor 3). Dredging, constructing a seismic wall, expanding the marina, and
34 engaging in other in-water activities proposed under Alternative 2 would result in not
35 significant impacts to EFH, similar to that described under Alternative 1. No mitigation is
36 proposed.

37 4.8.3 Alternative 3

38 Under Alternative 3, many buildings and facilities at NSTI would be reused. Building upgrades
39 for seismic safety would be limited to minor rehabilitation to meet life safety requirements
40 recommended by FEMA-178 evaluations. Most new development would be on sites already
41 occupied by buildings or parking lots, or on mostly landscaped areas, and therefore would not

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1 significantly affect natural habitat areas. Dredging would be required to maintain the marina
2 and for constructing a new ferry terminal. The planned actions that would affect biological
3 resources would be increasing boat traffic, constructing a ferry terminal at Pier 12 and a yacht
4 harbor, and humans using sensitive mudflat habitat.

5 *Significant and Mitigable Impacts*

6 *Impacts to Sensitive Habitat*

7 Impact: Mudflat habitat disturbance (Factor 1). Significant impacts to mudflat habitat, including
8 eelgrass beds, may occur as a result of increased pedestrian and boating activity around Clipper
9 Cove. Due to their function as cover and feeding habitat for a number of species, the eelgrass
10 vegetated areas on the southeastern side of Clipper Cove are considered the most sensitive
11 aspect of EFH. Development at Treasure Island under Alternative 3 would attract an estimated
12 2,740 daily visitors. Although this represents an 80 percent reduction in pedestrian activity
13 compared to Alternative 1, it is still significantly higher than under current conditions. There
14 would be a small increase in boat traffic from visitors to the island. This slightly increases the
15 potential for disturbing the sensitive mudflat habitat, including eelgrass beds, from increased
16 recreational boating.

17 *Mitigation.* Mitigation measures for disturbing mudflat habitat would be the same as those
18 described for Alternatives 1 and 2. Implementing these mitigation measures would reduce the
19 impacts to a less than significant level.

20 *Impacts to Sensitive Bird Species*

21 Impact: Pedestrian and boating impacts on shorebirds (Factors 1 and 2). Alternative 3 would result
22 in impacts to protected bird species from human disturbance similar to those under Alternative
23 2, though at a reduced level. Although none of the bird species are listed as endangered or
24 threatened under the ESA, they are all protected under the MBTA. Development at Treasure
25 Island under Alternative 3 would attract an estimated 2,740 daily visitors. Although this
26 represents an 80 percent reduction compared to Alternative 1, it is still significantly higher than
27 under current conditions. There would be a small increase in boat traffic from visitors to the
28 island. This slightly increases the potential for disturbing the sensitive mudflat habitat,
29 including eelgrass beds, which may have an indirect effect on protected birds.

30 *Mitigation.* Mitigation measures for disturbing shorebirds would be the same as those described
31 for Alternatives 1 and 2. Implementing these mitigation measures would reduce the impact to a
32 less than significant level.

33 *Impacts to Mudflat and Eelgrass Habitat (EFH)*

34 Impact: Pedestrian and boating impacts on EFH (Factor 1). Increased pedestrian and boat activity
35 around Clipper Cove and along the perimeter of the islands would affect EFH in shallow water
36 and mudflat areas, as described for sensitive habitats under Alternative 1.

37 *Mitigation.* Mitigation measures for disturbing EFH would be the same as those described for
38 sensitive habitats under Alternatives 1 and 2. Implementing these mitigation measures would
39 reduce the impact to a less than significant level.

1 *Not Significant Impacts*

2 Dredging impacts to mudflat and eelgrass habitat (Factor 1). Impacts to eelgrass and mudflat
3 habitat resulting from dredging would be less than significant. Potential adverse effects would
4 be the same as those listed under Alternative 1.

5 Impacts to other sensitive habitats (Factor 1). Impacts to jurisdictional wetlands and waters of the
6 US would occur as a result of constructing a yacht harbor in Clipper Cove. Impacts related to
7 dredging to establish and maintain minimum depths for the proposed marina and other
8 boating activities would be the same as those described for Alternative 1. Dredging could result
9 in short-term localized impacts to water quality in open water habitats. These activities are
10 unlikely to cause significant impacts to sensitive habitats because of the distance between these
11 habitats and the dredging activities. Any dredging or construction in these waters would
12 require a Section 404 permit. Placing pilings in aquatic habitat would require a Section 10
13 permit from the COE. Impacts would be less than significant because these activities would be
14 conducted under Section 404 and coordinated with CDFG and NMFS, as described in
15 Alternative 1. Construction in Clipper Cove by a nonfederal agency would constitute fill,
16 according to BCDC, and would be regulated by that agency.

17 As described in Alternative 1, it is unlikely that increased boat traffic would cause an impact to
18 sensitive habitats, with the exception of eelgrass, discussed above. No mitigation is proposed.

19 Impacts to eelgrass beds from accidental oil releases from boats could have short-term impacts on
20 these habitats. Impacts of and prevention measures for oil releases are discussed under Impacts to
21 Other Sensitive Habitats, Alternative 1. Similar to Alternative 1, any shore-based spills that reach
22 the bay via the stormwater system would be regulated and monitored through the application of
23 best management practices and an SPCC Plan. These measures would reduce this impact to not
24 significant.

25 Impacts to critical habitat (Factor 3). The project area overlaps critical habitat for two fish species,
26 but critical habitat would not be significantly affected. The project area constitutes a very small
27 portion of fish species critical habitat. Potential impacts under this alternative would be
28 localized and would pose no threat to the viability of critical habitat in the area.

29 The project area falls within designated critical habitat for the endangered Steller sea lion;
30 however, this critical habitat zone covers almost all of the west coast of the US, including Alaska.
31 Because the project area makes up such a small portion of that critical habitat and because the
32 species is rarely seen in the bay, impacts from project activities would be less than significant. No
33 mitigation is proposed.

34 Impacts to sensitive marine mammals (Factor 2). Impacts to MMPA-protected species from habitat
35 degradation and human presence under this alternative would be similar to, but less than,
36 impacts from Alternative 1. There would be a small increase in boat traffic from visitors to the
37 island. This slightly increases the potential for disturbing the sensitive seal habitat, including
38 haulout and basking sites, from recreational boating. Impacts would be less than significant,
39 and no mitigation is proposed. Dredging and other activities for building and maintaining a
40 ferry terminal at Pier 1 would also have impacts on seals similar to those discussed for

4.8 Biological Resources

1 Alternative 1, which would be addressed through adherence to permit conditions and
2 requirements identified by state and federal resource agencies.

3 Impacts to benthic organisms (Factor 2). Dredging in Clipper Cove to accommodate a yacht
4 harbor would have a short-term, adverse impact on benthic organisms and bottom-dwelling
5 invertebrates found within the shallow water habitat of the cove. This impact would be to local
6 populations and is not expected to affect the overall population of these species within the bay.
7 There are no sensitive species within this habitat type except for eelgrass, described in the
8 previous section, and invertebrates affected by dredging are expected to reestablish themselves
9 in the dredged zone over time. No mitigation is proposed.

10 Impacts to sensitive bird species (Factors 1 and 2). Impacts to the American peregrine falcon,
11 California brown pelican, California least tern, and Alameda song sparrow are expected to be
12 similar to, but proportionally less than, those described under Alternative 1. These less than
13 significant impacts include impacts to special status species and prey and avian foraging
14 habitat, impacts from dredging and in-water and near-shore construction, and impacts from
15 increased vessel traffic. No mitigation is proposed.

16 Impacts to sensitive fish species (Factor 2). Dredging, constructing a seismic wall, expanding the
17 marina, and other in-water activities proposed under Alternative 3 would result in not
18 significant impacts to sensitive fish species similar to, but less than, that described for
19 Alternative 1. No mitigation is proposed.

20 Impacts to EFH (Factor 3). Dredging, constructing a seismic wall, expanding the marina, and
21 other in-water activities proposed under Alternative 3 would result in not significant impacts to
22 EFH similar to, but less than, that described for Alternative 1. No mitigation is proposed.

23 4.8.4 No Action Alternative

24 Under the No Action Alternative, property available for disposal at NSTI would continue under
25 federal ownership in an inactive caretaker status, and existing interim leases would be allowed
26 to expire. There would be minimal use of NSTI property and facilities under this alternative.
27 Ongoing activities would include maintenance to minimize deterioration and essential security
28 operations.

29 Maintaining NSTI in caretaker status would result in no impacts to biological resources.
30 Because no reuse would occur, there would be no impacts to sensitive species, sensitive habitat,
31 marine mammal species, or essential fish habitat. No impacts to the mudflat habitat would
32 occur because no new docks or facilities for recreational boats would be constructed.

33

34

1 **4.9 GEOLOGY AND SOILS**

2 The primary geotechnical hazards that may affect the reuse plan area, along with engineering
3 techniques that could avoid or reduce the risk from these hazards, are discussed in this section
4 as related to either seismic events or nonseismic events. The effects of earthquake-induced
5 tsunamis are addressed in Section 4.10, Water Resources.

6 Factors considered in determining whether an alternative would have a significant impact on
7 geology and soils included the extent or degree to which its implementation would:

- 8 1. Cause soil erosion, sedimentation, or land subsidence;
- 9 2. Adversely affect unique geologic or topographic features; or
- 10 3. Increase exposure of people, structures, or infrastructure to risk of catastrophic loss,
11 injury, or death from rupture of a known earthquake fault, strong seismic ground
12 shaking; or seismic-related ground failure, including liquefaction.

13 **4.9.1 Alternative 1**

14 *Significant and Mitigable Impacts*

15 Liquefaction, lateral spreading, and differential settlement (Factor 3). As discussed in Section 3.9,
16 Treasure Island has a high probability of liquefaction and associated lateral spreading and
17 differential settlement in the event of a major earthquake, due to the presence of sand fill below
18 the water table and the underlying shoal sands. Treasure Island is designated a Seismic
19 Hazards Studies Zone (SHSZ) by the California Division of Mines and Geology (CDMG).
20 During a strong earthquake, liquefaction and differential settlement would likely occur
21 throughout Treasure Island and the causeway and lateral spreading would likely occur within
22 500 feet of the perimeter dike (see Figure 3-19). In addition, approximately 6,700 linear feet of
23 shoreline, in the northwest and southeast portions of the island, is subject to rotational dike
24 failure (see Figure 2-2).

25 Low-lying areas of Yerba Buena Island underlain by heterogeneous artificial fill also are
26 potentially subject to liquefaction, lateral spreading, and differential settlement hazards. The
27 severity of the damage would vary, depending on the nature of the structure and site-specific
28 geologic conditions.

29 The potential for damage to structures and infrastructure due to liquefaction-induced ground
30 failure is considered a potentially significant but mitigable impact. Alternative 1 includes seismic
31 stabilization improvements around the entire perimeter of Treasure Island, including the
32 causeway. Under this alternative, a 50-foot wide band of rows of stone columns would be
33 constructed along the shoreline to create an "improved zone" that is capable of confining and
34 retaining liquefied soil inland of the zone. In addition, 6,700 linear feet of cement columns
35 would be constructed in the areas prone to rotational dike failure (see Figure 2-2).

36 In addition to these proposed seismic stabilization improvements, the following mitigation
37 measures shall be implemented during perimeter stabilization and new construction:

4.9 Geology and Soils

1 *Mitigation.* Interior island areas shall be improved to reduce large differential settlement caused
2 by liquefaction, using methods such as stone columns, dynamic compaction, chemical and
3 compaction grouting, dewatering the groundwater below the level of liquefiable soils, and
4 surcharge fill with wick drains (San Francisco 1995b).

5 All sensitive structures (e.g., buildings greater than three stories, buildings intended for public
6 occupancy, structures supporting essential services, and buildings housing schools, medical,
7 police, and fire facilities) shall be supported on pile systems or other specially designed
8 foundations. Smaller structures shall use mat foundations to distribute loads over a larger area
9 and to increase foundation flexibility. Essential utilities shall be fit with flexible connections
10 designed to withstand rupture (San Francisco 1995b).

11 Detailed geotechnical studies shall be completed in accordance with San Francisco requirements
12 for individual development sites to identify which specific engineering techniques should be
13 used to reduce liquefaction, lateral spreading, and differential settlement hazards to an
14 acceptable level of risk. Such geotechnical studies shall incorporate recommendations of a
15 California-licensed engineering geologist into future site preparation, foundation, and building
16 design.

17 Complying with these mitigation measures would eliminate or reduce impacts to less than
18 significant.

19 *Not Significant Impacts*

20 *Non-Seismic Hazards*

21 Geotechnical hazards not specifically related to earthquake activity include local settlement,
22 slope instability, and erosion.

23 Local settlement (Factor 1). Settlement is the localized lowering of the ground surface due to a
24 decrease in the volume of the underlying soil. Development under Alternative 1 could result in
25 settlement hazards associated with construction on the on-site fill sediments or the underlying
26 Bay muds as these materials adjust to new loading from heavy buildings, mat foundations, or
27 other new fills and drains. Although most of the potential settlement at existing loadings at
28 Treasure Island has already occurred, gradual area-wide settlement could be accelerated and
29 could continue for many more years, resulting in increased local ponding, increased flooding
30 potential, or water-logged soils.

31 Standard engineering techniques to remove and recompact loose, unconsolidated fill to
32 relatively noncompressible materials would be applied in those areas proposed for
33 development under Alternative 1. Geotechnical evaluations of proposed specific reuse
34 development projects would be required. Engineering techniques to remove and recompact
35 near-surface soils would be used to reduce hazards of local settlement. Because established
36 engineering techniques would be applied, as appropriate, the potential for settlement would be
37 minimized, and this impact would be not significant. No mitigation is proposed.

38 Slope instability (Factor 1). Due to the steep slopes and landslide deposits around the margin of
39 Yerba Buena Island, development under Alternative 1 could result in increased exposure to

1 hazards associated with slope instability. However, impacts on development would not be
2 significant because of requirements for construction. San Francisco's standard code
3 requirements for slope design and drainage would apply to new developments. San Francisco
4 would routinely check existing landslides and steep slope areas for slope movements. If slope
5 movement is detected, appropriate repairs would be initiated as soon as possible. Specific
6 requirements would be evaluated on a project-by-project basis. Therefore, this impact would
7 not be significant under Alternative 1. No mitigation is proposed.

8 Erosion (Factor 1). Demolition and construction activities within the reuse plan area could result
9 in increased potential for wind erosion of soils, especially if grading is conducted in dry, but
10 windy, summer weather. Once an individual site is graded and landscaping vegetation is
11 established, the erosion potential of the soils would diminish.

12 Soil erosion from Treasure Island is not expected to be significant due to the relatively level
13 topography of the island. Construction on Yerba Buena Island could result in substantial
14 erosion due to its steep slopes, which in turn could affect slope stability. Temporary erosion
15 control measures would be provided during the construction phases of the project, as required
16 by the local grading code and NPDES permits, to minimize these effects. A post-development
17 erosion-control program also would be implemented. This program could include regular
18 inspection and maintenance of drainage control devices, proper irrigation to minimize runoff,
19 and landscaping to reduce wind and water erosion. Implementation of these required
20 measures would ensure that erosion impacts are reduced to a not significant level. No
21 mitigation is proposed.

22 Ferry wakes also could erode the perimeter dike, but it is in good repair and subject to regular
23 wave and wake action daily from local and international shipping vessels. Therefore, it is
24 unlikely that ferry wakes would substantially affect the dike.

25 *Seismic Hazards*

26 As discussed in Section 3.9, the reuse plan area lies within a region of northern California that is
27 seismically active and is subject to earthquake-related hazards, as discussed below.

28 Surface fault displacement (Factor 3). The reuse plan area is not located within an Alquist-Priolo
29 Earthquake Fault Zone and no active or potentially active fault is known to exist at the ground
30 surface on or immediately adjacent (i.e., within 5 miles [8 km]) to the site. Therefore, the
31 potential risk of loss, injury, or death due to surface fault rupture would be minimal. There
32 would be no impact from hazards to reuse development associated with surface fault
33 displacement.

34 Seismic shaking (Factor 3). As discussed in Section 3.9, the reuse plan area would be subject to
35 strong seismic ground shaking during major earthquakes. A maximum credible earthquake
36 centered on the northern segment of the Hayward Fault (Mercalli scale intensity IX at NSTI,
37 ABAG 1995a) would cause major damage to NSTI structures and utilities. A major earthquake
38 could severely limit or even prevent vehicular access to the site if the SFOBB is damaged,
39 impeding basic and emergency services to the site, even with the proposed dike improvements,
40 causeway reinforcement, and the proposed SFOBB east span replacement and west span
41 strengthening.

4.9 Geology and Soils

1 It is likely that emergency response systems, in San Francisco in particular and in the Bay Area
2 as a whole, would be overloaded in the immediate aftermath of a large earthquake. Because of
3 the large population that probably would be present at NSTI in an earthquake under this
4 alternative, it likely would be necessary for offices, hotels, recreational facilities, and residents to
5 be self-sufficient for several days until basic systems could be restored or until occupants could
6 be evacuated.

7 All new structures in California must be designed and constructed in compliance with seismic
8 safety standards and requirements of the State Uniform Building Code (UBC). San Francisco
9 requires all new development of existing structures to comply with the most current UBC
10 requirements and standards. The San Francisco Department of Building Inspection (DBI) will
11 use the *National Earthquake Hazards Reduction Program Handbook for the Seismic Evaluation of*
12 *Existing Building* (FEMA-17) to assess seismic hazards in existing buildings; this is the federal
13 standard by which federal buildings are evaluated (San Francisco 1998c). Seismic upgrades of
14 existing structures designated for reuse would be performed to minimize life safety risks from
15 failures in a large earthquake. Structures that cannot feasibly be retrofitted to meet a life safety
16 objective would be demolished. Compliance with these regulations by each individual
17 development within the reuse plan area would reduce impacts related to seismic shaking to the
18 most current safety levels.

19 Several measures and policies to minimize the effects of seismic shaking are included as part of
20 the Draft Reuse Plan. These measures include investigating structural and geotechnical
21 conditions with appropriate upgrades prior to reuse of existing structures, preparing
22 geotechnical site investigations and conducting appropriate structural design for all new
23 development, and preparing emergency response plans. Therefore, the potential risk of loss,
24 injury, or death would be minimal and impacts would not be significant. No mitigation is
25 proposed.

26 Dike failure (Factor 3). As discussed in mitigation measures provided above, placing stone
27 columns, soil-cement columns, and rock berms around the island perimeter would minimize
28 risks associated with perimeter dike failure from lateral spreading or slumping in an
29 earthquake or from wave action associated with large storms. Still, localized failures may occur
30 because of the thickness of the unconsolidated sediments underlying the dikes. In the event of
31 a failure, or as a precautionary measure in areas deemed to be less resistant to failure, the rock
32 berm that forms the perimeter dike could be replaced or reinforced with a larger, exterior rock
33 berm. The larger rock berm would buttress the dike and would resist the forces imposed by
34 liquefied soil and fill behind the dike, as well as ground shaking. The San Francisco
35 Department of Building Inspection will require peer review of permits for perimeter dike
36 improvements by structural and geotechnical engineers for the purpose of ensuring that
37 appropriate geotechnical data are collected and properly evaluated, and for ensuring that
38 appropriate corrective measures are proposed. Implementing these measures is expected to
39 reduce the hazards related to dike failure to acceptable levels. Localized dike failure, which has
40 occurred in the past, is not expected to result in an unacceptable risk of loss, injury, or death.
41 No mitigation is proposed.

42 Seismically induced slope failure (Factor 3). As described in Section 3.9, slope failure can be
43 triggered by an earthquake. Slopes subject to earthquake-induced failure exist on steep slopes
44 of Yerba Buena Island. Existing landslide deposits are concentrated around the margins of

1 Yerba Buena Island, particularly on the south shore of the island (see Figure 3-21). There is no
2 new habitable development planned for these areas; however, existing roads may continue to
3 be undercut by slope failures and earthquake-induced failures could threaten existing or
4 proposed development in other areas in which landslides have not been mapped. Alternative 1
5 would not increase the potential for earthquake-induced slope failure; however, it could
6 increase the number of people exposed to the hazards of slope failure to the extent that there
7 would be more traffic on existing roads on Yerba Buena Island. Major slope failure could result
8 in road closures, and this could impede transportation between NSTI and the mainland.
9 Landslides onto the roadway would endanger people using the road. As discussed above with
10 regard to seismic shaking, existing structures, including roadways, would be evaluated and
11 retrofitted or abandoned, if necessary, to reduce risks to acceptable levels. Therefore, the
12 impacts of earthquake-induced slope failure are not considered significant.

13 *No Impacts*

14 Unique geologic and topographic features (Factor 2). The reuse plan area does not contain any
15 unique geologic or topographic features. Yerba Buena Island is a prominent topographic
16 feature, but it is not unique and would not be substantially altered under Alternative 1.
17 Therefore, there is no impact. No mitigation is proposed.

18 **4.9.2 Alternative 2**

19 *Significant and Mitigable Impacts*

20 The potential impacts under Alternative 2 would be comparable to those of Alternative 1
21 because the geotechnical hazards are associated with existing physical features of the reuse plan
22 area itself. However, the type, nature, and magnitude of development under Alternative 2
23 differ from those proposed under Alternative 1. Alternative 2 includes creating a golf course
24 instead of housing on the northwest portion of Treasure Island, eliminating the proposed
25 perimeter stabilization of that portion of the island, and building fewer residential units on
26 Yerba Buena Island. Less residential development under Alternative 2 would reduce the
27 magnitude of the geologic impacts described for Alternative 1 because a smaller permanent
28 population would be exposed to seismic hazards.

29 Greater impacts to unprotected recreational land uses would be created in the golf course area
30 due to lack of perimeter stabilization in that area. For example, substantial lateral spreading in
31 a major earthquake would result in a localized loss of recreational land near the point of a dike
32 failure and within 500 feet (152 m) or more inland. If not promptly repaired, such a failure
33 would reduce the buffer area provided by the golf course and possibly subject any unsupported
34 structures and infrastructure inland of the failure to the secondary effects of future seismically
35 induced lateral spreading.

36 Similar to Alternative 1, impacts are considered potentially significant but mitigable. With the
37 exception of the area adjacent to the proposed golf course, Alternative 2 includes seismic
38 stabilization improvements around the perimeter of Treasure Island, including the causeway
39 (see Figure 2-2). Similar to Alternative 1, an "improved zone" would be created that is capable
40 of confining and retaining liquefied soil inland of the zone.

4.9 Geology and Soils

1 In addition to these proposed seismic stabilization improvements, the following mitigation
2 measures shall be implemented during perimeter stabilization and new construction:

3 *Mitigation.* Proposed mitigation measures are the same as those discussed for Alternative 1.
4 Complying with these mitigation measures would reduce impacts to less than significant.

5 *Not Significant Impacts*

6 As discussed for significant and mitigable impacts above, the potential for less than significant
7 impacts under Alternative 2 would be comparable to those of Alternative 1. Compliance with
8 San Francisco requirements for site-specific geotechnical investigations would be required for
9 each individual development. Requirements identified for Alternative 1 to reduce local
10 settlement, slope instability, and erosion also would be required for development under
11 Alternative 2. No mitigation is proposed.

12 **4.9.3 Alternative 3**

13 *Significant and Mitigable Impacts*

14 The potentially significant and mitigable impacts under Alternative 3 would be roughly
15 comparable to those of Alternative 1 because the geotechnical hazards are associated with
16 existing physical features of the reuse plan area itself. However, the type, nature, and
17 magnitude of development-related impacts under Alternative 3 differ from those proposed
18 under Alternative 1. Alternative 3 would involve extensive reuse of existing facilities, including
19 continuation of existing leases, and less intensive new development than the other two reuse
20 alternatives, and there may be more potential difficulty in retrofitting existing structures to
21 resist seismic hazards. Compared to Alternative 2, more residential development would
22 increase the magnitude of the impacts described because a larger resident population would be
23 exposed to seismic hazards, including greater nighttime exposure to these hazards. Perimeter
24 dike improvements would be limited to the northwest and southeast corners of Treasure Island
25 in the areas subject to rotational dike failures (see Figure 2-2). Therefore, greater impacts to
26 unprotected shoreline recreational land uses and some areas proposed for institutional and
27 community uses would be created due to the lack of perimeter stabilization in these areas.
28 Impacts are considered potentially significant but mitigable.

29 Similar to Alternative 1, an "improved zone" would be created in the northwest and southeast
30 portions of the island that is capable of confining and retaining liquefied soil inland of the zone.
31 The following mitigation measures shall be implemented during perimeter stabilization and
32 new construction:

33 *Mitigation.* Proposed mitigation measures are the same as those discussed for Alternative 1.
34 Complying with these mitigation measures would reduce impacts to less than significant.

35 *Not Significant Impacts*

36 As discussed above for potentially significant and mitigable impacts above, the potential for less
37 than significant impacts under Alternative 3 would be comparable to those of Alternative 1.
38 Compliance with San Francisco requirements for site-specific geotechnical investigations would
39 be required for each individual development. Requirements identified for Alternative 1 to

1 reduce local settlement, slope instability, and erosion also would be required for development
2 under Alternative 3. No mitigation is proposed.

3 **4.9.4 No Action Alternative**

4 The No Action Alternative would not result in new or additional geotechnical impacts. Existing
5 structures would continue to be subject to existing seismic and nonseismic hazards, and no
6 increase over existing seismic hazards would occur.

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1 **4.10 WATER RESOURCES**

2 Potential water resources impacts resulting from disposal and reuse of NSTI are discussed in
3 this section. This section is closely related to section 4.11 (Utilities), which discusses water
4 supply and infrastructure for domestic use. Factors considered in determining whether an
5 alternative has significant impacts to water resources included the extent or degree to which its
6 implementation would:

- 7 1. Adversely affect drainage patterns to the extent that the physical, chemical, or biological
8 character of nearby bodies of surface water would be substantially altered;
- 9 2. Degrade water quality below levels established by regulatory agencies; or
- 10 3. Increase risk to human health and safety, or for economic damage, by siting
11 incompatible land uses and facilities within areas susceptible to flooding or ponding.

12 **4.10.1 Alternative 1**

13 Alternative 1 would require dredging to develop and maintain the marina (including periodic
14 shoal dredging), for maintaining and using Pier 1 for ferry service, and possibly for developing
15 the new ferry terminal pier proposed for the west side of Treasure Island.

16 The overall area of paved surfaces at NSTI would increase under this alternative. Assuming
17 that approximately 75 percent of open space areas on NSTI are developed, Alternative 1 would
18 generate an additional 37 acres (15 ha) of paved surfaces; therefore, the volume of stormwater
19 discharges also would increase.

20 The volume of wastewater discharged as treated effluent would remain below the permitted
21 capacity of the sewage treatment plant (see section 4.11.3).

22 ***Significant and Mitigable Impacts***

23 *Impact: Exposure of individuals and property to ponding from high tides (Factor 3).* The installation of
24 residential development in low-lying areas on Treasure Island would result in increased
25 exposure of occupants, visitors, and property to ponding hazards due to seepage through the
26 dike and underlying sediments during some high tide events. The rate of flow from the bay to
27 the interior of the island is proportional to the difference in elevation between the bay and the
28 water table on the island, so the rate of seepage increases with higher tidal stands. This seepage
29 sometimes leads to water ponding in low-lying areas of the island. Compared to baseline
30 conditions, there would be a net increase of about 2,395 residents, plus approximately 13,700
31 daily visitors. The exposure of people and structures to this type of flooding is considered a
32 potential significant and mitigable impact.

33 *Mitigation.* Filling low-lying portions of the residential area to at least 9 feet (3 m) NGVD prior
34 to development would mitigate this impact by ensuring that the ground surface is above the
35 maximum average daily elevation of the bay. In addition, other low-lying areas within 500 feet
36 (152 m) of the Treasure Island perimeter should be similarly filled before development is
37 allowed.

1 Implementing this mitigation would reduce the impact to a not significant level.

2 Impact: Exposure of individuals and property to flooding (Factor 3). Developing and reusing
3 Treasure Island under Alternative 1 could expose occupants, visitors, and property to flooding
4 hazards caused by dike overtopping during storms, which could be a significant impact. In a
5 worst-case scenario, a maximum high tide of 6.4 feet (2 m) NGVD, in combination with 60 mph
6 (97 km/hour) storm winds, could result in waves reaching 13 to 14 feet (4 to 4.3 m) above sea
7 level NGVD. As the existing perimeter dike is at elevations ranging from about 7.7 to 13.8 feet
8 (2.3 to 4.2 m) NGVD, events of this magnitude would result in waves overtopping the dike in
9 some areas.

10 Sea level rise also could increase potential flooding problems at NSTI. Predictions of future
11 accelerated sea level rise due to global warming vary widely. The effect of sea level rise is
12 increased on a land mass that is concurrently subsiding. The EPA projects a 50 percent
13 likelihood that sea levels will rise about 4 inches (10 cm) (an average of 0.14 inches [0.36
14 cm]/year) by 2025 and about 8 inches (20 cm) (an average of 0.16 inches [0.39 cm]/year) by
15 2050. Such increases are the middle range of sea level rise estimates, which range from zero to
16 over 18 inches (46 cm) (an average of 0.03 feet [0.009 m]/year) by 2050 (EPA 1995).

17 When the highest current tide (approximately 6.4 feet [2 m]) is superimposed on the EPA's
18 estimates for rise in sea level (approximately 8 inches [20 cm]), high tides could reach
19 approximately 7 feet (2 m) and 1 inch (2.5 cm) NGVD. Such estimates do not include
20 compounding caused by high storm waves of approximately 7.5 feet (2 m) occurring
21 simultaneously with high tides. They also do not include the effects of continued settlement of
22 the island, which has been estimated to be on the order of approximately 1 foot (0.3 m) over the
23 next 50 years (San Francisco 1995b). Therefore, significant flooding could still occur, even with
24 raised dikes. This is considered a significant and mitigable impact.

25 *Mitigation.* Set back development inboard of the perimeter dike to allow room for periodic dike
26 raising without substantially increasing bay fill. Raise the dike as necessary to account for site
27 settlement, changes in maximum tidal heights, and rises in sea levels. In addition, inspect the
28 dike after each major storm to identify repair needs, and repair the dike promptly.

29 Implementing this mitigation measure would reduce the impacts to a not significant level.

30 ***Not Significant Impacts***

31 Dredging and dredge material disposal (Factors 1 and 2). Dredging associated with this alternative
32 could disturb and disperse sediments, including any contaminated sediments, into the water
33 column, reducing dissolved oxygen and increasing suspended particulates (COE 1992).
34 Dredging also would cause temporary increases in water column sediment and turbidity as the
35 sediments are raised through the water column. Contaminants released by dredging activities
36 could significantly degrade water quality at or near the dredge sites, unless precautionary
37 measures are taken.

38 Sediments will be tested in place prior to dredging. If contaminants are identified at
39 concentrations capable of causing adverse water quality effects, appropriate measures will be
40 evaluated and adopted prior to undertaking dredging. Dredging contaminated sediments

1 requires use of special dredging equipment, such as an environmental or closed bucket, high
2 solids slurry pumps, marine excavators, and silt curtains. The site will be dredged using
3 appropriate dredging technology suitable to the site-specific conditions and in accordance with
4 future permit requirements placed by the appropriate regulatory agencies.

5 Sediment sampling conducted in late January through early February 1996 at the former
6 Clipper Cove Skeet Range indicated that there are contaminated sediments in the marina area
7 with elevated levels of lead and polychlorinated aromatic hydrocarbons (PAHs) (DON 1997q).
8 Dredging operations typically do not cause significant short- or long-term fluctuations in
9 salinity, temperature, or pH. However, temporary turbidity increases occur when the scow
10 receiving the dredged materials is allowed to overflow with sediment-laden water so that it can
11 be filled to capacity.

12 Dredging would require permits and approvals from BCDC, San Francisco Bay RWQCB, and
13 the COE. Prior to dredging, and in compliance with the CWA (Section 404, EPA's 404[b][1]
14 Guidelines of 1980 [40 C.F.R. Part 230]), all materials proposed for excavation and dredging
15 must be tested for heavy metals, hydrocarbons, PCBs, tributyltin, pesticides, and any other
16 contaminants of concern to the RWQCB. Careful delineation and segregation of any
17 contaminated material would minimize the volume of contaminated sediments generated.
18 Compliance with all applicable regulatory requirements would ensure that potential impacts
19 would not continually violate water quality standards or requirements and therefore would be
20 not significant. No mitigation is proposed.

21 Marine disposal of contaminated dredged sediments also could contaminate receiving waters.
22 Uncontaminated dredge sediments could increase turbidity and suspended sediments at
23 marine disposal sites. Runoff from drying and dewatering dredge materials also could
24 adversely affect adjacent bay waters. However, similar to dredging, the dredge material
25 disposal process is strictly regulated by federal and state agencies. Any contaminated dredging
26 material must be disposed of in approved upland facilities. All sediment disposal programs
27 and methods would need to comply with applicable LTMS sediment disposal priorities, which
28 favor reusing sediments on land instead of disposing of them in the bay or ocean. Complying
29 with the LTMS Implementation Plan for dredge material disposal and all other applicable
30 regulatory requirements would ensure that dredging activities would not violate water quality
31 standards or requirements; therefore, impacts would be not significant. No mitigation is
32 proposed.

33 Construction impacts (Factors 1 and 2). Alternative 1 would result in construction of buildings,
34 other structures, and infrastructure within the reuse plan area. Construction operations would
35 lead to silt-laden runoff from construction sites due to storm events and watering to reduce
36 PM₁₀ emissions. Dewatering of construction sites also could be employed if extensive ground
37 excavation, such as for deep foundations, were required. This runoff, which could contain
38 relatively high levels of petroleum hydrocarbons, would contribute to degrading local and
39 regional surface water quality. Construction would not impact groundwater in the regional
40 aquifer because NSTI is isolated from the water-bearing aquifers in the Oakland area.
41 Groundwater in the shallow aquifer beneath the islands might be locally lowered during
42 construction. However, this impact would be temporary and would not impact water
43 operations elsewhere in the Bay Area.

4.10 Water Resources

1 A stormwater management plan would be developed for NSTI consistent with Clean Water Act
2 requirements for the Stormwater Pollution Prevention Program (SWPPP). The stormwater
3 management plan would address monitoring, source reduction, BMPs, and treatment strategies.
4 Examples of some general actions required by BMPs include the following:

- 5 • Schedule excavation and grading work for dry weather;
- 6 • Use as little water as possible for dust control;
- 7 • Use revegetation, if feasible, for erosion control after clearing, grading, or excavating; and
- 8 • Follow other BMPs required by general construction NPDES permits.

9 Therefore, construction impacts would not violate water quality standards or requirements and
10 would be not significant. No mitigation is proposed.

11 Water quality (Factors 1 and 2). Alternative 1 would result in a small increase in impervious
12 surface area (see below, for Factor 3), resulting in the potential for an increased rate of discharge
13 of stormwater to the bay. Higher flow velocities or increased ponding in low areas could cause
14 slightly increased loading of urban pollutants (e.g., sediments, oil and grease, etc.). Since the
15 percentage increase in the volume of stormwater runoff would be small, it is unlikely to result
16 in a significant increase in the amount of pollutants that flow into the bay.

17 Contaminants commonly associated with urban development include leaking motor oils, fuel,
18 and other vehicular fluids, fertilizers and pesticides from landscaping, and trash. These
19 contaminants can be washed by rain and carried with runoff into the bay. Ferry service to and
20 from Treasure Island also could contribute to pollutants in the bay. Similar to construction, an
21 SWPPP and BMPs may be required to limit the introduction of these contaminants into the bay.

22 As recommended in the Draft Reuse Plan, Alternative 1 would include implementation of BMPs
23 to improve water quality prior to discharging to the bay. BMPs for stormwater runoff include
24 limiting oil and grease runoff from parking areas, limiting contaminants in wash-down of the
25 themed attraction, and managing herbicides and pesticides for open space areas and yards.
26 Wherever possible, grassy swales and detention ponds should be used to provide on-site
27 treatment of urban pollutants prior to water discharges to the bay.

28 Alternative 1 also could lead to dewatering of the high groundwater table beneath Treasure
29 Island if deep foundations or utilities were to be built. Since groundwater beneath Treasure
30 Island contains petroleum hydrocarbons, metals, and other contaminants, and this project
31 would contribute runoff to the bay, this dewatering would need to comply with BMPs
32 contained in the state's NPDES permit and local RWQCB permits. It is anticipated that most
33 groundwater removed during dewatering activities would be discharged to the on-site
34 wastewater treatment plant. Any contaminated water not treatable by the plant would be
35 disposed of in an appropriately permitted facility. Discharge of the removed groundwater into
36 the on-site drainage system would be allowed only after obtaining a San Francisco discharge
37 permit. In reviewing the permit for discharge, the city would ensure that contaminant levels
38 would be reduced to the extent required to be protective of the bay and in compliance with
39 applicable permits from the RWQCB. If direct discharge to surface water is determined as the
40 appropriate method for disposal of groundwater removed during dewatering, permits issued

1 by the RWQCB under the NPDES program would be required. Therefore, the impact of
2 dewatering would not be significant.

3 Exposure of individuals and property to flooding (Factor 3). Although nearly all stormwater (except
4 that which evaporates) must be discharged to the bay to prevent flooding, Alternative 1 would
5 increase the amount of impervious surfaces, particularly in the residential area in the northwest
6 portion of the site, and therefore could increase the average volume and speed of stormwater
7 runoff. Developing sports fields on the central portion of Treasure Island, on the other hand,
8 would reduce the area of impervious surface, and slow the rate of runoff. Because much of the
9 island is already covered with impervious surfaces, the proposed net increase would not be
10 substantial. It is estimated that Alternative 1 would generate an additional 37 acres (15 ha) of
11 impervious surfaces. The small increase in the runoff rate is not expected to substantially
12 increase the potential for flooding.

13 Tsunami and seiche wave heights are expected to be less than about 3 feet (0.9 m) (San
14 Francisco 1995b). For flooding to occur, tsunamis would need to coincide with combined tide
15 and wave heights of over 7.5 feet (2 m). The likelihood of a major tsunami (e.g., a 100- or 500-
16 year event) occurring simultaneously with a high tide is highly remote. For example, if we
17 estimate that over the next 100 years bay water levels (accounting for tidal levels, base swell,
18 wind-driven waves, rise in sea level, and settlement of the dikes) will exceed the equivalent of
19 7.5 feet (2 m) NGVD about 20 percent of the time, then the probability of a 100-year tsunami or
20 seiche occurring simultaneously with such a high tide would only be about 0.2 percent per year,
21 or equivalent to about a once in 500 years event. This is not sufficiently probable to be
22 considered a significant impact.

23 4.10.2 Alternative 2

24 Under Alternative 2, a golf course would be developed on the northern portion of Treasure
25 Island, and development would occur on the southern half of the island. Similar to Alternative
26 1, dredging would be required for expanding and maintaining the marina, maintaining and
27 using Pier 1, and constructing a ferry terminal on the west side of Treasure Island. Although
28 stormwater runoff in the northwest portion of Treasure Island (where the golf course is
29 proposed) would decrease, the overall amount of paved surfaces at NSTI would increase under
30 this alternative.

31 Golf course development is estimated to result in a net loss of approximately 25 acres (10.1 ha)
32 of paved surfaces. However, assuming that approximately 75 percent of open space areas on
33 Treasure Island is developed, Alternative 2 would generate an additional 37 acres (15 ha) of
34 paved surfaces, for a net increase of 12 acres (4.9 ha) of paved area. Therefore, the volume of
35 stormwater discharges also would increase. The volume of wastewater discharged as treated
36 effluent would remain below the permitted capacity of the sewage treatment plant.

37 *Significant and Mitigable Impacts*

38 Impact: Exposure of individuals and property to flooding (Factor 3). Compared to baseline
39 conditions, this alternative would subject fewer residents (a net decrease of approximately
40 3,790) but more daily visitors (a net increase of 5,500) on the northern half of Treasure Island,
41 where a golf course is proposed, to existing flood hazards. Flood hazards on the southern

4.10 Water Resources

1 portion of the site would be similar to those described for Alternative 1. This is considered a
2 significant and mitigable impact.

3 *Mitigation.* Mitigation measures for flooding from dike overtopping would be the same as those
4 described for Alternative 1.

5 Implementing these mitigation measures would reduce the impact to a not significant level. As
6 described for Alternative 1, flooding due to tsunamis or seiches is not considered a significant
7 impact.

8 *Not Significant Impacts*

9 Not significant impacts related to dredging and dredge material disposal, and construction
10 impacts are the same as those described for Alternative 1. Ponding from high tides also would
11 be considered a not significant impact because only minimal structures (e.g., golf club house,
12 golf shop) are planned in the northern portion of the island where existing ponding occurs.

13 Water Quality (Factors 1 and 2). Not significant impacts to water quality would be similar to
14 those described for Alternative 1 with the exception that Alternative 2 would have a slightly
15 greater potential impact to water quality as a result of the development of a golf course.
16 Chemicals associated with the golf course could adversely affect water quality if not adequately
17 managed. Hazardous materials management would be subject to all regulatory controls. In
18 addition, a chemical application and management plan would be required to address the
19 management of these materials.

20 **4.10.3 Alternative 3**

21 Under Alternative 3, most existing facilities would be reused and existing interim uses, such as
22 the firefighting training facility, would continue. Dredging would be required only for
23 maintaining the existing marina. Dike improvements are proposed along the northwest and
24 southeast portions of Treasure Island in the areas subject to rotational dike failure. It is
25 anticipated that the overall amount of paved surfaces at NSTI would remain roughly the same
26 under this alternative because minimal new development is proposed, so the volume of
27 stormwater discharges would remain roughly the same. The volume of wastewater discharged
28 as treated effluent would remain below the permitted capacity of the sewage treatment plant.

29 *Significant and Mitigable Impacts*

30 Impact: Exposure of individuals and property to flooding (Factor 3). Alternative 3 could subject
31 occupants, visitors, and property to substantial flood hazards throughout Treasure Island.
32 Compared to operational baseline conditions, there would be fewer residents (a net decrease of
33 990) but more daily visitors (an increase of 2,740) throughout NSTI exposed to these existing
34 hazards. This is considered a significant and mitigable impact.

35 *Mitigation.* Mitigation measures for flooding from dike overtopping would be the same as those
36 described for Alternative 1.

1 Implementing these mitigation measures would reduce the impact to a not significant level. As
2 described for Alternative 1, potential flooding due to tsunamis or seiches is not considered a
3 significant impact.

4 Impact: Exposure of individuals and property to ponding from high tides (Factor 3). Occupants of
5 structures in the low-lying areas of the residential portion of Treasure Island would be
6 susceptible to substantial ponding hazards. This is considered a significant and mitigable
7 impact.

8 Mitigation. Mitigation measures for ponding during high tides would be the same as those
9 described for Alternative 1.

10 Implementing these mitigation measures would reduce the impact to a not significant level.

11 ***Not Significant Impacts***

12 Dredging and dredge material disposal (Factors 1 and 2). The only dredging activity proposed
13 under this alternative is maintenance dredging at the existing marina. This level of dredging
14 would be commensurate with historic maintenance dredging activities at NSTI and would not
15 be considered a significant effect. No mitigation is proposed.

16 Construction impact (Factors 1 and 2). Construction-generated stormwater runoff from the
17 development of Alternative 3 would be substantially less than but similar in nature to what
18 would result for Alternative 1. Lower levels of runoff are expected because several existing
19 buildings would be reused and there would be limited new construction. Impacts would not
20 continually violate water quality standards or requirements and would be not significant. No
21 mitigation is proposed.

22 Water quality (Factors 1 and 2). Compared to baseline conditions, Alternative 3 would generate
23 about 17 percent fewer daily vehicle trips, and there would be no expected increase in boating
24 activity. Therefore, potential water quality impacts associated with urban pollutants in
25 stormwater runoff and boat discharges would not be significant. The existing firefighting
26 training school is a contained facility, and all runoff is discharged directly to the sanitary sewer
27 for treatment. No materials are burned, and no fire suppression chemicals are used during
28 training exercises; therefore, there would be no significant impacts on runoff water quality
29 generated at this facility. No mitigation is proposed.

30 **4.10.4 No Action Alternative**

31 Under the No Action Alternative, property available for disposal at NSTI would continue under
32 federal ownership in an inactive caretaker status, and existing interim leases would be allowed
33 to expire. There would be minimal use of the property and facilities under this alternative.
34 Dike maintenance would provide continued flood protection under most conditions, although
35 in large storm events it is expected that waves would overtop the dikes occasionally, resulting
36 in flooding of low-lying areas unless the dike elevation is raised or sufficient pumping capacity
37 is installed to drain off the water. Cleanup of hazardous materials, petroleum products, or
38 waste sites also would be continued by the Navy. There would be no additional impervious
39 surfaces; therefore, there would not be an increase in runoff into the stormwater system relative

4.10 Water Resources

1 to current conditions (except if the dikes were overtopped). Ponding of stormwater in low-
2 lying areas would continue, as would settling of the sediments underlying the island, resulting
3 in the potential for continued and possibly increased localized flooding. These impacts would
4 be controlled through maintenance, such as by installing additional pumping capacity as
5 needed, and would be not significant. Existing residual urban pollutants would continue to be
6 discharged to the bay in stormwater runoff, resulting in not significant impacts on water
7 quality. No dredging would be required. No impacts to water resources would occur under
8 this alternative.

1 **4.11 UTILITIES**

2 Utility services addressed in this section are potable water and fire protection distribution,
3 wastewater collection and treatment, stormwater collection, electrical and natural gas,
4 telecommunications, and solid waste systems. Factors considered in determining whether an
5 alternative would have significant impacts on utilities included the extent or degree to which its
6 implementation would:

- 7 1. Increase utility demand to a level in excess of current or planned capacity for major
8 utility system components, such as reservoirs, wastewater treatment plants, or landfills;
9 or
10 2. Would cause the utility provider to violate applicable legal or regulatory environmental
11 standards and requirements.

12 The impacts presented in this section have been evaluated against the baseline environmental
13 conditions presented in Chapter 3. Navy recognizes that changes in the environmental
14 conditions may have occurred in the period between the baseline years and the present.
15 Although these changes may result in different, and in many cases, lesser impacts to certain
16 resources, changes to the impact analysis based on any interim change in resource conditions is
17 not appropriate.

18 Resolving utility issues related to ownership of certain portions of NSTI property and the utility
19 infrastructure that crosses that property owned by Caltrans would be the responsibility of San
20 Francisco.

21 **4.11.1 Alternative 1**

22 Under Alternative 1, a new wastewater treatment plant would be constructed, and a new utility
23 corridor would be constructed around the perimeter of Treasure Island and under an east-west
24 roadway in the center of the island. This utility corridor would carry storm and sanitary sewer
25 mains, water mains, reclaimed water mains, and electricity, gas, and telecommunications lines.
26 Because construction of these facilities is part of Alternative 1 reuse, impacts related to air
27 quality, noise, and other environmental issues are described within various sections of chapters
28 4 and 5.

29 ***Not Significant Impacts***

30 Impacts to utility systems, including potable water and fire protection distribution, wastewater
31 collection and treatment, stormwater collection, electrical and natural gas, telecommunications,
32 and solid waste, are considered not significant because they would not increase demand in
33 excess of current or planned capacity nor would they cause utility providers to violate applicable
34 regulations and standards or require unplanned construction of major additional infrastructure.
35 These impacts are discussed in the sections below.

36 Potable water and fire protection distribution (Factors 1 and 2). Baseline domestic water usage was
37 0.96 MGD (3.6 million liters per day) (see Table 4.11-1). The average daily domestic water
38 demand was estimated by applying per capita average water demands to the number of
39 employees, residents, theme park visitors, hotel guests, and acres of sports fields anticipated

4.11 Utilities

1 under this alternative. The projected average daily domestic water demand for the reuse plan
 2 area at buildout is estimated to be 2.1 MGD (7.9 million liters per day). Thus, the total change
 3 from baseline consumption under Alternative 1 would be an increase of approximately 1.04
 4 MGD (3.9 million liters per day). Under this alternative, and in accordance with the Draft
 5 Reuse Plan, the water supply system would be replaced with new pipes that could
 6 accommodate the increase. With implementation of water conservation measures and a new
 7 recycled wastewater system described in the Draft Reuse Plan (San Francisco 1996e), the potable
 8 water demand would be reduced by an unknown amount.

9 **Table 4.11-1. Estimated Water and Wastewater Demand by Alternative**

	ESTIMATED DEMAND (MGD)	
	Potable Water	Wastewater
NSTI Capacity	2.0	2.0
Baseline Conditions ¹	0.96	0.77 ²
Alternative 1	2.1	1.5
Alternative 2	1.6	0.49
Alternative 3	0.92	0.55
1	Source: DON 1997c	
2	Baseline wastewater demand was estimated by assuming that 80 percent of potable water consumed is discharged as wastewater.	

10 The existing transmission pipeline attached to the SFOBB, with a capacity of approximately 2.5
 11 MGD (9.5 million liters per day) (based on a pump rate of about 1,750 gallons [6,624 liters] per
 12 minute), and water supply from the San Francisco Water Department are adequate to
 13 accommodate the increase in demand (San Francisco Water Department 1998). This impact
 14 would not be significant because it would not require the construction of major additional
 15 infrastructure and all necessary infrastructure improvements would be implemented as part of
 16 this alternative. No mitigation is proposed.

17 Wastewater collection and treatment (Factors 1 and 2). Assuming that 80 percent of potable water
 18 consumed (not including sports field irrigation) is discharged as wastewater, sewage generation
 19 with development of Alternative 1 would be approximately 1.5 MGD (5.7 million liters per
 20 day). This amount of wastewater would be within the capacity of the existing wastewater
 21 treatment plant on Treasure Island (approximately 2 MGD [9.5 million liters per day]) and also
 22 would be within the capacity of the new wastewater treatment plant. The wastewater collection
 23 system experiences inflow and infiltration problems (DON 1994b), and the increase may
 24 periodically exceed the capacity of the existing collection system. A replacement sewer system
 25 is planned under this alternative that could accommodate the new uses and would be required
 26 to meet applicable discharge standards. Therefore, the increase in sewage generation would not
 27 be significant, and no mitigation is proposed.

28 Stormwater collection (Factor 1). Development of the reuse plan area would replace undeveloped
 29 areas and undeveloped parcels with urban-type development. While sports fields and other
 30 open spaces would provide some pervious surfaces to absorb rainwater, the overall amount of

1 impervious surface would increase by 37 acres, thereby increasing the amount of surface water
2 runoff.

3 In accordance with the Draft Reuse Plan, new stormwater collection infrastructure would be
4 designed to accommodate projected increases in stormwater flow. Other systemwide
5 improvements could include implementing alternative technologies, including use of wetlands
6 to capture stormwater discharges. On-site storm drainage improvements would be required as
7 part of development approvals. This impact would not be considered significant because
8 infrastructure improvements implemented as part of this alternative would provide adequate
9 capacity for the increased stormwater flow. No mitigation is proposed.

10 Electricity and natural gas (Factor 1). The steam system supplying heat to a number of buildings
11 is dismantled, and buildings proposed for reuse that were previously heated by steam would
12 require either the installation of individual boilers or connection to the natural gas
13 infrastructure. Most of the electrical distribution system at NSTI was upgraded in the early
14 1980s. With some exceptions, the system is in adequate condition and is capable of providing
15 service to existing load demands (San Francisco 1995b). The natural gas distribution system is
16 in adequate condition for current needs.

17 The electrical and natural gas infrastructure would be modified or expanded to serve the
18 individual needs of the future users of NSTI. As of October 1, 1998, the San Francisco PUC is
19 purchasing natural gas through California consolidated purchase. Replacement of the steam
20 plant with individual building heating systems would result in a more efficient use of natural
21 gas. The capacity of the existing transmission line is adequate to supply future uses of the
22 property. No mitigation is proposed.

23 Telecommunications (Factor 1). This alternative would require expanding telecommunication
24 switch capacity to serve those portions of NSTI that were served by Navy telecommunications
25 systems and expanding service to the residential areas. The switch would be designed with
26 adequate capacity, or with the capability to expand, to serve future demands at NSTI. These
27 actions would be phased in with reuse and individual developments. This impact would be
28 considered not significant because all necessary infrastructure improvements would be
29 implemented as part of this alternative. No mitigation is proposed.

30 Solid waste (Factor 1). It is estimated that proposed development under Alternative 1 would
31 generate approximately 9,549 tons (8,665 metric tons) of solid waste per year, an average of 26
32 tons (29 metric tons) per day. This generation would be a decrease of about 5,691 tons (5,164
33 metric tons) per year of solid waste from the baseline generation of 15,240 tons (13,829 metric
34 tons) per year presented in section 3.11, which is equivalent to a decrease of 16 tons (18 metric
35 tons) per day.

36 Solid waste from development under Alternative 1 would be delivered to the Davis Street
37 Transfer Station and then transported to the Altamont Landfill. This landfill can accept a
38 maximum of approximately 11,150 tons (10,117 metric tons) per day and will reach capacity in
39 approximately 30 years. Based on an excess of approximately 5,000 tons in daily capacity, this
40 solid waste disposal facility has ample capacity to accommodate the solid waste generated daily
41 under Alternative 1. No new facilities would be required; therefore, the impact under
42 Alternative 1 would not be significant. No mitigation is proposed.

1 Construction and demolition activities would increase the amount of solid waste generated at
2 NSTI. This alternative would involve demolishing approximately 3,059,959 square feet (284,279
3 m²) of NSTI structures, or about 70.5 percent of the built space. Such demolition would
4 generate approximately 801,097 cubic yards (612,482 m³) of solid waste, equivalent to
5 approximately 657 percent of the solid waste generated at NSTI in 1993. Assuming that all the
6 projected demolition occurs within two years after Navy disposal and that no reuse or recycling
7 occurs, the increase in the average amount of demolition solid waste transported daily to the
8 Altamont Landfill would be approximately 151 tons (137 metric tons). This amount would not
9 significantly contribute to the daily tonnage received by the landfill. As development proceeds,
10 the daily tonnage would decrease, due to the cessation of demolition activities and the lower
11 waste generation rates for constructing buildings. No new solid waste disposal facilities would
12 be required; therefore, the impact under Alternative 1 would not be significant, and no
13 mitigation is proposed.

14 The solid waste generated under this alternative would need to be accommodated within San
15 Francisco's effort to divert 50 percent of solid waste from landfills, as required by the California
16 Integrated Waste Management Act, Cal. Pub. Res. Code § 40000 et seq. San Francisco would
17 remain in compliance with this act by developing a solid waste management plan. This plan
18 would contain programs and procedures to meet the requirements of this regulation and would
19 emphasize reusing and recycling solid waste, particularly construction and demolition debris.
20 At a minimum, the plan would include San Francisco's solid waste recycling and reuse
21 programs. Construction and demolition contractors could be required to submit individual
22 solid waste management plans consistent with the overall plan, detailing the types of waste to
23 be generated, material handling procedures, and the methods of disposal. This is not
24 considered a significant impact, and no mitigation is proposed.

25 4.11.2 Alternative 2

26 Under Alternative 2, a new wastewater treatment plant would be constructed. A new utility
27 corridor would be constructed around the perimeter of Treasure Island under Alternative 2, but
28 it would not extend to the perimeter adjacent to the proposed golf course. Because construction
29 of these facilities is part of Alternative 2 reuse, impacts related to air quality, noise, and other
30 environmental issues are described within various sections of chapters 4 and 5.

31 *Not Significant Impacts*

32 Potable water and fire protection distribution (Factor 1). The average daily demand for water under
33 this alternative reuse development would be approximately 1.6 MGD (6.1 million liters per
34 day), which would be an increase of approximately 0.64 MGD (2.4 million liters per day) over
35 baseline demand at NSTI (Table 4.11-1). More than half of the projected potable water demand
36 would be attributable to golf course development. As with Alternative 1, the water supply
37 system would be replaced with new pipes that could accommodate the increased demand.
38 Water supply capacity is available to meet demand for potable water and fire protection;
39 therefore, the impact under Alternative 2 is not significant, and no mitigation is proposed.

40 Wastewater collection and treatment (Factor 1). The average daily wastewater flow generated by
41 Alternative 2 would be approximately 0.49 MGD (1.8 million liters per day). This average daily
42 flow would result in an increase of approximately 0.45 MGD (1.7 million liters per day) over

1 baseline average daily flows. As with Alternative 1, a new wastewater treatment plant would
2 be designed to accommodate reuse development. The wastewater collection system
3 experiences inflow and infiltration problems. However, a replacement sewer system is planned
4 under this alternative that could accommodate the new uses, and it would be required to meet
5 applicable discharge standards. This impact would not be significant because all necessary
6 infrastructure improvements would be implemented as part of this alternative. No mitigation is
7 proposed.

8 Stormwater collection (Factor 1). Although stormwater runoff in the northwest portion of
9 Treasure Island (where the golf course is proposed) would decrease, the overall amount of
10 paved surfaces at NSTI could increase by 12 acres under this alternative, so the volume of
11 stormwater discharges also would increase. On-site storm drainage improvements would be
12 required as part of development approvals, and the new stormwater collection infrastructure
13 would be designed to accommodate projected increases in stormwater flow. This impact would
14 not be considered significant, and no mitigation is proposed.

15 Electricity and natural gas (Factor 1). Under Alternative 2, the electrical and natural gas
16 infrastructure would be modified or expanded to serve the individual needs of the future users
17 of NSTI. Therefore, this would not be a significant impact. No mitigation is proposed.

18 Telecommunications (Factor 1). Alternative 2 would require expanding telecommunication switch
19 capacity to serve those portions of NSTI that were served by Navy telecommunications systems
20 and expanding service to the residential areas. As described under Alternative 1, these actions
21 would be phased in with reuse and individual developments. This would not be a significant
22 impact. No mitigation is proposed.

23 Solid waste (Factor 1). Alternative 2 would generate approximately 4,062 tons (3,686 metric tons)
24 of solid waste per year, which is 11,178 tons (10,142 metric tons) per year less than baseline.
25 These rates represent an average of 11 tons (10 metric tons) of solid waste generated per day, a
26 decrease of 31 tons (28 metric tons) per day. This waste would be disposed of at the Altamont
27 Landfill. This landfill could adequately accommodate solid waste generated under Alternative
28 2. No additional solid waste facilities would be required to be constructed. Impacts would not
29 be significant, and no mitigation is proposed.

30 This alternative would have a greater impact on demolition waste management than
31 Alternative 1 due to greater demolition of existing residential units on the northern part of
32 Treasure Island. Demolition would create approximately 939,598 cubic yards (718,374 m³) of
33 solid waste, equal to about 771 percent of baseline generation. This alternative envisions the
34 demolition of approximately 3,588,991 square feet (333,428 square m) of existing facilities, or
35 about 82.7 percent of the built space. Under this alternative, there would be fewer facilities
36 constructed than under Alternative 1 and less construction debris. As described for Alternative
37 1, San Francisco would remain in compliance with the California Integrated Waste Management
38 Act by developing a solid waste management plan. No mitigation is proposed.

39 4.11.3 Alternative 3

40 Under Alternative 3, the new utility corridor would be limited to the south end of Treasure
41 Island. Because construction of the corridor is part of Alternative 3 reuse, impacts related to air

4.11 Utilities

1 quality, noise, and other environmental issues are described within various sections of chapters
2 4 and 5. Where significant impact would occur, mitigation measures are identified.

3 *Not Significant Impacts*

4 Potable water and fire protection distribution (Factor 1). The average daily demand for water under
5 this alternative reuse development would be approximately 0.92 MGD (3.5 million liters per
6 day), which would be a decrease of approximately 0.04 MGD (0.15 million liters per day) over
7 baseline demand at NSTI (Table 4.11-1). As with Alternative 1, system capacity could
8 accommodate reuse development under Alternative 3; therefore, the impact under Alternative 3
9 would not be significant, and no mitigation is proposed.

10 Wastewater collection and treatment (Factor 1). The average daily wastewater flow generated by
11 Alternative 3 would be approximately 0.55 MGD (2.1 million liters per day). This average daily
12 flow would result in an increase of approximately 0.51 MGD (1.9 million liters per day) over
13 baseline average daily flows. As with Alternative 1, system capacity could accommodate reuse
14 development under Alternative 3. The wastewater collection system experiences inflow and
15 infiltration problems. However, under this alternative a replacement sewer system is planned
16 that could accommodate the new uses and would be required to meet applicable discharge
17 standards. This impact would not be significant, and no mitigation is proposed.

18 Stormwater collection (Factor 1). The overall amount of paved surfaces at NSTI would remain
19 roughly the same under this alternative because minimal new development is proposed, so the
20 volume of stormwater discharges would remain roughly the same. San Francisco's assessment
21 of the capacity and condition of the stormwater system found several potential problems.
22 However, on-site storm drainage improvements would be required as part of development
23 approvals, and any new stormwater collection infrastructure would be designed to
24 accommodate projected stormwater flows. This impact would not be considered significant,
25 and no mitigation is proposed.

26 Electricity and natural gas (Factor 1). Under Alternative 3, the increase in development and
27 increase in energy efficiency likely would result in an increase in the annual amount of energy
28 consumed. The electrical and natural gas infrastructure would be modified or expanded to
29 serve the individual needs of the future users of NSTI. This would not be considered a
30 significant impact. No mitigation is proposed.

31 Telecommunications (Factor 1). Alternative 3 would require expanding telecommunication
32 switch capacity to serve those portions of NSTI that were served by Navy telecommunications
33 systems and expanding service to the residential areas. As described under Alternative 1, these
34 actions would be phased in with reuse and individual developments. This would not be
35 considered a significant impact. No mitigation is proposed.

36 Solid waste (Factor 1). Solid waste generation under Alternative 3 would be approximately 4,050
37 tons (3,675 metric tons) of solid waste per year, or approximately 11 tons (10 metric tons) per
38 day. This amount of solid waste would be about 11,190 tons (10,154 metric tons) of solid waste
39 per year less than baseline generation, an average daily decrease of 31 tons (28 metric tons).
40 Solid waste generated under Alternative 3 would be disposed of at the Altamont Landfill.
41 Landfill space at the Altamont Landfill could adequately accommodate solid waste generated

1 under this alternative. No additional solid waste facilities would be required to be constructed.
2 Impacts would not be significant, and no mitigation is proposed.

3 Under Alternative 3, approximately 1,359,874 square feet (126,336 square m), or about 31
4 percent, of facilities would be demolished, yielding approximately 356,015 cubic yards (272,193
5 m³) of solid waste. Such an amount would be equivalent to almost three times the amount of
6 solid waste generated under baseline conditions. However, as described for under Alternative
7 1, San Francisco would remain in compliance with the California Integrated Waste Management
8 Act by developing a solid waste management plan. This would not be a significant impact, and
9 no mitigation is proposed.

10 **4.11.4 No Action Alternative**

11 Under the No Action Alternative, the utility systems would continue to be operated and
12 maintained by the San Francisco PUC. Due to the reduction in employment and activity, the
13 No Action Alternative would result in reduction in demand for all utilities over baseline
14 conditions. Demand for potable water, sewage, electricity, telecommunications, and solid waste
15 disposal would be reduced to levels necessary for caretaker status. Storm drain conditions
16 would not change. The No Action Alternative would have no impact on either the capacity or
17 function of on-site utility systems. No construction of any on-site utility systems would be
18 required.

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1 **4.12 PUBLIC SERVICES**

2 Public services addressed in this section are police protection, fire protection, and emergency
3 services. The analysis of the need for additional police and emergency service facilities is based
4 on the number of people to be served, whereas the need for additional fire protection facilities is
5 based on the amount of development. Factors considered in determining whether an
6 alternative would have significant impacts on public services included the extent or degree to
7 which its implementation would:

- 8 1. Require or result in unplanned construction of new facilities that would cause changes
9 or alterations to the physical environment; or
- 10 2. Result in a demand for public services or facilities that would exceed the available or
11 planned capacity of those services.

12 The impacts presented in this section have been evaluated against the baseline environmental
13 conditions presented in Chapter 3. Navy recognizes that changes in the environmental
14 conditions may have occurred in the period between the baseline years and the present.
15 Although these changes may result in different, and in many cases, lesser impacts to certain
16 resources, changes to the impact analysis based on any interim change in resource conditions is
17 not appropriate.

18 **4.12.1 Alternative 1**

19 *Not Significant Impacts*

20 As discussed below, impacts to fire protection, police protection, and emergency medical
21 services are considered not significant. There is land available on NSTI to accommodate any
22 new public service facilities, such as an ambulance company. In addition, funding for new
23 facilities or services could be made available through a variety of mechanisms, such as
24 development impact fees, special taxes, and other public revenues. Developing NSTI property
25 would provide an expanded funding base for San Francisco. The method of funding for
26 expanded public services would be determined during the permitting process for specific
27 development projects, development agreements entered into between San Francisco and
28 developers, or city development policy enactments.

29 Fire protection (Factors 1 and 2). Alternative 1 would increase demand on San Francisco Fire
30 Department fire prevention and protection services because the amount of development on the
31 site would increase. Individual development projects within the site would be required to meet
32 existing San Francisco Fire Department regulations codified in the 1998 San Francisco Fire Code
33 regarding construction materials and methods, emergency access, water mains, fire flow, fire
34 hydrants, sprinkler systems, building setbacks, and other relevant regulations. Adherence to
35 the San Francisco Fire Department regulations would reduce the risk of uncontrollable fire and
36 increase the ability to efficiently provide fire protection services to the reuse plan area.

37 As discussed in section 2.4.2, under this alternative, two fire stations would be operated, a new
38 station on Treasure Island and an existing station on Yerba Buena Island. Both stations would
39 be necessary to maintain the department's response time goal of three minutes because the San

4.12 Public Services

1 Francisco Fire Department's nearest station (36 Bluxome Street) is approximately 4.5 miles (7
2 km) from NSTI (San Francisco Fire Department 1996). Both stations would be required for one
3 engine company to respond to calls on-site if the other were occupied with an incident on the
4 SFOBB. Because the two stations would meet the demands created by the new development on
5 the site, there would be no significant impact related to provision of new or expanded facilities.
6 Each station would require a staff of one officer and three fire fighters per shift, so that
7 approximately eight officers and 30 fire fighters would be needed altogether. This would
8 represent an approximate 2.5 percent increase in total department staff. The themed attraction
9 developer would be responsible for contracting with the San Francisco Fire Department or
10 another provider for services requiring additional personnel, if required; no new fire
11 department facilities are anticipated for the themed attraction. No mitigation is proposed.

12 Police protection (Factors 1 and 2). Development of the site under Alternative 1 would increase
13 the need for police emergency protection services. The need for police protection services in
14 San Francisco is assessed on the basis of the number of people to be served. At buildout of
15 Alternative 1, the San Francisco Police Department would need to add about 21 officers, three
16 sergeants, and two patrol cars to cover the additional responsibility (San Francisco Police
17 Department 1998). The added officers would represent an approximate 1.2 percent increase in
18 departmental personnel. Increased police services would be provided to meet projected needs.
19 Under this alternative, the provision of this personnel and equipment would be accommodated
20 at existing facilities and at the new police station that would be constructed on Treasure Island.
21 Because these planned facilities would meet the demands created by the new development on
22 the site, there would be no significant impact related to the provision of police protection
23 services.

24 The San Francisco Police Department would review future development plans for projects to
25 evaluate visibility, lighting, circulation patterns, emergency access, building design, and other
26 security issues. This would maximize their ability to respond to emergencies.

27 The themed attraction developer would be responsible for contracting with the San Francisco
28 Police Department or another provider for services requiring additional personnel, if required.
29 Impacts would be not significant, and no mitigation is proposed.

30 Emergency medical services (Factors 1 and 2). Alternative 1 would increase demand on local
31 emergency medical services because the number of people living and working on the site and
32 the amount of urban development on the site would increase. Under this alternative, the San
33 Francisco Paramedic Division would locate one ambulance company at the new fire station on
34 Treasure Island to serve the site. To meet this increased demand, the division would need to
35 add eight paramedics to its staff (San Francisco Department of Public Health 1996, 1997). The
36 themed attraction developer would be responsible for contracting with the paramedic division
37 or another provider for services requiring additional personnel, if required; no new paramedic
38 facilities are anticipated for the themed attraction. This impact is not significant, and no
39 mitigation is proposed.

1 **4.12.2 Alternative 2**

2 ***Not Significant Impacts***

3 Fire protection (Factors 1 and 2). Similar to Alternative 1, Alternative 2 would require operating
4 two fire stations, a new station on Treasure Island and an existing station on Yerba Buena
5 Island. Fire protection impacts would be the same as those described for Alternative 1. This
6 impact would not be significant, and no mitigation is proposed.

7 Police protection (Factors 1 and 2). Similar to Alternative 1, Alternative 2 would construct a new
8 police station on Treasure Island. Police protection impacts would be the same as those
9 described for Alternative 1. This impact would not be significant, and no mitigation is
10 proposed.

11 Emergency medical services (Factors 1 and 2). Similar to Alternative 1, Alternative 2 would
12 involve the San Francisco Paramedic Division locating one ambulance company on Treasure
13 Island to serve the site. Emergency medical service impacts would be the same as those
14 described for Alternative 1. This impact would not be significant, and no mitigation is
15 proposed.

16 **4.12.3 Alternative 3**

17 ***Not Significant Impacts***

18 Fire protection (Factors 1 and 2). Under this alternative, San Francisco would not build a new
19 fire station; the San Francisco Fire Department would operate the existing fire stations on
20 Treasure Island and Yerba Buena Island. Although there would be less overall development,
21 fire protection impacts would be similar to those described for Alternative 1. This impact
22 would not be significant, and no mitigation is proposed.

23 Police protection (Factors 1 and 2). Under this alternative, a new police station would be
24 constructed on Treasure Island to replace existing facilities, similar to Alternative 1. Although
25 there would be fewer residents, employees, and visitors, police protection impacts would be
26 similar to those described for Alternative 1. This impact would not be significant, and no
27 mitigation is proposed.

28 Emergency medical services (Factors 1 and 2). Similar to Alternative 1, Alternative 3 would
29 involve the San Francisco Paramedic Division locating one ambulance company on Treasure
30 Island to serve the site. Although there would be less overall development, emergency medical
31 service impacts would be similar to those described for Alternative 1. This impact would not be
32 significant, and no mitigation is proposed.

33 **4.12.4 No Action Alternative**

34 The No Action Alternative would not result in additional demand for public services and
35 would have no impact. Public services provided by San Francisco and private contractors under
36 current Navy agreements and contracts would be expected to continue under caretaker status.

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1 **4.13 HAZARDOUS MATERIALS AND WASTE**

2 Factors considered in determining whether an impact would have a significant impact related
3 to hazardous materials and wastes included the extent or degree to which an alternative would:

- 4 1. Create a hazard to the public or the environment through the routine transport, use, or
5 disposal of hazardous materials, substances, or wastes; and
- 6 2. Create a hazard to the public or the environment through reasonably foreseeable upset
7 and accident conditions involving the likely release of hazardous materials into the
8 environment.

9 **4.13.1 Alternative 1**

10 Development of this alternative would result in a variety of residential, commercial, and
11 recreation uses that, depending on the specific type of operation, could use hazardous materials
12 or could generate hazardous wastes. Use and maintenance of residential landscaping might
13 involve pesticides, fertilizers, and other household chemicals. Commercial land uses, such as
14 activities associated with offices, film production, and retail and service industries, could
15 require use of hazardous substances, such as fuels, solvents, corrosives, and flammables.
16 Recreation uses likely would use pesticides and fertilizers in their operations.

17 *Significant and Mitigable Impacts*

18 Impact: Installation Restoration Program (IRP) (Factor 1). Construction activities at NSTI
19 associated with future development of the housing unit area, including demolition of existing
20 structures, may interfere with remedial actions under CERCLA.

21 *Mitigation.* The Navy is in the process of implementing various remedial actions at NSTI
22 pursuant to and in accordance with the requirements of CERCLA and the NCP that will
23 remove, manage, or isolate any potentially hazardous substances present on the property prior
24 to conveyance. These remedial actions will ensure that human health and the environment will
25 be protected based on the land uses specified in the Draft Reuse Plan. If the CERCLA remedy
26 for a particular site includes land use controls, the acquiring entity or entities will be required to
27 comply with the land use controls during construction or operations to ensure continued
28 protection of human health and the environment. No CERCLA ROD has been signed for NSTI
29 and therefore discussion of the specifics of possible land use controls would be premature.
30 However, based on the approach used for closure of other nearby military installations, it is
31 expected that land use controls would be managed according to a tiered process. The first tier
32 would be a permitting process administered by San Francisco for disturbance of soil and
33 groundwater. If necessary, a second tier would follow that would include further
34 characterization and potentially a response action.

35 Subsequent redevelopment of the housing area which would involve demolition of existing
36 structures and the grading and reconfiguring of the soil would likely be subject to land use
37 controls on the property, including compliance with a City-administered soil management plan
38 that would require soil and groundwater disturbance be permitted subject to proper
39 characterization and management. In addition, deeds conveying the affected property will

4.13 Hazardous Materials and Waste

1 contain a notice that areas of the property not subject to remediation efforts (such as areas
2 beneath existing foundations) may require additional characterization and possible response
3 actions subject to appropriate regulatory oversight. Adherence to land use controls and
4 regulatory requirements would mitigate potentially significant impacts to an acceptable level.

5 *Not Significant Impacts*

6 *Construction*

7 Asbestos Containing Material (ACM) (Factor 1). Demolition and/or renovation of existing
8 structures would occur under Alternative 1. The exact number of structures to be demolished
9 or renovated is not known. These activities have the potential to generate air emissions of
10 asbestos from ACM. Any renovation or demolition would be subject to federal, state, and local
11 requirements designed to minimize the potential for asbestos fiber releases and associated
12 health risks. In order to be issued a permit to demolish or renovate (Cal. Health and Safety
13 Code § 19827.5), the acquiring entity would be required to comply with applicable OSHA
14 regulations and the Asbestos NESHAP, 40 C.F.R. Part 61, Subpart M (1998). The BAAQMD,
15 which regulates airborne pollutants, would be notified 10 days prior to any demolition or
16 abatement work. The acquiring entity would be required to employ a contractor trained and
17 certified in the proper handling of ACM during demolition and renovation work. The
18 acquiring entity also would be required to notify the local office of Cal OSHA prior to the start
19 of work and would be required to register with the Office of the California Department of
20 Health Services in Sacramento to obtain a Hazardous Waste Generation number. Adherence to
21 these regulatory requirements would reduce potential impacts to a not significant level. No
22 mitigation is proposed.

23 Lead Based Paint (LBP) (Factor 1). Demolition and/or renovation of existing structures would
24 occur under Alternative 1. These activities have the potential to generate air emissions of lead-
25 contaminated dust from LBP. LBP was in common use at NSTI and elsewhere prior to 1978. In
26 accordance with DoD policy and the Residential Lead-based Paint Hazard Reduction Act of
27 1992 (42 U.S.C. § 4851 et seq.), housing at NSTI constructed prior to 1978 will be inspected for
28 LBP hazards. The 200 housing units on Treasure Island proposed for reuse under this
29 alternative were constructed in 1989 and therefore would not be subject to inspection. Of the 90
30 existing units on Yerba Buena Island proposed for residential reuse, 36 were constructed before
31 1960 and 54 were constructed in 1966. The units constructed in 1966 would be subject to
32 inspection, and the units constructed before 1960 would be subject to inspection and abatement.

33 Any LBP hazards discovered in housing constructed prior to 1960 will be abated before the
34 housing is conveyed out of federal ownership, unless the transferee intends to demolish the
35 housing and assumes responsibility for the proper handling of and disposal of LBP waste
36 during demolition. Results of LBP surveys and lead warning statements will be included in any
37 contract for transfer or lease, and the acquiring entity or entities will assume responsibility for
38 properly managing LBP on buildings, in accordance with all applicable federal, state, and local
39 laws and regulations. Adherence to these regulatory requirements would reduce potential
40 impacts to a not significant level. No mitigation is proposed.

41 Polychlorinated Biphenyls (PCBs) (Factor 1). PCB-containing equipment and PCB release sites
42 have been identified at NSTI. PCB surveys by Navy at NSTI are ongoing, and all PCB release

1 sites will be remediated prior to property conveyance. Navy will comply with the restrictions
2 on the distribution of PCBs in commerce found in Section 6 of the TSCA (15 U.S.C. § 2605), and
3 implementing EPA regulations, including the requirement that it disclose the existence of
4 known PCB-containing electrical equipment at the time of lease, transfer, or conveyance. The
5 acquiring entities would be required to comply with all applicable provisions of TSCA and
6 other applicable laws and regulations designed to minimize the risks posed by PCBs. Any new
7 releases of PCBs to the environment would be subject to the cleanup requirements of TSCA,
8 CERCLA, and state law. Adherence to these regulatory requirements would reduce potential
9 impacts to a not significant level. No mitigation is proposed.

10 Storage tanks (Factor 1). All current tanks will be closed per approved closure plans. No
11 significant impacts to construction or operation would result. Reuse activities associated with
12 this alternative might require removing ASTs or USTs. Reused and new tanks installed by the
13 acquiring entities would be subject to all applicable federal, state, and local regulations,
14 including San Francisco's tank operation and removal ordinance, Chapter 21 of the San
15 Francisco Municipal Code. These regulations include acceptable leak detection methods, spill
16 and overflow protection, cathodic protection, secondary containment for hazardous waste tank
17 systems and piping, liability insurance, and removal regulations. Adherence to these
18 regulatory requirements would reduce potential impacts to a not significant level. No
19 mitigation is proposed.

20 Installation Restoration Program (IRP) (Factor 1). Construction activities at NSTI that may
21 interfere with remediation would be subject to institutional controls identified in CERCLA
22 RODs, including a Soil Management Plan. For any future project, the property owner must be
23 informed of the past use so that remediation sites can be considered in the more detailed
24 designs of future projects. Contractors would be informed of the past use and would be
25 required to implement health and safety plans for work around remediation sites. Contractors
26 would develop contingency plans to address contaminated soil and groundwater. If
27 contaminated soil or groundwater is encountered, work could proceed following the applicable
28 provisions of the contingency plan. Adherence to these institutional controls and regulatory
29 requirements would reduce potential impacts to a not significant level. No mitigation is
30 proposed.

31 *Operation*

32 Hazardous materials use and hazardous waste generation (Factors 1 and 2). Land use under
33 Alternative 1 could use and generate small amounts of hazardous substances in commercial and
34 recreation areas. The presence of these materials would create the potential for incidents of
35 uncontrolled releases of hazardous materials to the environment through accidental spills,
36 equipment failure, and other unanticipated events. However, no significant impacts related to
37 hazardous materials use or hazardous waste generation are anticipated under Alternative 1
38 because federal, state, and local laws require procedures and practices to ensure that hazardous
39 materials are properly used, stored, and disposed of to prevent or minimize injury to human
40 health and the environment.

41 Hazardous wastes generated by reuse operations would be handled and disposed of according
42 to current regulatory guidelines. The acquiring entity and any tenants and business operators
43 with which the acquiring entity establishes property usage agreements would be responsible for

4.13 Hazardous Materials and Waste

1 hazardous materials and waste management under federal, state, and local laws and
2 regulations. Depending on the types and quantities of hazardous materials used, each
3 acquiring entity would be subject to the requirements of the Emergency Planning and
4 Community Right-to-Know Act (EPCRA) (42 U.S.C. § 11001 et seq.), the Resource Conservation
5 and Recovery Act (RCRA) (42 U.S.C. § 6901 et seq.), and state hazardous materials business
6 plans and risk management prevention programs for emergency planning review and
7 community right-to-know inventory reporting. Adherence to these strict regulatory
8 requirements would reduce potential impacts to a not significant level. No mitigation is
9 proposed.

10 Radioactive materials (Factors 1 and 2). Under this alternative, small quantities of radioactive
11 materials could be used for medical diagnosis and treatment in medical offices. Use and
12 storage of such materials are tightly regulated under federal and state regulations. Adherence
13 to these regulatory requirements would reduce potential impacts to a not significant level. No
14 mitigation is proposed.

15 Medical/biohazardous wastes (Factors 1 and 2). Under this alternative, medical office tenants may
16 produce small quantities of medical or biohazardous wastes. Handling, storing, and disposing
17 of such wastes is strictly regulated by federal and state law, which also requires the
18 establishment of medical or biohazardous material business plans and risk management
19 prevention programs. Adherence to these regulatory requirements would reduce potential
20 impacts to a not significant level. No mitigation is proposed.

21 Pesticides (Factors 1 and 2). Pesticide use may vary under this alternative but is expected to be
22 minimal. All household and commercial use of pesticides would be controlled and regulated
23 by the City Pesticide Management Program, Chapter 39 of the San Francisco Administrative
24 Code, and applicable federal, state, and local regulations. Adherence to these regulatory
25 requirements would reduce potential impacts to a not significant level. No mitigation is
26 proposed.

27 4.13.2 Alternative 2

28 The total built area under this alternative would be somewhat less than that for Alternative 1,
29 and combined employee and resident populations would be about two-thirds less than
30 Alternative 1. Overall hazardous materials use and hazardous waste generation would be
31 lower for this alternative than for Alternative 1 due to the lesser amount of planned residential,
32 commercial, and other uses that may require the use of hazardous materials and that may
33 generate hazardous wastes.

34 *Significant and Mitigable Impacts*

35 Impact: Installation Restoration Program (IRP) (Factor 1). Development of a golf course in the
36 northern part of the island would involve demolition of existing structures and the grading and
37 reconfiguring of the soil, which may interfere with remedial actions under CERCLA.

38 *Mitigation.* The Navy is in the process of implementing various remedial actions at NSTI
39 pursuant to and in accordance with the requirements of CERCLA and the NCP that will
40 remove, manage, or isolate any potentially hazardous substances present on the property prior

1 to conveyance. If a remedy for a particular site includes land use controls, the acquiring entity
2 or entities will be required to comply with the land use controls during construction or
3 operations to ensure continued protection of human health and the environment. Similar to
4 Alternative 1, any work impacting the property under land use controls would comply with a
5 City-administered soil management plan. Deeds conveying the affected areas will contain a
6 notice that the property not subject to remediation efforts (such as areas beneath existing
7 foundations) may require additional characterization and possible response actions subject to
8 appropriate regulatory oversight. Therefore, compliance with all applicable federal, state, and
9 local regulations in the handling and use of hazardous substances and adherence to land use
10 controls would mitigate potentially significant impacts to an acceptable level.

11 *Not Significant Impacts*

12 Pesticides (Factors 1 and 2). Creating a golf course instead of housing in the northern part of
13 NSTI would increase pesticide use in that location, as compared to other alternatives. Pesticide
14 use is controlled by federal, state, and local regulations, including the San Francisco Pest
15 Management Program. Moreover, the City and County of San Francisco would develop and
16 implement a pesticide, herbicide, and fertilizer management plan. For example, golf course
17 design and operation could include BMPs for the storage, handling, and use of pesticides or
18 fertilizers, including a chemical application and management plan. Golf course operation also
19 could include integrated pest management to limit pesticide use. The use of BMPs and
20 integrated pest management would be based on factors such as topography, proximity to water
21 resources, mowing, and irrigation. BMPs would help to limit soil and water contamination
22 from daily operations. Compliance with these regulations would minimize pesticide impacts to
23 a not significant level, and no mitigation is proposed.

24 4.13.3 Alternative 3

25 The construction and operational impacts under this alternative would be similar to, but less
26 than, those identified for Alternative 1. The total built area and combined employee and
27 resident populations would be about half that of Alternative 1. Because the existing facilities
28 would be used and no new housing would be constructed, impacts associated with this
29 alternative would be less extensive than those anticipated for Alternatives 1 and 2. Overall
30 hazardous materials use and hazardous waste generation would be lower for this alternative
31 than for Alternative 1 due to the lesser amount of planned residential and other uses that may
32 require the use of hazardous materials and that may generate hazardous wastes.

33 *Significant and Mitigable Impacts*

34 Impact: Installation Restoration Program (IRP) (Factor 1). If subsequent redevelopment of the
35 housing area involving demolition of existing structures and the grading and reconfiguring of
36 the soil were to occur, it may interfere with remedial actions conducted under CERCLA.

37 *Mitigation.* The Navy is in the process of implementing various remedial actions at NSTI
38 pursuant to and in accordance with the requirements of CERCLA and the NCP that will
39 remove, manage, or isolate any potentially hazardous substances present on the property prior
40 to conveyance. If a remedy for a particular site includes land use controls, the acquiring entity
41 or entities will be required to comply with the land use controls during construction or

4.13 Hazardous Materials and Waste

1 operations to ensure continued protection of human health and the environment. Similar to
2 Alternatives 1 and 2, any work impacting the property under land use controls would comply
3 with a City-administered soil management plan. Deeds conveying the affected areas will
4 contain a notice that the property not subject to remediation efforts (such as areas beneath
5 existing foundations) may require additional characterization and possible response actions
6 subject to appropriate regulatory oversight. Therefore, compliance with all applicable federal,
7 state, and local regulations in the handling and use of hazardous substances and adherence to
8 land use controls would mitigate potentially significant impacts to an acceptable level.

9 **4.13.4 No Action Alternative**

10 Under the No Action Alternative, Navy would retain ownership of NSTI property. Except for
11 the existing leases, which would be allowed to expire, buildings would be vacated. The
12 property would be under caretaker status, the area fenced off, buildings would be sealed and
13 decommissioned, and no new construction would occur. Ongoing remediation efforts would
14 continue at all restoration sites, which would be cleaned to standards consistent with the
15 current program requirements.

16 All remediation efforts would be conducted in compliance with federal, state, and local
17 regulations. However, under this alternative, NSTI would not be transferred for reuse, and
18 therefore cleanup efforts would not be accelerated pursuant to the President's fast-track cleanup
19 directive. The scope and timing of investigations and cleanup would reflect the caretaker status
20 of the property and would proceed in accordance with the IRP. However, cleanup may slow
21 without the possibility of reuse.

22 ACM left in existing buildings would not be impacted under caretaker status. Normal
23 maintenance operation in buildings would not release ACM.

24 The No Action Alternative would have no impact to hazardous materials and environmental
25 contamination on NSTI. Maintenance would be undertaken so that human health and the
26 environment would be protected.

CHAPTER 5.0

Cumulative Projects and Impacts

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5.0 CUMULATIVE PROJECTS AND IMPACTS

1 CEQ regulations implementing NEPA require that the cumulative impacts of a proposed action
2 be assessed (40 C.F.R. Parts 1500-1508). A cumulative impact is an "impact on the environment
3 which results from the incremental impact of the action when added to other past, present, and
4 reasonably foreseeable future actions" (40 C.F.R. § 1508.7). Cumulative impacts can result from
5 individually minor but collectively significant actions taking place over a period of time (40
6 C.F.R. § 1508.7).

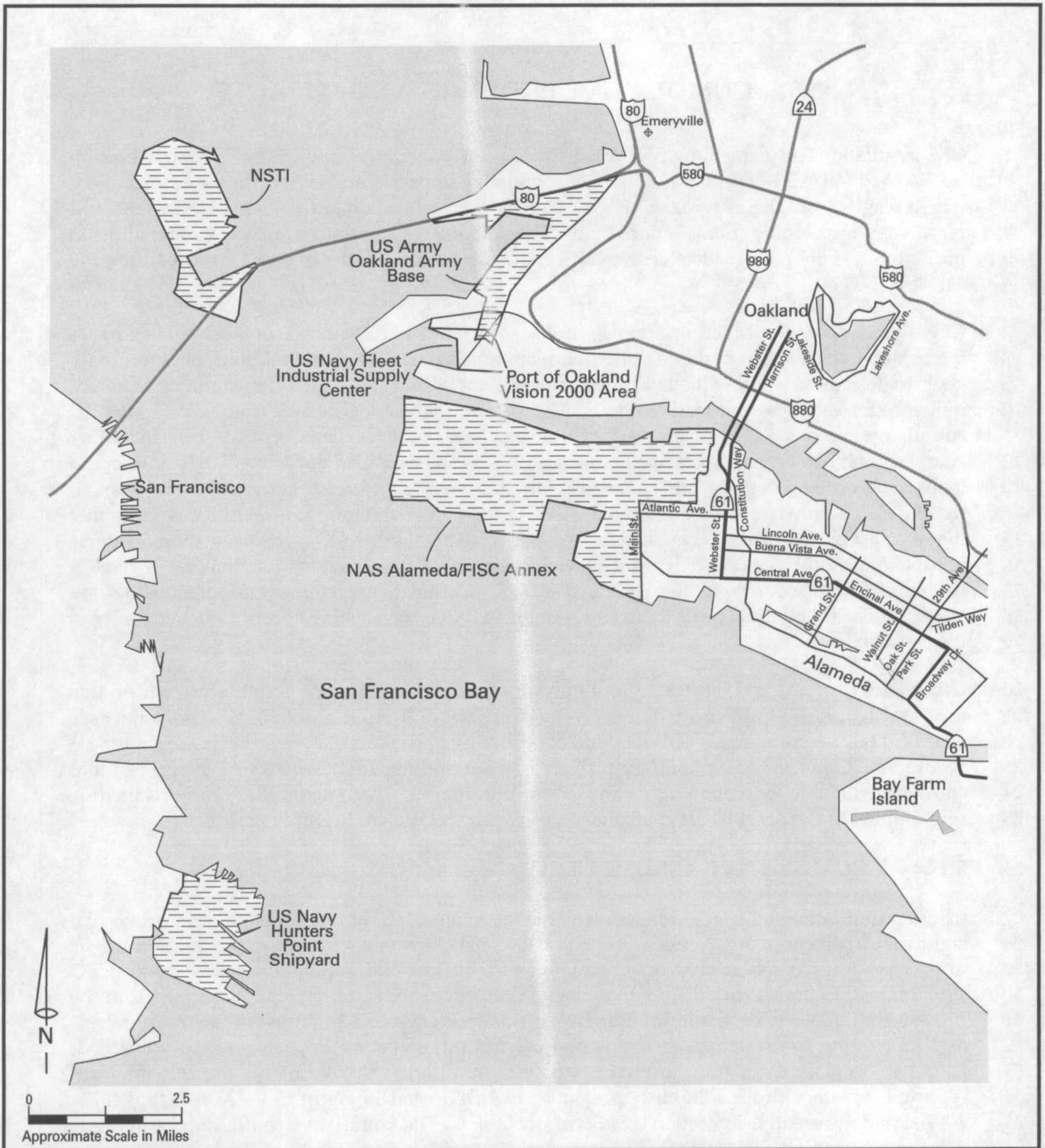
7 CEQ's guidance for considering cumulative effects, states that NEPA documents "should compare
8 the cumulative effects of multiple actions with appropriate national, regional, state, or community
9 goals to determine whether the total effect is significant" (CEQ 1997). In this section, the region of
10 influence for each resource is the same as described in Chapter 4. The area from which potential
11 cumulative projects was drawn is the East and West bays of the San Francisco Bay Area, including
12 Alameda and San Francisco counties. Because NSTI is an island and not immediately adjacent to
13 lands where other projects are likely to occur, the area from which cumulative projects can
14 reasonably be drawn is fairly limited (Alameda County and San Francisco). While it is likely that
15 many other projects may occur in this area (i.e., construction projects, roadway modifications,
16 dredging activities), most such projects would be either too small or too remote to have a
17 meaningful interaction with the proposed action. Cumulative projects considered below are
18 either similar to the proposed action, large enough to have far reaching effects, or in proximity to
19 the proposed action.

20 Other base disposal and reuse activities in Alameda and San Francisco counties are within this
21 area and would be implemented concurrent with the NSTI reuse alternatives. Military bases
22 near NSTI undergoing reuse activities and contributing to the cumulative analysis are shown on
23 Figure 5-1. Other major nonmilitary projects in the more immediate vicinity of the project that
24 could contribute to local cumulative impacts are considered. These nonmilitary projects include
25 replacement of the SFOBB east span and waterfront development in San Francisco.

26 5.1 CUMULATIVE ASSUMPTIONS

27 CEQ's cumulative effects guidance sets out several different methods to determine the
28 significance of cumulative effects, such as checklists, modeling, forecasting, and economic
29 impact assessment where changes in employment, income and population are assessed (CEQ
30 1997). This EIS uses a checklist methodology of resource areas and regional projects within the
31 region of influence to determine cumulative effects on ecosystems and it uses economic analysis
32 and forecasting for determining socioeconomic and infrastructure impacts. *ABAG Projections*
33 *2002* has been used for this cumulative analysis in addition to cumulative impacts analyses
34 reported for other projects in close proximity to NSTI listed in Figure 5-1. *ABAG Projections*
35 *2002* data is presented in section 3.3, Socioeconomics. The cumulative traffic impact analysis
36 was based on the regional MTC transportation model, which included land use forecasts
37 developed by ABAG for year 2010. Year 2010 is a frequently used benchmark established by
38 regional transportation agencies such as the MTC for long-range planning of regional
39 transportation improvements.

40



In addition to NSTI, there are four other Navy bases in the East and West Bay undergoing closure and reuse: NAS Alameda/FISC Annex, Fleet and Industrial Supply Center, Oakland, Oakland Army Base, and Hunters Point Naval Shipyard.

Regional Base Closures and Reuse in the San Francisco Bay Area

Bay Area, California

LEGEND:

 Military Sites Undergoing Civilian Reuse

Figure 5-1

5.2 BAY AREA BASE CLOSURES

Concurrent ongoing and proposed specific base closures and reuse relatively near NSTI could reasonably contribute to cumulative impacts; these projects are identified in Table 5-1 and their locations are shown on Figure 5-1. A joint Final NEPA/CEQA EIS/EIR was completed for the Fleet and Industrial Supply Center, Oakland (FISCO) in August 1997. A Final EIS/EIR for the Disposal and Reuse of Hunters Point Shipyard in San Francisco was issued in March 2000. A Final EIS for the Naval Air Station (NAS) Alameda/Fleet and Industrial Supply Center (FISC) Annex in Alameda was issued in October 1999. The Draft EIS for the Oakland Army Base was issued in September 1999. Several additional projects have occurred as a result of Bay Area base closure decisions and subsequent property transfer requests. Two of these projects—the Job Corps facility and the US Coast Guard Station expansion—are on Treasure Island and Yerba Buena Island, respectively.

Job Corps

US Department of Labor uses Buildings 363, 364, 365, and 368 on Treasure Island for its federal Job Corps training facility. US Department of Labor was granted approximately 36 acres (14 ha) of Treasure Island, with improvements thereon, for the continued use of this training facility. The Job Corps trains underprivileged youth to serve local communities. The Job Corps at Treasure Island would provide approximately 300 new jobs and maintain a student enrollment of approximately 850 new students. Approximately 750 new students would reside on Treasure Island but approximately 100 students and all staff are expected to commute (US Department of Labor 1997). Job Corps trainees could provide restaurant service, medical, and technical support services to island uses, employees, visitors, and residents.

US Coast Guard

The US Coast Guard has been granted approximately 11 acres of dry land (4 ha) on Yerba Buena Island, with improvements thereon, to support its continuing operations. No additional employees or residents are expected as a result of the expansion of the station area. An additional 11 acres (4 ha) of submerged lands was transferred to US Coast Guard in 2002.

USFWS Wildlife Refuge

As part of the closure of NAS Alameda/FISC Annex, the USFWS was granted 900 acres (362 ha) of dry and submerged land for use as part of the San Francisco Bay National Wildlife Refuge Complex. The refuge provides habitat and nesting for the only substantial colony of California least tern in the San Francisco Bay.

5.3 NONMILITARY PROJECTS

Two concurrent local nonmilitary developments or plans are considered in this analysis. The first is the seismic upgrade of the SFOBB, including replacing the east span. The second development is implementing the San Francisco Waterfront Land Use Plan. A Final EIR for the Waterfront Land Use Plan was certified in 1996.

Table 5-1. Regional Base Closure and Reuse

<i>Project</i>	<i>Proximity to NSTI</i>	<i>Project Size</i>	<i>Historical Uses</i>	<i>Project Description</i>	<i>Completion Date of Planning Document</i>	<i>Projected Project Completion Date</i>	<i>Historical Population</i>	<i>Projected Future Population</i>	<i>Net Population Change</i>
NAS Alameda/FISC Annex	3 to 5 miles	2,842 acres	Military	Reuse property for civilian residential and nonresidential purposes.	October 1999 (Final EIS)	2020	5,736	21,939-28,097	22,361-16,203
FISCO/Port of Oakland, Vision 2000 Program	3 to 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 3 largest port facilities in the western United States.	August 1997 (Final EIS/EIR)	2010	0	0	0
Oakland Army Base	3 to 3.5 miles	422 acres	Military	Currently unknown civilian reuse of base.	September 1999 (Draft EIS)	2010	0	0	0
Hunters Point Naval Shipyard	6 miles	936 acres	Military	Mixed-use	October 1998 (Revised Draft EIS/EIR); March 2000 (Final EIS)	2025	39	1,050-3,900	1,011-3,861

1 **SFOBB**

2 The SFOBB East Spans Seismic Safety Project involves construction of a new east span and
3 dismantling of the existing east span of the SFOBB. A Final EIS for the SFOBB east span project
4 was published in May 2001 and a ROD was issued on July 11, 2001. Replacement Alternative
5 N-6 with the self-anchored suspension bridge design option was selected as the final
6 replacement alternative (FHWA 2001). The replacement bridge would be located north of the
7 existing east span (see Figure 5-2). This alternative involves constructing a new bridge with two
8 side-by-side decks, each consisting of five lanes. Approximately 1,968 feet (600 m) east of the
9 tunnel on Yerba Buena Island, the alignment would transition from a double-deck viaduct to
10 two parallel structures. The western limit of construction for the selected replacement
11 alternative is the eastern portal of the Yerba Buena Island tunnel; however, the limits of work
12 may extend to the western approach of the west span in San Francisco due to project-related
13 traffic controls and signage. Parts of the Yerba Buena Island east viaduct would be retrofitted,
14 modified, partially demolished, and reconstructed. SFOBB construction is scheduled to be
15 completed in 2007. Most of the reuse improvements on Yerba Buena Island, according to the
16 initial Draft Reuse Plan phasing schedule, is to occur between 2007 and 2011, after the new
17 SFOBB east span is completed. While little or no concurrent construction between the two
18 projects is expected, the effects of constructing the two projects sequentially on Yerba Buena
19 Island may still result in cumulatively significant impacts. Please refer to the EIS for the east
20 spans realignment for discussion of impacts of that project (see [http://www.dot.ca.gov/
21 dist4/sfobb/sfobbfeis.htm](http://www.dot.ca.gov/dist4/sfobb/sfobbfeis.htm)). It is estimated that the project will begin by 2004 and be completed
22 within seven years.

23 **San Francisco Waterfront Land Use Plan**

24 The San Francisco Waterfront Plan (Waterfront Plan) covers a project area of about 730 acres
25 (296 ha) along approximately 7.5 miles (12 km) of waterfront (April 1996). The overarching goal
26 of the Waterfront Plan is "reuniting the City with its waterfront" through implementation of the
27 Waterfront Plan. Implementing the Waterfront Plan could add as many as 460 persons to the
28 population of San Francisco or less than one percent of the projected city population growth of
29 50,700 in the period 1995 to 2010. As many as 230 new housing units and as many as 6,850 new
30 jobs could be added in the Waterfront Plan project area (San Francisco 1997b). The Waterfront
31 Plan takes into account a number of other projects that are in various stages of development.
32 These projects include:

- 33 • *Mid-Embarcadero Roadway/Terminal Separator Structure:* This project entailed replacing
34 the Embarcadero Freeway with a surface roadway. It was completed in 2000.
- 35 • *Hyde Street Harbor and Pier 45:* This project involved adding berths and constructing
36 support facilities for the fishing community.
- 37 • *Ferry Building Renovation:* The Port is currently restoring the historic Ferry Building,
38 adding retail and offices space.
- 39 • *Downtown Ferry Terminal Improvements:* These improvements would renovate the ferry
40 landings/terminals at Pier ½ and Pier 1.

41

- 1 • *Cogeneration Facility*: The California Energy Commission has recommended construction
2 of a cogeneration plant.
- 3 • *Rincon Hill Area*: A 450,000 square foot sports and recreation and entertainment facility
4 is being considered for the base of Rincon Hill, South of Market Street.
- 5 • *China Basin Mixed Use Opportunity Area*: The development of the Pacific Bell baseball
6 park for the San Francisco Giants has been completed.
- 7 • *China Basin Channel/Mission Bay*: Development in the Mission Bay and China Basin
8 Channel areas contemplates potential construction of 2000 multi-family residences and
9 up to 400,000 square feet of an urban entertainment retail area. This project is out of the
10 Waterfront Plan area.

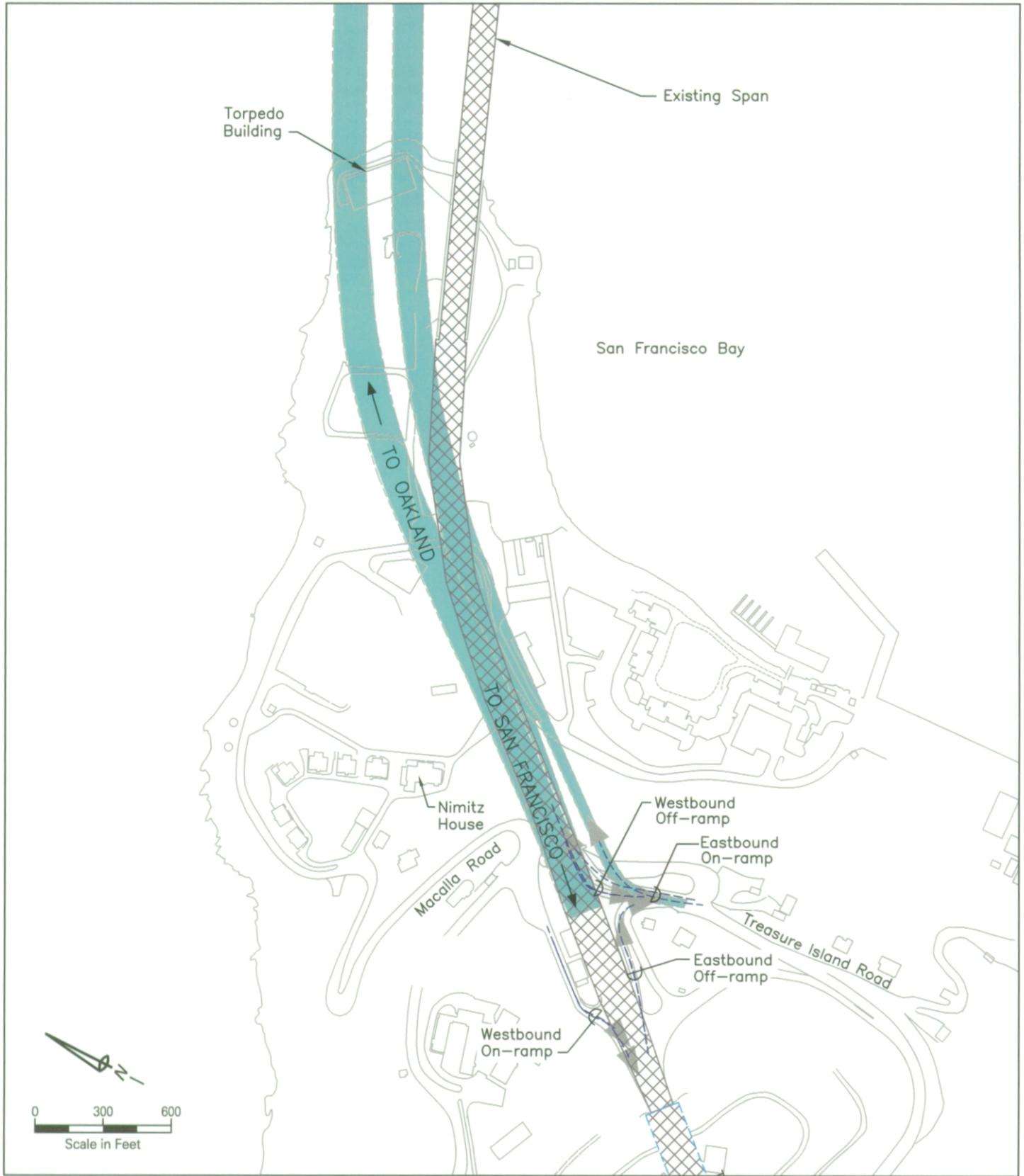
11 5.4 ANALYSIS OF CUMULATIVE IMPACTS

12 The cumulative impacts of these concurrent developments and the Waterfront Plan, as well as
13 the military base closure and reuse projects presented in Table 5-1, are discussed by resource
14 area below. Implementing Navy disposal action, as essentially a transfer of title, would not
15 contribute to any direct cumulative impacts to any of the resources analyzed in this document.
16 Therefore, the discussion of cumulative impacts for each resource does not include further
17 analysis of Navy disposal. Relevant significant and not mitigable, significant and mitigable,
18 and not significant cumulative impacts associated with NSTI reuse are described below.

19 Land Use

20 All three reuse alternatives would result in developing additional urban uses, and all three
21 would entail a significant change in the historic land use of NSTI. The most basic impact is the
22 change from military use to combined residential, public and light industrial. The change in
23 land use is similar in nature to the other base closures in the area, although the reuse
24 alternatives for NSTI have a smaller percentage industrial component. Combined with future
25 regional development, each reuse alternative would contribute to a cumulative increase in
26 urbanization of the area and the region. The increased urbanization process within the region
27 would be required to proceed in accordance with land use plans of the local communities, as
28 each community's General Plan governs all future development within its jurisdictional
29 boundaries. These plans contain policies, implementation measures, and programs designed to
30 ensure that future development would be compatible with existing and planned land uses,
31 would proceed in an orderly fashion, and would contribute to community goals and objectives
32 for land use. After implementation of mitigation to amend the general plans and zoning codes
33 of San Francisco, the inconsistency with local land use plans would be eliminated. Each of the
34 three reuse alternatives would be a component of this region-wide process, and would be
35 implemented in a manner that would not create land use conflicts with existing or future land
36 uses in the area. Therefore, the reuse alternatives' incremental contribution to regional
37 cumulative land use impacts would not be significant.

38 The incremental contribution of implementing the reuse alternatives in combination with
39 reconstructing the SFOBB east span could result in cumulatively significant land use impacts.
40 The selected SFOBB replacement alternative would result in planned land uses for
41



The replacement alternative for the new east span of the SFOBB is north of the existing span. Existing Yerba Buena Island on- and off-ramps are also shown. The redesign of new ramps on Yerba Buena Island is the subject of continuing discussion between Caltrans and the City and County of San Francisco.

SFOBB East Span Seismic Safety Project - Replacement Alternative for New East Span

- Planned Replacement
- Existing

Source: Caltrans 1993, 1994

Figure 5-2

1 redevelopment of Yerba Buena Island, in accordance with the Draft Reuse Plan. This is a
2 conceptual plan for NSTI reuse; therefore, the assumption is that the SFOBB construction would
3 not significantly affect implementation of the overall reuse concept on Yerba Buena Island.

4 Construction-generated traffic and noise impacts as a result of reuse activities and SFOBB
5 construction could have adverse localized effects on both the physical desirability and economic
6 viability of land uses on Yerba Buena Island and Treasure Island. For example, construction
7 activities could adversely affect noise-sensitive film industry activities on Treasure Island in
8 Buildings 2 and 3. Planned reuse of Yerba Buena Island would be affected, particularly the
9 planned residential and public development proposed in areas near the new SFOBB alignment
10 and subject to noise and traffic of construction. (Please see the SFOBB east spans realignment
11 EIS at <http://www.dot.ca.gov/dist4/sfobb/sfobbfeis.htm> for a discussion of impacts of the
12 SFOBB project.) These localized cumulative land use impacts, however, would be temporary.
13 In addition, the magnitude of cumulative impact is difficult to predict since it would depend on
14 the timing of construction for reuse and the SFOBB. Separate construction periods for reuse and
15 the SFOBB, as currently planned, would result in a lesser impact at any one time but extended
16 over a longer period, while concurrent construction would result in a greater impact at any one
17 time.

18 Visual Resources

19 The viewsheds of San Francisco Bay consist of a diverse combination of urban development,
20 industrial, military, and natural landscape. In combination with other similar projects, the
21 cumulative visual effect would result in a movement away from a military and industrial theme
22 and toward a mixed use development. Each of the reuse alternatives would result in a change
23 from a military base and associated structures to a mixed-use development. The development
24 would be similar in character to the surrounding development in San Francisco, including reuse
25 of regional Navy bases, converted wharves and warehouses, Ferry terminals and marinas, and
26 would not contribute to significant cumulative effects on visual resources.

27 Development under each of the NSTI reuse alternatives would not substantially alter existing
28 views; however, these changes, in conjunction with replacing the SFOBB, could result in
29 cumulative impacts to the visual character of Yerba Buena Island. The proposed parallel
30 roadway alignment for the SFOBB would result in a much wider bridge footprint and a greater
31 number of support piers (Caltrans and FHWA 2001). The effect of physical changes from reuse
32 and SFOBB construction, as well as changes in shadow and lighting, may substantially alter the
33 visual character of the eastern side of the island from viewpoints on both Treasure and Yerba
34 Buena islands over time.

35 Realignment of the SFOBB east span would also require removing woodland vegetation from
36 Yerba Buena Island, including oak woodland habitat near Macalla Road and eucalyptus groves
37 on the east side of Yerba Buena Island. Future reuse of Yerba Buena Island, which includes
38 reuse in previously developed portions of the island, combined with a new east span structure,
39 could cumulatively alter the visual character of NSTI. According to the SFOBB east spans
40 project EIS, all vegetation removed on Yerba Buena Island would be replanted with native or
41 drought tolerant species (Caltrans and FHWA 2001).

5.0 Cumulative Projects and Impacts

1 Visual impacts from construction activities, such as from construction staging or lighting,
2 would be short-term. These impacts, combined with potential construction impacts from reuse
3 construction, would not be cumulatively significant, following mitigation by project
4 construction requirements.

5 **Socioeconomics**

6 The three reuse alternatives would contribute to regional employment and population growth.
7 However, housing at NSTI under Alternatives 1 and 3 would be comparable to the projected
8 increase in jobs and therefore would be consistent with San Francisco population and housing
9 growth forecasts. Population and employment increases projected under the three reuse
10 alternatives would be in addition to those provided by the Job Corps (which will add
11 approximately 1,150 trainees and teaching and administrative employees to the local
12 population on Treasure Island). The incremental contribution of NSTI jobs would not have a
13 significant effect on regional housing demand under these two reuse alternatives and would
14 therefore not be cumulatively considerable. While SFOBB construction could temporarily
15 displace occupants of NSTI housing, this impact would be short-term and would not
16 cumulatively add to effects from reuse activities on Yerba Buena Island because these two
17 projects would not be expected to be constructed simultaneously.

18 Under Alternative 2, Treasure Island housing would be eliminated over time. As a result, any
19 employment growth could result in increased long-term housing demand. The need for
20 affordable housing to Bay Area workers is a region-wide policy issue of great importance.
21 However, an imbalance of housing to jobs is not a physical environmental effect, but rather an
22 economic and social issue. The physical impacts of NSTI's housing supply shortfall under
23 Alternative 2 relate primarily to project-induced and cumulative traffic and air quality effects,
24 discussed below.

25 There is a possibility that the uses contemplated for Treasure Island reuse will overlap or
26 compete with proposed developments in the San Francisco waterfront area, such as the Rincon
27 Hill Arena project and proposals for an entertainment retail center in the China Basin/Mission
28 Bay Plan area. However, planning of these entertainment areas will be coordinated by San
29 Francisco and such similar developments are not expected to cause adverse socioeconomic
30 impacts. Similar projects may provide additional jobs to San Francisco residents and any
31 additional housing demand created by Rincon Hill and China Basin entertainment complexes
32 would be covered by potential development of 2,000 multi-family residences in the China Basin
33 project (San Francisco 1997b).

34 **Cultural Resources**

35 The demolition of historic military properties as part of disposal and reuse of Bay Area Navy
36 installations, including Point Molate, NAS Alameda, Mare Island Naval Shipyard, and Hunters
37 Point Naval Shipyard, could result in a significant cumulative impact to cultural resources.
38 Although transfer of each of these installations has been or will be accompanied by a MOA
39 between Navy and SHPO, as well as other invited signatories, to ensure protection of historic
40 resources, demolition of historic properties may occur at some installations (i.e., Mare Island
41 Naval Shipyard) under certain reuse alternatives. While Alternatives 1 and 3 would preserve
42 historic structures on NSTI and would not contribute to a cumulative impact, Alternative 2

1 would add to the significant cumulative impact through demolition of historic buildings and
2 structures at NSTI.

3 The selected alignment for the SFOBB east span could also adversely affect significant cultural
4 resources on both Navy and non-Navy land on Yerba Buena Island. For example, noise and
5 vibration generated by driving piles and other construction activities, as well as potential
6 interruptions in access and construction staging, could affect historic Yerba Buena Island
7 buildings, such as the Senior Officers Quarters Historic District (see Figure 3-4 in section 3.4).
8 The area east of Quarters 1 may be used for construction staging as part of the SFOBB east span
9 project. Construction activities for the SFOBB would substantially reduce Navy and the reuse
10 entity's ability to maintain these historic properties. Permanent visual, shadow, noise, and
11 vibration effects resulting from construction of the SFOBB alignment also could result in
12 deterioration of historic characteristics of structures on Yerba Buena Island. In addition,
13 physical disturbances, such as possible demolition and adaptation of cultural resources in the
14 area, could result in an irreversible loss of finite resources.

15 Known prehistoric archeological resources are confined to non-Navy land on Yerba Buena
16 Island. Cumulative significant impacts to these resources could occur under all three reuse
17 alternatives in conjunction with the proposed SFOBB east span project if subsurface
18 archeological remains are discovered during reuse implementation (see Figure 3-3 in section
19 3.4).

20 Mitigation for these cumulative impacts would involve prohibiting demolition of significant
21 historic buildings and structures, the adaptive reuse of these properties following the Secretary
22 of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, and
23 the appropriate treatment of historic and prehistoric archeology, should such resources be
24 uncovered. In addition, resources should be documented before destruction in accordance with
25 HABS/HAER standards.

26 **Transportation**

27 The traffic analysis presented in section 4.5 calculated traffic to be generated by each of the
28 reuse alternatives for NSTI, added it to projected traffic from probable future development,
29 distributed the trips to the transportation network, and then determined the impact. The
30 analysis assumed full build out of the alternatives in year 2010 and 2025. The future conditions
31 in the traffic analysis takes into account both the growth expected at NSTI and the growth
32 forecast for San Francisco and the Bay Area, and is therefore inherently cumulative.

33 Cumulative impacts would occur under the three reuse alternatives related to traffic congestion
34 and an increased demand for parking at ferry terminals that would provide service to and from
35 NSTI. Jack London Square/Alameda Main Street and Golden Gate Fields are outside the San
36 Francisco's jurisdiction. The significance of this cumulative impact at these locations is not
37 known with certainty; it would be a localized impact. Potential specific mitigation measures
38 also cannot be known at this time. Given the lack of specific development projections and the
39 high degree of uncertainty concerning possible effects on the environment, potential cumulative
40 impacts attributable to increased traffic congestion and parking demand at East Bay ferry
41 terminals are considered too speculative to evaluate.

5.0 Cumulative Projects and Impacts

1 Caltrans has begun construction of a new east span of the SFOBB. The new east span of SFOBB
2 provides for the bridge to use structures separating the double-decked lanes into two parallel
3 structures. The eastbound on-ramp on the east side of the YBI tunnel would be rebuilt to
4 current standards under the SFOBB project; however, the reconstruction and funding for other
5 new ramps on Yerba Buena Island was not included as part of the SFOBB project. Future
6 improvements to the other ramps are possible under a separate project because MTC has made
7 them eligible for future funding in the Regional Transportation Plan. The replacement
8 alternative would maintain existing vehicular capacity and may improve traffic operations, but
9 congestion is unlikely to be effected (Caltrans and FHWA 2001). The SFOBB is projected to be
10 at capacity during peak hours in the future, whether or not reuse occurs. The three reuse
11 alternatives would contribute a small increment to projected traffic volumes, which would be
12 considered cumulatively significant. The contribution to cumulative congestion attributable to
13 the reuse alternatives could be reduced by implementing the TDM measures, proposed ferry
14 services, and transit services identified in section 4.5, Transportation. In addition, a traffic
15 monitoring program was included in the mitigation measure to ensure that additional traffic
16 generated by the proposed action would not negatively impact SFOBB.

17 Construction-related traffic would be noticeable on island roadways and could contribute to
18 localized congestion. Construction of the SFOBB would also require temporary closure of
19 roadways on Yerba Buena Island such as Macalla Road and Southgate Road. The area east of
20 Quarters 1 may be used for construction staging as part of the SFOBB east span project.
21 Cumulative impacts would be reduced to the extent that, as initially planned, the scheduled
22 SFOBB construction and reuse construction activities on Yerba Buena Island would occur at
23 different times. Additional mitigation for this cumulative impact would involve providing
24 alternate routes and regulating on-island roadways with flaggers, particularly along Macalla
25 Road, to ensure there are no conflicts with oversized construction vehicles using these roads.
26 Other measures that could be undertaken include requiring that construction contractors limit
27 the number of vehicles on the islands, provide alternative means of transportation for
28 construction workers, and use car ferries to transport construction workers and materials.
29 Project-specific proposals also should include temporary replacement parking, as necessary.

30 Air Quality

31 The geographic scope of impacts on air quality is the San Francisco Bay Area Air Basin. Falling
32 within the boundaries of the San Francisco Bay Area Air Basin are stationary source emissions
33 within the project boundaries, mobile source emission from people travelling to and from the
34 project site, and power plant emissions from facilities providing power to the project area. All
35 of these affect the concentration of pollutants at locations distant from the site within the basin.
36 Cumulative air quality concerns include potential local carbon monoxide effects due to
37 cumulative traffic congestion and cumulative regional emissions of ozone and PM₁₀ precursors.
38 As indicated in the modeling analysis presented in section 4.6, there is little potential for
39 cumulatively adverse carbon monoxide impacts along the SFOBB, even when traffic volumes
40 reach that facility's capacity limits.

41 Ozone precursor and PM₁₀ precursor emissions associated with NSTI reuse (see Table 4.6-1 in
42 section 4.6) would be added to similar emissions from other sources of regional growth and
43 would contribute to cumulative air pollutant emissions in the Bay Area. Cumulative air quality
44 issues in the San Francisco Bay Area are being addressed through regional air quality plans

1 such as the BAAQMD Bay Area 2001 Ozone Attainment Plan. The projected changes in land use
2 and vehicle travel patterns from the reuse alternatives would not have significant cumulative
3 air quality impacts because projected reuse-generated emissions would not alter existing air
4 quality conditions. Implementing TDM measures discussed in section 4.5, Transportation, can
5 reduce cumulative air quality impacts.

6 NSTI reuse, if undertaken concurrently with the proposed SFOBB east span project, could
7 contribute to significant cumulative construction and demolition air quality impacts from dust
8 and vehicle emissions. The primary emission-generating activities would be new construction,
9 roadway reconstruction, and demolition. This cumulative impact can be mitigated by
10 implementing the dust control measures during construction and demolition activities
11 described in section 4.6, Air Quality.

12 **Noise**

13 Noise conditions are inherently localized, because noise levels decrease quickly with increasing
14 distance from the noise source. Very few noise sources are audible at distances beyond 2 miles.
15 Cumulative noise effects are limited primarily to local effects of cumulative traffic conditions or
16 combined effects of adjacent development. Isolation from other urban development in the Bay
17 Area limits cumulative noise issues to traffic noise along the SFOBB corridor. The contribution
18 of traffic associated with reuse to this cumulative traffic noise would be inconsequential. The
19 reuse alternatives could, however, introduce new uses to areas near the SFOBB, which could be
20 affected by noise associated with the proposed SFOBB east span project.

21 The EIS for the SFOBB east span project estimates that peak noise levels generated by that
22 project would exceed noise abatement criteria for sensitive land uses but would generally be
23 less than existing traffic noise levels due to use of steel-reinforced concrete and a side-by-side
24 roadway design (rather than stacked decks). Reuse activities in combination with SFOBB
25 construction activities may result in temporary cumulative noise impacts. Reuse construction
26 on Yerba Buena Island is planned to occur following SFOBB construction, which would
27 minimize concurrent cumulative impacts. Cumulative impacts may nevertheless occur as a
28 result of sequential construction noise events. Reuse construction noise would be minimized
29 through limitations on activities, as described in section 4.7. Caltrans will work with the
30 property recipient regarding appropriate noise abatement approaches on Yerba Buena Island to
31 mitigate noise impacts from SFOBB construction (Caltrans and FHWA 2001).

32 **Biological Resources**

33 NSTI reuse would not combine with other projects to result in cumulatively significant effects
34 on biological resources. Effects on biological resources from reuse of NSTI are limited to
35 disturbance to mudflats and eelgrass habitat at NSTI, dredging for the proposed marina, and
36 potential effects on harbor seals. These NSTI project effects, however, would not incrementally
37 add to effects of other projects to cause significant impacts to wetlands, shoreline, or other
38 marine biological resources.

39 In regard to long-term population growth and secondary impacts on land use and wetlands, the
40 proposed NSTI reuse would not substantially increase urbanization or population pressure in
41 the region of influence and therefore would not contribute to such increases that could cause

5.0 Cumulative Projects and Impacts

1 alterations of wetland or other sensitive habitats. In regard to the cumulative effects of the
2 reuse of NSTI and those of other Bay Area base closures identified in the region of influence, the
3 disposal and reuse of NAS Alameda/FISCO Alameda or the reuse of the Presidio Army Base in
4 San Francisco are expected to have beneficial impacts on marine and biological resources and
5 therefore there would be no significant cumulative adverse effects from the base closures.

6 Implementing either Alternative 1 or 2, in combination with replacing the SFOBB east span,
7 could result in cumulative impacts to mudflat habitat along Yerba Buena Island, including
8 potential impacts to eelgrass beds. Mitigation identified for the reuse alternatives would
9 minimize disturbance to these mudflats. SFOBB replacement would be expected to result in the
10 loss of a small area of eelgrass at the Oakland touchdown. Mitigation proposed for this loss
11 includes a conceptual mitigation plan to replace affected mudflat habitat and eelgrass beds
12 (Caltrans and FHWA 2001). Therefore cumulative impacts from the proposed reuse of NSTI
13 and construction of SFOBB would be minimized and would not be significant.

14 Proposed dredging activity under NSTI reuse could incrementally add to cumulative impacts to
15 marine species and habitats both locally, as a result of the SFOBB east span project, and in other
16 portions of the Bay proposed for dredging, such as the Oakland Inner Harbor as part of the
17 reuse of FISCO. Dredging impacts include the physical modification of benthic habitats and the
18 removal or disturbance of local populations of bottom-dwelling organisms; increased turbidity
19 and the release of contaminants that are contained in the sediments into the water column; and
20 the noise and disturbance caused by dredging operations. Dredged material disposal can have
21 analogous impacts at disposal sites. However, impacts of dredging are generally short-term,
22 limited in area, and mitigable at the source on a project-specific basis through compliance with
23 stringent federal and state regulatory requirements. In addition, cumulative Bay-wide
24 dredging and dredged material disposal impacts, including the small amount of potential
25 dredging at NSTI, are being mitigated through the Bay Area Long Term Management Strategy
26 (LTMS) (COE 2000b). Therefore, the contributions of the reuse alternatives to cumulative
27 impacts to marine species and habitats from dredging would not be significant.

28 Increased boat traffic under Alternatives 1 or 2, in combination with the SFOBB east span
29 replacement (scheduled for completion by 2005) and work at the Richmond-San Rafael Bridge
30 (scheduled for completion by 2004) could result in cumulative impacts to harbor seals at Yerba
31 Buena Island. However, because none of these projects would directly use the haul-out sites
32 during construction activities, the construction phases of these projects would not overlap, and
33 the project activities would be intermittent, cumulative impacts from these projects are not
34 considered to be cumulatively adverse or significant.

35 Geology and Soils

36 NSTI is in an active seismic area subject to periodic earthquakes. Each of the three reuse
37 alternatives, in conjunction with future development at closing Navy bases in the Bay Area and
38 in the region, would expose more persons to earthquake hazards. Other geotechnical
39 constraints, such as liquefaction and lateral spreading, might present hazards in specific areas.
40 In addition, vegetation removal would present potential erosion conditions. Adherence to
41 recommendations contained in site-specific geotechnical reports, building codes, and grading
42 ordinances, and implementation of region-wide erosion control plans would avoid significant

1 cumulative impacts because exposure would not result in risks higher than commonly accepted
2 in northern California.

3 **Water Resources**

4 Possible cumulative impacts from development of structures in coastal areas include impacts to
5 changes in flooding patterns, loss of sand, and loss of near shore areas. Land use and drainage
6 patterns would not be substantially altered and no impacts are expected in these areas. The
7 possible cumulative water resources impacts of NSTI reuse and other projects in the region of
8 influence would be the impacts of dredging and dredge material disposal on the water quality
9 of central San Francisco Bay. Significant cumulative impacts could occur as a result of
10 concurrent dredging activities for NSTI reuse, SFOBB replacement, FISCO reuse, and the Vision
11 2000 program for deepening Oakland Inner Harbor; however, impacts of dredging are
12 generally short-term, limited in area, and mitigable at the source on a project-by-project basis
13 through compliance with applicable regulatory requirements, including the LTMS. The impacts
14 of dredging at NSTI are expected to be consistent with the federal and state established plan for
15 dredged spoils in the San Francisco Bay. Depending on the selected disposal option, dredge
16 material disposal may have cumulatively significant water quality impacts. Compliance with
17 applicable dredge disposal priorities, which favor reusing sediments on land, would minimize
18 this impact to a not significant level.

19 **Utilities**

20 Each of the three reuse alternatives in combination with cumulative regional development
21 would result in increased demand for utilities in San Francisco (potable water and fire
22 protection distribution, wastewater collection and treatment, stormwater collection, electrical
23 and natural gas, telecommunications, and solid waste systems). The increased regional demand
24 could require construction of new and enlarged utility systems and upgrading of existing utility
25 infrastructure. Construction of utility systems and facilities to serve regional growth and
26 development would proceed under the direction of the utility providers. Each of the reuse
27 alternatives would include development of utility systems and facilities that would adequately
28 serve the reuse development without impacting services in the region and therefore would not
29 conflict with general plans of San Francisco or neighboring municipalities. Therefore, there
30 would be no cumulative impact.

31 Realignment of the SFOBB east span, in accordance with the east spans realignment alternative
32 selected by FHWA in its July 11, 2001 ROD, would require demolishing the old east span and
33 would remove a Navy potable water line through which EBMUD provides emergency backup
34 service to NSTI. If this line were not replaced, the site would lose this emergency backup
35 service. This is a significant and mitigable cumulative impact resulting from the SFOBB project.
36 Mitigation would involve replacing the potable water pipeline along the new east span of the
37 SFOBB to provide emergency backup service to Treasure Island and Yerba Buena Island.

38 **Public Services**

39 The three reuse alternatives, in conjunction with other area development on Treasure and Yerba
40 Buena Islands and in the region, would result in a cumulative increase in demand for public
41 services. However, development restrictions would not allow for construction of a reuse

5.0 Cumulative Projects and Impacts

1 alternative until all public services can be provided. Further, reuse of NSTI would not result in
2 the realignment or development of other projects in the region of influence, which may further
3 increase the demand for public services. Therefore, NSTI reuse development under any of the
4 three reuse alternatives would not have an incremental cumulative impact on the ability to
5 provide these services.

6 **Hazardous Materials and Waste**

7 Similar reuse of contaminated properties (i.e., military base closures) could result in a greater
8 potential for exposure of the public to hazardous substances. Implementing various remedial
9 actions pursuant to CERCLA at each of these sites to remove, manage, or isolate any potentially
10 hazardous substances prior to conveyance would minimize the potential for a significant
11 cumulative impact. Acquiring entities at these installations have been required to comply with
12 Land Use Controls during construction or operations to ensure continued protection of human
13 health and the environment; deeds conveying these properties have, in some cases, contained
14 notices that areas not subject to remediation efforts (such as under foundations) may require
15 additional characterization and possible response actions to appropriate regulatory oversight.

16 Implementation of the three reuse alternatives would result in the use of hazardous materials
17 and the generation of hazardous wastes. Such waste would also be generated by other Navy
18 bases in the Bay Area that are closing, the Job Corps facility on Treasure Island, and possible
19 waterfront development in San Francisco. Future development at NSTI and other installations
20 would be required to comply with all applicable federal, state, and local regulations governing
21 the use, storage, transfer, and disposal of hazardous materials, as well as the measures stated
22 above. Therefore, development at NSTI under any of the three reuse alternatives would not
23 incrementally contribute to a cumulative impact from hazardous materials or waste. In
24 addition, while remediation at NSTI and other Bay Area Navy bases being conducted in
25 accordance with CERCLA is not subject to NEPA, it would nevertheless have a beneficial
26 impact on the region's environment.

27

CHAPTER 6.0

Other Considerations Required by NEPA

1 **6.0 OTHER CONSIDERATIONS REQUIRED BY NEPA**

2 This section addresses other topics required by NEPA in an EIS. These include: an analysis of
3 significant unavoidable adverse impacts to the environment; the relationship between local
4 short-term uses of the environment and long-term productivity; the identification of any
5 irreversible and irretrievable commitments of resources; a discussion of Executive Order 12898
6 (Environmental Justice, 59 Fed. Reg. 7629 [Feb. 11, 1994]); and a discussion of Executive Order
7 13045 (Environmental Health and Safety Risks to Children, 62 Fed. Reg. 19885 [April 21, 1997]).

8 **6.1 SIGNIFICANT UNAVOIDABLE ADVERSE EFFECTS**

9 An EIS must describe any significant unavoidable impacts for which either no mitigation or
10 only partial mitigation is feasible. The impact analysis presented in Chapters 4 and 5 of this EIS
11 indicates that significant unavoidable adverse effects would occur only under Alternative 2.

12 Implementation of Alternative 2 would require demolition of Building 2 and Building 3 on
13 Treasure Island, buildings eligible for listing on the NRHP. This would result in the loss of
14 significant historic resources. This adverse effect can be lessened or reduced by recording the
15 affected resources to the standards of HABS/HAER, but recordation would not eliminate the
16 adverse effect caused by the demolition of NRHP-eligible resources.

17 **6.2 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM**
18 **PRODUCTIVITY**

19 NEPA requires that an EIS consider the relationship between short-term uses of the
20 environment and the maintenance and enhancement of long-term productivity. The analysis
21 covers the extent to which both disposal and reuse involve tradeoffs between short-term
22 environmental gains at the expense of long-term losses, or vice versa.

23 Because most of NSTI has been developed, redevelopment under any of the three reuse
24 alternatives would do little to negatively affect the short or long-term productivity of the area.
25 Disposal and subsequent reuse of NSTI could however result in both short- and long-term
26 environmental gains that would enhance productivity of the site. Improved vehicle access and
27 increased public recreation opportunities along the San Francisco Bay shoreline under reuse
28 would be both a short- and long-term gain. Long-term gains would also include increases in
29 jobs and housing and generation of sufficient revenue to support the investment necessary to
30 upgrade the Treasure Island perimeter dike and undertake other facility ground improvements
31 that would improve the seismic safety of the site.

32 Disposal and reuse of NSTI could result in potential environmental impacts, as identified in
33 Chapters 4 and 5 of this EIS, such as those to transportation, biological resources, and water
34 resources. If not mitigated, these impacts could result in decreases in the long-term
35 productivity of the environment on NSTI.

36 **6.3 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES**

37 NEPA requires that an EIS analyze the extent to which the proposed alternatives' primary and
38 secondary effects would commit nonrenewable resources to uses that future generations

6.0 Other Considerations Required by NEPA

1 probably would be unable to reverse. Disposal and subsequent reuse of Navy property and
2 structures would constitute an irreversible or irretrievable commitment of military resources
3 and land uses.

4 Reuse of the property would provide for responsible long-term resource management and,
5 except for Alternative 2, makes no irreversible resource commitments. Alternative 2 would
6 include the planned removal of historic Building 2 and Building 3 on Treasure Island, which
7 would be a permanent loss of these resources.

8 Implementing any of the reuse alternatives would require short-term commitments of both
9 renewable and nonrenewable energy and material resources for demolition, and commitments
10 for construction of the structures and infrastructure improvements required for
11 implementation. These developments would represent a very large commitment of financial
12 resources but would not represent an irreversible commitment of NSTI surplus property to the
13 proposed uses.

14 Equipment used during construction and demolition activities at NSTI would consume
15 petroleum fuels, such as gasoline and diesel. This temporary energy expenditure would occur
16 over the short term and would not substantially increase the overall demand for electricity or
17 natural gas. Implementing the reuse alternatives would consume large volumes of
18 nonrenewable fossil fuel as a result of increased trips generated by automobile, bus, and ferry
19 trips. Additional energy would also be expended at the wastewater treatment plant. The
20 increase in development likely would result in an increase in the annual amount of energy
21 consumed in heating, air conditioning, and other operational uses of energy. Infrastructure
22 improvements would be provided corresponding to each new phase of development to meet
23 increased demand.

24 **6.4 ENVIRONMENTAL JUSTICE**

25 This section summarizes potential impacts from disposal and reuse of the site on issues of
26 environmental justice, as mandated by Executive Order 12898. The Executive Order on
27 "Federal Actions to Address Environmental Justice in Minority Populations and Low-income
28 Populations," issued on February, 11, 1994, requires that the impacts of federal actions on
29 minority and low-income populations be addressed to avoid disproportionate adverse impacts
30 to these groups.

31 On April 21, 1995, the Secretary of Defense submitted a formal environmental justice strategy
32 and implementation plan to the EPA. To comply with the executive order, this EIS included the
33 following actions:

- 34 • Gathering economic, racial, and demographic information generated from the 1990 census
35 to identify areas of low-income and high minority populations in San Francisco and
36 Alameda counties that would potentially be exposed to project impacts;
- 37 • Assessing the disposal and reuse alternatives for disproportionate impacts resulting from
38 on-site activities associated with reuse of project site facilities; and

- Encouraging community participation and input through public hearings and meetings and extensive public notification, which are described in Chapter 1 and Chapter 7 of this document.

6.4.1 Criteria and Methodology

Under the provisions of Executive Order 12898, "[m]itigation measures outlined or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible, should address significant and adverse environmental effects of proposed federal actions on minority communities and low-income communities." Relative to environmental justice, a significant impact would occur if the proposed action, including the consideration of all resource issues, would result in disproportionate negative effects on minority populations or low-income populations. To determine whether low-income or minority populations could be disproportionately affected by the disposal and reuse of NSTI, low-income and minority populations were first identified. Potential effects in areas where these populations live were next identified and these effects were further evaluated to determine if there would be any disproportionate effect. The area considered in this analysis includes NSTI, San Francisco, and Alameda County.

6.4.2 Minority Population and Low-income Population Overview

As presented in Table 6-1, the population of NSTI in 1990 was predominately White (65 percent), as it was in the Bay Area region (69 percent), in San Francisco (54 percent), and in Alameda County (60 percent). The residential population of NSTI in 1990 was entirely composed of military personnel and their dependents. The non-white (i.e., racial minority) population at NSTI was roughly proportional to the region and in the surrounding communities of San Francisco and Alameda counties.

Median income of NSTI households in 1990 was about 16 percent lower than the San Francisco median income and 25 percent lower than Alameda County's (see Table 3.3-4 in section 3.3, Socioeconomics). At the time of the 1990 census approximately nine percent of all households in the Bay Area, 13 percent of San Francisco households, and 11 percent of Alameda County households were below the poverty level.

6.4.3 Potential Disproportionate Impacts to Minority Populations or Low-income Populations

The potentially affected area adjacent to NSTI does not include disproportionately high minority populations or low-income populations compared to adjacent communities. In addition, impacts under any of the three reuse alternatives would either not be significant or, if significant, would be adequately mitigated such that no disproportionate impact would be expected to occur. As a result, none of the reuse alternatives appear likely to have a disproportionate impact on minority populations or low-income populations to warrant further analysis beyond that conducted in each of the environmental issue areas.

Table 6-1
Racial Composition of NSTI, Bay Area, San Francisco, and Alameda County Population, 1980 and 1990

Location		White		Black		American Indian		Asian Pacific Islander		Other		Hispanic	
		1980	1990	1980	1990	1980	1990	1980	1990	1980	1990	1980	1990
NSTI	#	2,565	2,911	321	718	44	38	794	702	211	140	293	389
	%	65.2	64.6	8.2	1.6	1.1	0.8	20.2	15.5	5.4	3.1	7.4	8.6
Bay Area	#	3,940,084	4,147,971	466,274	533,188	37,187	39,035	462,890	919,279	273,349	384,104	632,640	899,243
	%	76.0	68.9	9.0	8.9	0.7	0.6	8.9	15.3	5.3	6.4	12.2	14.9
San Francisco	#	395,081	388,341	86,414	78,931	3,548	3,354	147,426	211,000	46,505	42,333	83,373	96,640
	%	58.2	53.6	12.7	10.9	0.5	0.5	21.7	29.1	6.8	5.8	12.3	13.3
Alameda County	#	740,612	762,557	203,612	229,316	7,446	8,354	85,899	193,282	67,810	85,673	129,962	176,017
	%	67.0	59.6	18.4	17.9	0.6	0.7	7.8	15.1	6.1	6.8	11.8	13.8

Note: Percentages may not add to 100 due to rounding. Hispanic origin is for information only and is not considered a separate race. Persons of Hispanic origin are also counted under one of the other race columns.

Source: U.S. Department of Commerce 1980, 1990.

1 Socioeconomic impacts under any of the reuse alternatives would not occur or would not be
2 considered significant if they were to occur, and would not be expected to disproportionately
3 affect minority or low-income populations (see section 4.3). Each of the reuse alternatives
4 would create a net gain in employment, and jobs that would be provided at the theme park
5 should offer opportunities for minority populations and low-income populations. In addition,
6 TIHDI's Notice of Interest for NSTI includes homeless housing, support services, employment,
7 and economic development programs and services for the homeless, which would benefit low-
8 income populations.

9 Under the No Action Alternative, the caretaker program would provide employment for
10 approximately 50 personnel on the site, which would represent a decrease of 700 jobs from the
11 operational baseline. While most of the lost jobs would be from relocation of military personnel
12 to other installations, some would be local, civilian support jobs. Given the number of jobs
13 available in the region, this would be a less than significant impact. There is no indication that
14 the workers in these jobs would be predominantly minority or low-income and therefore would
15 be disproportionately affected.

16 The significant and not mitigable environmental impact of reuse Alternative 2 identified in this
17 EIS would affect cultural resources, as summarized in section 6.1. Under Alternative 2, the loss
18 of Buildings 2 and 3 on Treasure Island, which meet the criteria for listing in the National
19 Register, would have localized impacts at the individual sites and potential cumulative regional
20 impacts throughout the Bay Area, but would not have a disproportionate adverse impact on
21 minority populations or low-income populations.

22 There may be potentially significant but mitigable on-site health and safety implications
23 resulting from exposure to environmental contamination/hazardous materials on the site
24 during reuse (as discussed in section 4.13), but there is no indication that any such potential
25 impacts would disproportionately accrue to minority populations or low-income populations.
26 Health and safety impact concerns could also extend off-site under the reuse alternatives. Air
27 quality is one such issue, but given that any such impacts would be experienced on a regional
28 basis, no disproportionate impacts to minority populations or low-income populations are
29 anticipated.

30 Some unauthorized fishing has historically taken place at Pier 23 and other areas on NSTI; it is
31 possible that under the reuse plan public access for fishing would be broadened. Under these
32 circumstances, therefore, minority or low-income populations that conduct subsistence fishing
33 might gain increased access to fishing opportunities. It should be noted that California EPA has
34 identified possible health consequences from eating fish caught in San Francisco Bay, due to
35 high levels of the following chemicals: mercury, dioxins, PCBs, DDT, dieldrin, and chlordane
36 (California EPA 2001). It is recommended that under the selected alternative, warning signs in
37 a variety of languages be posted in areas that provide public access for fishing to warn of
38 possible health risks from consuming fish caught in San Francisco Bay.

1 **6.5 PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH**
2 **RISKS AND SAFETY RISKS**

3 On April 17, 1997 Executive Order 13045, Protection of Children from Environmental Health
4 Risks and Safety Risks, was signed by President Clinton. The policy of the Executive Order
5 states that:

6 A growing body of scientific knowledge demonstrates that children may suffer
7 disproportionately from environmental health risks and safety risks. These risks
8 arise because: children's neurological, immunological, digestive, and other
9 bodily systems are still developing; children eat more food, drink more fluids,
10 and breathe more air in proportion to their body weights than adults; children's
11 size and weight may diminish their protection from standard safety features; and
12 children's behavior patterns may make them more susceptible to accidents
13 because they are less able to protect themselves. Therefore, to the extent
14 permitted by law and appropriate, and consistent with the agency's mission,
15 each federal agency:

- 16 • shall make it a high priority to identify and assess environmental health
17 risks and safety risks that may disproportionately affect children; and
- 18 • ensure that its policies, programs, activities, and standards address
19 disproportionate risks to children that result from environmental health
20 risks or safety risks.

21 Under the definitions provided in Executive Order 13045, covered regulatory
22 actions included those that may be "economically significant" (under Executive
23 Order 12866) and "concern an environmental health risk or safety risk that an
24 agency has reason to believe may disproportionately affect children." Further,
25 Executive Order 13045 defines "environmental health risks and safety risks" [to]
26 "mean risks to health and safety that are attributable to products or substances
27 that the child is likely to come in contact with or ingest (such as the air we
28 breathe, the food we eat, the water we drink or use for recreation, the soil we live
29 on, and the products we use or are exposed to).

30 Environmental health risks and safety risks mean risks to health or to safety that are attributable
31 to products or substances that the child is likely to come into contact with or to ingest. To
32 comply with Executive Order 13045, this section of the EIS discusses child-specific
33 environmental health risk and safety risk issues.

34 Areas on NSTI where there may be potentially high concentrations of children include schools,
35 day care centers, and residential areas. The only school on NSTI is the Treasure Island
36 Elementary School, leased to the SFUSD by Navy. This school has a capacity of up to a total of
37 1,000 students, kindergarten through 5th grade. The former child development center in
38 Building 502 closed in mid-1997, but was re-opened in March 2003.

39 Under Alternatives 1 and 3, the existing school would be retained and a child development
40 center would re-occupy Building 502. Residential development is also proposed under the

1 three reuse alternatives. The largest amount of residential development would occur under
2 Alternatives 1 and 3, where new residences would be developed in the northern half of
3 Treasure Island and on Yerba Buena Island. Under Alternative 2, residences would only be
4 developed on Yerba Buena Island.

5 There may be potentially significant, but mitigable on-site health and safety impacts resulting
6 from exposure to environmental contamination/hazardous materials on the site during reuse
7 (as discussed in section 4.13), but there is no indication that any such potential impacts would
8 disproportionately accrue to children. Areas of contamination are scheduled for cleanup prior
9 to reuse, with restoration to levels appropriate to subsequent reuse categories. Children would
10 not be expected to be exposed during the cleanup process.

11 Health and safety impact concerns could also extend off-site with the reuse alternatives. Air
12 quality impacts (as discussed in section 4.6) are a potential concern, but given that any such
13 impacts would be of a small incremental level and would be experienced on a regional basis
14 rather than a localized basis, no disproportionate impacts to children are anticipated.

15 As explained for environmental justice, a significant and not mitigable impact to historic
16 resources under Alternative 2 would not disproportionately affect children. For all significant
17 and mitigable environmental impacts identified in this EIS, implementing identified mitigation
18 measures as described would ensure that no disproportionate impacts to environmental health
19 risks and/or safety risks to children would occur under any of the reuse alternatives.
20

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CHAPTER 7.0

Consultation and Coordination

7.0 CONSULTATION AND COORDINATION

1 7.1 AGENCY COORDINATION

2 The federal, state, and local agencies were consulted prior to and during the preparation of this
3 EIS. Agencies were notified of plans for closure and disposal activities by mail; by scheduled
4 public meetings associated with the reuse planning process; by publication of an NOI
5 announcing preparation of a Draft EIS; by a public scoping meeting; by publication of an NOA
6 announcing the availability of the Draft EIS, and by a public hearing on the Draft EIS. The
7 agencies' viewpoints were solicited with regard to activities and issues within their jurisdiction.
8 Agency correspondence with US Fish and Wildlife Service, NOAA Fisheries US Department of
9 Housing and Urban Development, and SHPO, is provided in Appendix C. The agencies
10 contacted are listed below.

11 7.1.1 Federal Agencies

12 Department of Defense

13 US Navy, Naval Station Treasure Island

14 US Navy, Engineering Field Activity West

15 US Navy, Public Works Center San Francisco Bay

16 Department of the Interior

17 US Fish and Wildlife Service

18 Department of Labor

19 Department of Transportation

20 US Coast Guard

21 Federal Highways Administration

22 7.1.2 State Agencies

23 State Department of Transportation

24 Caltrans - District 4

25 State Lands Commission

26 State Office of Historic Preservation

27 7.1.3 Regional Agencies

28 San Francisco Bay Conservation and Development Commission

29 East Bay Municipal Utilities District

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1 San Francisco Bay Regional Water Quality Control Board

2 **7.1.4 City and County of San Francisco**

3 California Academy of Science

4 Department of Public Health

5 Department of Public Works

6 Fire Department

7 Hetch Hetchy Water and Power

8 Municipal Railway (Muni)

9 Office of Emergency Services

10 Planning Department

11 Police Department

12 Public Utilities Commission

13 Solid Waste Management Program

14 Treasure Island Homeless Development Initiative

15 Unified School District

16 Water Department

17 **7.1.5 Public Service Agencies**

18 Altamont Landfill and Resource Recovery Facility

19 **7.2 PUBLIC COORDINATION**

20 Extensive public coordination has occurred, and will continue to occur, as part of this proposed
21 action. Public involvement opportunities to date include the reuse planning process and the EIS
22 notification process, including the NOI and one scoping meeting. Sections 7.2.1 through 7.2.5
23 provide more information on the outreach activities and responses associated with the reuse
24 planning process, NOI process, public scoping meeting, public review of the Draft EIS, and
25 release of the Final EIS.

26 **7.2.1 Reuse Planning Process**

27 The process to convert NSTI to civilian use involved an extensive reuse planning and
28 community outreach process. San Francisco, acting as the LRA, prepared the reuse plan for
29 NSTI. During the reuse planning process, efforts were made to encourage and incorporate
30 public participation and communication into the reuse planning process. Community outreach
31 and involvement were critical components in the reuse plan development. This process
32 provided several opportunities to inform agencies and the public of the availability of NSTI
33 assets and to identify potential commercial interests in surplus military property.

1 A major portion of the outreach process involved conducting community workshops to define
2 issues and to discuss reuse opportunities. In addition to the community workshops, all meetings of
3 the Treasure Island Citizens Reuse Committee (CRC) were open to the public.

4 Based on the community outreach program and public interest, the LRA Draft Reuse Plan was
5 prepared. Section 2.2 of this EIS summarizes the alternatives development and screening
6 process leading to the final selection of a reuse plan.

7 **7.2.2 Notice of Intent to Prepare the Draft EIS/EIR**

8 The scoping process was conducted jointly with San Francisco. In conformance with the
9 requirements of NEPA, an NOI to prepare an EIS for the Disposal and Reuse of NSTI was
10 published by Navy in the Federal Register and distributed to potentially interested parties,
11 including regulatory agencies, local jurisdictions, service providers, and others. A copy of the
12 NOI is provided in Appendix D.

13 **7.2.3 Public Scoping Meeting**

14 An additional effort to inform the public and to solicit input on the scope of the EIS from
15 affected jurisdictions, interested members of the public, and organized groups was afforded
16 through a public scoping meeting held by Navy and San Francisco. The NSTI public scoping
17 meeting was held on October 9, 1996 at the San Francisco Ferry Building. Presentations were
18 given by representatives of Navy and San Francisco. An opportunity for oral comments
19 followed. Six oral comments were received; no written comments were received at the meeting.
20 Twelve written comments on the NOI were received via mail.

21 A complete transcript of the public scoping meeting is available from:

22 Timarie Seneca
23 US Navy, Southwest Division
24 BRAC Operations Office
25 1230 Columbia Street, Suite 1100
26 San Diego, California 92101-8517
27 (619) 532-0955

28 The environmental issues raised in the six oral and twelve written comments were considered
29 during the course of the impact assessment process, and are briefly summarized below.

30 ***Oral Comment Summary***

31 ***Public Involvement Process***

32 A commentor expressed concern about the public comment period and notice for the reuse
33 plan, as well as inadequate discussion of alternatives in the reuse plan.

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1 *Land Use*

2 A request was made for analysis of different land use intensities. It was suggested that a new
3 alternative that reuses housing without the addition of any new housing be analyzed.
4 Expanding the marina facilities and increasing parking areas with the marina were proposed.

5 *Socioeconomics*

6 Issues were raised regarding the inclusion of the concerns of veterans, as well as inclusion of
7 economic, educational, and technical programs in the reuse plan.

8 *Biological Resources*

9 It was recommended that wildlife habitat and wildlife viewing opportunities be included on
10 Treasure Island and Yerba Buena Island. The addition of wetlands was a suggested alternative.
11 A point was made that such opportunities also had economic, recreational, and sewage
12 treatment benefits.

13 *Public Plans, Policies, and Regulatory Agencies*

14 Concerns were expressed for the consistency of development with the Tidelands Trust and the
15 Sustainable San Francisco Plan.

16 *Written Comment Summary*

17 *Alternatives*

- 18 • Navy was encouraged to examine a full range of alternatives that maximize environmental
19 quality and that incorporate pollution prevention and conservation measures.
- 20 • A clear definition of the region of influence and an unambiguous statement of purpose and
21 need must be provided.
- 22 • Navy is required to identify both a Preferred Alternative and an Environmentally Preferable
23 Alternative.
- 24 • The public should be able to participate in the refinement of the reuse alternatives during
25 the EIS process beyond the minimum requirements of NEPA.
- 26 • The reuse plan developed by the Urban Lands Institute should be considered as an
27 alternative.
- 28 • The Reduced Impact Alternative should include reuse of the existing housing on Treasure
29 Island, as well as 300 units on Yerba Buena Island for affordable housing.

30 *Land Use*

- 31 • The US Coast Guard's current and future land use on Yerba Buena Island should be
32 considered in the EIS.

- 1 • Existing and projected land use conflicts should be identified, and the EIS should offer
2 opportunities that would reduce them.
- 3 • A portion of the lands comprising NSTI remains subject to the common law tidelands trust.
4 Upon the cessation of military use, the State Lands Commission has agreed to allow San
5 Francisco the continued use of existing buildings located on public trust lands (submerged
6 and tidal lands) for their intended use for an appropriate period, even where the uses do not
7 fall within the range of public trust uses.
- 8 • Designate the shoreline promenade, referred to in the Draft Reuse Plan, as part of the
9 planned 400-mile recreational Bay Trail system.
- 10 • It appears that the reuse alternatives involve land uses that are not permitted on public trust
11 land; the impacts of non-compliance with the Tidelands Trust Doctrine must be fully
12 detailed and mitigated.

13 *Visual Resources and Urban Design*

- 14 • The EIS should identify potential aesthetic effects particularly on the Bay shoreline.

15 *Socioeconomics and Population*

- 16 • Nearby residential areas should be documented and the potential effects on these areas fully
17 analyzed.
- 18 • The effects on minority communities should be analyzed in accordance with Executive
19 Order 12898, and opportunities for minority input should be presented in the EIS process.
- 20 • The potential for providing affordable housing on Treasure Island and parts of Yerba Buena
21 Island by reusing existing housing should be considered.

22 *Cultural Resources*

- 23 • In accordance with the NHPA, the EIS should identify all historic, prehistoric and
24 archeological resources at Treasure Island and provisions should be made to protect any
25 cultural resources encountered during project implementation.
- 26 • The reuse plan should incorporate systematic inventory and recording of historic resources,
27 protection of historic resources, and cultural resource reviews.

28 *Transportation*

- 29 • Transportation across the Bay Bridge and over the Bay by ferry should be given particular
30 consideration.
- 31 • Transportation effects should be taken in context with other transit changes in the region.
- 32 • Direct and indirect effects of reuse, which should be fully documented in the EIS, might
33 result in increased transit if additional employment is generated.

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1 • A complete traffic study was recommended to identify the impacts to State Route 80. A
2 request was made that the impact of additional traffic on the Bay Bridge, the inadequate
3 design of the existing on/off ramps, and the need for restricted accessibility to pedestrians
4 be addressed.

5 • Give consideration to safe pedestrian and bicycle access to Treasure Island, particularly
6 shoreline areas.

7 *Air Quality*

8 • Information regarding the current air quality attainment status and the generation of criteria
9 pollutants under the proposed alternatives should be analyzed with respect to attainment
10 status.

11 *Noise*

12 • Noise contours should be used to show existing and proposed noise levels. These should be
13 overlain by known sensitive areas to indicate potential impacts.

14 *Biological Resources*

15 • It is important that the project's effects on protected and endangered species and critical
16 fisheries habitat be addressed.

17 • A wildlife habitat component should be included in the alternatives.

18 • Consideration should be given to the preservation of remnant indigenous biological
19 communities on Yerba Buena Island in land use planning.

20 • The current reuse options should be more ecologically sustainable; the current options use
21 large amounts of natural resources and generate waste.

22 • Seabird nesting sites for MBTA-protected species at NSTI, such as the western gull, the
23 Brandt's cormorant, pelagic cormorant, and the black oystercatcher, should be protected
24 from development or other disturbance.

25 *Water Resources*

26 • The proposed development and reuse should not hinder the Department of Defense's
27 obligation to meet water quality standards.

28 • The EIS should address NPDES requirements, effects on Waters of the United States,
29 baseline conditions, and dredging.

30 *Public Services and Utilities*

31 • The EIS should discuss and encourage pollution prevention and energy conservation
32 opportunities.

- 1 • The net effect on regional water supplies and demand as a result of the project's actions
2 should be surveyed.
- 3 • Water conservation measures should be encouraged.

4 *Hazardous Materials and Waste*

- 5 • Areas of existing and historical hazardous waste storage, disposal, and contamination
6 should be identified and any plans to disturb these areas discussed. Of particular concern
7 was the potential for adverse health effects on people who consume fish caught in the bay.
- 8 • The EIS should ensure that the reuse alternatives do not expose people to contaminated
9 soils on Treasure Island. Petroleum pollution on Treasure Island poses a threat to both
10 surface and ground water, and the stormwater conveyance system conducts the
11 contaminants throughout the island and into the Bay. It was suggested as mitigation that
12 stormwater be treated prior to its return to the Bay.

13 *Public Plans, Policies, and Regulatory Agencies*

- 14 • The regional planning efforts of the City, County, and Port of San Francisco and the City
15 and Port of Oakland should be taken into account to avoid potential future conflicts.

16 *Cumulative Effects*

- 17 • The EIS should contain a discussion of the cumulative effects of the project on its region of
18 influence. The discussion should describe the incremental impact of an alternative in
19 conjunction with past, current, and future projects. Special consideration should be given to
20 disposal and reuse of Hunter's Point Naval Shipyard, Mare Island, Alameda NAS, the Fleet
21 and Industrial Supply Center, the Oakland Naval Medical Center, and the Oakland Army
22 Base, as well as long term plans for the San Francisco waterfront.

23 *Impacts*

- 24 • Significance criteria and baseline conditions should be clearly defined.
- 25 • There are more environmental effects to consider than those identified on the Initial Study
26 checklist.

27 *Mitigation*

- 28 • Potential mitigation measures should be identified in the Draft EIS that would provide the
29 basis for specific commitments that would be carried forward through the rest of the
30 environmental process.

31 **7.2.4 Public Review of the Draft EIS**

32 The public was invited to review and comment on the Draft EIS. An NOA was published in the
33 Federal Register on May 10, 2002 and notices were published in the *San Francisco Chronicle* and
34 *Oakland Tribune* on May 25 and 26, 2002. Copies of the Draft EIS and NOA were mailed to those

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1 on the mailing list (Chapter 10 of the Draft EIS), beginning a 45-day public comment period. A
2 public hearing on the Draft EIS was also held at Building 140 on Treasure Island on June 11,
3 2002.

4 During the public comment period, 22 comment letters on the Draft EIS were received from
5 agencies or individuals. In addition, four persons provided oral comments on the Draft EIS at
6 the public hearing. Comments on the Draft EIS and responses to those comments are provided
7 in Chapter 11, Responses to Comments. The Final EIS has been revised, as appropriate, in
8 response to public comments.

9 **7.2.5 Final EIS**

10 The Final EIS incorporates and responds to comments received on the Draft EIS and has been
11 provided to all agencies or individuals that officially commented on the document or otherwise
12 requested a copy (see Chapter 10, EIS Distribution List). An NOA of the Final EIS was
13 published in the Federal Register on June 27, 2003.

14 As required under NEPA, there will be a 30-day review period after publication of the Final EIS.
15 During this period, the public may comment on the adequacy of responses to comments and the
16 Final EIS. After the 30-day review period, Navy can issue a NEPA ROD.

CHAPTER 8.0

List of Preparers and Contributors

8.0 LIST OF PREPARERS AND CONTRIBUTORS

1 **LEAD AGENCY**

2 U.S. Department of the Navy, Southwest Division
 3 BRAC Operations Office
 4 1220 Pacific Highway
 5 San Diego, California 92132-5190

6 Timarie Seneca, Project Leader

7 This EIS was prepared for, and under the direction of, the DON, by Science Applications
 8 International Corporation (SAIC). Members of SAIC's professional staff who contributed to the
 9 preparation of this document are listed below.

<i>Name</i>	<i>Degree</i>	<i>Project Participation</i>
<i>SAIC PROFESSIONAL STAFF</i>		
Douglas Billings	B.S., Geology and Geography	Program/Project Manager
Debby Baca	B.S., Technical Illustration, Commercial Design	Graphic Design
Chris Crabtree	B.A., Environmental Studies	Air Quality
Mike Dungan	Ph.D., Ecology and Evolutionary Biology	Biological Resources
Karen Foster	Ph.D., Anthropology	Quality Assurance/Quality Control, Land Use, Visual Resources, Socioeconomics, Utilities, Public Services
Dick Kentro	M.A., Environmental Planning	Noise
Perry Russell	M.S., Geological Sciences	Geology and Soils, Water Resources, Hazardous Materials and Wastes
Forrest Smith	B.A., History and Political Science	Quality Assurance/Quality Control
Craig Woodman	M.A., Anthropology	Cultural Resources
<i>BOTANICAL CONSULTING SERVICES</i>		
Mike Wood	M.A., Ecology and Systematic Biology	Rare Plant Survey
<i>CHEUNG ENVIRONMENTAL CONSULTING</i>		
Lori Cheung	B.A., Environmental Sciences	QA/QC, Research
<i>GRASSETTI ENVIRONMENTAL CONSULTING</i>		
Richard Grassetti	M.A., Geography	Water Resources, Geology and Soils
<i>JRP HISTORICAL CONSULTING</i>		
Steve Mikesell	M.A., History	Historical Resources

8.0 List of Preparers and Contributors

<i>Name</i>	<i>Degree</i>	<i>Project Participation</i>
<i>CHS CONSULTING</i>		
Chi-Hsin Shao	M.S., Infrastructure Planning and Management	Traffic and Transportation
Ramin M. Massoumi	M.S., Civil Engineering/Transportation	Traffic and Transportation
<i>MARA FEENEY & ASSOCIATES</i>		
Mara Feeney	M.A., Community and Regional Planning	Socioeconomics
<i>PAR ENVIRONMENTAL</i>		
Mary L. Maniery	M.A., Anthropology	Archeological Resources
Blossom J. Hamusek-McGann	M.A., Anthropology	Archeological Resources
Cindy Baker	M.A., History	Archeological Resources

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CHAPTER 10.0

EIS Distribution and Notification List

10.0 EIS DISTRIBUTION LIST

1 A copy of the EIS has been distributed to the following:

2 **FEDERAL AGENCIES**

3 Advisory Council on Historic Preservation

4 US Army Corps of Engineers

5 US Department of Commerce, National Marine Fisheries Service

6 US Department of Commerce, National Oceanic and Atmospheric Administration

7 US Department of Defense, Office of Economic Adjustment

8 US Department of Education

9 US Department of Energy

10 US Department of Homeland Security

11 US Coast Guard

12 Federal Emergency Management Agency, Region 9

13 US Department of Housing and Urban Development

14 US Department of the Interior

15 Office of Environmental Policy and Compliance

16 Bureau of Indian Affairs

17 Fish and Wildlife Service Realty Division

18 National Park Service

19 US Geological Survey

20 US Department of Labor

21 US Department of State

22 US Department of Transportation

23 Federal Aviation Administration

24 Federal Highway Administration

10.0 EIS Distribution List

- 1 Federal Transit Administration
- 2 US Environmental Protection Agency, Region 9
- 3 US General Services Administration
- 4 US Navy
- 5 Naval Facilities Engineering Command, SOUTHWESTDIV
- 6 Naval Facilities Engineering Command, Washington Navy Yard

7 **STATE AGENCIES**

- 8 California Air Resources Board
- 9 California Assembly Office of Research
- 10 California Department of Conservation
- 11 California Department of Fish & Game
- 12 California Department of Forestry
- 13 California Department of Health Services
- 14 California Department of Highway Patrol
- 15 California Department of Parks & Recreation
- 16 California Department of Toxic Substance Control
- 17 California Department of Transportation, District 4
- 18 California Department of Water Resources
- 19 California Economic Development Department
- 20 California Labor Foundation
- 21 California Native American Heritage Commission
- 22 California Office of Economic Adjustment
- 23 California Office of Emergency Services
- 24 California Public Utilities Commission
- 25 California State Coastal Conservancy

- 1 California State Historic Preservation Office
- 2 California State Lands Commission
- 3 California Trade and Commerce Agency
- 4 California Water Resources Control Board
- 5 Northwest Information Center
- 6 San Francisco Bay Conservation and Development Commission
- 7 State of California, Clearinghouse
- 8 The Resources Agency
- 9 University of California, Berkeley and at San Francisco
- 10 **ELECTED OFFICIALS**
- 11 Senator Barbara Boxer
- 12 Senator Dianne Feinstein
- 13 Congresswoman Barbara Lee
- 14 Congressman George Miller
- 15 Congresswoman Nancy Pelosi
- 16 Congressman Peter Stark
- 17 Senator John Burton
- 18 Assemblywoman Dion Aronor
- 19 Assemblywoman Helen Thompson
- 20 Mayor, Willie Brown, City and County of San Francisco
- 21 Mayor, Jerry Brown, City of Oakland
- 22 Honorable, Tom Ammiano, President, San Francisco Board of Supervisors
- 23 Honorable Chris Daly, San Francisco Board of Supervisors
- 24 Honorable, Matt Gonzalez, San Francisco Board of Supervisors
- 25 Honorable, Tony Hall, San Francisco Board of Supervisors

10.0 EIS Distribution List

- 1 Honorable, Mark Leno, San Francisco Board of Supervisors
- 2 Honorable, Jake McGoldrick, San Francisco Board of Supervisors
- 3 Honorable, Sophie Maxwell, San Francisco Board of Supervisors
- 4 Honorable, Gavin Newsom, San Francisco Board of Supervisors
- 5 Honorable, Aaron Peskin, San Francisco Board of Supervisors
- 6 Honorable, Gerardo Sandoval, San Francisco Board of Supervisors
- 7 Honorable, Leland Yee, San Francisco Board of Supervisors

8 **REGIONAL AGENCIES/SPECIAL PURPOSE AGENCIES**

- 9 AC Transit
- 10 Association of Bay Area Governments, San Francisco Bay Trail Project
- 11 Bay Area Air Quality Management District
- 12 Bay Area Rapid Transit District Planning
- 13 California Regional Water Quality Control Board
- 14 East Bay Municipal Utility District
- 15 Metropolitan Transportation Commission
- 16 Port of Oakland
- 17 San Francisco Municipal Railway

18 **LOCAL AGENCIES**

- 19 City and County of San Francisco
- 20 City Attorney's Office
- 21 Department of Building Inspection
- 22 Department of City Planning
- 23 Department of Public Health
- 24 Department of Public Works
- 25 Division of General Engineering Services

- 1 Fire Department Regional Training Center
- 2 Fire Department, Division of Planning & Research
- 3 Planning Commission
- 4 Planning Department
- 5 Police Department
- 6 Public Utilities Commission
- 7 Real Estate Department
- 8 Recreation & Park Department
- 9 Redevelopment Agency, Office of Base Conversion
- 10 San Francisco Landmarks Preservation Advisory Board
- 11 San Francisco Port Commission
- 12 City of Alameda, Planning Department
- 13 City of Berkeley, Planning Department
- 14 City of Brisbane, Planning Department
- 15 City of Daly City, Planning Department
- 16 City of Emeryville, Planning Department
- 17 City of Larkspur, Planning Department
- 18 City of Oakland, Planning Department
- 19 City of San Mateo, Planning Department
- 20 City of Sausalito, Community Development Planning Department
- 21 City of South San Francisco, Planning Department
- 22 City of Tiburon, Planning Department
- 23 City of Vallejo, Planning Department
- 24 County of Alameda, Planning Department
- 25 County of Marin, Planning Department

10.0 EIS Distribution List

- 1 County of San Mateo, Planning Department
- 2 County of Solano, Planning Department
- 3 **OTHER INTEREST GROUPS**
- 4 Arc Ecology
- 5 Bay Area Council
- 6 Coalition for San Francisco Neighborhoods
- 7 Golden Gate Audubon Society
- 8 Natural Resources Defense Council
- 9 Nature Conservancy
- 10 San Franciscans for Reasonable Growth
- 11 San Francisco Bay Chapter of the Sierra Club
- 12 San Francisco Planning & Urban Research Association
- 13 San Francisco Tomorrow
- 14 Social Economic Environmental Justice Advocates
- 15 Treasure Island Development Authority
- 16 Treasure Island Homeless Development Initiative
- 17 Treasure Island Firefighters
- 18 Treasure Island Yacht Club
- 19 **LIBRARIES**
- 20 Oakland Public Library, Eastmont Branch
- 21 Oakland Public Library, Main Library
- 22 San Francisco Public Library, Main Library
- 23 San Francisco Public Library, Bayview/Waden Branch
- 24 San Francisco Public Library, Portrero Branch
- 25 San Francisco Public Library, Chinatown Branch

- 1 San Francisco Public Library, North Beach Branch
- 2 San Francisco Public Library, Bernal Heights Branch

3 **UTILITIES/PUBLIC SERVICES**

- 4 Pacific Gas and Electric
- 5 TI Utilities Manager
- 6 San Francisco Unified School District
- 7 Water Department Distribution Division

8 **NATIVE AMERICANS**

- 9 Ione Band of Mission Indians

10 **INTERESTED INDIVIDUALS**

- 11 Woody Baker-Cohn
- 12 Eugene Brodsky
- 13 Normal de Vall
- 14 Susan DeVico
- 15 Katherine Erolinda Perez
- 16 Karen Frick
- 17 John Geddie
- 18 Mr. Gerberding
- 19 Kathleen Gilbert
- 20 Ruth Gravanis
- 21 Richard Hansen
- 22 Emeric Kalman
- 23 Karen Knowles-Pearce
- 24 Lew Schalit
- 25 Dale Smith

10.0 EIS Distribution List

- 1 Warwick Tompkins
- 2 Joel Ventresca
- 3 Lisa Vorderbrueggen
- 4 Bill Wong

CHAPTER 11.0

Responses to Comments

11.0 RESPONSES TO COMMENTS

1 The Draft EIS for the Disposal and Reuse of NSTI was circulated for public and agency review
 2 from May 10 to June 24, 2002. The lead agency, the Navy, held a public hearing on June 11,
 3 2002, at Treasure Island to provide the public with an opportunity to comment on the content
 4 and accuracy of the Draft EIS. In addition, written comments were accepted throughout the
 5 review period.

6 In accordance with NEPA regulations, the Final EIS provides responses to comments on the
 7 Draft EIS (40 CFR § 1503.4). In compliance with those regulations, this section of the Final EIS
 8 includes a list of agencies, organizations, and individuals commenting on the Draft EIS,
 9 comment letters, and responses to the substantive environmental issues raised in the comments.
 10 Responses to comments received at the public hearing also are included. If a comment did not
 11 relate to an environmental issue or was worded more as a statement to be entered into the
 12 record, it is indicated by the response "comment noted."

13 Agencies or Individuals Commenting on the Draft EIS

<i>Letter Reference</i>	<i>Commentor</i>
FEDERAL AGENCIES	
A	US Coast Guard
B	US Department of Transportation, Federal Highway Administration
C	US EPA
STATE AGENCIES	
D	State Clearinghouse
E	State Clearinghouse
F	Department of California Highway Patrol
G	Department of Toxic Substances Control
H	California Department of Transportation
I	Office of Historic Preservation
J	San Francisco Bay Conservation and Development Commission
K	California Regional Water Quality Control Board, San Francisco Bay Region
L	California State Land Commission
LOCAL AND REGIONAL AGENCIES	
M	San Francisco Bay Trail Project
N	City and County of San Francisco
O	San Francisco Municipal Railway

<i>Letter Reference</i>	<i>Commentor</i>
ORGANIZATION	
P	Arc Ecology
INDIVIDUALS	
Q	Michael Dziadek
R	Norman L. de Vall
S	Ruth Gravanis
T	Richard Hansen
U	Emeric Kalman
V	Warwick Tompkins
W	Warwick Tompkins
PUBLIC HEARING COMMENTS	
PH-1 and 2	Warwick Tompkins
PH-3	Richard Hansen
PH-4	Susan DeVico
PH-5	Dale Smith

U.S. Department
of Transportation

United States
Coast Guard



Commander
Maintenance & Logistics
Command Pacific

Coast Guard Island, Bldg 54D
Alameda, CA 94501-5100
Staff Symbol: se-1
Phone: (510) 437-3511
FAX: (510) 437-5753

16475

June 24, 2002

Ms. Timarie Seneca
BRAC Operations Office
U.S. Navy, Southwest Division
Naval Facilities Engineering Command, Code 06CM.TS
1230 Columbia Street, Suite 1100
San Diego, CA 92101-8517

Subject: *Draft Environmental Impact Statement for the Disposal and Reuse of Naval Station
Treasure Island, San Francisco, California. May 2002.*

Dear Ms. Seneca:

Thank you for providing copies of the subject draft environmental impact statement (DEIS) to the Coast Guard. We have noted that Coast Guard property was excluded from this DEIS that only addresses development proposals on 920 acres to be disposed of by the Navy, i.e., Naval Station Treasure Island (NSTI) lands as delineated in the DEIS as "Reuse Plan Area". The Coast Guard has some concerns about matters that may directly or indirectly affect Coast Guard operations, property, and personnel related to the proposed alternative development plans.

The DEIS discussion of future utilities related primarily to development proposed on Treasure Island, e.g., installation of a perimeter utility corridor around Treasure Island for Alternatives 1 and 2. The DEIS did not address provision of utility services to entities outside the NSTI planning area, i.e., the U.S. Department of Labor, Coast Guard, or Caltrans. The Navy currently owns and operates the utilities, and provides utilities services to the Coast Guard. The Coast Guard wants the responsibility to be transferred to San Francisco.

A-1

Coast Guard has some concerns regarding its access road, i.e., Macalla Road, and the capacity of the road to accommodate additional traffic from new development proposed in the DEIS. The relocation of Macalla Road by Caltrans, as part of its east span replacement construction activity for the San Francisco Oakland Bay Bridge, should afford an opportunity to work out a new design that will provide a satisfactory solution for all users. As mentioned in the DEIS, the on and off ramps to the bridge need upgrading, and it was noted that the ramps are owned by the Navy. The Coast Guard is concerned about accessibility to Yerba Buena Island (YBI) and the bridge, and the need to upgrade the ramps to have the capacity to handle additional traffic that will be generated by the alternative development proposals.

A-2

A-3

Coast Guard has some concerns about potential contamination from past practices. Installation Restoration Site 11 (IR 11), is contiguous to Coast Guard property. As mentioned in the DEIS, it was transferred to the FHWA, but additional investigation is planned to determine the extent of the landfill and the need for remedial action. The Coast Guard is concerned about possible migration of contamination from IR 11 onto or under its property. This is an issue that Coast

A-4

16475

June 24, 2002

Guard needs to have resolved before Caltrans starts construction activity on IR 11. The Coast Guard is pleased with a statement that two underground storage tanks (UST) at the entrance to Coast Guard property will be removed.

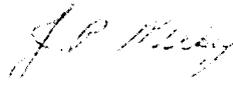
A-4

References in the DEIS to Quarters 8 and 9, which are both eligible for the National Register of Historic Places, are somewhat confusing. They were transferred by the Navy to the Coast Guard, but this was not stated anywhere in the DEIS. The depiction of Quarters 8 and 9 on Figure 3-4 is inconsistent with the title of this figure, i.e., "National Register Listed Buildings and Eligible Properties on NSTI" since Quarters 8 and 9 are outside of NSTI.

A-5

If you have any questions regarding the above comments, please call my environmental reviewer, Ms. Carol Meyer, at (510) 437-3511. Thank you for your consideration.

Sincerely,



J. MILKEY
Lieutenant Commander, U. S. Coast Guard
Chief, Planning Branch
By Direction of the Commander

Copy: Commanding Officer, Coast Guard Group San Francisco

1 **RESPONSE TO COMMENTS**

2 **Response to Comment A-1.** The Navy intends to convey all utilities associated with NSTI to
3 the designated property recipient. The Navy has retained all utility easements that are within
4 lands transferred to FHWA. Easements that are assignable will be transferred to the designated
5 property recipient in conjunction with the associated utilities. The US Coast Guard would be
6 required to reach agreement with the property recipient for providing or sharing operation of
7 any utility services in the future.

8 **Response to Comment A-2.** The design of the San Francisco-Oakland Bay Bridge (SFOBB) east
9 span retrofit project has been completed and construction has begun. The project will include
10 improved eastbound ramp access from Yerba Buena Island to the Bay Bridge East Span for
11 vehicular traffic, as well as new pedestrian and bicycle access to and from the East Bay on the
12 south side of the SFOBB East Span. Neither Caltrans nor the Treasure Island Development
13 Authority (TIDA) has plans to make further improvements to Macalla Road and connecting
14 ramps. Macalla Road currently has very low traffic volumes. While it is not a high capacity
15 road, it has the capacity to handle 300-400 vehicles per hour. The May 2000 EIR estimated that
16 the on-ramp on the east side of the SFOBB tunnel would carry approximately 195 vehicles
17 during the weekend midday peak hour (worst case condition under Alternative 1), of which
18 only a portion came from Treasure Island using Macalla Road. The remaining came from Yerba
19 Buena Island. Macalla has capacity for an additional 200 vehicles.

20 **Response to Comment A-3.** As stated in response to comment A-2, the design of the SFOBB
21 east span retrofit project has been completed and construction has begun. The project will
22 include improved ramp access from Yerba Buena Island to the Bay Bridge East Span for
23 vehicular traffic, as well as new pedestrian and bicycle access to and from the East Bay on the
24 south side of the SFOBB East Span. Neither Caltrans nor the TIDA has plans to make further
25 improvements to the connecting ramps.

26 **Response to Comment A-4.** IR Site 11 is in the remedial investigation (RI) stage. The full extent
27 of contamination will be assessed, and, upon completion of the RI, the appropriate course of
28 action to address contamination at the site will be made. The remedial action selected will
29 ensure that contamination issues at the site will be adequately addressed and that no
30 contamination would migrate onto US Coast Guard property. As the commentor notes, the
31 Navy intends to remove two underground storage tanks at IR Site 11. The date of removal of
32 these tanks will be determined based on the timing of SFOBB construction activities in the area.
33 All remedial work is expected to be completed in 2006.

34 **Response to Comment A-5.** Section 3.4 has been revised to clarify that quarters 8 and 9 have
35 been transferred to the US Coast Guard. Quarters 8 and 9 have been removed from Figure 3-4.

36



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
980 Ninth Street, Suite 400
Sacramento, CA, 95814-2724
June 11, 2002

IN REPLY REFER TO:
HDA-CA
File #: 04-SF-80
Document #: P 40532

Ms. Timarie Seneca
BRAC Operations Office, Southwest Division
Naval Facilities Engineering Command, Code 06CM.TS
1230 Columbia Street, Suite 1100
San Diego, CA 92101-8517

Dear Ms. Seneca:

SUBJECT: DEIS for Disposal and Reuse of Naval Station Treasure Island.

Thank you for the May 7, 2002, notice along with a copy of the Draft Environment Impact Statement (DEIS) for the Disposal and Reuse of Naval Station Treasure Island (NSTI).

The DEIS purpose and need as stated is to dispose of surplus federal property at NSTI for subsequent reuse. Furthermore, it states "Navy considered the Local Redevelopment Authority's (LRA) stated purpose and need in developing reasonable reuse alternatives." Since the scoping meeting, the DEIS shows that the City and County of San Francisco have decided to proceed with the state process under a separate environmental impact report (EIR) to analyze the impacts from the reuse of NSTI. It is our understanding that the proposed EIR is currently being prepared. As such the DEIS is deficient in addressing the impact related to the developments that have not yet been determined by the city.

B-1

The DEIS states that on October 26, 2000, the Federal Highway Administration (FHWA) transferred 97 acres of Navy dry and submerged land on Yerba Buena Island (YBI) to the California Department of Transportation (Caltrans). It further states that the FHWA conveyed this land in fee and this land is no longer available for transfer by the Navy to the city. Most of the acreage noted in the federal land transfer to Caltrans is under a "Temporary Construction Easement (TCE)," please note that the TCE acreage is not a fee transfer and the land will be returned to the United States when the construction of the San Francisco - Oakland Bay Bridge, East Span Seismic Safety Project is completed. The DEIS needs to clarify and identify the area as fee transfer and other areas as TCE. We have enclosed a map showing the limits of the federal land transfer for your use.

B-2

Section 3.5, Transportation, discusses the transportation system and the deficiencies. Table 3-9 on page 3-47 is using accident data from January '92 to April '95. More recent information should be used to assess the accidents to date as well as the safety concerns associated with the increased traffic by future city developments.

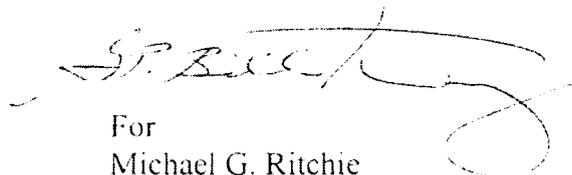
B-3

Chapter 4, Environmental Consequences are deficient in addressing land use on YBI and the ramps to and from I-80. As noted above, the TCE will return to the Navy/United States when it is no longer needed for the SFOBB. The impact associated with the city's development should be evaluated and mitigated. The document uses 2010 for traffic analysis and certain mitigation measures identified was based on 2010 forecast and demand. It would be appropriate to use 2015 or built out year forecast to assess mitigation for future planned developments. Section 4.5.1 shows impact to SFOBB/I-80 YBI westbound on-ramp (west side) and (east side) to be significant. One of the mitigation measures for the west side on-ramp is to route traffic to the east side on-ramp. The DEIS also discusses the planned ramp upgrade as a part of the SFOBB project. This statement is incorrect. The existing eastside westbound on-ramp will be closed during the construction of the SFOBB, East Span. After construction, the existing on - ramp will be similar to what it is today. It is our understanding that the City is working with Caltrans to improve or modify this ramp but this is being proposed outside the scope of the SFOBB, East Span project. Unless the proposed upgrade by the City is completed, both of these on-ramps will be deficient and have insufficient capacity to handle the increased traffic from the city's development.

B-4

If you have any questions regarding these comments please contact Bill Wong, Bay Bridge Project Manager, at (916) 498-5042.

Sincerely,



For
 Michael G. Ritchie
 Division Administrator

Enclosure



1 **Response to Comments**

2 **Response to Comment B-1.** As the commentor notes, the federal action evaluated in this EIS is
3 the disposal of surplus federal property at NSTI. NEPA requires federal agencies to evaluate
4 the reasonably foreseeable effects of the federal action. The EIS needs only to assess the
5 potential for impacts based on the reasonably foreseeable reuse of the property and need not
6 address future site development plans that are beyond the Navy's ability to reasonably
7 estimate.

8 Because a final development plan was not available at the time it was prepared, the EIS relies on
9 alternatives that reflect a range of development concepts, including the City and County of San
10 Francisco's Draft Reuse Plan (San Francisco 1996e). Alternative 1 represents the City's draft
11 reuse plan concept and is a high level of development. Alternative 2 is based on
12 recommendations by the Urban Land Institute and the public on the Draft Reuse Plan and is a
13 medium level of development. Alternative 3 is a limited development alternative that focuses
14 on reuse of existing facilities.

15 A developer submitted a proposal for NSTI to TIDA on July 2, 2002, and TIDA is currently
16 reviewing it. TIDA or private reuse entities will be required to prepare separate environmental
17 documentation to address the potential impacts of the development plan once it has been
18 finalized.

19 **Response to Comment B-2.** The May 2002 draft EIS was prepared with the understanding that
20 all property in the temporary construction easements (TCEs) and aerial easements were
21 encumbered to such a degree that it eliminated the ability for development, per the Draft Reuse
22 Plan. In earlier negotiations, TIDA and the Navy concluded that the property need not be
23 conveyed until the easements had been relinquished. Further, the prospective completion date
24 for the new SFOBB east span was beyond the period in which the Navy could convey the
25 property under the BRAC authority. Therefore, all of the approximately 98 acres (40 ha) of land
26 transferred to FHWA, including the TCEs and aerial easements, were excluded from evaluation
27 in the Draft EIS. Due to a new understanding between Navy and TIDA, Navy has determined
28 that the TCEs and aerial easements are available for disposal and are included in the transfer
29 and reuse analysis presented in the Final EIS.

30 The Final EIS has been revised to reflect that land on Yerba Buena Island transferred to FHWA,
31 and subsequently conveyed to Caltrans, via permanent aerial easements of approximately 0.6
32 acre (0.2 ha) of dry land and TCE's approximately 77 acres (32 ha) of dry and submerged land,
33 are available for disposal and are evaluated in the EIS. Lands permanently conveyed in fee to
34 Caltrans (approximately 20 acres [8 ha] of dry land) for construction and operation of the
35 SFOBB are permanently transferred out of Navy ownership and are not evaluated in the EIS. In
36 addition, Figure 1-2 and other figures throughout the Final EIS have been revised to reflect the
37 inclusion of these areas.

38 With the exception of the cultural resources analysis, inclusion of the TCEs and aerial easements
39 was not found to measurably alter the analysis or conclusions presented in the Final EIS. The
40 TCE and aerial easements make up only approximately 8.5 acres [3.5 ha], or 0.02 percent of the
41 dry land proposed for disposal. The analysis of such resources as socioeconomics, traffic, air

1 quality, and noise is partly based on the approximate acreage of each land use type.
2 Nevertheless, the designated land uses for these lands (residential, publicly oriented, and open
3 space/recreation), which were developed before being transferred to FHWA, are less intensive
4 and, as such, loss of this land does not substantially alter the assumptions of the analysis in the
5 EIS.

6 The TCEs and aerial easements contain structures that are eligible for listing on the National
7 Register of Historic Places and areas of cultural sensitivity. These areas were not considered as
8 part of the proposed transfer and were identified but not analyzed in the Draft EIS. The Final
9 EIS has been revised to address these resources. The MOA for cultural resources has also been
10 revised to include these areas; as a result of inclusion of these resources in the MOA, no new
11 significant impacts were identified as a result of inclusion of these areas.

12 **Response to Comment B-3.** The accident data in Table 3-9 of the Draft EIS (now Table 3.5-1 of
13 the Final EIS) has been updated based on information provided by Caltrans.

14 **Response to Comment B-4.** Please see response to comment B-2 regarding inclusion of the
15 FHWA/Caltrans easements in the EIS analysis.

16 A technical memorandum has been included as Appendix F.3-A with year 2025 freeway
17 mainline and ramp analyses. This technical memorandum concluded that there is no change in
18 the findings of additional significant traffic impacts on SFOBB and its connecting ramps at
19 NSTI. The year 2025 vehicle trip generation estimates for the proposed action is the same as
20 that of year 2010 because the year 2010 vehicle trip generation analysis presented in the Draft
21 EIS is for the full build of the proposed action. While traffic demand on the Bay Bridge would
22 be greater in 2025 than in 2010, the actual number of vehicles that can get onto the SFOBB in
23 both eastbound and westbound directions are restricted by the metering lights on the eastern
24 end and by the I-80 lane configuration and congestion in San Francisco downtown.

25 The EIS states that the level of service on the SFOBB is assumed to continue to operate at
26 capacity with or without reuse of NSTI. The EIS does state that there would be significant but
27 mitigable impacts from the increased volumes and queuing on three SFOBB ramps on Yerba
28 Buena Island and from a reduced level of service on the westbound SFOBB during the peak
29 traffic periods and the only feasible mitigation (transportation demand management [TDM]) is
30 provided. The metering lights at the SFOBB toll plaza control westbound traffic to ensure
31 smooth operation of the SFOBB. Additional traffic under reuse of NSTI would not slow the
32 metering lights and, as a result, regardless of the number of vehicles approaching the SFOBB,
33 the operation of the SFOBB would remain the same and, therefore, impacts as evaluated in the
34 EIS would not change.

35 It is noted that the eastbound on-ramp on the west side of Yerba Buena Island is expected to be
36 closed for approximately three years during construction of the SFOBB, which may result in
37 traffic impacts that Caltrans would need to mitigate as part of that project. Nevertheless, the
38 closure of the eastbound on-ramp during SFOBB construction would not be expected to
39 measurably affect or interact with reuse construction for several reasons. First, the traffic
40 analysis presented in the EIS is for full build out at NSTI. It is unlikely that the first phase of

1 reuse construction would generate such high levels of traffic. Second, SFOBB construction is
2 scheduled to be completed in 2005 and is unlikely to substantially overlap with the first phase
3 of reuse construction, which was projected in the Draft Reuse Plan to occur between 2002 and
4 2006. Finally, the EIS does not refer to any planned upgrade of the westbound on-ramp on the
5 eastside of Yerba Buena Island. The Navy concurs that the eastside westbound on-ramp would
6 be deficient to address reuse traffic and proposes mitigation to address this potential impact.

7



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

LETTER C

Timarie Seneca
BRAC Operations Office
Naval Facilities Engineering Command
U.S. Navy, Southwest Division
1230 Columbia Street, Suite 1100
San Diego, CA 92101

June 20, 2002

Dear Ms. Seneca:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the *DISPOSAL AND REUSE OF NAVAL STATION TREASURE ISLAND (NSTI), City and County of San Francisco, California* (CEQ # 020174, # D-USN-K11107-CA). Our comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act. EPA attended the Navy's public hearing for this DEIS, held on Treasure Island on the evening of June 11, 2002.

The proposed action is disposal of Navy property for subsequent reuse and redevelopment. Operationally closed in 1997, NSTI is on two islands in San Francisco Bay midway between the shores of the San Francisco and Oakland. Treasure Island, the larger island, consists of 402 acres of dry land created with fill in the 1930s. Approximately 681 acres of dry and submerged land are available for disposal on Treasure Island. Yerba Buena Island is a natural island connected to Treasure Island by a causeway. Approximately 239 acres of dry and submerged land are available for disposal on Yerba Buena Island (a total acreage of approximately 920 acres is thus proposed for disposal and reuse). Approximately 36 acres of land on Treasure Island were previously transferred to the U.S. Department of Labor, while approximately 97 acres on Yerba Buena Island were transferred to the Federal Highway Administration (with a subsequent transfer to the California Department of Transportation), and 22 acres are scheduled for transfer to the U.S. Coast Guard (the acreage already transferred to the U.S. Department of Labor and the Federal Highway Administration, and scheduled for transfer to the U.S. Coast Guard, is outside the scope of the current disposal and reuse action assessed in this DEIS).

The DEIS evaluates three reuse alternatives. Navy disposal of 920 acres of dry and submerged land on the two islands is assumed for each reuse alternative. Alternative 1 represents full implementation of the development scenario described in the Naval Station Treasure Island Draft Reuse Plan developed by the Treasure Island Development Authority (TIDA). Alternative 2 is based on comments received during the scoping process, including recommendations by an advisory panel of the Urban Land Institute. Alternative 3 represents a lower level of

redevelopment than proposed in the Draft Reuse Plan. A fourth alternative, No Action, assumes no property disposal, but retention of the property by the Navy in an inactive or caretaker status. Under No Action, existing leases would continue until they expire or are terminated, no new leases would be implemented, and all buildings and other facilities would remain vacant and unused. Alternative 1 (the Navy's Preferred Alternative) features a combination of publicly-oriented development, open space and recreation, and extensive residential development at full build out. Under Alternative 1, publicly-oriented development on Treasure Island would include a theme attraction park, a 300-room hotel, and a 1,000-room hotel with three restaurants and offices. Publicly-oriented uses on Yerba Buena Island would include a 150-room hotel, conference facilities, and restaurant. Clipper Cove Marina would be expanded and a new yacht club developed. Community uses on both islands would include parks and open space, schools, a bikeway and pedestrian path. Industrial uses and infrastructure include a new wastewater treatment plant, a new police station and a new fire station on Treasure Island. Other facilities would include an elementary school, child development center, fire training school and brig. Residential housing includes a reuse of existing housing and construction of new housing on both islands. Alternative 1 proposes 2,840 dwelling units (290 existing residential units + 2,550 new residential units).

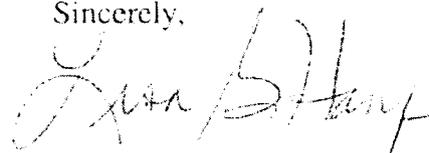
The DEIS sufficiently addresses the environmental impacts associated with the proposed disposal and reuse action. However, EPA has environmental concerns that mitigation is not addressed where impacts are identified, and information which is necessary to assess impacts is not provided. Specifically, EPA has environmental concerns with the proposed action because air quality impacts are identified, however, no mitigation is proposed. These include emissions from construction and demolition activities; transportation-related emissions; potential carbon monoxide (CO) hot spots; and potential air toxic emissions (see pp. 4-60 to 4-64). In each case, the Navy asserts that no air quality-related mitigation is proposed because the emissions are not considered to be significant. However, NEPA requires that an Environmental Impact Statement discuss steps that could be taken to mitigate adverse environmental consequences (e.g., potential CO hot spots, emissions of air toxics) even if such mitigation would not be implemented by the lead Federal agency (as in this case, since TIDA and/or the City and County of San Francisco would require or implement mitigation associated with NSTI's reuse).

EPA also has environmental concerns because the DEIS does not present relevant information on the location and amount of dredging associated with reuse activities, i.e., a new ferry terminal and marina maintenance. Because NSTI was an active Federal facility for more than 60 years, and the Navy was historically involved in a number of dredging and dredged material disposal projects in the San Francisco Bay Area, we assume that the Navy has information on file regarding dredging activities at NSTI, including historic data on sediment quality and characteristics. However, the Navy has deferred an analysis of impacts associated with dredging for this project, with page 2-14 stating, "this EIS must necessarily evaluate potential impacts from dredging on a programmatic level." There is, however, no corresponding commitment by the Navy to prepare a tiered NEPA document analyzing the environmental effects of dredging associated with NSTI reuse activities.

We have environmental concerns regarding several issues involving hazardous materials and hazardous substances contamination at NSTI. EPA believes that the manner in which the Navy presents information on hazardous materials and hazardous substances contamination at NSTI can be presented more clearly, resulting in an improved NEPA document and an informed decision-making process. For example, although the DEIS presents a useful discussion of hazardous substances contamination at NSTI, no map is provided that depicts contamination at NSTI, although such maps are available as part of the environmental restoration process. Additionally, no information is provided regarding the Navy's schedule for its investigation and remediation activities at NSTI. We are concerned by remarks made by the Navy at the June 11, 2002 hearing that environmental restoration activities and this NEPA process are separate processes, and that information developed as part of the environmental restoration process will not be presented in this NEPA analysis (e.g., maps depicting contamination at NSTI, and information regarding the Navy's schedule for investigation and remediation of hazardous substances at NSTI). Although we recognize that the NEPA process and the environmental restoration process are separate statutory requirements, current information developed in the course of the Navy's environmental restoration process at NSTI should be appropriately reflected in a concise manner in this EIS.

Based upon our review, EPA rates this DEIS as EC-2, Environmental Concerns - Insufficient Information. Please refer to the attached "Summary of Rating Definitions" for a detailed explanation of EPA's rating system. Please refer to our detailed comments (attached) for further discussion of EPA's concerns and other issues requiring clarification or more discussion in the Final Environmental Impact Statement (FEIS). We appreciate the opportunity to comment on the DEIS. Please send two copies of the FEIS to me at the letterhead address (mailcode: CMD-2) when it is filed with EPA's Washington, D.C. office. If you have any questions, please contact my staff reviewer for this document, David Tomsovic, at 415-972-3858.

Sincerely,



Lisa B. Hanf, Manager
Federal Activities Office

Enclosures: 4
"Summary of Rating Definitions"
EPA's Detailed Comments on DEIS
Site Location Map (contaminated sites)
Site Summary (list of contaminated sites)
Pollution Prevention Checklists

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

U.S. EPA Comments on the Navy's Draft Environmental Impact Statement (DEIS) - Disposal and Reuse of Naval Station Treasure Island (NSTI), City and County of San Francisco, California - June 20, 2002.

AIR QUALITY

Air Quality Impacts and Air Quality Mitigation

The DEIS (p. 4-59) states, "Buildout of Alternative 1 would result in short-term air pollutant emissions from construction activities, long-term emissions from operation of new sources, and potential long-term emissions from hazardous air pollutants." For Alternative 1, pages 4-60 to 4-64 state that no mitigation is proposed for the air quality effects of construction and demolition activities; transportation-related air pollutant emissions; potential carbon monoxide (CO) hot spots; or potential air toxic emissions. In each instance, the DEIS asserts that such impacts are 'not significant,' thus not warranting mitigation. Similarly, no air quality mitigation is proposed for Alternatives 2 and 3. Dust control measures recommended by the Bay Area Air Quality Management District (BAAQMD) are listed (p. 4-60).

C-1

In order to facilitate effective NEPA public disclosure, we strongly recommend that the Navy discuss its rationale for determining that impacts related to potential CO hot spots, emissions of air toxics, and other air quality-related issues were found to be 'not significant.' For example, page 4-64 states that for Alternative 1, air toxics could be generated by retail establishments, but the DEIS acknowledges that "the actual amount of these air contaminants cannot be quantified due to a lack of information about specific business uses...in the reuse plan area." It thus appears premature to assert that air toxic emissions would not be significant if actual pollutant types and emission levels are not known. It also seems premature to indicate that no mitigation is proposed without knowing the types and volumes of air toxics that would be emitted.

EPA believes that the Navy's approach (i.e., no mitigation proposed for air quality effects) is not consistent with the Council on Environmental Quality's (CEQ) pollution prevention memorandum to Federal agencies ("Memorandum to Heads of Federal Departments and Agencies Regarding Pollution Prevention and the National Environmental Policy Act," CEQ, January 12, 1993). Concerning the responsibilities of Federal agencies, CEQ's memorandum indicates that "federal departments and agencies should take every opportunity to include pollution prevention considerations in the early planning and decision making processes for their actions...and...document those considerations in any EISs...."

C-2

It does not appear that the Navy has taken "every opportunity" to integrate air quality mitigation to the "fullest extent practicable." Because of the role played by the BAAQMD in protecting the airshed, we encourage the Navy to work closely with that office to identify appropriate air quality mitigation measures, which should be presented in the Final Environmental Impact Statement (FEIS).

Recommended Mitigation for Air Toxic Emissions

Page 4-64 states that no mitigation is proposed for potential air toxic emissions. The FEIS should recognize that construction machinery is a source of air toxic emissions. A discussion of appropriate mitigation to reduce air toxics from construction machinery should be presented in the FEIS. Such mitigation would prove useful to the Treasure Island Development Authority (TIDA), and the City and County of San Francisco, as they proceed with NSTI's reuse. Below are suggested mitigation measures to reduce construction-related diesel emissions that EPA recommends be presented in the Navy's FEIS:

- ▶ Require that diesel-powered equipment be properly maintained;
- ▶ Minimize idling of diesel equipment to the fullest extent feasible;
- ▶ Lease or buy newer, "cleaner" equipment, 1996 or newer model year and use a minimum of 75 percent of the total horsepower of the equipment;
- ▶ Prohibit engine tampering to increase horsepower (engines should be tuned to meet the engine manufacturer's specifications);
- ▶ Use low sulfur diesel fuel (with a sulfur content of 15 ppm or less);
- ▶ Reduce diesel emissions using control technologies like traps that capture about 80% of diesel particulates, and specialized catalytic converters (oxidation catalysts) which control approximately 20% of diesel particulates, 40% of carbon monoxide, and 50% of hydrocarbons. These control technologies can be used together to maximize reductions in diesel emissions;
- ▶ Evaluate the use of other available engine types such as electric, liquified or compressed natural gas (CNG), hydrogen fuel cells, or alternative diesel formulations [Note: CNG may have a drawback since there is research data indicating that formaldehyde is emitted during combustion];
- ▶ Reduce construction-related traffic trips; and,
- ▶ Develop a 'Construction Emissions Mitigation Plan' describing measures to reduce the project's diesel emissions.

C-3

The Navy should know that the National Aeronautics and Space Administration (NASA) has agreed to adopt similar recommendations as part of their NASA Ames Programmatic Development Plan, including adoption of a 'Construction Emissions Mitigation Plan.'

Coordination with the Federal Highway Administration on Traffic-Related Issues, Including Air Quality

Page 7-1 identifies agencies contacted during the development of the DEIS. The Federal Highway Administration (FHWA) was not contacted. Since access to, and egress from, NSTI connects to the National Highway System (Interstate 80, I-80), the FHWA may have concerns regarding potential impacts to I-80 from future reuse activities at NSTI, including air quality impacts and an appropriate level of air quality mitigation. We recommend that the Navy contact FHWA to determine potential issues of concern to FHWA, including the EIS's presentation of

C-4

project-related impacts, and mitigation that should be presented in the FEIS. We note that a number of potential transportation-related mitigation measures are recommended in 4.5 (Transportation). Lastly, since FHWA may have jurisdiction by law and/or special expertise regarding access or potential impacts to I-80, the FEIS should address whether FHWA was asked to be a cooperating agency.

C-4

DREDGING AND DREDGED MATERIAL DISPOSAL

Page 2-14 states, “[t]he exact location and amount of potential dredging is not known at present and therefore, this EIS must necessarily evaluate potential impacts from dredging on a programmatic level.” Because the Navy does not specifically identify this DEIS as a ‘programmatic’ NEPA document, it may be inappropriate to defer analyzing such impacts by indicating that they will be evaluated on a ‘programmatic level’ at some future point. Should the Navy use a programmatic approach for dredging-related issues at NSTI, the FEIS and NEPA Record of Decision should contain a commitment that a future ‘tiered’ NEPA document would be prepared by the Navy to assess dredging-related activities at NSTI, consistent with CEQ’s NEPA Implementing Regulations on programmatic analyses. Absent that, dredging-related issues should be fully discussed in the current NEPA document, and addressed as part of the Navy’s NEPA decision-making process for this project. As indicated in our cover letter, EPA assumes the Navy has information on file regarding dredging-related issues at NSTI, including historic data on sediment quality and characteristics. As a matter of NEPA public disclosure, such information should be presented in the FEIS. The FEIS should also address if the party seeking authorization for dredging and/or dredged material disposal would be TIDA, the City and County of San Francisco, and/or a private party.

C-5

HAZARDOUS SUBSTANCES CONTAMINATION AND HAZARDOUS MATERIALS

Polychlorinated Biphenyls (PCBs)

Page 3-137 addresses the spillage or release of PCB-contaminated transformer fluids at the PCB equipment storage area (Installation Restoration [IR] site 03). Page 3-143 states, “Surveys continue to be conducted for PCBs in secondary electrical equipment and hydraulic equipment.” The FEIS should clarify the most current information regarding PCBs which may remain in use or in storage at NSTI, as well as the most current information regarding the known or suspected release of PCBs into the environment at NSTI areas proposed for reuse. The Navy should update the text discussion on page 3-137 to indicate that the Navy has requested permission from the State of California to eliminate site 03 as an IR site. The FEIS should clarify the phrase “the site was used to store and repair transformers,” (p. 3-137) as the Navy’s Base Realignment and Closure (BRAC) staff indicated to regulatory agencies that the site served only as an electrical substation.

C-6

The DEIS discusses other NSTI facilities where PCBs may have been potentially used

C-7

(e.g., the old boiler plant and medical clinic, see p. 3-137; and the foundry, see p. 3-138). Page 3-143 indicates that the State of California has recommended further investigation of PCB contamination at IR site 09 (foundry). The FEIS should address if PCBs may have been used at the old boiler plant or other facilities using equipment containing PCBs, and, if so, whether PCB contamination may be an issue of concern. We note that page 3-137 states that the old boiler plant building was demolished in 1968, and its debris "reportedly buried in place." Should PCBs have been used at the old boiler plant, the FEIS should address if PCB contamination at the boiler plant site is an issue of concern.

C-7

The discussion in the DEIS on IR site 12 (old bunker) (p. 3-139) should be expanded to provide a more detailed description of the site contamination and investigation history under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). For example, please update the FEIS to describe a former Chemical Storage Yard in the vicinity of Halyburton and Bigelow Courts that was the subject of a large-scale removal action (approximately two acres) conducted in 2000-2001 to remove PCB-contaminated soils, and describe the numerous indoor air and subsurface soil sampling activities to assess PCBs at this area.

C-8

Impacts from Potential Methane Gas Concentrations

The FEIS should address if concentrations of methane gas may be an issue of concern at any areas of NSTI proposed for reuse. One potential area could be IR site 11 (Yerba Buena landfill), for which additional investigation is planned "to determine the extent of the landfill." (p. 3-139). Should methane gas concentrations be an issue of concern, the FEIS should address the Navy's coordination with regulatory agencies, including applicable requirements or mitigation to avoid or reduce potential impacts related to methane gas.

C-9

Radon and Radiological Contamination

Page 3-145 briefly addresses radon screening at six locations conducted under the Navy's Radon Assessment and Mitigation Program. In order to facilitate effective public disclosure under NEPA, the FEIS should discuss what activities involving potential radiological contamination occurred at these sites. Additionally, the FEIS should discuss the location of any sites screened for radon, and whether the Navy intends to survey other sites at NSTI for potential radiological contamination.

C-10

The FEIS should also briefly discuss if military vessels used in U.S. atmospheric testing of atomic and hydrogen weapons at Bikini and Enewetak (present-day Republic of the Marshall Islands) were brought to NSTI for damage assessment and radiological decontamination, or whether such activities took place only at the (former) Hunters Point Naval Shipyard. It is unclear if damage assessment and radiological decontamination took place at NSTI. The FEIS should briefly discuss if vessels involved in the weapons testing program were berthed at NSTI and, if so, whether radiological contaminants may have entered adjacent waters. This issue is

C-11

relevant to addressing potential impacts associated with dredging and dredged material disposal for the marina and ferry service.

C-11

Map Depicting Known or Suspected Hazardous Waste, Toxic Substances or Hazardous Substances Contamination

The DEIS does not provide a map or maps depicting known or suspected hazardous waste, toxic substances or hazardous substances contamination at NSTI. In order to facilitate effective NEPA public disclosure, the FEIS should provide a map or maps depicting:

- ▶ Installation Restoration (IR) sites, including 29 sites identified for investigation (p. 3-136) which includes the 16 remaining IR sites described on pp. 3-136 to 3-142. We suggest that the FEIS present the Site Location Map and Site Summary Table from "Naval Station Treasure Island. Environmental Closeout Strategy/Schedules" (December 2001);
- ▶ Petroleum hydrocarbon contamination, including the nine major petroleum hydrocarbon sites identified on pp. 3-135 and 3-136 (e.g., hydraulic training school, fire training area, etc);
- ▶ Fuel storage tanks and oil/water separators;
- ▶ Polychlorinated biphenyls (both as releases or discharges into the environment, and in electrical and hydraulic equipment still at NSTI);
- ▶ Metals;
- ▶ Pesticides and herbicides;
- ▶ Solvents;
- ▶ Asbestos-containing materials;
- ▶ Lead-based paint;
- ▶ Radon and any other radiological contamination; and,
- ▶ Other areas or contaminants of concern to the Navy.

C-12

A Navy map (attached) found in "Island Times: Environmental Investigation and Cleanup News" (summer 2001) is a useful reference that should be presented in the FEIS; this map depicts IR and petroleum sites, underground storage tanks, pipelines requiring possible investigation and remediation, and buildings at NSTI. In many respects the "Island Times" map is similar to the December 2001 map noted above, although the "Island Times" map does not specifically depict IR site 13 (stormwater outfalls), instead indicating that site 13 "includes all offshore areas."

Investigation and Remediation of Contaminated Areas

Pages 3-131 to 3-145 provide a useful discussion of hazardous materials, hazardous waste, and hazardous substances contamination at NSTI. The DEIS does not, however, present the Navy's schedule for when each contaminated area would be investigated and, as necessary, remediated prior to reuse. Current information on when the Navy's investigation and remediation efforts would be completed is integral to effective NEPA public disclosure for

C-13

NSTI's reuse, and should be presented to agencies and the public as part of this NEPA document. The FEIS should provide the Navy's most current assessment for each area having known or suspected contamination or other releases into the environment; as well as for environmental restoration efforts involving units such as the survey of PCBs in secondary electrical equipment and hydraulic equipment, remediation of asbestos-containing materials, and other efforts. We recommend that such information be presented in a matrix format so readers can understand the Navy's schedule for completing its investigation and remediation of areas at NSTI with known or suspected contamination, or other toxic materials still in use. For reference, we have attached a "Site Summary: Naval Station Treasure Island" (Draft, 12/11/2001) that the FEIS could use as a model to portray the schedule for NSTI environmental restoration efforts.

C-13

POLLUTION PREVENTION AND MITIGATION FOR THIS PROJECT

EPA commends the U.S. Department of Defense and the Navy for environmental leadership in the Federal sector, including an exemplary leadership role in pollution prevention, energy and water conservation, recycling, waste reduction, and waste minimization. However, despite the Navy's leadership role, the DEIS does not specifically reference how the proposed reuse can meet the intent of guidance issued in 1993 by the Council on Environmental Quality (CEQ) to integrate pollution prevention in NEPA planning, NEPA documents, and NEPA decisions. Please note that CEQ does not require that a particular impact or emission level be considered "significant" before a Federal agency is able to discuss mitigation that avoids, prevents or reduces environmental impacts, including health impacts (e.g., the health effects of air toxics). CEQ instructs Federal agencies to include pollution prevention to the extent practicable in the proposed action and in the reasonable alternatives. For your reference, we have attached several pollution prevention checklists (for building/housing construction; dredging; energy management; landscaping; and military base closure and reutilization) presenting strategies to reduce potentially adverse impacts associated with a facility's reuse.

C-14

The Council on Environmental Quality's "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations" is instructive (CEQ, March 16, 1981, see 46 Fed. Reg. 18026). Question 19a raises the question, "What is the scope of mitigation measures that must be discussed?" In reply, CEQ states,

"The mitigation measures discussed in an EIS must cover the range of impacts of the proposal....Mitigation measures must be considered even for impacts that by themselves would not be considered 'significant.' Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or not "significant") must be considered, and mitigation measures must be developed where it is feasible to do so."

Question 19b asks, "How should an EIS treat the subject of available mitigation measures that are (1) outside the jurisdiction of the lead or cooperating agencies, or (2) unlikely to be adopted or enforced by the responsible agency?" CEQ indicates that,

"All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperating agencies, and thus would not be committed as part of the RODs of these agencies.... This will serve to alert agencies or officials who can implement these extra measures, and will encourage them to do so. Because the EIS is the most comprehensive environmental document, it is an ideal vehicle in which to lay out not only the full range of environmental impacts but also the full spectrum of appropriate mitigation."

For NSTI's reuse, TIDA is the primary entity to implement such measures, while the Navy's EIS should be the primary vehicle to identify such measures, even if impacts are 'not significant.' Lastly, the Navy should address the applicability of two Executive Orders: 13101 ("Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition," 9/14/1998); and 13148 ("Greening the Government Through Leadership in Environmental Management," 4/21/ 2000). The FEIS should discuss measures for acquisition of environmentally preferable materials for facility construction (which could be Federally-funded), waste prevention, waste recycling, energy and water conservation, and other feasible pollution prevention measures.

C-14

SITE SUMMARY
NAVAL STATION TREASURE ISLAND

Site No.	Site Name and Description	Current Status
1	Medical Clinic	Awaiting site closure approval
3	PCB Equipment Storage Area	Awaiting site closure approval
04/19	Hydraulic Training School Refuse Transfer Center	Corrective action in planning phase
5	Old Boiler Plant	Closed – incorporated into Site 24
06	Fire Training School	Currently being documented in CAP
7	Pesticide Storage Area	Additional investigation being prepared
8	Army Point Sludge Disposal Area	No additional sampling; will be documented into Final RI with Sites 11, 28, and 29
9	Foundry	Additional investigation being prepared for further delineation of TPH and lead
10	Bus Painting Shop	Additional investigation being prepared for further delineation of pesticides and SVOCs
11	YBI Landfill	Additional investigation being prepared for landfill delineation and delineation of lead in surface soil
12	Old Bunker Area	Further investigation and time critical removal actions being performed
13	Stormwater Outfalls	Final RI in preparation
14/22	New Fuel Farm/ Navy Exchange Service Station	Currently being documented in CAP/ Interim Action in progress (SVE pilot)
15	Old Fuel Farm	Currently being documented in CAP
16	Clipper Cove Tank Farm	Construction Summary Report and Closure Summary Report in preparation
17	Tanks 103 and 104	Closed – incorporated into Site 24
20	Auto Hobby Shop and Transportation Center	Construction Summary Report and Closure Summary Report in preparation
21	Vessel Waste Oil Recovery Area	Additional investigation for delineation of VOCs being performed
24	Dry Cleaning Facility	Additional investigation for delineation of VOCs and TPH being performed
25	Seaplane Maintenance Area	Currently being documented in CAP/ Interim Action in progress (SVE pilot)
27	Clipper Cove Skeet Range	Final RI in preparation. FS in preparation
28	West Side On/Off Ramp	No additional sampling; will be documented into Final RI with Sites 8, 11, and 29
29	East Side On/Off Ramp	Additional investigation being prepared for delineation of lead in surface soil

Draft

Last Updated: 12/11/01

TC 0308.11324

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR BUILDING/HOUSING CONSTRUCTION

How Can Building/Housing Construction Affect the Environment?

Wastes associated with building/housing construction include unused and excess material generated during site excavation, site clearance, construction, and renovation activities. These wastes may be rubble (concrete, bricks, and asphalt), wood and wood products, plaster, metals, plastics, and insulation. These materials (commonly referred to as C&D debris) comprise approximately 15 to 30 percent of all waste disposed of in landfills. Further, some of these waste products may contain toxic constituents that pose a risk to human health and the environment. Many local governments have passed ordinances that restrict or prohibit the disposal of C&D debris in landfills and require the recycling of many of these materials. In addition, purchasing decisions associated with building/housing construction projects can affect the amounts of waste generated, as well future energy requirements (e.g., from lighting and heating).

Also see checklists on Ecosystem Preservation and Protection, Siting, Landscaping, Pest Management, and Energy Management.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Ecosystem Concerns. The clearing of lands for construction can lead to the loss of wildlife habitats, erosion and sedimentation associated with the use of heavy machinery, loss of native plant life, and contamination of soils and surface and groundwater. However, proper design and planning can help reduce these impacts.

- Is the construction project necessary? Is the project over-designed? In some cases, the construction of additional structures is not needed and minor alterations to existing facilities may be sufficient.
- Have attempts been made to avoid construction in environmentally sensitive areas (such as wetlands and threatened or endangered species habitats)? *
- Are specifications for construction practices designed to control and exclude pest entry in contained habitats? *
- Does the construction contract specify that contractors should cause the least possible disturbance to the site's vegetation? For example, under certain circumstances, it may be possible to preserve individual trees or stands of old-growth that would otherwise be destroyed.
- Does the construction plan provide for erosion and sediment control during construction as well as after? Uncontrolled soil erosion can have adverse effects on local waterbodies and aquatic life.
- Will soil excavated from the construction site be reused? Topsoil can be respread in areas to be landscaped to enhance plant health. *
- Does the plan include the revegetation of areas disturbed by construction? *

* Indicates an environmental impact reduction opportunity.

- Is there a plan to reduce the use of materials containing constituents that can negatively affect the environment?
- Is there a spill control and countermeasure plan to properly address spills of hazardous construction materials?
- Will hazardous materials be stored properly at the construction site? Hazardous materials should be kept in storage buildings (with secondary containment and hard stands) located away from the active construction zone. Examples of hazardous materials typically found at construction sites are petroleum products (lubricating oils and greases), fuels (gasoline, kerosene), solvents, paints, batteries, and miscellaneous equipment maintenance supplies.

Procurement Concerns. Environmentally sound purchasing decisions are an important element of pollution prevention, helping reduce the amount of waste generated by a building/housing construction project. In addition, the purchasing of recycled-content material helps support markets for materials collected for recycling.

Executive Order 12873 directs all Federal agencies to review and revise their specifications, product descriptions, and standards to increase their purchase of environmentally preferable and recycled products.

- Will the project include the use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time?
- Are there provisions for the proper storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements?
- Will perishable construction materials (such as paints) be purchased incrementally to ensure reduced spoilage of unused materials?
- Will the project use building materials that have minimal packaging to avoid the generation of excessive packaging waste?
- Will the project use building materials that are produced locally to avoid energy use and pollution generated from transportation?
- Will the project use construction materials containing recycled content when possible and in accordance with accepted standards? Examples of recycled-content materials include concrete containing fly ash and thermal insulation containing cellulose (i.e., recovered newspaper with fire retardant).
- Does the construction plan include the use of alternative, environmentally preferable construction materials? Alternative construction materials include lumber products containing recycled plastic and/or wood, lead-free and low-VOC paints and coatings, and recycled steel for use in building frame applications.

* Indicates an environmental impact reduction opportunity.

- Does the construction plan call for the use of refurbished construction materials? Purchasing and using once-used or recovered construction materials can often save money and reduce the amount of C&D debris disposed of as waste.

Reuse and Recycling. Many of the waste materials generated as a result of building/housing construction can be reused, refurbished, or recycled into usable products. The benefit of these practices is that materials that would otherwise be disposed of from the waste stream are diverted for productive uses.

- Will the construction contract specify that construction materials left over at the end of the project be reused in other projects rather than be disposed of? *
- Will the construction contract specify that construction materials that are damaged or wasted be recovered for refurbishing and use in other construction projects? Such items as cabinets, doors, plumbing and lighting fixtures, tile, carpeting, door hinges, wall paneling, restroom mirrors, and stairway banisters can be recovered and renovated for use. Local community groups or individual homeowners may also be interested in reusing these items. *
- Is there a plan to use or sell trees cut down during construction activities as lumber or compost? *
- Will any metal, wood, or packaging wastes generated as a result of construction activities be collected for reuse or recycling into other usable products? Commonly recycled construction materials include concrete, asphalt roofing material, metals, and structural wood. *
- Will mercury-containing materials recovered in any renovations of existing structures be recycled?

Energy Efficiency. Employing energy efficient technologies and practices can have a significant positive effect on the environment. There are a number of opportunities to include energy efficiency in building/housing construction projects.

Executive Order 12902 calls on Federal agencies and facilities to increase energy conservation efforts and improve energy efficiency.

- Does the construction plan specify the use of "low-embodied energy" construction products whenever possible? The energy required to make a product should be considered in making purchasing decisions.
- Does the construction plan specify the use of energy efficient lighting systems?
- Will preference be given to purchasing energy-efficient electric products and equipment (such as appliances and heating and cooling systems)?
- Does the construction plan call for sufficient insulation to reduce heat loss and conserve energy?
- Will the proposed facility participate in the EPA Energy Star Buildings program?

* Indicates an environmental impact reduction opportunity.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR DREDGING

How Can Dredging Affect the Environment?

Dredging activities in fresh and salt water environments can have a variety of impacts on the environment. These impacts can include benthic disturbances, water quality degradation and impacts on aquatic organisms, and water and soil contamination resulting from marine and upland disposal of dredged materials. Impacts can also result from the potential release of hazardous constituents to marine and terrestrial environments. Dredging activities require the transportation of dredged materials and the use of energy resources.

Also see checklists on Dams, Hydropower, and Water Supply Reservoirs, Ecosystem Preservation and Protection, and Flood Control Projects.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Beneficial Use Options. Beneficial use options for dredged materials include beach nourishment and habitat restoration or enhancement. The beneficial use of dredged materials prevents the material from consuming limited upland landfill capacity and from having adverse impacts on the marine environment.

- Have specific beneficial use options been identified for dredged materials to reduce or eliminate the volume of waste that would otherwise be disposed of? *
- Will dredged materials be sampled and analyzed for particle size and evaluated for use as beach nourishment? Dredged materials should be sampled and analyzed for hazardous constituents to ensure that their use will not introduce pollution into the environment? *
- Does the project consider options to "clean" toxic dredged materials, thereby rendering them safe for beneficial use? *

Ecosystem Concerns/Dredging. Two dredging alternatives, mechanical and hydraulic, are practiced to remove sediments from marine environments. Mechanical dredging uses hoppers to dig and remove sediments. Hydraulic dredging uses a great deal of water to create suction to remove sediments and generates a much greater volume of dredged material that must be disposed of or used otherwise. This additional volume becomes a problem particularly when upland disposal is the only option.

- When considering dredging alternatives, has emphasis been placed on reducing or eliminating the amount of disturbance to the marine environment? *
- Will the selection of the dredging alternative (mechanical or hydraulic) be based on factors that will reduce or eliminate the generation of pollution and minimize the impacts on the environment?
- Will the dredging alternative be selected based on pollution prevention criteria that minimize energy consumption?
- Are sediment flushing or pass through alternatives being considered?

* Indicates an environmental impact reduction opportunity.

- Will measures be taken to minimize potential impacts on fisheries and aquatic resources?
- Have alternatives to dredging or alternatives that would reduce the amount of material to be disposed of, habitat destruction, and/or disposal-related impacts been considered? Options might include choosing an alternative site, extending the length of the pier to reach deep water, or reconfiguring dockage space to accommodate vessels into a smaller area.
- Have all environmentally sensitive areas been characterized? Have attempts been made to avoid dredging in environmentally sensitive areas? *
- Are measures considered to reduce or eliminate the pollution generated from dredging equipment and operations? Will sediments containing hazardous constituents be contained during dredging operations?
- Will hazardous materials needed for onsite heavy equipment maintenance and operation (e.g., fuels, solvents, greases) be properly stored and managed?

Ecosystem Concerns/Disposal of Dredged Materials. Dredging and dredged materials disposal in marine environments may have significant effects, including the disturbance of benthic environments, suspension of sediments, plume migration and introduction of potentially hazardous constituents (including heavy metals), and other negative impacts on water quality. By implementing various techniques, however, these impacts may be reduced or eliminated.

- Will measures be taken to minimize the introduction of contaminated dredged materials to benthic and other aquatic environments?
- Will techniques be used to reduce or minimize the suspension of sediments during dredging and or dredge disposal?
- Does the selection of marine disposal sites include criteria to create the least impact on aquatic life, water quality, plume migration, and sediment suspension?
- Has clean material been identified for use as a cap on toxic materials deposited in marine disposal?

Transporting Dredged Materials. Dredged materials must be transported from the original dredge site to the location of beneficial use or to disposal in either upland or marine disposal sites. The transportation of toxic materials presents significant threats to the environment in the event of a spill, accident, or other release. By addressing and utilizing pollution prevention techniques, these threats can be reduced or minimized.

- Has the dredging plan considered the need to transport potentially toxic dredged materials and taken steps to prevent spills during transportation?
- Have the safest and least populated routes of travel been identified for transporting toxic dredged materials that are unsuitable for beneficial use to the ultimate disposal site?

* Indicates an environmental impact reduction opportunity.

- Does the plan for the transportation of dredged materials to marine disposal sites consider minimizing the disruption of benthic environments and the dispersal of dredged materials in the water column during deposition?
- Will the method for transporting dredged materials minimize energy consumption?

Other References

U.S. Environmental Protection Agency. January 1994. Final EIS for the Designation of a Deepwater Disposal Site.

U.S. Army Corp of Engineers. January 1994. EIS/EIR for the Oakland Harbor Deep-Draft Navigation Improvements.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR ENERGY MANAGEMENT

How Can Energy Management Affect the Environment?

The generation of electricity accounts for 35 percent of all U.S. emissions of carbon dioxide, the most prevalent greenhouse gas. Electricity generation also accounts for 75 percent of U.S. sulfur dioxide emissions and 38 percent of nitrogen oxides emissions. These gases can cause smog, acid rain, and global warming. The pollution associated with these greenhouse gases can be reduced by applying energy efficient technologies and practices. These techniques, which include using compact, long-lasting fluorescent lighting as an alternative to incandescent bulbs and using fuel efficient vehicles and alternative transportation methods, can have a significant impact on the environment.

What Questions Should Be Asked To Ensure That These Effects Are Minimized Or Eliminated?

Executive Order 12902, Energy Efficiency and Water Conservation, directs all Federal agencies and facilities to increase efforts to conserve energy and increase energy efficiency. Other Executive Orders, such as 12844 and 12845, call on Federal agencies and facilities to increase their purchasing of alternatively fueled vehicles and energy-efficient computers.

Lighting. Lighting consumes about 20 to 25 percent of the electricity generated in the United States. In commercial buildings, lighting accounts for 40 percent of overall electricity usage. Lighting is one of the easiest areas where energy conservation and efficiency techniques can be applied to save energy.

- Will an assessment be performed to determine the best number, location, and type of lighting fixtures for the facility? A well-designed lighting assessment prevents the installation of excessive lighting fixtures and should incorporate the use of task-specific lighting (e.g., desk lamps) where possible rather than relying on overhead lighting.
- Can motion sensors or timers be used to turn lights off automatically when they are not needed? Motion sensors are widely used in European countries in such areas as hallways, stairwells, and restrooms, as well as work spaces. The use of these sensors is growing in the United States as well.
- Will the most efficient lighting equipment available be used? Optical reflectors and electronic ballasts can improve the efficiency of lower wattage lighting.
- Will the facility take advantage of the lighting provided by natural sunlight through building design, orientation, and internal layout? Other opportunities to maximize the use of natural light include utilizing top-silvered blinds and light colored finishes to reflect light and installing glass skylights or panels on top of office partitions to increase ambient lighting.
- Will the use of external lighting be minimized to reduce impacts to nearby sensitive habitats?
- Will the facility prepare an energy awareness campaign to educate employees about the importance of energy conservation?

Electrical Products and Equipment. A facility's energy consumption can be reduced greatly by purchasing energy-efficient products, such as energy-efficient computers and appliances. Computers alone are believed to account for 5 percent of commercial electricity consumption. The selection of energy efficient products can, then, help reduce a facility's energy consumption.

- Will the facility use energy efficiency as a criterion in purchasing electrical equipment?
- Will commercially available appliances with high energy ratings be selected?
- Will the project make use of high-efficiency, adjustable-speed motors in machinery and equipment applications when possible?
- Can timers be used to turn off computers or equipment automatically when they are not in use?

Heating and Cooling. Improvements in heat, ventilation, and air conditioning (HVAC) systems can lead to significant energy savings.

- Will heat and/or air conditioning thermostat settings be either manually or automatically changed at night, weekends, or at other times when the facility is not in use?
- Will the facility employ a computerized energy management system (EMS) to control heating or cooling systems or lighting?
- Can outside air be intentionally drawn into the facility for cooling purposes during cool weather?
- Can a system to bring warm air down to floor level from the underside of the roof be installed for heating purposes during the winter (e.g., ceiling fans)?
- If the facility will utilize electric chillers, will the chilled water lines be properly insulated?
- If the facility will use a boiler, will the steam/hot water lines be properly insulated?
- Will energy efficient windows or reflective films, such as "low-emissivity" or "low-e" coatings, be installed?
- Could solar panels be integrated into the building design to reduce reliance on electricity or fossil fuels?
- Will the smallest, most-efficient HVAC system possible be used to regulate building temperature properly?
- Will load sharing be used to reduce energy consumption? Shutting down HVAC systems for non-critical uses for short periods can result in significant savings.
- Will the facility use natural shading from trees and shrubbery to reduce heating and air conditioning needs?

- Will appropriate building materials be selected to minimize energy use from heating and air conditioning (e.g., using light colored paint, paving, and roofing materials and not designing a building with large glass facades in hot, sunny areas)?

Insulation Concerns. Insufficient insulation can result in the loss of large amounts of energy. For example, the poor insulation of windows is responsible for approximately 25 percent of all heating and cooling requirements. The insulation of heat-generating equipment also reduces the need for building cooling.

- Will hot or cold equipment surfaces and the building walls and roof be well insulated?
- If this is a manufacturing or industrial environment, will any heat exchangers for heat recovery be installed?
- Will building doors opening to the environment minimize energy losses? Proper weather stripping reduces energy losses, as do revolving and double doors.
- Will insulated windows be used? Such windows employ a gas, such as argon, between two coated panes of glass to minimize energy losses.
- Where appropriate, will energy efficient insulation materials fabricated from recycled materials be used?

Hot Water. Reducing the use of hot water can help conserve energy by decreasing the amount of energy that must be expended to heat water.

- Will water-efficient showerheads be installed?
- Will faucet aerators be installed?
- Will water heaters be sufficiently insulated?
- Will energy-efficient water heaters be purchased?
- In manufacturing facilities, can the heat radiated from hot water pipes be used for other purposes?

Fuel and Gasoline. Increasing fuel efficiency and using alternatively fueled vehicles helps reduce our reliance on fossil fuels, which cause air pollution when burned.

- If the facility requires the use of fleet vehicles, will fuel-efficient, cleaner burning vehicles be purchased?
- Has the use of alternatively fueled (e.g., electric, solar electric, compressed natural gas, ethanol, or methanol) vehicles been considered? Alternatively fueled vehicles have proved successful for short distance purposes. They can be used as fleet vehicles for facility maintenance or for short trips around a large facility.

- Are there provisions to encourage facility employees to reduce motor vehicle use? These provisions can include installing bike racks and showers, providing shuttle service between the facility and public transportation stops, promoting carpooling by maintaining ride boards, and subsidizing public transportation costs.

Energy Production Facilities. The design, construction, and operation of energy production facilities presents a number of opportunities to reduce pollution and environmental impacts.

- In constructing or operating energy production facilities, will rate structures be considered that will reduce peak loads?
- Are co-generation activities included in facility design?

Other References

Northeast Sustainable Energy Association. 23 Ames Street, Greenfield, MA 01301.
Telephone No. (413) 774-6051.

Rocky Mountain Institute. 1739 Snowmass Creek Road, Snowmass, CO 81654-9199. Telephone No. (303) 927-3851, Fax No. (303) 927-4178.

U.S. Department of Energy, Federal Energy Management Program. CE-44, 1000 Independence Avenue, SW, Washington, DC 20585. Telephone No. (202) 586-5772.

U.S. EPA, Energy Star Buildings Program. Telephone No. (202) 233-9146.

U.S. EPA, Energy Star Computers Program. Telephone No. (202) 233-9114.

U.S. EPA, Green Lights Program. Telephone No. (202) 233-9065.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR LANDSCAPING

How Can Landscaping Affect the Environment?

Landscaping wastes currently account for approximately 20 percent (or 31 million tons) of the municipal solid waste (MSW) generated in the United States each year. This makes landscape trimmings the second largest component (by weight) of the MSW stream. Because of their high bulk and density, landscaping wastes consume a disproportionate amount of landfill space. In addition, these wastes, as well as other organic matter disposed of in the landfill, can generate methane and acidic leachate when they decompose. When incinerated, the high moisture content and high nitrogen levels of these wastes can interfere with the combustion process and contribute to the formation of smog-causing nitrogen oxides.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

On April 26, 1994, President Clinton signed a Presidential Memorandum calling for the establishment of guidelines for Federal facility managers on how to increase the use of native species, reduce the use of chemical fertilizers and pesticides, implement water conservation techniques, and promote awareness of the environmental and economic benefits of better landscaping techniques. These guidelines will be proposed by a Federal interagency workgroup established by the Federal Environmental Executive. The following questions address the concept delineated in the Presidential Memorandum, as well as additional opportunities to prevent pollution and reduce waste generation associated with landscaping operations.

Ecosystem Concerns. Landscaping activities can affect the environment through the release of toxic pesticides and excess nutrients, as well as the destruction of wildlife habitat and ecologically sensitive areas. However, proper landscape design and maintenance can help reduce these environmental impacts and can help minimize the effects of other activities as well.

- Will landscape development be integrated with existing natural resources? Such integration may include the use of a Geographic Information System (GIS) that incorporates physical and natural features of the area to be developed (e.g., tidal and non-tidal wetlands, steep slopes, and natural riparian buffers). *
- Will the landscape plan incorporate the use of plants that require little water and minimal fertilizer, herbicide, and pesticide use?
- Does the landscape plan encourage the use of Integrated Pest Management (IPM)?
- Will the landscape plan ensure that rare, threatened, and endangered wildflowers and other species are adequately protected? *
- Does the landscape plan consider materials other than asphalt for constructing walkways across lawns (i.e., using wood chips, flag stones, and other materials that have less environmental impact than asphalt)?

* Indicates an environmental impact reduction opportunity.

- Will the landscape plan include the planting of primarily native trees, shrubs, and perennials? *
- Will the introduction of invasive species be avoided? *
- Will the plantings be arranged in a natural manner and in naturally associated groupings? *
- Does the landscaping plan incorporate features to minimize solar radiation or heat sinks, such as planting shade trees and avoiding overly large areas of asphalt? *
- Will the plant species used in the landscape plan provide food or cover for desirable wildlife? *
- Will the landscape plan call for fertilizing lawns only when grass roots will take up nutrients? These times are late summer-fall for cool season grasses and early summer for warm season grasses.
- Will lawns be watered at the optimal time of day to promote healthy growth and conserve water?
- Does the landscape plan take advantage of vegetation's natural properties? Planting shade trees near building windows can reduce energy consumption associated with air conditioning needs and serve as effective wind barriers.
- Will species of vegetation that support wetlands development be planted on the edges of waterbodies? These species may help break down pollutants carried in non-point source runoff and also can prevent soil and debris from polluting waterbodies.
- Will lawn areas be kept to a minimum with the remainder planted/retained as native meadows and woodlands to minimize air impacts associated with power maintenance equipment and the need for pesticides?
- Does the facility design reduce the impact of lighting on critical habitats and scenic areas?

Reducing Landscape Wastes. A number of steps can be taken during project planning, design, and operation and maintenance to reduce or avoid the generation of landscaping wastes. These techniques include landscape development and alteration, grass-cycling, composting, and mulching. They can be tailored to specific characteristics of a landscape, such as climate and geography, and can be mixed in any number of combinations.

- Will the landscape plan incorporate the planting of native and indigenous trees and plants that require less attention and maintenance? *
- Will trees and shrubs be pruned only on an as needed basis? *
- Will grass-cycling be practiced as part of project landscape maintenance operations? Grass-cycling is a process in which grass clippings are left in place on a lawn after mowing instead of being raked and bagged. Grass-cycling requires that no more than one third of the blade is cut off and that no more a 1-inch total be cut at any one time. This process improves lawn quality by returning

* Indicates an environmental impact reduction opportunity.

important nutrients from the decaying clippings to the soil and lawn. When grass-cycling is practiced, less money is spent on fertilizers, disposable collection bags, labor costs, and waste disposal. *

- Will composting be practiced as part of project landscaping maintenance operations? Composting is a process using microorganisms (generally bacteria or fungi) in the presence of oxygen and moisture to break down organic wastes into a humus-like product. Compost is a superior soil conditioner or mulch suitable for most landscaping and gardening uses. Using compost will help reduce reliance on phosphate and nitrogen fertilizers that may be detrimental to the surrounding ecosystems. Compostable materials include grass clippings, seaweed, leaves, sawdust, chipped or shredded brush, cow and horse manure, chipped or shredded logs, weeds, pine needles, hay, straw, shredded newspaper, and wool and cotton rags. Weeds with many seeds, diseased plants, and manure from meat-eating animals should not, however, be composted.
- Will mulching be practiced as part of project landscaping maintenance? Mulching is the practice of spreading or mixing organic material, such as wood chips, leaves, or compost, over soil surfaces. Mulch reduces moisture evaporation from the soil surfaces, reduces soil erosion and compaction from heavy rains, moderates soil temperature, provides optimal conditions for soil enhancing organisms, protects young tree trunks, and provides nutrients as it decays. Furthermore, mulch inhibits weed growth, thereby decreasing the need for constant landscaping care and weed disposal.

Landscape Product Purchasing and Management. Lawn and plant care products, such as fertilizers and pesticides, are also considered as wastes that result from landscape operations. Spoilage of these materials and the packaging left after use should be minimized to reduce an operation's impact on the environment.

- Will landscape products be purchased in bulk or concentrate to reduce packaging waste?
- Will strict inventory control practices be adopted to prevent material expiration and, thus, waste generation?
- Will the use of gas-powered landscape maintenance equipment (which account for 5 percent of our air pollution) be kept to a minimum? Executive Order 12844 calls on Federal facilities to increase their purchase of alternatively fueled motor vehicles.

Other References

"Presidential Memorandum for the Heads of Executive Departments and Agencies on Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds." August 22, 1994. *Federal Register* Vol. 59, No. 161.

U.S. EPA. "Environmental Fact Sheet: Recycling Grass Clippings." July 1992. EPA/530-F-92-012.

U.S. EPA. "Environmental Fact Sheet: Yard Waste Composting." May 1991. EPA/530-SW-91-009.

* Indicates an environmental impact reduction opportunity.

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR MILITARY BASE CLOSURE AND REUTILIZATION

How Can Military Base Closure and Reutilization Affect the Environment?

Military base closure and reutilization projects can have a variety of effects on the environment. These impacts may include air quality effects from demolition/construction dust and increased vehicle/aircraft emissions, hazardous materials and waste management concerns (including Installation Restoration Program sites, unexploded ordnance, PCBs, asbestos, lead-based paint, and underground storage tanks), noise impacts, pollution of surface water and groundwater sources, impacts to biological resources, and soil erosion and contamination.

Also see checklists on Ecosystem Preservation and Protection, Energy Management, Water Use, Landscaping, Waste Site Investigations and Cleanup Activities, Solid Waste Landfills, Building/Housing Construction, Airports, and Water Use.

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Air Quality Concerns. Demolition and construction as part of military base closure activities can cause air quality impacts from fugitive dust and construction equipment emissions. In addition, proposed base reuse plans may result in an increase of air pollutants from mobile sources (e.g., vehicles and aircraft) and point sources (e.g., generators, incinerators, and storage tanks).

- Are there opportunities to reduce the adverse effects of air emissions by considering alternative reuse plans for the military base?
- Will fugitive dust reduction measures (such as ground watering and reduced speed limits on unpaved roads) be incorporated into demolition/construction activities?
- Are adequate containment measures specified to avoid the accidental release of friable asbestos during demolition or modification of structures?

Hazardous Material/Waste Management Concerns. Concerns associated with military base closure and reuse projects include the management of hazardous materials and wastes (such as solvents, pesticides, aviation fuels, POL, and heavy metals), remediation of existing Installation Restoration Program (IRP) sites, removal of unexploded ordnance, and management of asbestos, PCBs, lead-based paint, and underground storage tanks.

- Are there provisions for reducing potential spills and uncontrolled releases of hazardous materials? Is there a spill prevention and control plan?
- Will new and reused underground storage tanks be equipped with leak detection mechanisms, secondary containment systems, spill and overflow protection, and cathodic protection?

- Will PCB-contaminated equipment be removed prior to base closure? Will remaining PCB-contaminated equipment be routinely inspected for leaks? Will transformers be retrofilled with non-PCB-containing oils? *
- Are measures specified for the proper removal and disposal of structural material containing toxic lead-based paint associated with demolition activities? *

Noise Concerns. Noise associated with demolition/construction equipment and planned land uses, such as airfields or industrial activities, can affect both humans and wildlife.

- If aircraft operations are planned to continue, are noise buffer zones and a wide range of sound attenuation measures, such as noise barriers and concrete bunkers, included to reduce noise impacts?

Surface Water Concerns. Surface water quality could be affected by spills or leaks of hazardous materials and by contaminated storm water runoff.

- Does the project require the preparation of Spill Prevention Control and Countermeasures Plans, Stormwater Pollution Prevention Plans, and Soil Erosion and Sediment Control Plans?
- Will oil/water separators be installed to prevent fuels, oils, and other residual contaminants in storm water runoff from contaminating any nearby streams or other surface water?
- Do construction designs incorporate provisions to reduce storm water runoff/sediment transport? Such designs include creating landscaped areas that are pervious to surface water, minimizing areas of surface disturbance, and constructing runoff/sediment transport barriers around soil stockpiles.

New Use Concerns. Public utilities, such as wastewater treatment facilities, solid waste landfills, and electricity/natural gas supplies, may be affected by military base closure and reuse projects. Reuse plans may propose new commercial and residential uses that would increase water and electricity/natural gas consumption and increase wastewater and solid waste disposal requirements.

- Does the project require the collection of inert demolition/construction wastes, such as wood, metals, concrete, and asphalt, for reuse or recycling to decrease potential impacts on landfills?
- Will energy efficiency and water conservation devices be incorporated into all new residential and commercial structures?

Biological Resources Concerns. The construction of new or expanded facilities could require the filling of wetlands and could result in habitat loss from the siting of structures and utilities. Potential impacts to wildlife could result from noise and dust during demolition/construction activities.

- Does the siting of any new construction take into consideration avoiding proximity to wetlands, wildlife habitat, and ecologically sensitive areas? *

* Indicates an environmental impact reduction opportunity.

- Are measures included to avoid disturbing the habitat of any threatened or endangered species located on or in the vicinity of the military base? *
- Are measures specified to control construction runoff, such as the use of berms, silt curtains, straw bales, and other erosion control techniques?
- Will native trees and vegetation be planted to increase favorable habitat for wildlife and help prevent erosion? *

Geology/Soils Concerns. Demolition/construction activities may cause soil erosion and soil contamination.

- Can existing facilities and paved areas be remodeled and used to minimize soil disturbance caused by extensive new construction?
- Does the project call for preparation of soil erosion and sediment control plans? Are specific control measures suggested, such as seeding exposed soil, watering to prevent fugitive dust, and using sediment basins and fences?

Other References

Army Regulation 200-1, Environmental Protection and Enhancement.

Army Regulation 220-2, Environmental Effects of Army Actions.

U.S. Department of the Interior, Denver Service Center. September 1993. *Guiding Principles of Sustainable Design*. National Park Service (NPS) publication number NPS D-902; GPO publication number GPO 777442.

* Indicates an environmental impact reduction opportunity.

1 **Response to Comments**

2 **Response to Comment C-1.** The carbon monoxide (CO) hot spot modeling analysis revealed no
3 potential violations of federal or state CO standards. In addition, no violations of federal or
4 state CO standards have been detected in the San Francisco Bay Area since 1991. Consequently,
5 there is no requirement to propose mitigation measures related to ambient CO conditions.
6 Similarly, there are no indications that normal residential, commercial, or office development
7 would create any unusual sources of hazardous air pollutants requiring special mitigation
8 measures. Furthermore, the Navy will not have any authority over reuse activities and thus is
9 in no position to impose mitigation measures related to the types or intensities or reuse
10 activities. EPA and the California Air Resources Board have sole jurisdiction to regulate vehicle
11 fuel composition and resulting emissions of hazardous air pollutants from vehicle traffic.

12 **Response to Comment C-2.** No significant air quality problems have been identified for either
13 closure or reuse of NSTI, so there is no requirement to propose any air quality mitigation
14 measures. As noted previously, the Navy will have no authority or responsibility with respect
15 to reuse of NSTI and is thus not in a position to impose mitigation measures.

16 **Response to Comment C-3.** EPA and the California Air Resources Board have sole jurisdiction
17 over the composition of vehicle fuels and the regulation of vehicle emissions. Unlike the NASA
18 example cited in the comment, the Navy is disposing of NSTI property with no operational
19 responsibility. The Navy will have no authority or responsibility over construction contracts or
20 actual reuse activities, so it is not in any position to impose specific mitigation measures on
21 construction associated with reuse activities. The designated property recipient will be required
22 by law to ensure that appropriate construction-related mitigation measures are imposed.

23 **Response to Comment C-4.** The Navy has conferred with FHWA regarding the transfer of land
24 for the SFOBB and the relationship of this transfer to the disposal and reuse and NSTI. (FHWA
25 has been added to the list of agencies contacted during preparation of the EIS.) FHWA was not
26 asked to be a cooperating agency for this EIS. The SFOBB realignment and the disposal and
27 reuse of NSTI are separate actions, and neither the Navy nor the FHWA are under obligation to
28 include the other as a cooperating agency in the preparation of their respective EISs. FHWA is
29 not regarded as having special expertise or jurisdiction warranting inclusion as a cooperating
30 agency because the SFOBB is operated by Caltrans and all NSTI lands transferred to FHWA
31 were subsequently conveyed to Caltrans.

32 **Response to Comment C-5.** As assumed in the EIS, some dredging will occur as part of reuse,
33 but no specific development proposal has been completed at present, so it is not possible to
34 determine the extent and location of any future dredging or to evaluate specific impacts.
35 Regardless of who seeks authorization for dredging, such operations will be required to comply
36 with the permitting requirements of the US Army Corps of Engineers and to be consistent with
37 the LTMS. The noted text in chapter 2 has been revised to read as follows:

38 "[t]he exact location and amount of potential dredging is not known at present and
39 therefore, this EIS can necessarily evaluate potential impacts from dredging in only a
40 programmatic general way."

1 The Navy completed a remedial investigation of offshore sediments in 2001 and addressed the
2 potential ecological risk from contaminants at the former Clipper Cove skeet range
3 (immediately east of the marina), stormwater outfalls, and an area on the northwestern
4 shoreline of Treasure Island. Under this investigation, no chemicals were found at levels that
5 would pose a risk to aquatic and avian receptors, and no further investigation or action was
6 recommended. The study did note that sediment dredging near the former Clipper Cove skeet
7 range could disrupt and resuspend lead shot on the sediment surface.

8 **Response to Comment C-6.** An inventory of all potential sources of PCBs was completed in
9 1995. Since that time, all potential sources of PCB contamination have been removed for NSTI,
10 including out of service or closed hydraulic equipment. IR Site 03 is an area immediately
11 adjacent to an electrical substation where transformers may have been placed or repaired in the
12 past. IR Site 03 was closed with DTSC approval in 2002.

13 **Response to Comment C-7.** Based on the 1995 inventory for PCBs, no PCB sources were
14 identified at IR Site 09, which is in the remedial investigation phase. Following completion of
15 the investigation, the potential contaminants and the appropriate course of action will be
16 determined.

17 No PCB sources were identified at IR Site 01 during the 1995 inventory, and the DTSC granted
18 closure approval on March 20, 2002.

19 In the PCB inventory completed in 1995, a potential source of PCBs at the old boiler plant (Site
20 05) was not identified; thus, Navy has determined that no action is required at IR Site 05.
21 Groundwater contamination at IR Site 05 will be investigated as part of measures taken at IR
22 Site 24, which surrounds IR Site 05.

23 **Response to Comment C-8.** The nature of material formerly stored at IR Site 12 is unknown,
24 and no records describe the types of operations in the vicinity. The following text has been
25 added to the description of IR Site 12 in section 3.13 of the Final EIS:

26 Analysis of soil and groundwater samples from the FSY area indicated that
27 PAHs and PCBs were the chemicals of concern. In 2000, all soil in the FSY area
28 containing PCBs at levels in excess of the screening level (1 mg/kg) was
29 excavated to 4 feet (1 m) bgs, except where buildings or other structures, such as
30 transformer pads, impeded access. Indoor air monitoring to evaluate the
31 potential risk posed by vapor intrusion from volatilization of PCBs into buildings
32 is ongoing. Initial conservative estimates from this investigation indicate that
33 PCB volatilization may pose a risk to human health in Building 1100 Unit C.

34 **Response to Comment C-9.** There is no indication that methane gas is being released at IR Site
35 11. Although the site is a former landfill, it appears that the debris placed at this location
36 contained little organic material that would produce methane during decomposition.

37 **Response to Comment C-10.** Radon is a naturally occurring gas and is not related to human
38 activities. As described in the EIS, radon screening was conducted at NSTI, and all samples
39 were found to be below US EPA recommended action levels; consequently the Navy does not

1 believe further investigations for radon are warranted. Radiological concerns at NSTI are
2 limited to past decontamination training conducted at IR Site 02. The radiological material used
3 in this training had a short half-life and would no longer be found at the site. Radiological
4 concerns were not part of the remedial investigation at IR Site 02. The Navy has been gathering
5 data on potential radiological concerns as part of its ongoing investigations at NSTI but has
6 found none.

7 **Response to Comment C-11.** No radiological decontamination is known to have occurred at
8 NSTI, where radiological concerns are limited to those described above in response to comment
9 C-10. The Navy did conduct radiological decontamination at Hunters Point Naval Shipyard,
10 which is addressed in the CERCLA process for that facility.

11 **Response to Comment C-12.** The environmental investigation and remediation at NSTI is
12 being carried out pursuant to and in accordance with the provisions of CERCLA. The CERCLA
13 process is considered to be the functional equivalent of the NEPA process, including extensive
14 opportunities for public involvement. In addition, the remedial process is a rapidly evolving
15 program and subject to frequent changes. As a result, the remedial process under CERCLA is
16 summarized in section 3.13 of the EIS, but details of investigations, results of sampling, and
17 mapping of contamination are not included. Detailed information on environmental
18 investigation and remediation can be obtained through the CERCLA staff in the Navy's BRAC
19 Operations Office, as noted in section 3.13.3 of the EIS. The Navy is committed to cleaning up
20 each site according to applicable laws and regulations and to levels appropriate to the proposed
21 land use to ensure protection of public health and safety.

22 **Response to Comment C-13.** Please see response to comment C-12, above, regarding including
23 additional information on CERCLA activities in the EIS.

24 **Response to Comment C-14.** Navy agrees that pollution prevention is an important issue. The
25 federal action evaluated in the EIS is the disposal of federal property, and the Draft EIS
26 addresses pollution prevention in the context of fugitive dust control measures for air quality
27 (section 4.6), minimizing impacts to water quality (section 4.10), and proper remediation and
28 disposal of potentially hazardous materials (section 4.13). Navy may require specific
29 mitigations be in place prior to conveying the property but will have no authority or
30 responsibility over actual reuse activities. Consequently, Navy is not in a position to impose
31 mitigation measures for pollution prevention associated with reuse. Considering that the
32 proposed action is the disposal of federal property, additional mitigation measures beyond
33 those included in the Draft EIS do not appear to be warranted. Navy believes that the
34 appropriate vehicle to identify measures associated with reuse would be the City and County of
35 San Francisco's NSTI reuse EIR in compliance with CEQA, not the Navy's EIS.

36 Executive Orders 13101 ("Greening the Government Through Waste Prevention, Recycling, and
37 Federal Acquisition," 9/14/1998), 13148 ("Greening the Government Through Leadership in
38 Environmental Management," 4/21/2000), and additionally, 13123 ("Greening the Government
39 Through Efficient Energy Management" 6/8/1999) would apply only to the federal action, and
40 not to activities associated with reuse. Navy assumes that state and local regulations would

- 1 provide similar pollution prevention regulatory guidance to the City and County of San
- 2 Francisco for all reuse activities.
- 3



STATE OF CALIFORNIA

Governor's Office of Planning and Research
State Clearinghouse



Gray Davis
GOVERNOR

June 27, 2002

Tal Finney
INTERIM DIRECTOR

Timarie Seneca
U.S. Navy
1230 Columbia St. Suite 1100
San Diego, CA 94066-0720

Subject: Disposal and Reuse of Naval Station Treasure Island
SCH#: 2002052061

Dear Timarie Seneca:

The State Clearinghouse submitted the above named Draft EIS to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on June 26, 2002, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

D-1

SCH# 2002052061
Project Title Disposal and Reuse of Naval Station Treasure Island
Lead Agency U.S. Navy

Type EIS Draft EIS
Description This environmental impact statement (EIS) evaluates the potential impacts on the natural and human environment that could result from Navy disposal of surplus federal properties within NSTI and subsequent reuse of those federal properties. NSTI is made up of dry and submerged lands of both Treasure Island and portions of Yerba Buena Island in San Francisco, California.

Lead Agency Contact

Name Timarie Seneca
Agency U.S. Navy
Phone 619-532-0995 **Fax**
email
Address 1230 Columbia St. Suite 1100
City San Diego **State** CA **Zip** 94066-0720

Project Location

County San Francisco
City San Francisco, Oakland
Region
Cross Streets
Parcel No.
Township 1S **Range** 5W **Section** **Base** MTDIABLO

Proximity to:

Highways 101
Airports
Railways
Waterways San Francisco Bay
Schools San Francisco United School District
Land Use Military installation

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Coastal Zone; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Landuse; Cumulative Effects; Other Issues

Reviewing Agencies Resources Agency; Department of Boating and Waterways; Department of Fish and Game, Region 3; Office of Historic Preservation; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; California Highway Patrol; Caltrans, District 4; Caltrans, Division of Transportation Planning; Air Resources Board, Major Industrial Projects; Integrated Waste Management Board; Regional Water Quality Control Board, Region 2; Department of Toxic Substances Control; State Lands Commission

Date Received 05/13/2002 **Start of Review** 05/13/2002 **End of Review** 06/26/2002

1 **Response to Comments**

2 **Response to Comment D-1.** Comment noted.

3



Gray Davis
GOVERNOR

July 1, 2002

STATE OF CALIFORNIA

Governor's Office of Planning and Research
State Clearinghouse



Tal Firney
INTERIM DIRECTOR

Timarie Seneca
U.S. Navy
1230 Columbia St. Suite 1100
San Diego, CA 94066-0720

Subject: Disposal and Reuse of Naval Station Treasure Island
SCHI#: 2002052061

Dear Timarie Seneca:

The enclosed comment (s) on your Draft EIS was (were) received by the State Clearinghouse after the end of the state review period, which closed on June 26, 2002. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2002052061) when contacting this office.

Sincerely,

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency

E-1

1 **Response to Comments**

2 **Response to Comment E-1.** Comment noted. The Navy has addressed the issues raised in the
3 attached letters.

4



Memorandum

Date: June 24, 2002

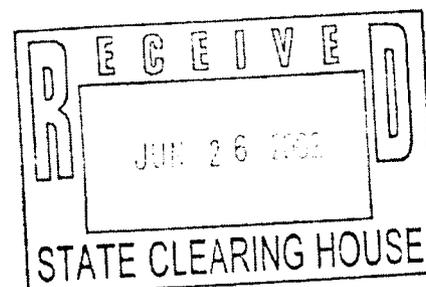
To: State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814

From: **DEPARTMENT OF CALIFORNIA HIGHWAY PATROL**
San Francisco Area

File No.: 335.11425

Subject: ENVIRONMENTAL DOCUMENT REVIEW
AND RESPONSE, SCH #2002052061

*Clear
6-26-02*



The Environmental Document Review and Response for the disposal and reuse of Naval Station Treasure Island (NSTI), SCH #2002052061, has been reviewed. NSTI closed on September 30, 1997, and the Navy is in the process of disposing of the property in accordance with applicable laws and regulations. NSTI is on two islands in San Francisco Bay approximately midway between the shores of the cities of San Francisco and Oakland. Vehicular access to NSTI is via the San Francisco/Oakland Bay Bridge (SFOBB) on Yerba Buena Island. The SFOBB is part of the Interstate-80 (I-80) freeway system and provides an east-west link between the cities of San Francisco and Oakland.

At the time of operational closure, NSTI totaled approximately 1,075 acres of dry and submerged land within San Francisco. Approximately 36 acres were transferred from the Navy to the Department of Labor, 22 acres were transferred to Coast Guard, and 97 acres were transferred to Federal Highway Administration (FHWA), leaving 920 acres for disposal. The Navy can either retain NSTI surplus property in federal ownership (No Action Alternative) or dispose of the property for subsequent reuse.

Reuse Alternative 1 proposes 151 acres of publicly oriented uses. The major publicly oriented development on Treasure Island would be a theme attraction with the potential to attract an average of approximately 13,700 daily visitors. Development would include a 300-room and a 1,000-room hotel with three restaurants and offices. The total number of jobs expected to be generated is 4,482. Alternative 1 proposes 131 acres of residential uses. The total number of housing units associated with this reuse alternative would be approximately 2,850. Traffic generated by Alternative 1 is estimated to be approximately 960 vehicle trips during the weekday AM peak hour, 1,555 vehicle trips during the weekday PM hour, and 1,440 vehicle trips during the weekend midday peak hour.

State Clearinghouse

Page 2

June 24, 2002

Reuse Alternative 2 is similar to Alternative 1, but less extensive. Alternative 2 proposes 151 acres of publicly oriented uses. A theme attraction would draw up to approximately 5,500 daily visitors. Development would include a 700-room and 500-seat amphitheater, and an entertainment and retail center. The total number of jobs expected to be generated is 2,513. Alternative 2 proposes 19 acres of residential uses. 50 existing housing units would remain and approximately 200 new units would be added. Traffic generated by Alternative 2 is estimated to be 385 vehicle trips during the weekday AM peak hour, 775 vehicle trips during the PM peak hour, and 785 vehicle trips during the weekend midday peak hour.

Reuse Alternative 3 represents minor development and existing facilities would be reused. Alternative 3 proposes 121 acres of publicly oriented uses. A theme attraction would draw up to approximately 2,740 daily visitors. Development would include at least one landmark structure up to 100 feet tall, and other new buildings similar in height to existing conditions. The number of jobs expected to be generated is 1,736. Alternative 3 proposes 150 acres of residential uses. The number of housing units associated with this reuse alternative would be approximately 1,100. Traffic generated by Alternative 3 is estimated to be 610 vehicle trips during weekday AM peak hour, 800 vehicle trips during the weekday PM hour, and 770 vehicle trips during the weekend midday peak hour.

The following comment is offered regarding the reuse alternatives:

Regardless of the alternative considered, SFOBB will definitely be adversely impacted by traffic. Westbound SFOBB traffic is controlled at the toll plaza by metering lights. The additional traffic resultant of the NSTI reuse would require the slowing of the metering lights, which would adversely impact traffic on Interstates 80, 580, and 880 in Alameda County. In order to properly manage this amount of traffic and adequately provide the public service required in this general location, it would be necessary to increase in-view patrol during weekday AM and PM peak hours and weekend midday peak hours.

F-1

If you have any questions regarding this memorandum and our comment, please contact me or Lieutenant Don Morrell at (415) 557-1094.



E. C. CHOI, Lieutenant
Acting Commander

cc: Golden Gate Division
Special Projects Section

1 **Response to Comments**

2 **Response to Comment F-1.** Please see response to comment B-4 regarding traffic on the SFOBB
3 and at the SFOBB toll plaza. Additional traffic generated by the proposed action would not
4 require the slowing of the SFOBB metering lights; metering lights are designed to restrict the
5 number of vehicles to get onto the SFOBB. However, these additional vehicles may cause
6 longer vehicle queuing on the approach to the toll plaza. As stated in the response to comment
7 B-4, regardless of the number of vehicles approaching the SFOBB, the operation of the SFOBB
8 would remain the same and, therefore, it is not certain that additional in-view patrols would be
9 required.

10

Department of Toxic Substances Control



Edwin F. Lowry, Director
700 Heinz Avenue, Suite 200
Berkeley, California 94710-2721

Gray Davis
Governor

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

June 24, 2000

Ms. Timarie Seneca
BRAC Operations Office
Southwest Division, Naval Facilities Engineering Command
Code 06CM.TS
1230 Columbia Street, Suite 1100
San Diego, California 92101-8517

DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS), NAVAL STATION
TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Dear Ms. Seneca:

The Department of Toxic Substances Control (DTSC) has reviewed the DEIS for the disposal and reuse of Naval Station Treasure Island dated May 2002. The DEIS analyzes potential environmental impacts from three reuse alternatives relating to land use, visual resources, socioeconomics, cultural resources, transportation, air quality, noise, biological resources, geology and soils, water resources, utilities, public services and hazardous materials and waste. DTSC's review was limited to sections directly addressing hazardous materials and waste issues. Following are DTSC's comments.

1. Chapter 1, Section 1.2, Overview of NSTI

A fuel service station and munitions storage bunkers were operated by the Navy and should be added to the list of facilities that were formerly located on Treasure Island.

} G-1

2. Chapter 1, Section 1.5, Related Studies

The 1997 BRAC Cleanup Plan mentioned does contain a remediation plan and schedule, however, the plan and schedule are out of date and do not reflect the current understanding of the Installation Restoration sites and associated schedules.

} G-2

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at www.dtsc.ca.gov.

Ms. Timarie Seneca
June 24, 2002
Page 2

3. Chapter 3, Section 3.13.1, Hazardous Materials Management

Please see comment number two.

} G-3

4. Chapter 3, Section 3.13.3, Installation Restoration Program (IRP)

The master schedule for NSTI was last updated in 2001 and will be updated annually. The master schedule will be the Appendix D schedule for the NSTI FFSRA.

} G-4

5. Chapter 3, Section 3.13.5, Polychlorinated Biphenyls (PCBs)

IR Site 12 should be added to the list of sites known to have had historical releases of PCBs to soils that are in need of further evaluation and eventual remediation.

} G-5

If you should have any questions regarding this letter, please contact me at (510) 540-3763.

Sincerely,



David Rist
Hazardous Substances Scientist
Office of Military Facilities

cc: Mr. Phillip Ramsey (SFD-8-2)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105

Ms. Sarah L. Raker
California Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612

Ms. Martha Walters
Mayor's Office at Treasure Island
770 Golden Gate Avenue
San Francisco, California 94102

1 **Response to Comments**

2 **Response to Comment G-1.** The facilities listed in section 1.2 are intended to inform the reader
3 of the general types of uses at NSTI, especially with respect to structures that may be part of
4 reuse. Because of the size and complexity of land uses and facilities on NSTI, this list is not
5 intended to be inclusive of all historic uses of NSTI facilities.

6 **Response to Comment G-2.** The BCP has not been updated and, as noted by the commentor,
7 does not reflect the current schedule and remediation plan. As noted in section 3.13.3 of the
8 EIS, current information on remediation plans and schedules are available through the Navy's
9 BRAC Operations Office and in Appendix D of the NSTI FFSRA.

10 **Response to Comment G-3.** Please see the response to comment G-2 above.

11 **Response to Comment G-4.** The text in section 3.13.3 of the Final EIS has been revised to read
12 as follows:

13 Appendix D of the NSTI FFSRA, which provides the submittal schedule for draft
14 primary and secondary documents, was last updated in 2002.

15 **Response to Comment G-5.** The text in section 3.13.5 has been revised to read as follows:

16 Navy has investigated IR sites 03, 12, and 17 for potential PCB contamination. No
17 further action relative to PCBs has been recommended at either site 03 or 17. A removal
18 action for soils containing PCBs at levels in excess of the screening level (1 mg/kg) was
19 conducted in 2000 at IR 12.
20

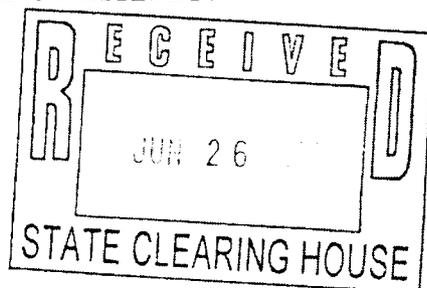
DEPARTMENT OF TRANSPORTATION

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June 24, 2002



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 File #SF080104
 SCH #2002052061

Ms. Timarie Seneca
 BRAC Operations Office
 Southwest Division
 Naval Facilities Engineering Command
 Code 06CM.TS
 1230 Columbia Street, Suite 1100
 San Diego, CA 92101-8517

Dear Ms. Seneca:

Disposal and Reuse of Naval Air Station Treasure Island - Draft Environmental Impact Statement (DEIS)

Thank you for including the California Department of Transportation (Department) in the environmental review process for the above-referenced project. We have reviewed the DEIS dated May 2002, and have the following comments to offer:

1. Executive Summary – Section ES-3, Disposal and Reuse Process, page ES-3:

The Executive Summary states "The easements impose substantial restrictions on Navy's ability to access and utilize the underlying property. This land is no longer available for transfer by the United States and, as such, is no longer available for community reuse..." It continues, "For that reason, the SFOBB property, including the construction and aerial easements, is not included in the Navy disposal and is therefore, excluded from this EIS."

The Department questions the meaning of these statements since the deeds transferring the land include the provision for terminating the temporary construction easements of several parcels on Yerba Buena Island. The deeds state that "termination shall occur when the State determines that the easements are no longer required for the construction of the seismic safety projects or when the State gives final acceptance to its contractor for work on the seismic safety projects. If requested, the State will prepare, execute and deliver to the Navy deeds to release and extinguish the temporary construction easements." When construction activities on Yerba Buena Island are completed, the State will then relinquish its rights on the temporary construction easement. Further, the deeds also acquired right of way for all three bridge replacement alternatives under consideration for Department's east span seismic replacement project on the SFOBB and the deed also provides for returning any unnecessary right of way to the Navy. Therefore, excluding the portion of Yerba Buena Island currently within the State's temporary construction easement and all the permanent right of way acquired in October 2000, the DEIS ignores the potential reuse of this land.

H-1

2. Section 3.1.3 Surrounding Land Uses, page 3-11:
 We suggest that the San Francisco-Oakland Bay Bridge be included in this section, as it is a very important land use on the island. } H-2

3. Section 3.3 Socioeconomics, page 3-18:
 The analysis in this section relies heavily on the Association of Bay Area Governments (ABAG) Projections 1996 series. Three new Projection Series have been released since the 1996 series (1998, 2000, and 2002). We have found in general that, compared to the more recent Projection Series, the 1996 Projections (which were released toward the end of an economic recession) tend to under-predict future job, population and housing growth in the region. For example, ABAG Projections 2002 estimates a 41% increase in Bay Area jobs between 1990 and 2015 (from 3.1 million to 4.5 million), rather than the 29% job growth for the same period referenced from 1990 on page 3-19 of the DEIS. The most recent Projection Series available, ABAG Projections 2002 should be used and all analysis should be revised accordingly. } H-3

4. Section 3.5.1 Roadway Network, second paragraph, page 3-39:
 The text states that Figure 3-5 shows "the location of the six ramps and the Caltrans easement across Yerba Buena Island." Figure 3-5 on page 3-40 does not show the Department's easement on Yerba Buena Island. } H-4

5. Chapter 4, Introduction, Environmental Consequences, last paragraph, page 4-2:
 The Department disagrees with the statement that the "Navy is effectively precluded at this time from taking those actions that are required of it to make temporary construction easements as possible excess property suitable for conveyance." While construction activities on the easement will indeed limit Navy's access to its property, land use planning can proceed. In addition, the transfer did not include right of way for roadway and utility purposes across one parcel. The Navy has identified certain hazardous waste sites in portions of the area previously within the Temporary Construction Easement and in-fee land, and if the Navy requires access from the Department to investigate and/remediate such wastes, it is entitled to such access under the provisions of the land transfer. This means that the Navy can in fact take actions necessary to prepare the land for conveyance. } H-5

6. Section 4.5 Transportation - Traffic Analysis Methodology, page 4-34:
 The report provides traffic forecasts to year 2010, stating that this is a common benchmark used by the Metropolitan Transportation Commission (MTC) for long-range planning in the region. The MTC currently provides traffic forecasts, based on ABAG Projections 2000, to year 2025. This analysis should take into account the latest planned and programmed transportation improvements assumed in the current MTC travel demand model, and identified by the nine Bay Area counties, Caltrans, and MTC. Traffic projections should at least be provided for the assumed Naval Station Treasure Island build-out year, 2015, and, to be consistent with regional planning efforts, year 2025 traffic forecasts should be developed as well. } H-6

7. Section 4.5, Transportation, Significant and Mitigable Impacts, pages 4-36 to 4-58:
 Mitigation of the significant traffic impacts identified in the DEIS relies heavily on implementation of the Transportation Demand Management (TDM) measures identified in Chapter 4 & Appendix F. We are skeptical of the ability of these TDM measures to effectively } H-7

reduce vehicle demand for the island, particularly since ferry service to and from the island (currently non-existent) appears to play a major role. Since much of the TDM measures depend on adequate funding, it is unrealistic to propose them as mitigation without an established financing plan.

H-7

8. Section 4.5, Transportation, Significant and Mitigable Impacts, pages 4-36 to 4-58:

The eastbound on-ramp will be rebuilt with the replacement of the east span. The rebuilt on-ramp will have a significantly improved merge taper, which will increase the on-ramp capacity. We estimate the peak period capacity to be approximately 900-1000 vehicles per hour (vph), which will be able to handle all of the forecasted demands. This additional demand entering the freeway will very likely have a significant adverse impact on freeway operation, particularly during the PM peak period when the freeway operates at capacity. The proposed mitigation should be revised to address the expected impact to the freeway. As part of the mitigation, we recommend implementation of ramp metering which would be operated to maintain capacity flow along the entire length of the bridge.

H-8

9. Section 4.5, Transportation, page 4-40:

The DEIS proposes that impacts from the increased traffic for the westside eastbound off-ramp be mitigated with signs directing traffic to the eastside eastbound off-ramp. The analysis estimates that this mitigation would split the demand about evenly between the two off-ramps. We believe that it is unrealistic to expect this amount of traffic shift to occur. It is more likely that most, if not all, of the eastbound traffic destined for Treasure Island will use the westside eastbound off-ramp regardless of the signing. It is more appropriate to assume that no traffic would shift, and develop mitigation measures that would directly address this impact.

H-9

10. Section 4.5, Transportation, pages 4-43 to 4-45:

The DEIS describes construction-related impacts as being not significant. However, construction-related vehicles may have a significant impact if they use the bridge during the peak periods due to the currently over-saturated conditions. This should be identified as a potential significant impact with use of water transportation and off-peak vehicle travel as mitigation.

H-10

11. Section 4.5, Transportation, Not Significant Impacts, page 4-43:

Under "Other ramp operations (Factor 1)" the DEIS states that there would be no significant queuing impacts because ramp demand would be less than capacity, except for the western westbound on-ramp, the eastern eastbound off-ramp, and the eastbound on-ramp. While this may be true for the ramp operation, it is not a correct assessment of freeway impacts since any increase in on-ramp volume entering the freeway during the peak period in the peak direction would significantly impact freeway operation on the bridge and its approaches. This is true because the freeway currently operates at capacity essentially along the entire length of the bridge in the westbound direction during the AM peak period, and in the eastbound direction during the PM peak period. The bridge is the primary bottleneck along this corridor, which means that any additional traffic entering the bridge will result in an increase in traffic congestion and delay.

H-11

12. Section 4.5, Transportation, Level of Service, page 4-44:

It appears that the level of service (LOS) for the freeway mainline was determined using speed as the criterion. The accepted methodology in the Highway Capacity Manual is to use density as the criteria for freeway LOS. The analysis should be revised accordingly.

H-12

13. Appendix F.2 Socioeconomics:

Since 1990 U.S. Census data shows that the average household size at Naval Station Treasure Island was 3.7, it would seem more appropriate to use this value to represent existing household size, rather than the 3.2 figure based on the average family size in San Francisco assumed in the Presidio reuse plan.

H-13

14. Appendix F.3 Transportation, Table F-7, page F-17:

How were the number of trips derived for specific land uses in each travel analysis zone? Are these based on Institute of Transportation Engineers (ITE) trip generation rates?

H-14

15. Appendix F.3, Travel Demand, page F-23:

What assumptions were made in "adjusting" the trip generation, trip distribution, and mode split estimates for the various land use alternatives, as well as for auto occupancy factors and vehicle trips to ferry terminals? How was the travel demand information derived for land uses not evaluated for the reuse plan? The basis for these assumptions should be clearly defined.

H-15

16. Appendix F.3, Trip Generation, page F-23:

It is not clear which ITE Trip Generation Edition was used to derive the number of trips assumed for the various land use categories. The 6th Edition (most recent) is the preferred source of trip generation rates, and should be used in this analysis.

H-16

17. Appendix F.3, Trip Generation, page F-24:

On what basis was it concluded that 40% of the daily and peak-hour person trips in Alternative 1 will consist of internal trips? This key assumption in the analysis requires a much more detailed explanation as to how such a seemingly high percentage of internal trips was derived. Similarly, further explanation is needed as to how the other travel mode percentages (for auto, vanpool, bus and ferry) were derived.

H-17

18. Appendix F.3, Table F-14, Person Trip Generation, page F-31:

The totals of the Retail/Work trip distribution percentages in Table 14 exceed 100%. This should be corrected, along with any part of the analysis that utilized the errant figure.

H-18

19. Appendix F.3, Table F-15, Mode Split, and Tables F-16 & F-17, Average Vehicle Occupancy, page F-32:

What is the justification for assuming that 100% of all internal work and non-work trips, for each land use category, will be made by bus? The mode split percentages assumed here are significantly different than the current average mode split percentages for the region (as is the high vehicle occupancy rate). Detailed justification and documentation supporting such percentages should be provided.

H-19

20. Appendix F-3, Transportation Features Assumed, page F-20:

There is no discussion of the accommodation of bicycles and pedestrians in this DEIS. The Appendix indicates that pedestrian and bicycle facilities would be provided. However, there is no mention how this will be done on Yerba Buena Island, and how this will connect to the pedestrian and bicycle path on the new cast span of the Bay Bridge. These are significant issues

H-20

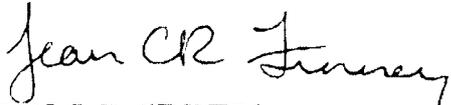
Seneca/DEIS
June 24, 2002
Page 5

that should be addressed. This DEIS needs to indicate how pedestrian and bicycle facilities will be accommodated on Yerba Buena Island, and how they will connect to Treasure Island. The DEIS should also indicate whether the proposed bicycle accommodations will be compliant with the Americans with Disabilities Act.

H-20

We look forward to your response to our concerns. Should you require further information or have any questions regarding this letter, please call Paul Svedersky of my staff at (510) 622-1639.

Sincerely,



JEAN C. R. FINNEY
District Branch Chief
IGR/CEQA

c: Kate Shulte Joung, State Clearinghouse

1 **Response to Comments**

2 **Response to Comment H-1.** Please see response to comment B-2 regarding inclusion of the
3 FHWA/Caltrans easements in the EIS analysis.

4 **Response to Comment H-2.** The SFOBB was discussed in the Draft EIS under Yerba Buena
5 Island in section 3.1.2 Reuse Plan Area. This discussion has been moved to section 3.1.3
6 Surrounding Land Uses in the Final EIS.

7 **Response to Comment H-3.** Previous projections (ABAG 1996) indicted a job growth rate of 29
8 percent for the Bay Area, while more recent projections (ABAG 2002) estimate a job growth rate
9 of 39.9 percent growth between 1990 and 2015, with the largest growth occurring in Santa Clara
10 and Alameda counties. Due to the substantial difference in anticipated population and job
11 growth between Projections '96 and Projections '02, data from the ABAG's Projections 2002 was
12 used to update this section. This data also was used to revise the analysis of socioeconomic
13 effects in section 4.3 and the cumulative socioeconomic effects described in section 5.1
14 Cumulative Assumptions, and section 5.4 Analysis of Cumulative Impacts. The updated
15 information did not alter the conclusions in these sections.

16 **Response to Comment H-4.** Figure 3-5 has been revised to show the FHWA/Caltrans
17 easements.

18 **Response to Comment H-5.** Please see response to comment B-2 regarding inclusion of the
19 FHWA/Caltrans easements in the EIS analysis. The referenced text has been removed.

20 **Response to Comment H-6.** Please see response to comment B-4 regarding updates of traffic
21 projections to year 2025.

22 **Response to Comment H-7.** The only access to NSTI is from the SFOBB. The EIS documented
23 existing ramp constraints and current and future traffic conditions and impacts on these ramps
24 and SFOBB mainline. The current vehicular access to NSTI is highly constrained. T he only
25 feasible modifications to the ramps are those included in the SFOBB east span project. Other
26 major physical improvements, such as a BART Treasure Island Station, were dropped from
27 consideration. Consequently, the only feasible mitigation measures are TDMs, new ferry
28 services, balancing the ramp volumes, and the creation of a monitoring program that would
29 potentially limit the amount of land use development on NSTI. All of these mitigation
30 measures are presented in section 4.5.1 under Alternative 1, Significant and Mitigable Impacts.

31 The proposed action evaluated in the EIS is the transfer of federal property. Mitigations for
32 potential impacts associated with reuse are identified and agreed to by the City as part of the
33 transfer agreement. Funding for these measures would be undertaken by the City as part of
34 reuse. State legislation has created a regional Water Transit Authority (WTA) to assist in
35 defining a regional ferry system for the future. Treasure Island is one of the key locations for the
36 initial services.

1 **Response to Comment H-8.** Comments on the new eastbound on-ramp on the east side of the
2 tunnel is noted and changes were made in the text. A potential mitigation measure of a
3 metering light is also included. Please see response to comment B-4 regarding traffic impacts
4 on the eastbound on-ramp on the east side of the tunnel.

5 **Response to Comment H-9.** Section 4.5 states that the proposed TDM program could reduce
6 the peak-hour vehicle trips by 6 to 12 percent. Consequently, traffic volumes on the eastbound
7 off-ramp on the west side of Yerba Buena Island could be reduced from 535 vehicles to 471-503
8 vehicles. The capacity of this ramp has been observed to be 500 vehicles per hour. Even with a
9 smaller shift in traffic to the off-ramp on the east side of the island, the impact could be reduced
10 to an nonsignificant level, meaning that drivers would not have to queue on the SFOBB during
11 the PM peak hour. Currently there are no signs to direct vehicles to use the off-ramp on the east
12 side of the island, which is underutilized (approximately 21 percent of the total drivers from the
13 eastbound direction use this ramp).

14 **Response to Comment H-10.** As stated in the EIS, a guiding policy of the Draft Reuse Plan (San
15 Francisco 1996e) is to limit truck service and freight delivery to off-peak hours (generally
16 between 10:00 AM and 3:00 PM and after 7:00 PM on weekdays). In addition, construction on
17 NSTI would vary depending on the specific construction activity and schedule for the various
18 components of the development. In addition, construction impacts are generally short term in
19 nature and can be managed through proper phasing, sequencing, and scheduling. Truck ferries
20 could potentially be used to transport construction materials and equipment to accommodate
21 construction activities.

22 **Response to Comment H-11.** Table 4-8 of the Draft EIS (now Table 4.5-6 of the Final EIS)
23 presents the freeway SFOBB mainline impacts. It shows that there would be no significant
24 impacts on SFOBB both in the eastbound and westbound directions. For the westbound
25 direction, SFOBB will operate at LOS F condition with or without the redevelopment of NSTI.
26 Traffic operation on the SFOBB westbound direction is controlled by the metering lights at the
27 approach to the SFOBB to ensure a free flow condition of SFOBB. If additional traffic from NSTI
28 would cause traffic speed to slow down on the SFOBB, Caltrans could further reduce the
29 number of vehicles getting onto the SFOBB, which could potentially cause secondary impacts.

30 **Response to Comment H-12.** The freeway mainline analysis performed in 1996 (using speed to
31 determine level of service instead of density based on the Highway Capacity Manual 1985) was
32 appropriate at the time it was prepared. Since then the Highway Capacity Manual was
33 modified twice and the current version (2000) recommends the use of density as a measure to
34 determine freeway mainline level of service. While the change of analysis may affect the level
35 of service presented in the Final EIS, it would not affect the proposed mitigation measures.

36 NSTI is an island that can only be accessed by the six freeway on- and off-ramps from SFOBB.
37 Freeway volumes on SFOBB during AM and PM peak hours from both the eastbound and
38 westbound directions are restricted either because of the metering lights (in the westbound
39 direction) or lane geometry (in the eastbound direction). There is no opportunity to modify the
40 ramp geometry (except the eastbound on-ramp on the east side of the tunnel which will be
41 improved as part of the SFOBB East Span project). Feasible measures for the Disposal and

1 Reuse of Treasure Island project to mitigate impacts are documented under "Significant and
2 Mitigable Impacts for SFOBB/I-80 Yerba Buena Island Ramps". These mitigation measures
3 include a TDM program, increased bus and ferry services, traffic signage to balance ramp
4 usage, and a monitoring program to ensure the established goals and objectives in the Draft
5 Reuse Plan are implemented. If the results of the monitoring program indicate that significant
6 impacts still occur, either more aggressive TDM and transit improvements must be implemented
7 or additional developments should be delayed until such improvements are implemented.

8 **Response to Comment H-13.** The average military household size when NSTI was used solely
9 for military purposes was 3.7 persons. It is assumed in the analysis that the units to be reused
10 would have a slightly smaller household size (3.2 persons per unit) because non-military
11 population densities are less than military. The lower household size (3.2 versus 3.7 persons)
12 also is based on the fact that there would be additional constraining factors to non-military
13 families reusing the area that did not exist for military families: children who might have to be
14 shuttled to a variety of after-school activities, medical appointments, shopping, etc. A slightly
15 lower average household size, therefore, was projected for the reuse of the larger units, using
16 the Presidio Planning Socioeconomic Analysis Report as an estimate for consistency. The
17 higher density for reuse of the existing units, as compared to the new ones (3.2 persons in the
18 reused units versus 2.3 persons in the new units), is based on the larger number of
19 bedrooms/square footage than is common in the Bay Area.

20 **Response to Comment H-14.** Analysis presented in the EIS used the ITE rates for only part of
21 the trip generation analysis. Whenever possible, trip generation rates developed by the San
22 Francisco Planning Department were used. When the data was not available from the San
23 Francisco Planning Department, ITE rates were used. The San Francisco Planning Department
24 data were obtained from an extensive survey of a wide range of land uses in 1991 and
25 documented in a report, titled San Francisco Citywide Travel Behavior Survey (CTBS). The key
26 differences between the CTBS and ITE data are that ITE data were mostly obtained from
27 suburban sites, typically in a single-use site, where CTBS data are San Francisco specific and
28 they are mostly in a mixed-use setting. CTBS data have been used for all transportation impact
29 analysis both for individual development projects as well as areawide planning projects, such as
30 the Hunters Point Naval Shipyard EIS/EIR. ITE data were used whenever CTBS data are not
31 available. The assumptions for the trip generation rates are presented in Tables F-8 and F-9 of
32 the Draft EIS (now Tables F-10 and F-11 of the Final EIS).

33 **Response to Comment H-15.** Trip generation, trip distribution, and modal split ratios for the
34 EIS were developed by the San Francisco Planning Department as part of the Citywide Travel
35 Behavior Survey. They are presented in Tables F-14 and F-15 of the Draft EIS (now Tables F-16
36 and F-17 of the Final EIS). Both Tables F-8 and F-9 of the Draft EIS (now Tables F-10 and F-11 of
37 the Final EIS) contain extensive documentation of the assumptions in the footnote.

38 **Response to Comment H-16.** As stated in Appendix F, trip generation rates were obtained
39 from City and County of San Francisco sources. Where San Francisco trip generation rates were
40 not available, rates were obtained from ITE version 5.

1 **Response to Comment H-17.** The internal trip assumptions are presented in Table F-14 of the
2 Draft EIS (now Table F-16 of the Final EIS). This table presents trip distribution pattern for all
3 land use categories by work and non-work related trips, including internal trips. The Draft EIS
4 generally stated that the Island would be developed as a mixed-use district.

5 **Response to Comment H-18.** The percentage of internal work trips for retail in Table F-14 of
6 the Draft EIS (now Table F-16 of the Final EIS) has been corrected to read 10 percent rather than
7 100 percent.

8 **Response to Comment H-19.** The modal split ratios presented in Table F-15 of the Draft EIS
9 (now Table F-17 of the Final EIS) were incorrect and have been modified.

10 Treasure Island is approximately 0.6 miles by 1 mile, and, therefore, most of the land uses
11 would be within reasonable walking distance to each other, except those located on the
12 perimeter of the Island. The majority of the internal trips would be made by transit, pedestrian,
13 and bicycle modes. This assumption is further supported by that fact that Treasure Island
14 would be designed as a mixed-use island with a wide range of land uses, including residential,
15 office, retail, and recreational uses. It would also be designed to include multimodal
16 transportation modes to facilitate pedestrian, bicycle, and transit use. Key transportation
17 policies from the Draft Reuse Plan include:

- 18 • Establish transit and pedestrian-based development on Treasure Island, and
- 19 • Establish a multimodal internal circulation system that emphasizes non-auto modes.

20 **Response to Comment H-20.** The EIS is a program level document based on the description
21 provided by the City and County of San Francisco in its Draft Reuse Plan. The Draft Reuse Plan
22 stated that pedestrian and bicycle facilities would be provided; however, no specific design was
23 presented. This condition was also stated in the SFOBB East Span Seismic Safety Project EIS
24 (page 4-25 under section 4.2.2 Yerba Buena Island).

25 The SFOBB East Span Seismic Safety Project EIS states that: "the bicycle/pedestrian path
26 proposed for the Preferred Alternative (Replacement Alternative N-6) and Replacement
27 Alternatives N-2 and S-4 would terminate on the eastern side of Yerba Buena Island. In the
28 final design phase for a replacement alternative, Caltrans would work with the Navy and/or
29 the City and County of San Francisco (San Francisco) to design appropriate path connections to
30 the local roadway network. Caltrans would consult with the Navy and/or other property
31 owners on Yerba Buena Island about their interest in having directional signage installed for
32 path users on the bridge. If consultation results in agreement on the nature and placement of
33 the signs, Caltrans would install the signage. To the extent the Navy and San Francisco believe
34 the SFOBB bicycle/pedestrian path would create excessive demand on Navy/ San Francisco
35 facilities on Yerba Buena Island, Caltrans would limit access to Yerba Buena Island at the
36 request of the Navy and/or San Francisco. Should the Navy or the San Francisco desire Yerba
37 Buena Island access to be specifically directed, limited, or prohibited, Caltrans would work with
38 these agencies to design signage or barriers. Caltrans does not have responsibility or authority
39 for areas of Yerba Buena Island and Treasure Island once path users leave the path on the East
40 Span.

1 "Caltrans and MTC are currently preparing a feasibility study for a possible
2 bicycle/pedestrian/maintenance path from San Francisco across the West Span and a
3 connection around Yerba Buena Island to a path on the replacement East Span. East of the
4 Yerba Buena Island anchorage, the path would continue on elevated structures which would
5 connect to an at-grade path along the south side of Yerba Buena Island, generally along the
6 existing Treasure Island Road, that would then connect to the East Span path. Any future
7 pathway on the West Span and on Yerba Buena Island would be separate project. The East
8 Span path could accommodate connections to a possible path of the West Span."

9

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
 P O BOX 942896
 SACHAMENTO, CA 94296-0011
 (916) 653-6624 Fax (916) 653-9824
 calshpo@mail2.quiknet.com



June 28, 2002

REPLY TO: USN020508A

Ron Plaseied, Base Closure Manager
 Department of the Navy
 Southwest Division
 Naval Facilities Engineering Command
 1220 Pacific Highway
 SAN DIEGO CA 92132-5190

Re: Draft Environmental Impact Statement for the Disposal and Reuse of Naval Station
 Treasure Island, City and County of San Francisco.

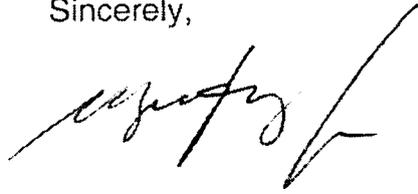
Dear Mr. Plaseied:

Thank you for submitting to our office your May 7, 2002 letter and copy of the "Draft Environmental Impact Statement (DEIS) for Disposal and Reuse of Naval Station Treasure Island," a property located in the City and County of San Francisco. The closure of the facility is being done under the direction of the Defense Base Closure and Realignment Act (DBCRA). The 103rd U.S. Congress approved the closure of Naval Station Treasure Island (NSTI) in September 1993. The DEIS seeks to evaluate the potential impacts on cultural resources that could result from Navy disposal of surplus federal properties within NSTI and subsequent reuse of those federal properties. The Navy is considering four alternatives, including a No-Action Alternative, for implementation of the disposal and reuse of the properties on NSTI. The alternatives are detailed in the Executive Summary of the DEIS and in other sections of the document that seek to measure the impacts of the alternatives on the natural and human environment.

The Navy is seeking our comments on its DEIS in accordance with 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act. It has been noted in Sections 3.4 and 4.4 of the DEIS that historic properties on Treasure Island and Yerba Buena Island have been identified and evaluated by the Navy in consultation with our office. A number of these properties have been determined, by consensus, to be eligible for inclusion on the National Register of Historic Places (NRHP). The Navy's identification and evaluation of historic properties on NSTI, as described in the DEIS, appears adequate and meets the standards set forth in 36 CFR 800.4. We will provide comments on the proposed closure and reuse of NSTI once the Navy has selected a preferred alternative and has provided documentation regarding its potential impacts on historic resources.

Thank you again for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

A handwritten signature in black ink, appearing to read "Knox Mellon", written in a cursive style.

Dr. Knox Mellon
State Historic Preservation Officer

1 **Response to Comments**

2 **Response to Comment I-1.** Comment noted.

3

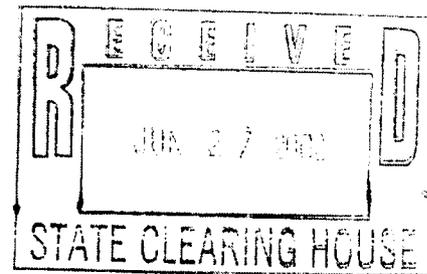
SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

50 CALIFORNIA STREET, SUITE 2600
SAN FRANCISCO, CALIFORNIA 94111
PHONE: (415) 352-3600
http://www.bcdc.ca.gov

June 26, 2002

Southwest Division
Naval Facilities Engineering Command
1230 Columbia Stret, Suite 1100
San Diego, CA 92101-8517

clear
to 12/26/02
w/tee



Attn: Ms. Timarie Seneca

and

City and County of San Francisco
Treasure Island Development Authority
Treasure Island
San Francisco, California 94130

Attn: Ms. Ann Marie Conroy

SUBJECT: BCDC Inquiry File No. SF.YB.7120.1, Comments on Draft Environmental Impact Statement For the Disposal and Reuse of Naval Station Treasure Island, State Clearinghouse Number 2002052061

Greetings:

This letter conveys the staff comments on the on Draft Environmental Impact Statement For the Disposal and Reuse of Naval Station Treasure Island (DEIS), State Clearinghouse Number 2002052061, dated May 2002 and received in our office on May 14, 2001. Although the Commission has not had an opportunity to review the DEIS, we trust the following staff comments based on the Commission's law, the McAteer-Petris Act (Act), and the policies of the Commission's *San Francisco Bay Plan* (Bay Plan), will be considered by the United States Navy when preparing the final DEIS for the transfer of Naval Station Treasure Island (NSTI).

The DEIS assesses potential environmental impacts of the disposal and reuse of NSTI from the United States Navy (USN) to the City and County of San Francisco (City) and the potential significant impacts of three proposed reuse alternatives. Draft Reuse Plan Alternative 1, Alternative 2 and Alternative 3. A fourth alternative, no action, assumes no disposal of the property and retention of NSTI by the Navy in caretaker status. The DEIS states that the only significant non-mitigable impact is would occur under alternative 2 and involves the demolition of historic buildings.

Jurisdiction.

On Page 3-4 through 3-6, the DEIS summarizes the Commission's authority under the McAteer-Petris Act, including the *San Francisco Bay Plan* and the *San Francisco Bay Area Seaport Plan* and the federal Coastal Zone Management Act. The discussion of the Commission's jurisdiction and authority is thorough and for the most part accurate with a few minor inaccuracies. The DEIS states, in part that "the the *San Francisco Bay Plan* and the *San Francisco Bay Area Seaport Plan* are the approved local coastal plans for complying with CZMA in San Francisco Bay." This is partially correct. The Commission's approved federal Coastal Management Program does include these plans, among others. The Commission's approved management program includes its laws, the McAteer-Petris Act and the Suisun Marsh Preservation Act, its plans the *San Francisco Bay Plan*, *Suisun Marsh Preservation Plan*, *San Francisco Bay Area Seaport Plan*, *San Francisco Waterfront Special Area Plan*, and other Special Area Plans, and many other documents. The DEIS also states on page

J-1

J-2

3-5 that "the *San Francisco Bay Plan*, adopted by BCDC in January 1969 and amended through 1997..." The *San Francisco Bay Plan* has been amended by the Commission 10 times since 1997 and was last amended on April 18, 2002. Nine of the Bay Plan amendments adopted since 1997 are in full force and effect, and the April 18, 2002 amendment is in effect for the Commission's review of permits, but not yet for federal consistency reviews. The Commission submitted a notice of a routine program change to the Office of Coastal Resource Management for its concurrence and for public comment on June 21, 2002. Within 30 days or by July 20, 2002, these new policies will be in force and effect for federal consistency reviews. Therefore, they are quoted below as they will apply to the Commission's federal consistency review of the USN's proposed disposal of NSTI.

J-2

The maps in Figures 2-3, 2-4 and 2-5 do not clearly show the location of the proposed land uses in relation to the location of the Commission's jurisdiction. From our review of the DEIS, the elements of the project which appear to be located in the Commission's jurisdiction from the three proposed alternatives include: (1) waterfront trails or promenades; and (2) roadways; (3) conference center uses; (3) new ferry terminals, (4) marina expansion; (5) public open space; (6) fill production uses; (7) institutional and community uses; (8) theme park uses; and (9) publicly-oriented uses golf course and wildlife habitat; and (10) shoreline stabilization. The Final DEIS should identify those project elements within the Commission's jurisdiction so that we can more accurately assess their potential effects on the Coastal Zone. Although the DEIS correctly states that NSTI is not currently within the Coastal Zone, development of the uses proposed and evaluated in the DEIS will occur within the Commission's jurisdiction and will require permit authorization from the Commission. Therefore, these proposals will affect the Coastal Zone and should be evaluated pursuant to the Commission's approved federal coastal management program.

J-3

Table 2-4 Summary of Significant Environmental Consequences and Mitigation Measures.

The Land Use category in this table fails to mention the potential inconsistency of proposed land uses for Yerba Buena Island with the Bay Plan waterfront park priority use designation of the site. The FEIS should evaluate the consistency of the proposed reuse plan with the Bay Plan waterfront park priority use designation and what if any changes to the proposed uses would address this inconsistency. In addition, under the topic of Biological Resources on page 2-28 in this table, the DEIS states that under all alternatives, "significant impacts to mudflat habitat, including eelgrass beds, may occur as a result of increased pedestrian and boater activity around Clipper Cove. Expanding the marina or constructing a yacht harbor, new docks or other structures that would cover the surface of the water could impact eelgrass beds, but would require a permit from the COE." Section 66605(a) of the McAteer-Petris act provides, in part "that further filling of San Francisco Bay...should be authorized only when the public benefits from the fill clearly exceed the public detriment from the loss of the water areas..." The FEIS should discuss the public benefits that would accrue from the proposed fill and evaluate these benefits against the public detriment from the loss of important habitat values such as eel grass beds. This analysis should include a cumulative analysis of the proposed impacts in conjunction with the impacts of the SFOBB East Span replacement project which will impact portions of existing eel grass beds in the Bay on the north shore of Yerba Buena Island. The section on Biological Impacts in this table does not indicate that potential increased impacts on harbor seals from the proposed increase in boating activity would be significant. This may not be an accurate assessment of the impacts to harbor seals. The FEIS should include a more extensive evaluation of the types of impacts that could occur. Increased boating activity would increase the interactions between humans and harbor seals and if an increase is expected, disturbance of harbor seals would occur as a result. The DEIS should provide a more thorough analysis supporting the determination that these impacts would not be significant, including a discussion of the threshold of significance, and a cumulative impact analysis that considers the impacts of the SFOBB East Span Replacement project and the Richmond San Rafael Bridge seismic retrofit project which also have impacts on Harbor Seals.

J-4

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J-7

San Francisco Bay Plan Recreation Policies. Following staff's review of the DEIS, and the proposed reuse alternatives, it appears that certain uses proposed in the alternatives for Yerba Buena Island, including residential and some commercial uses are inconsistent with the Commission's

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waterfront park priority use designation and the Bay Plan recreation policies. The Bay Plan policies on recreation identify, among other things, the need to focus shoreline park planning on docking and picnic facilities for boaters, the opportunity to view nature and open space without adversely affecting habitat and access to the Bay through waterfront trails, recreational boating facilities views and fishing facilities. The Bay Plan policies on recreation also state, in part, that "...[l]imited commercial recreation facilities, such as small restaurants, should be permitted within waterfront parks, provided they are clearly incidental to the park use, are in keeping with the basic character of the park, and do not obstruct public access to and enjoyment of the Bay. Limited commercial development may be appropriate (at the option of the park agency responsible) in all parks shown on the Bay Plan maps except where there is a specific note to the contrary." (Recreation Policy 5(a)). The policies also state, in part, that "recreational facilities that do not need a waterfront location, e.g., golf courses, and playing fields should generally be placed inland, but may be permitted in shoreline areas if they are part of park complex that is primarily devoted to water-oriented uses." The Bay Plan designates the entirety of YBI for waterfront park, beach priority use. Bay Plan Map 4, note 1⁹ requires that areas of YBI "released from military use should be developed for recreation uses." The Reuse Plan makes specific provision for recreation uses on YBI by setting aside 30 acres of inaccessible hillside areas for viewing as open space; by preserving the existing picnic area at the western end of Clipper Cove; and by designating Building 262 for commercial recreation use. Thus, commercial uses and active recreation uses that are appropriate to the park at NSTI could be consistent with the Bay Plan.

J-8

As outlined in the DEIS, the proposed reuse plan at NSTI considers three alternative land use scenarios, including Alternative 1: full build-out of the communities draft reuse plan, at an accelerated rate (completion in 2015 v. 2030), Alternative 2: the Community Reuse Plan modified by the recommendations made by the Urban Land Institute; and Alternative 3: a lower level of development than that envisioned in the Draft Reuse Plan, in addition to the no action alternative. Figure 2-1 and Table 2-2 on pages 2-10 and 2-12 of the DEIS describe the general acreage of proposed land uses under the three alternatives and summarize the specific uses that might occur under the broad headings of public oriented, Institutional and community, residential, and open space/recreation. The range of uses that could occur under these headings is quite broad. The DEIS also states that recreation uses could include both active and passive recreation uses. From reviewing the maps in the DEIS and the description of the proposed reuse alternatives, it is not possible to tell to what degree land uses that may be inconsistent with the Commission's priority use designation would be located within the waterfront park priority use area.

J-9

On page 4-2 through 4-9 of Section 4.1, Land Use, the DEIS fails to mention the San Francisco Bay Plan (BayPlan) designation of Yerba Buena Island for waterfront park priority use. The DEIS states that "Implementing Alternative 1 would increase public access to existing open space areas, including the San Francisco Bay shoreline, and would allow development of recreational facilities, which would be consistent with the San Francisco Bay Plan." The DEIS provides no basis for this conclusion, based on the Commission's Bay Plan waterfront park priority use designation and the recreation policies. The FEIS should evaluate the consistency of the proposed land uses with this priority use designation.

In general, the proposed reuse alternatives raise the following two issues: whether the proposed mix of recreation and non-recreation uses within the Commission's Bay Plan priority use area is consistent with the Bay Plan priority use designation, and whether the alternatives that contemplate non-park uses at NSTI on Yerba Buena Island would be consistent with the Commission's federally approved coastal management plan and whether any of these alternatives would negatively affect the coastal zone. As noted above, the recreation policies state that commercial development should be provided at a shoreside park, only if appropriate for the site and not expressly prohibited in the Bay Plan. Since it is not possible to tell the amount or type of commercial use contemplated in the Waterfront Park Beach priority use area, we are unable to assess the consistency of such use with the Bay Plan policies. Therefore, the blanket statement of consistency with the Bay Plan policies on page 4-3 of the DEIS is premature, and inconsistent with the prior statement that a Bay Plan amendment would be required in order to approve the uses proposed.

J-10

Moreover, it is unclear from the maps and descriptions provided whether residential uses within the priority use area, as proposed would have a negative effect on the coastal zone. It is clear from reviewing the DEIS, alternative 2 most closely conforms to the Bay Plan park priority use designation and recreation policies. The other two alternatives may raise significant issues with regard to the Bay Plan, depending on how these uses are located, and what their affect might be on the public's ability to use the shoreline open space areas. We will need additional information regarding the location and intensity of the proposed non-park uses of the site in order to accurately assess the consistency of the proposed alternatives with the recreation policies in the San Francisco Bay Plan. The Final DEIS should assess whether any proposed active recreational uses within the shoreline areas would be consistent with the Bay Plan recreation policies.

J-10

The majority of the shoreline band on Treasure Island is proposed for passive recreation uses. In general, the reuse plan envisions the shoreline edge being developed with the shoreline protection system (riprap or sheet pile or some combination), a shoreline trail in a landscaped corridor inboard of the shoreline protection system, and a perimeter roadway. Buildings are to be set back at least 100 feet from the shoreline. Since the Reuse Plan establishes policy calling for continuous public access to the shoreline, it can be considered generally consistent with the existing Bay Plan recreation policies and Bay Plan Map 4 policy 18. However, recent amendments to the San Francisco Bay Plan policies on Map 4 regarding Treasure Island addressing the harbor seal haul out site there may affect the nature of public access that can be allowed there.

J-11

Visual Resources. The discussion of impacts on views in Section 4.2 Visual Resources evaluates visual impacts for each of the three alternatives. This section includes an evaluation of the on-site views and visual access for each alternative. In the analysis of the alternatives, the DEIS mentions that beneficial effects would occur because increased public access would provide more opportunities to views. The analysis seems to focus on development on Treasure Island with little or no analysis of the visual impacts or benefits that would occur on Yerba Buena Island. The FEIS should include a discussion of whether the alternatives would modify or remove any existing buildings on Yerba Buena Island to improve views, particularly if the proposed hotel building would block existing view corridors. The FEIS should also discuss in more detail what the opportunities for improving public views are on Yerba Buena Island and how each of the alternatives takes advantage of these opportunities.

J-12

Transportation. On page 3-53, the DEIS, in section 3.5.4 Pedestrian and Bicycle Circulation, describes existing conditions on the island, but does not mention the addition of pedestrian and bicycle access to the east and west spans of the San Francisco-Oakland Bay Bridge. The State of California Department of Transportation is constructing a new east span that will include pedestrian and bicycle access to Yerba Buena Island. The Bay Area Toll Authority has prepared an analysis of the design and cost of providing pedestrian and bicycle access to the west span of the SFOBB as required in State legislation. The DEIS should evaluate the proposed project's effects on these two pedestrian and bicycle facilities. The discussion in Section 4.5 Transportation makes no mention of the pedestrian and bicycle access from the new east span of the SFOBB.

J-13

Biological Resources. On pages 3-59 through 3-65, the DEIS discusses existing biological resources on the site. The DEIS does not mention Pacific Herring (*Clupea pallasii*) as a fish species occurring at the site. However, Section 4.8 discusses potential impacts to the herring fishery, and identifies the impacts as not significant. The Commission's Bay Plan fish, other aquatic organisms and wildlife policies state in part that "to assure the benefits of fish, other aquatic organisms and wildlife for future generations, the greatest extent feasible, the Bay's tidal marshes, tidal flats and subtidal habitat, should be conserved, restored and increased." The Bay Plan policies on Subtidal Habitat state, in part that, "Any proposed filling or dredging project in a subtidal areas should be thoroughly evaluated to determined the local and Bay-wide effects of the project on: (a) the possible introduction or spread of invasive species; (b) tidal hydrology; (c) fish, other aquatic organisms and wildlife; (d) aquatic plants; and (e) the Bay's bathymetry. Projects in subtidal areas should be designed to minimize and, if feasible, avoid any harmful effects....Subtidal areas that are scarce in the

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Bay or have an abundance and diversity of fish, other aquatic organisms, and wildlife (e.g., eelgrass beds, sandy deep water or underwater pinnacles) should be conserved. Filling, changes in use and dredging projects in these areas should therefore be allowed only if: (a) there is no feasible alternative; and (b) the project provides substantial public benefits. The FEIS should include a supplemental analysis of the impacts to the herring fishery, that considers these Bay Plan policies. It is likely that the Commission would deem any impacts to the eelgrass beds or the herring fishery at NSTI as significant.

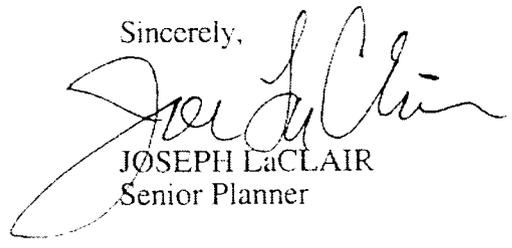
J-14

On page 4-78, the DEIS states that "under alternative 1, the number of boat slips in the proposed marina would quadruple" and on page 4-79, the DEIS states that "the level of disturbing boat activity is not expected to differ substantially from present conditions." This assessment is inaccurate, both because of the certain increase in boater activity in the area as a result of expanding the marina, and a failure to assess impacts from other craft, particularly kayaks that are ever more frequently plying the waters of San Francisco Bay, especially in the vicinity of Yerba Buena Island. As improvements are made to recreation facilities on NSTI during its reuse, the frequency of small craft use in the area will also likely increase. Citizen efforts are underway to create a "water trail" around San Francisco Bay for kayaks and canoes. This trail would include landing and launching sites on Yerba Buena and Treasure Islands. The FEIS should reevaluate the likely impacts to harbor seals that would occur from the reuse of NSTI, including an analysis of small craft impacts. It is likely that active management and an information program will be necessary to address this potentially significant impact.

J-15

Thank you, for the opportunity to comment on the DEIS for the transfer and reuse of Naval Station Treasure Island. If you have any questions regarding these comments or any other matter, please contact me by phone at (4415) 352-3656 or email joel@bcd.ca.gov

Sincerely,



JOSEPH LaCLAIR
Senior Planner

cc: Katie Shulte Joung, California State Clearinghouse
Ann Marie Conroy, Treasure Island Development Authority

1 **Response to Comments**

2 **Response to Comment J-1.** The referenced text in section 3.1 of the Final EIS has been revised
3 to read:

4 The Bay Area Seaport Plan and the San Francisco Bay Plan, discussed below, are
5 the approved local coastal plans in the portion of San Francisco Bay around NSTI
6 and, in conjunction with other BCDC laws, Special Area Plans, and other
7 guidance, form BCDCs management program for complying with CZMA.

8 **Response to Comment J-2.** The referenced text in section 3.1 of the Final EIS has been revised
9 to read:

10 The San Francisco Bay Plan, adopted by BCDC in January 1969 and amended
11 through 2002, includes policies...

12 It is noted that 2002 Bay Plan amendments may be in effect at the time of NSTI disposal.

13 **Response to Comment J-3.** As stated in section 3.1.1, Regulatory Considerations, federal
14 property such as NSTI is not subject to the CZMA and, therefore, is not subject to the priority
15 use designations and policies of the Bay Plan. The expectation is that BCDC would amend the
16 Bay Plan to incorporate priority use designations for Treasure Island and Yerba Buena Island,
17 following transfer of the property out of federal ownership. At that time, all specific reuse
18 development would be subject to these designations through BCDC permitting authority.

19 The alternatives analyzed in the EIS are based on conceptual plans that delineate the general
20 arrangement of land uses but do not depict the specific locations of development within these
21 areas. It is not possible in the EIS to meaningfully assess the consistency of specific
22 development activities with BCDC policies based on these general development plans, as the
23 commentor has noted. Although priority use designations are not in effect for NSTI, detailed
24 reuse plans are not available, and some specific uses under the alternatives may be inconsistent
25 with the proposed priority use designations, it appears that most of the reuse concept would be
26 substantially consistent with future Bay Plan policies for NSTI. The text in section 4.1
27 addressing potential impacts to land use policy under each reuse alternative has been revised to
28 reflect this.

29 **Response to Comment J-4.** Please see response to comment J-3 above regarding consistency
30 with BCDC policies.

31 **Response to Comment J-5.** Eelgrass is not found in the area of marina construction and would
32 not be affected. The text in Table 2-4 of the Final EIS has been corrected to read:

33 Expanding the marina or constructing a yacht harbor, new docks, or other
34 structures that would cover the surface of the water would impact Waters of the
35 Untied States ~~could impact eelgrass areas~~ but would require a permit from the
36 BCDC and the COE.

1 The appropriate text regarding this impact in section 4.8 (Biological Resources) of the
2 Final EIS, has also been revised.

3 **Response to Comment J-6.** Please see response to comment J-5 above regarding impacts to
4 eelgrass beds. Potential cumulative impacts to eelgrass beds from reuse alternatives and the
5 SFOBB east span replacement project are discussed in Chapter 5.

6 **Response to Comment J-7.** The determination that potential impacts to harbor seals would be
7 less than significant is based on the fact that the harbor seal haul-out site on Yerba Buena Island
8 is on US Coast Guard property and is not part of the reuse plan area, and that no modifications
9 or public access are considered in this area as part of the disposal and reuse of NSTI.
10 Furthermore, the haul-out site is in a remote location with very steep topography that is a
11 natural obstacle to access by land.

12 The population of approximately 700 harbor seals in the San Francisco Bay and at Yerba Buena
13 Island is robust. The number of seals has remained fairly constant since the early 1970s, even in
14 the midst of increasing development. The local sub-population of harbor seals at Yerba Buena
15 Island has also remained steady, with several hundred harbor seals using Yerba Buena Island as
16 a haul-out site year-round.

17 While an increase in boat traffic in the area could be expected under each of the reuse
18 alternatives, the haul-out site is far removed from the area where boat traffic would increase.
19 Additional boat traffic that could occur near the haul-out site would be limited by the fact that
20 the site is in a small rocky cove that is difficult to access by boat. Access is further limited by
21 NMFS signage clearly stating that the seals are protected under the MMPA and that the public
22 must stay away. While the routes of proposed ferries are not known, it is unlikely that they
23 would be close enough to the shoreline to affect the haul-out site.

24 Based on the above factors, the Navy has determined that potential impacts to the harbor seals
25 from the disposal and reuse of NSTI do not meet the criteria for significance stated in the EIS
26 and would not adversely affect any species afforded protection under the MMPA. As part of
27 the disposal action, the Navy has consulted with NMFS about potential impacts from disposing
28 of the property. NMFS has closed consultation and has issued its concurrence with the Navy's
29 assessment of impacts.

30 **Response to Comment J-8.** Please see response to comment J-3 above regarding consistency
31 with BCDC policies.

32 **Response to Comment J-9.** Please see response to comment J-3 above regarding consistency of
33 with BCDC policies.

34 **Response to Comment J-10.** Please see response to comment J-3 above regarding consistency of
35 with BCDC policies.

36 **Response to Comment J-11.** Please see response to comment J-3 regarding consistency of with
37 BCDC policies. The seal haulout area is not within NSTI and therefore no development or

1 public access would occur in the area. Please see response to comment J-7 above regarding
2 potential impacts to harbor seals.

3 **Response to Comment J-12.** Specific development plans for Yerba Buena Island, such as the
4 removal, addition, or modification of buildings, including the conference center, have not been
5 finalized. Analysis of potential visual impacts should be conducted by the designated property
6 recipient or private developer as part of the environmental review for specific development
7 plans implemented under reuse. Nevertheless, the perimeter areas on Yerba Buena Island are
8 expected to remain open space, based on the steep topography of these areas and the land use
9 concept illustrated in the Draft Reuse Plan (San Francisco 1996e). This also is stated in section
10 4.2, Visual Resources: "It is assumed that existing view corridors to the Bay would be kept open,
11 with additional open space perimeter opportunities and public access opportunities provided
12 along the waterfront open space."

13 **Response to Comment J-13.** Please see response to comment H-20 regarding bicycle and
14 pedestrian access to Yerba Buena Island from the new SFOBB.

15 **Response to Comment J-14.** Please see response to comment J-3 regarding consistency of with
16 BCDC policies.

17 The potential for impacts to the Pacific herring were evaluated in the Draft EIS and it was
18 determined that potential impacts to this species would not be significant. Pacific herring was
19 discussed on page 3-79 of the Draft EIS. Potential impacts to this species were discussed with
20 regard to dredging impacts mudflat and eelgrass habitat (page 4-77 of the Draft EIS). No other
21 in-water construction was proposed that could potentially impact the species. Pacific herring is
22 not discussed under sensitive resources because it has no listing status and therefore no federal
23 protection.

24 **Response to Comment J-15.** Please see response to comment J-7 above regarding potential
25 impacts to harbor seals.

26



California Regional Water Quality Control Board

San Francisco Bay Region



Gray Davis
Governor

Winston H. Hickox
Secretary for
Environmental
Protection

Internet Address: <http://www.swrcb.ca.gov>
1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510) 622-2300 • FAX (510) 622-2460

Date: JUN 20 2002
File No. 2169.6013 (SLR)

Ms. Timarie Seneca
BRAC Operations Office,
Southwest Division Naval Facilities Engineering Command, Code 06CM.TS
1230 Columbia Street, Suite 1100
San Diego, CA 92101-8517

Subject: Comments on Draft Environmental Impact Statement, Naval Station Treasure Island, San Francisco

Dear Ms. Seneca:

Regional Water Quality Control Board (RWQCB) staff reviewed the draft report titled *Disposal and Reuse of Naval Station Treasure Island, Draft Environmental Impact Statement (EIS), San Francisco, California*, received on May 10, 2002, and prepared by Southwest Division, Naval Facilities Engineering Command. The EIS was prepared to comply with the National Environmental Policy Act (NEPA). The EIS evaluates three reuse alternatives proposed in the Draft Reuse Plan, dated July 1996, prepared by the Office of Military Base Conversion, Planning Department, City and County of San Francisco and the San Francisco Redevelopment Agency. The EIS also evaluates the No Action Alternative in which the Navy would retain ownership in a caretaker status. The companion Environmental Impact Report (EIR) will be prepared by the City and County of San Francisco and is due later this summer.

The EIS analyzes potential environmental impacts relating to land use; visual resources; socio-economics; cultural resources; transportation; air quality; noise; biological resources; geology and soils; water resources; utilities; public services; and hazardous materials and wastes. The following comments have been prepared for this document.

Section 3.10.1 Regulatory Considerations - (p. 3-119) Please state the beneficial uses of groundwater at Treasure Island and Yerba Buena Island.] K-1

Section 3.10.3 Ground Water (p. 3-122) In addition to the recommendations presented in the pilot beneficial use study (RWQCB, 1996), the RWQCB submitted a letter to the Navy stating that the quality and the hydrogeologic conditions of the groundwater beneath Treasure Island is such that the water is not a potential source of drinking water pursuant to SWRCB Resolution 88-63 and Regional Water Quality Control Board (RWQCB) Resolution No. 89-39. Please add this to the report.] K-2

Section 3.13.3 Petroleum Hydrocarbons - (pp. 135-136) Please update the recommendations for the site remediation to reflect the most recent decisions made at each site, as stated in the draft Corrective Action Plan (CAP)(2002).] K-3

Ms. Seneca

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Section 3.13.3 Site 08 - (p. 138) Please clarify what additional research is planned to evaluate ecological risk from potential surface water runoff at Site 8.] K-4

Section 3.13.3 Site 09 - (p. 138) Please update the site summary for Site 09 to state that although no volatile organic compounds (VOCs) were detected in 09-MW01, additional investigation is being conducted to evaluate the extent of contaminants in the hoist area.] K-5

Section 3.13.3 Site 10 - (p. 139) Please update the schedule for the additional investigation at Site 10.] K-6

Section 3.13.3 Site 21 - (p. 141) The document states "recent data reviewed by the RWQCB suggests that discharges are occurring to the Bay". What is the source of this statement? Current data indicate that VOCs are not migrating to the Bay.] K-7

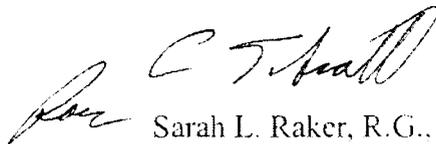
Section 3.13.3 Site 27 - (p. 142) What is the status of the RWQCB Order and the Compliance Plan at the Clipper Cove site?] K-8

Section 4.10.2 Alternative 2 (Water Resources) - (p. 4-100) As stated in the text "Under Alternative 2, a golf course would be developed on the northern portion of Treasure Island". Please describe the additional impacts associated with the proposed golf course and the mitigation measures that will be required. For example, a chemical application and management plan (CHAMP) will be required to control chemical applications and discharge to surface water] K-9

Section 4.11 Utilities - (p. 4-103) Please include a discussion that all appropriate efforts will be made to maximize use of reclaimed water for landscape irrigation including golf course irrigation, under each of the proposed alternatives.] K-10

If you have questions, please feel free to contact me by telephone at (510) 622-2377 or by electronic mail at slr@rb2.swrcb.ca.gov.

Sincerely,



Sarah L. Raker, R.G., C.H.G.
Associate Engineering Geologist

EIS comments.doc

cc: Mr. David Rist, Department of Toxic Substances Control
Mr. Phillip Ramsey, U.S. Environmental Protection Agency
Ms. Martha Walters, San Francisco Redevelopment Agency

1 **Response to Comments**

2 **Response to Comment K-1.** The following text has been added to section 3.10.1 of the Final
3 EIS:

4 The San Francisco Bay RWQCB has determined that groundwater beneath
5 Treasure Island is not a potential source of drinking water and is therefore not
6 considered to be a beneficial use. Groundwater is not used for any beneficial use
7 at NSTI.

8 **Response to Comment K-2.** The following text has been added to section 3.10.3 of the Final
9 EIS:

10 The San Francisco Bay RWQCB determined that ground water beneath Treasure
11 Island is not a potential source of drinking water, pursuant to SWRCB Resolution
12 no. 88-63 and RWQCB Resolution No. 89-39, because of the quality and
13 hydrologic conditions of the ground water.

14 **Response to Comment K-3.** The summaries of IR and CAP sites in section 3.13 Hazardous
15 Materials and Waste have been updated to reflect current status. Please note that restoration
16 pursuant to CERCLA is subject to frequent change. Information on any status updates for sites
17 can be obtained from the BRAC Operations Office, as listed in section 3.13.3 of the EIS.

18 **Response to Comment K-4.** An RI is currently underway at IR Site 08. A determination as to
19 any additional investigations and possible remedial actions will be made following completion
20 of the RI. Information on any future investigations can be obtained from the BRAC Operations
21 Office, as listed in section 3.13.3 of the EIS.

22 **Response to Comment K-5.** An RI is currently underway at IR Site 09. A determination as to
23 any additional investigations and possible remedial actions will be made following completion
24 of the RI. Information on any future investigations can be obtained from the BRAC Operations
25 Office, as listed in section 3.13.3 of the EIS.

26 The following text has been added to the discussion of IR Site 09 in section 3.13 of the Final EIS:

27 Navy completed additional investigation in January 2003 and is currently
28 preparing an RI report in anticipation of a No Action ROD. Site closure is
29 anticipated in late 2004.

30 **Response to Comment K-6.** The discussion of IR Site 10 in section 3.13 of the Final EIS has been
31 revised to read:

32 Navy completed additional investigation in January 2003 and is currently
33 preparing an RI report in anticipation of a No Action ROD. Site closure is
34 anticipated in late 2004.

1 **Response to Comment K-7.** Several rounds of groundwater sampling have been conducted at
2 IR Site 21 and no VOC discharge has been documented. The text regarding migration of VOCs
3 to the Bay has been deleted.

4 **Response to Comment K-8.** The RWQCB Order and the Compliance Plan were issued for
5 investigation of the skeet range in Clipper Cove prior to commencement of remedial activities
6 on NSTI pursuant to CERCLA. With the concurrence of RWQCB, investigation of this site was
7 incorporated into the CERCLA process. The FFSRA has superseded the RWQCB Order and
8 Compliance Plan; the schedule for action at the former Clipper Cove skeet range (IR Site 27) is
9 now part of FFSRA.

10 **Response to Comment K-9.** Potential significant impacts from hazardous materials use at the
11 golf course under Alternative 2 are addressed in section 4.13 Hazardous Materials and Waste,
12 of the EIS. The text in this section has been revised to read:

13 For example, golf course design and operation could include BMPs for the
14 storage, handling, and use of pesticides or fertilizers, including a chemical
15 application and management plan.

16 The following text has been added to section 4.10 (Water Resources) under the discussion of not
17 significant impacts for Alternative 2:

18 *Water Quality* (Factors 1 and 2). Not significant impacts to water quality would
19 be similar to those described for Alternative 1 with the exception that Alternative
20 2 would have a slightly greater potential impact to water quality as a result of the
21 development of a golf course. Chemicals associated with the golf course could
22 adversely affect water quality if not adequately managed. Hazardous materials
23 management would be subject to all regulatory controls. In addition, a chemical
24 application and management plan would be required to address the
25 management of these materials.

26 **Response to Comment K-10.** The Navy will have no authority or responsibility over actual
27 reuse activities and, consequently, the Navy is not in a position to impose specific mitigation
28 measures such as use of reclaimed water. The designated property recipient may encourage or
29 require use of reclaimed water for reuse activities. Although the draft development plan for
30 NSTI submitted to the City and County of San Francisco in July 2002 is not final, the plan does
31 call for use of reclaimed water for irrigation.

32

CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202



PAUL D. THAYER, Executive Officer

(916) 574-1800 FAX (916) 574-1810

California Relay Service From TDD Phone 1-800-735-2922

from Voice Phone 1-800-735-2929

Contact Phone: 916-574-1227

Contact FAX: 916-574-1955

June 24, 2002

File Ref: SCH 2002052061

US Navy, Southwest Division
Naval Facilities Engineering command
1230 Columbia Street, Suite 1100
BRAC Operations Office
San Diego, CA 92101-8517
ATTN: Ms. Timarie Seneca

Dear Ms. Seneca:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (EIS) for the Disposal and reuse of Naval Station Treasure Island, San Francisco, California.

Under the Land Use section (3.1), Page 3-7, the EIS states that the State Lands Commission has allowed existing specialized or single-purposes facilities to continue as nonconforming public trust uses for their useful life. This reuse issue should be further clarified by adding the language in Section 9(a), (b), (c) of Chapter 898, Statutes of 1997.

- **Section 9, Subdivision (a)** "...existing buildings or structures on the Trust Property which are incapable of being devoted to trust purposes may be used for other purposes, consistent with the reuse plan for the Trust Property, for the remaining useful life of such buildings or structures."
- **Section 9, Subdivision (b)** " The Authority and the State Lands Commission shall, by agreement, establish the remaining useful life of the buildings and structures described in subdivision (a), either individually or by category, provided that in no case shall the useful life of any building or structure be deemed to extend less than 25 years or more than 40 years from the effective date of this act."
- **Section 9, Subdivision (c)** "The maintenance and repair of any of the existing buildings or structures described in subdivision (a), and any structural or other alterations necessary to bring such buildings or structures into compliance with applicable federal, state, and local health and safety standards, including, but not limited to, seismic upgrading, shall be permitted, provided such activities will not enlarge the footprint or the size of the shell of such buildings or structures."

L-1

If you have any questions, please do not hesitate to contact me at the number referenced above.

Sincerely,



Grace Kato
Public Land Management Specialist

cc: Betty Silva

1 **Response to Comments**

2 **Response to Comment L-1.** It is the Navy's position that the United States acquired full fee
3 simple absolute title to all the property at NSTI, including the tidelands and submerged lands,
4 and that the property would not be subject to the public trust upon disposal by the Navy.
5 However, the State of California believes that all former and existing tidal and submerged lands
6 on Treasure Island would be subject to the public trust in the event of a transfer of the property
7 from the Navy. In 1997, the Treasure Island Conversion Act (TICA) (1997 Cal. Stat. 898, AB 699)
8 authorized the City and County of San Francisco to establish TIDA as the redevelopment
9 agency responsible for redeveloping NSTI. The act also granted TIDA power to administer and
10 control property at NSTI, which the State of California identified as land that will be subject to
11 the public trust upon its release from federal ownership. Thus, the City and County of San
12 Francisco's reuse planning process assumes the public trust applies, despite the Navy's
13 contention that it does not. The text in section 3.1.1 has been revised to more accurately
14 characterize the Navy's position on the public trust at NSTI.

15



June 17, 2002

US Navy, Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
BRAC Operations Office
San Diego, CA 92101-8517
Attn: Ms. Timarie Seneca

Subject: DEIS for the Disposal and Reuse of Naval Station Treasure Island

Dear Ms. Seneca,

I am writing provide comments for the San Francisco Bay Trail Project on the U. S. Navy's Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of Naval Station Treasure Island. Below, you will find a general overview of the Bay Trail and its interest in the project, as well as specific comments pertaining to the DEIS.

Bay Trail Overview & Interest in Project

The Bay Trail Project is a nonprofit organization administered by the Association of Bay Area Governments (ABAG) that coordinates the implementation of the Bay Trail. When complete, the Bay Trail will be a continuous 400-mile recreational pathway that will encircle San Francisco and San Pablo bays in their entirety. It will link the shoreline of all nine Bay Area counties, as well as 47 cities. A little more than half the length of the proposed system has been developed to date. Enclosed, you will find an overview map of the Bay Trail, a detailed map of the Bay Trail in the vicinity of Treasure Island, and a Bay Trail fact sheet.

The Bay Trail provides fantastic opportunities for recreation, environmental education, wildlife viewing and alternative transportation throughout the Bay Area. It also serves as a connective pathway between cities and counties as well as between parks and other open spaces. The Bay Trail currently travels across the Golden Gate Bridge and the Dumbarton Bridge, and will soon be implemented on the east span of the Bay Bridge, the Carquinez Bridge and the Benicia-Martinez Bridge. These connections provide trail users with the opportunity for non-motorized travel throughout the region, providing first-hand experience of the Bay and its amazing resources.

As you may know, an 15.5-foot-wide bicycle and pedestrian pathway is planned to run along the south side of the eastbound deck of the new 2-mile long east span of the Bay

Bridge. The addition of the Bay Trail to this new span of the Bay Bridge creates momentum for providing a continuous link between East Bay trails (including the planned Eastshore State Park) and Treasure Island.

In addition, the reuse of Treasure Island provides an excellent opportunity to extend the Bay Trail along the shoreline of Treasure and Yerba Buena Islands. A continuous pathway around Treasure Island's perimeter would no doubt make it a destination point for recreation and entertainment, and increase the accessibility of the Island.

We would appreciate the opportunity to work with the Navy and the Treasure Island Development Authority on the planning and design of a new Bay Trail spur connecting the planned Bay Trail on the new east span of the Bay Bridge to and around Treasure Island.

Comments Pertaining to the DEIS

Chapter 2, Proposed Action Alternatives

While each of the alternative maps (Figure 2-3 to Figure 2-5) depict a band of shoreline open space around Treasure Island, a bicycle and pedestrian pathway is discussed only in Alternative 1 (page 2-17). The DEIS should clarify whether Alternative 2 and Alternative 3 would also provide for a shoreline pathway around Treasure Island.

M-1

General Comment

We are aware of the fact that the City and County of San Francisco and Caltrans are involved in a continuing discussion regarding the design of the Bay Bridge touchdown on Yerba Buena Island (Figure 5-2, page 5-6). It is unclear, however, how the connection between the bicycle and pedestrian pathway on the east span will be planned for and implemented. The DEIS should identify a process for planning a continuous connection between the planned pathway on the new Bay Bridge east span and Yerba Buena and Treasure Islands, including all potential stakeholders and their role in the planning process.

M-2

We are grateful for the opportunity to comment of the DEIS and look forward to the completion of the final Disposal and Reuse plan for Treasure Island. Please feel free to call me at 510/464-7919 with any additional questions or comment.

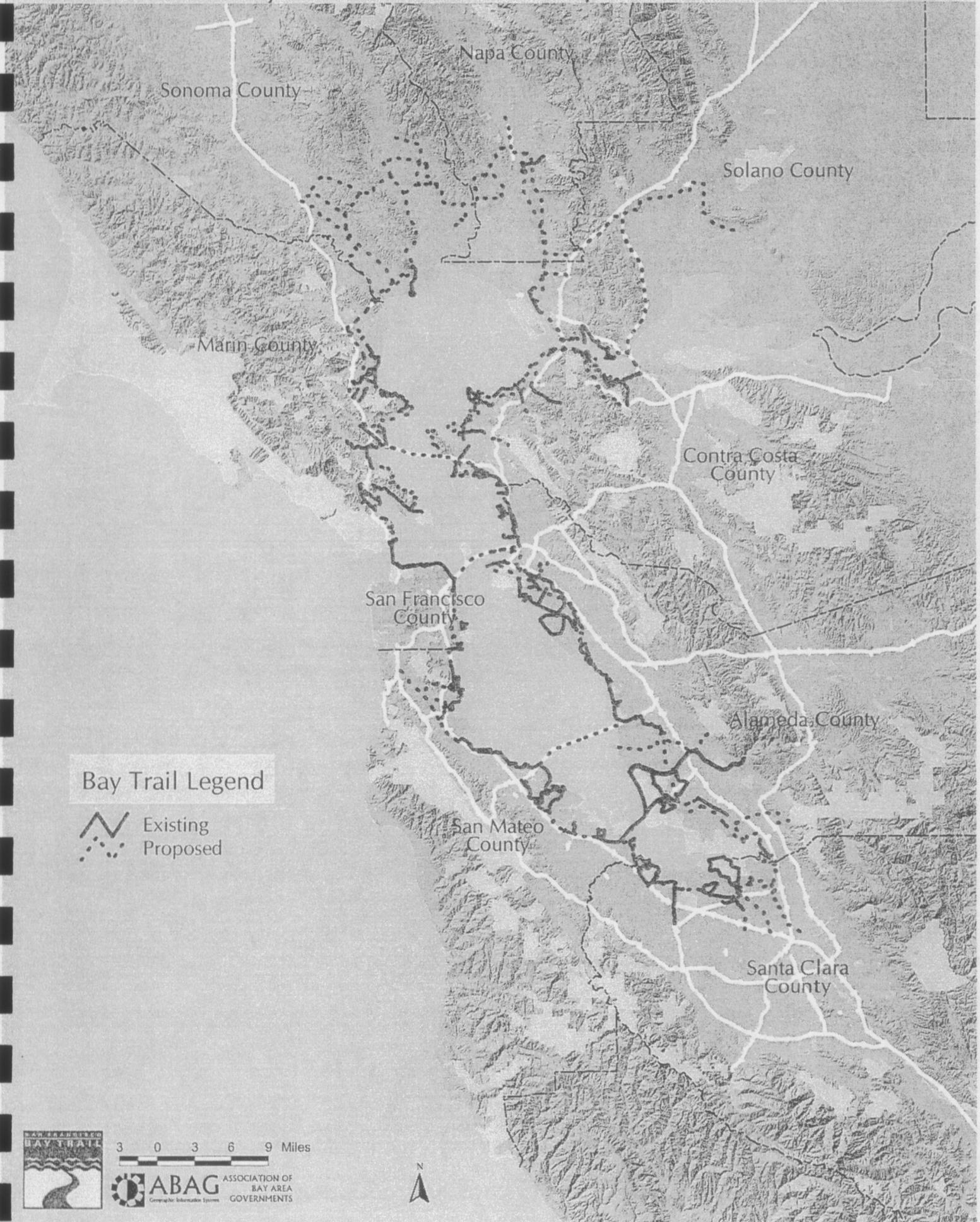
Sincerely,



Melissa Barry
Bay Trail Planner

Enclosures: San Francisco Bay Trail: Overview Map
San Francisco Bay Trail: Treasure Island Connections
Bay Trail Fact Sheet

San Francisco Bay Trail: Overview Map



Bay Trail Legend

-  Existing
-  Proposed



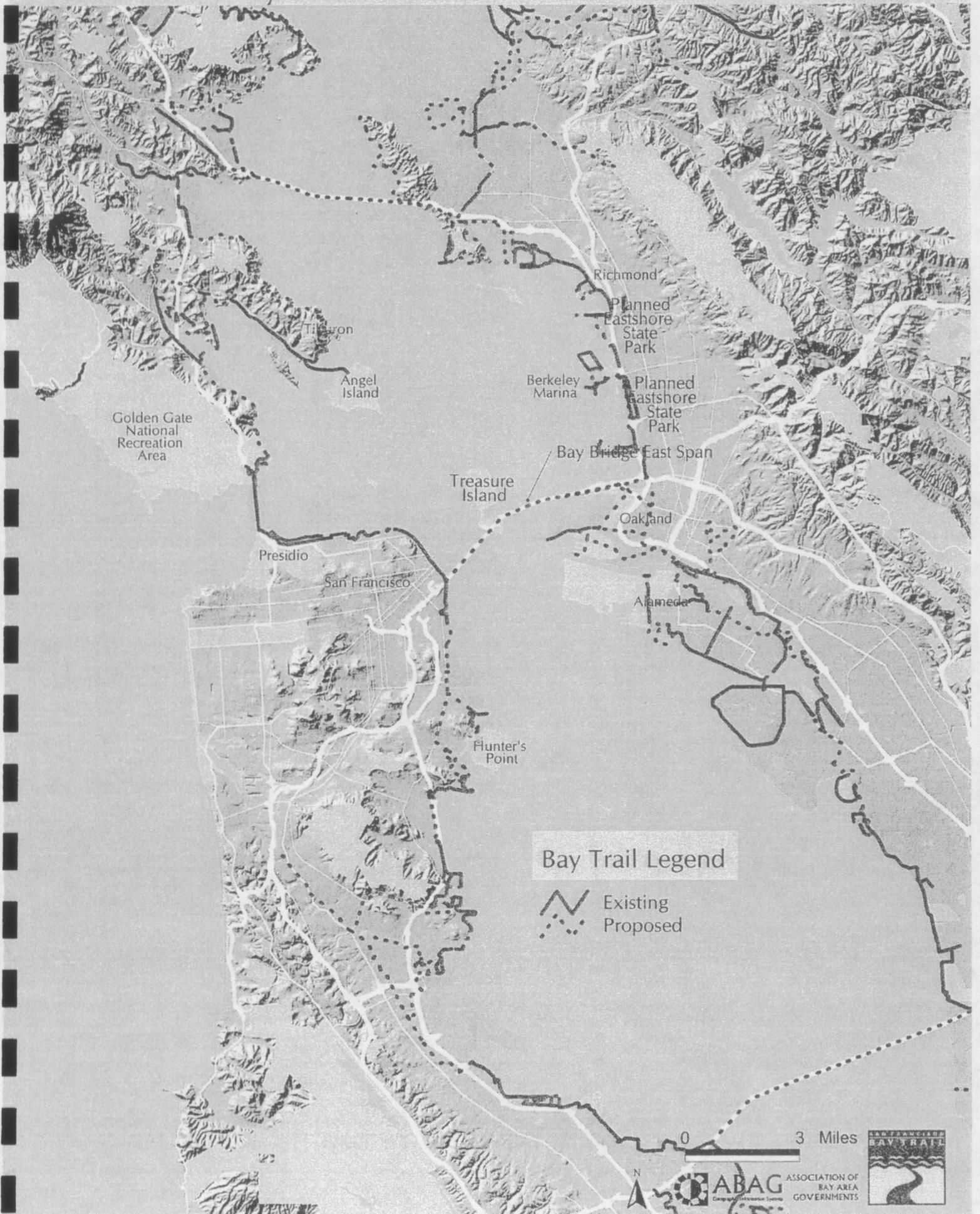
3 0 3 6 9 Miles

ABAG ASSOCIATION OF BAY AREA GOVERNMENTS
Geographic Information System



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San Francisco Bay Trail: Treasure Island Connections



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A FEW FACTS ABOUT THE SAN FRANCISCO BAY TRAIL

- When complete, the Bay Trail will be a **CONTINUOUS 400-MILE CORRIDOR** that will encircle San Francisco and San Pablo bays, connecting people to each other and to the water. It will link the shorelines of all nine Bay Area counties and pass through 47 cities. To date, slightly over half the Bay Trail's ultimate length has been developed.
- The Bay Trail provides free and easily accessible **RECREATIONAL OPPORTUNITIES** for outdoor enthusiasts, including hikers, joggers, bicyclists and skaters. It also offers a setting for wildlife viewing and environmental education, and it increases public respect and appreciation for the Bay.
- The Bay Trail also has important **TRANSPORTATION BENEFITS**: it provides a commute alternative for cyclists, and connects to numerous public transportation facilities, including ferry terminals, light-rail lines, bus stops, and Caltrans, Amtrak, and BART stations. Also, the Bay Trail will eventually cross the major bridges in the region.
- The Bay Trail **PROVIDES ACCESS** to commercial, industrial and residential neighborhoods; points of historic, natural and cultural interest; recreational areas like beaches, marinas and fishing piers; and over 130 parks totaling 57,000 acres of open space. It passes through highly urbanized areas such as downtown San Francisco as well as remote natural areas such as the San Francisco Bay National Wildlife Refuge. Depending on the location of its segments, the Bay Trail consists of paved multi use paths, dirt trails, bike lanes, sidewalks or signed bike routes.
- As much as possible, the Bay Trail overlaps with, and connects to, other trails and local bike routes. The Bay Trail should not be confused with the Bay Area Ridge Trail, a separate **REGIONAL TRAIL NETWORK** that travels inland, mostly along the Bay Area's mountain ridges.
- Senate Bill 100, authored by then state Senator Bill Lockyer and passed into law in 1987 with the endorsement of the entire Bay Area legislative delegation, introduced the concept of a "**RING AROUND THE BAY.**" SB 100 directed the Association of Bay Area Governments (ABAG) to develop an alignment for the Bay Trail as well as funding and implementation plans. This plan for the Bay Trail was adopted by ABAG in 1989.
- Implementation of the Bay Trail is coordinated by the Bay Trail Project, a **NONPROFIT ORGANIZATION** created by ABAG and housed at its offices in Oakland. To carry out its mission, the Bay Trail Project raises funds for trail construction and maintenance, ensures consistency with the adopted Bay Trail Plan, provides technical assistance, enlists public participation in trail-related activities, and publicizes the Bay Trail and its benefits to the region.

To learn more about the Bay Trail, visit the Bay Trail Project's web site at <http://www.baytrail.org>; call us at 510-464-7935 (Janet), 7909 (Laura), 7919 (Melissa), 7915 (David) or e-mail us at BayTrail@abag.ca.gov. (June 2002)



1 **Response to Comments**

2 **Response to Comment M-1.** The following text has been added under the heading "Open
3 Space and Recreation Uses" for Alternatives 2 and 3 in section 2.4 of the Final EIS:

4 Similar to Alternative 1, the shoreline open space would be widened to
5 approximately 100 feet (30 m) and would feature a bikeway and pedestrian path.

6 **Response to Comment M-2.** Please see response to comment H-20 regarding the connection
7 between the bicycle path on the SFOBB and Yerba Buena Island.

8

OFFICE OF THE MAYOR
SAN FRANCISCO



LETTER N

WILLIE LEWIS BROWN, JR.

TREASURE ISLAND PROJECT
412 AVENUE OF THE PALMS
BIRMINGHAM 2ND FLOOR
TREASURE ISLAND
SAN FRANCISCO, CA 94130
(415) 274-0660
FAX (415) 274-0299

June 24, 2002

Ms. Timarie Seneca
US Navy Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
BRAC Operations Office
San Diego, CA 92101-8517

Re: Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of Naval Station Treasure Island, San Francisco, California

Dear Ms. Seneca:

On behalf of the City and County of San Francisco ("City"), the Treasure Island Development Authority ("Authority") has reviewed the Draft Environmental Impact Statement ("DEIS") for the Disposal and Reuse of Naval Station Treasure Island ("Project") with the assistance of technical consultants. The Authority submits the following comments for your consideration. As the Local Redevelopment Authority for Naval Station Treasure Island and the proposed recipient of the land in question, the Authority has an interest in assuring that this document is adequate, accurate, and complete under the National Environmental Protection Act ("NEPA"). The Authority has reviewed the document and believes that the DEIS may be inadequate or inaccurate in several respects. For example, the DEIS contains incomplete or inadequate information; fails to identify all significant environmental effects; and fails to propose adequate mitigation measures.

Our comments are described in detail below. We appreciate your consideration of these comments and hope that you will take them into account in issuing the Final EIS for the Project.

I. General Comments

FHWA Land Transfer: The DEIS does not consider the transfer of certain interests in land to the Federal Highway Administration ("FHWA") to be part of the Navy disposal and has thus excluded it from the DEIS. The Authority does not agree with this approach. The Navy executed a land transfer with the Federal Highway Administration

N-1

("FHWA"), who in turn transferred property to Caltrans for construction of the replacement span for the Bay Bridge. The transfer included property transferred in fee to the agencies as well as the granting of temporary construction easements ("TCE") for the construction period. These transfers, however, may not transfer the entire fee and, even where the fee is transferred, the property may revert to the Navy or its designee, in this case the Authority, when the need for the interest no longer exists.

N-1

While this issue has been the source of some debate over the past year and half, the property was included in the Authority's Economic Development Conveyance Application to the Navy, and the Authority's understanding is that the Navy may agree to transfer the fee interest in TCE properties subject to the easement rights. The Authority maintains that such a transfer constitutes part of the Project being considered by the DEIS, thus those properties should be included in the project description and analyzed for any potential impacts. Otherwise, because FHWA did not analyze the effects of the transfer in this document or any other, the effects of the transfer would remain unanalyzed.

Baseline Data Interim Circumstances: The DEIS does not use a consistent baseline. The DEIS purports to (correctly) use a baseline of full operations immediately prior to the closure in 1993 for some resource areas, but then without explanation states that for some resources a 1996-1997 baseline is used. This discrepancy could result in different types of data that are difficult to compare or a skewed perspective of the impacts on some resources. The Authority recommends that the DEIS use a consistent baseline or explain why using two baselines is an acceptable method.

N-2

Moreover, while the Authority agrees with the use of a 1993 baseline, the DEIS should take account of events that have transpired since 1993 to give an accurate assessment of the current situation on the Project site. The Authority notes some such events in its specific comments below.

II. Specific Comments

Proposed Action and Alternative: This Section is incomplete. Table 2-3 on page 2-24 should indicate that the Navy must seek a Coastal Zone Management Act consistency determination from the San Francisco Bay Conservation and Development Commission ("BCDC") for the proposed disposal action.

N-3

Land Use: Section 3.1 is incomplete and the information on page 3-5 should reflect the fact that BCDC has received approval from their Board to prepare an amendment to the Bay Plan that will address future land uses on Treasure Island and Yerba Buena Island.

N-4

Cultural Resources: This section contains several inaccuracies and improperly relies on an unsigned Memorandum of Agreement ("MOA") to mitigate significant effects to both historic and archaeological resources. Please note the following:

N-5

LETTER N

- The DEIS notes that "Building 262 is within the area transferred to FHWA and is not part of the disposal and reuse" (Section 3.4.2, Zone 1). This statement is incorrect. The footprint of Building 262 is specifically excluded from the FHWA transfer. N-5
 - Building 111 (associated with Building 3 on Treasure Island) should be added to Table 4-2. N-6
 - The DEIS notes that "the area where the reported human remains were found was within the area transferred to FHWA" (Section 3.4.2, Zone 2). This statement may be inaccurate. The deed to FHWA only includes property up to the 270-foot elevation contour on Yerba Buena Island. The Authority is concerned that the area described in the text is above the 270-foot elevation. N-7
 - The DEIS describes the Draft MOA between the Navy and the State Historic Preservation Office ("SHPO"). The Authority has provided the Navy with comments on the Draft MOA and these comments have not been incorporated into the version attached as Appendix H. The Authority requests that the Navy incorporate these comments or explain why they are not included. The attached Draft MOA is not acceptable to the Authority. Parts of the Draft MOA are not enforceable and the Draft MOA is extremely confusing as to its applicability. The Draft MOA in Appendix H also does not include any of the Exhibits to the Agreement. The public cannot properly evaluate the document without the proposed exhibits. In addition, the DEIS does not inform the Authority or the public as to the status of the MOA. Most importantly, it does not indicate whether the version included as Appendix H is final or could change before the DEIS becomes final. N-8
 - The Navy should provide additional support for its finding that under Alternative 2 (Section 3.4.2), the Loss of Potentially Significant Historic Resources (Factor 1) is not a significant impact. While the DEIS (Section 4.4) notes that "compliance with the MOA is intended to ensure that project effects are not significant" and implementation of the MOA may mitigate the impacts, the MOA contains obligations that require approval by the San Francisco Board of Supervisors, and the City is not a signatory to the MOA. The DEIS cannot rely on future actions of a party who is not a signatory to the MOA to conclude that the MOA will reduce impacts to historic resources to a less-than-significant level. N-9
- Furthermore, an adverse effect through modification of an historic resource or a change in setting could constitute a significant effect. The DEIS (and MOA) focus on direct impacts to buildings through rehabilitation or demolition under various alternatives. It is less clear how the setting of historic resources might be changed. For example, development of the marina may have an effect on historic buildings when new features are constructed that will change the N-10

impact could be mitigated by the City through the expansion of service to Treasure Island, using facilities and funding sources that could be made available. The financial feasibility of accomplishing this mitigation for the various alternatives would also need to be addressed.

N-24

Hazardous Materials: The Authority is concerned that a CERCLA ROD has not been signed for Naval Station Treasure Island. The absence of any specific documentation makes an evaluation of the adequacy of the mitigation measure impossible. The Authority requests a full discussion of the CERCLA process including the preliminary assessment/site inspection, the Hazard Ranking System (HRS) scoring, the NPL site listing process, the Remedial Investigation/Feasibility Study (RI/FS), the remedy selection process and preferred alternative, the public comment phase, the selection of the final remedial action, and the schedule for completion of the ROD. In addition, the Authority requests a discussion of any Applicable or Relevant and Appropriate Requirements (ARARs), standards, criteria or limitations that have been established under federal or more stringent California law.

N-25

Specifically for each site, to the extent available, the Authority requests a discussion of the nature and extent of the contamination, the applicable clean-up levels, the remedial alternatives evaluated, the remedial alternative selected and rationale for selection, the schedule of implementation, the long term maintenance or monitoring required, the potential impacts, and the current regulatory status of the site. Please depict the location of each site on maps of each Alternative, with a key describing the type of site and target clean-up levels.

N-26

We look forward to additional information and clarification on these issues.

Sincerely,



Stephen Proud
Deputy Director
Treasure Island Development Authority

cc: Ron Plascied
Laurie Nelson
Annemarie Conroy
Michael Cohen
Kate Stacy
Susan Cleveland
Denise Heick

1 **Response to Comments**

2 **Response to Comment N-1.** Please see response to comment B-2 regarding inclusion of the
3 FHWA/Caltrans easements in the Final EIS analysis.

4 **Response to Comment N-2.** As noted on page 3.1-2 of the Final EIS, 1993 is used as the baseline
5 for analysis since this more accurately reflects environmental conditions during operational
6 status of NSTI. This condition provides a better gauge of potential impacts under reuse than
7 would a comparison to conditions after closure of NSTI. Data was collected for the baseline
8 year of the project whenever possible; however, if accurate data was not available for the
9 baseline year, data from closest available year was presented and used for the analysis. For
10 example, cultural resources investigations conducted in 1996, following closure, are intended to
11 be representative of 1993 conditions. Data from 1993 was not available for other resources, such
12 as water resources, so data from the closest years available (1990 and 1995) were used to
13 represent 1993 conditions. Finally, analysis of post-1993 conditions for certain resources, such
14 as hazardous materials, should be considered in the EIS.

15 The text on page 3.1-2 of the Final EIS has been revised to read:

16 The environmental baseline year for the EIS is 1993, which reflects conditions
17 before NSTI was designated for closure. This follows Navy BRAC policy, which
18 recommends using the last year the installation was in full operational use as the
19 baseline year instead of a baseline year portrayed as the property under
20 caretaker status. Since data from 1993 was not available for some resource areas,
21 the baseline for those resources relies on data from the closest year that is
22 representative of 1993 conditions. The analysis of hazardous materials and
23 waste is unique in that, because hazardous materials remediation is ongoing, it is
24 based on current conditions at NSTI. The physical conditions present in 1993 are
25 the same as the physical conditions present in later years; the entire
26 infrastructure for NSTI is still physically present on the property and has not
27 been significantly altered since 1993.

28 **Response to Comment N-3.** As noted in section 3.1, federal property is considered to be
29 outside the state coastal zone, as defined under the CZMA. The Navy has determined that a
30 Coastal Consistency Determination with the BCDC Bay Plan is not necessary for disposal of
31 NSTI. Upon conveyance of the property to a nonfederal entity, Bay Plan policies would be in
32 effect and reuse activities would be subject to BCDC priority use designations. Please see
33 response to comment J-3 regarding consistency with Bay Plan policies.

34 **Response to Comment N-4.** Please see response to comment J-3 regarding applicability of
35 BCDC priority use designations to NSTI.

36 **Response to Comment N-5.** At the time the Draft EIS was published, the MOA between Navy
37 and SHPO had not been finalized. The MOA that was included in the Draft EIS was incomplete
38 in that suggested changes to the MOA by the City and County of San Francisco and others had

1 not been resolved and incorporated. As stated in the EIS, NSTI cannot be conveyed to the
2 designated property recipient until a MOA ensuring protection of cultural resources has been
3 executed.

4 The revised MOA was completed by Navy and resubmitted to SHPO on September 15, 2002.
5 The City and County of San Francisco is included as an invited signatory party. A complete
6 copy of the Final MOA is found in Appendix H of the Final EIS.

7 Building 262, the Torpedo building, is within an area for which FHWA/Caltrans was granted a
8 permanent aerial easement for the SFOBB retrofit project. All land surrounding this building
9 was conveyed in fee to Caltrans. All areas transferred to FHWA were previously considered to
10 be too encumbered to permit conveyance and were not considered in the Draft EIS. Recent
11 discussion between Navy and TIDA have led to a determination that the TCE and aerial
12 easements are available for disposal. Consequently, Building 262 is now considered part of the
13 project and preservation measures are included in the MOA.

14 **Response to Comment N-6.** The text in Table 4-2 of the Draft EIS (now Table 4.4-1 of the Final
15 EIS) has been revised as follows:

16 Building 3 (including related Building 111), Treasure Island

17 **Response to Comment N-7.** The Final MOA includes provisions to accurately delineate
18 portions of the "area where human remains were found" in addition to testing all known sites
19 and sensitive areas prior to disposal.

20 **Response to Comment N-8.** The MOA has been revised to reflect City comments and
21 appropriate exhibits have been compiled.

22 **Response to Comment N-9.** The EIS states that loss of historic resources under Alternative 2
23 would be a significant and unmitigable impact. Please see response to comment N-5 regarding
24 the MOA for cultural resources.

25 **Response to Comment N-10.** The revised MOA specifically states that construction or other
26 modifications must be evaluated with regard to the potential effects on the integrity of setting
27 for historic properties and historic districts.

28 **Response to Comment N-11.** The revised MOA addresses archaeologically sensitive resources
29 in all zones and specifically describes responsibilities of the Navy with regard to testing and
30 mitigating to reduce or eliminate potential adverse effects.

31 **Response to Comment N-12.** The potential for submerged cultural resources has been
32 considered in the revised MOA. The stipulation includes all sensitive archaeological zones and
33 requires testing and possibly mitigation of as yet undiscovered resources that are considered
34 potentially significant.

1 **Response to Comment N-13.** The text in section 3.5.3 has been revised per your comment.

2 **Response to Comment N-14.** The EIS was prepared in 1996 at which time no SFOBB east span
3 retrofit design was available. The technical analysis will not be affected by the new east span
4 because it would not affect trip generation, trip distribution, modal split, and trip assignment
5 analysis. The only potential effect the new east span would have on the EIS analysis is
6 increased merging lane for the eastbound on-ramp onto the SFOBB, which would enhance the
7 safety of vehicle entering the SFOBB from Treasure Island and Yerba Buena Island. This benefit
8 is documented in section 4.5.1. of the EIS.

9 **Response to Comment N-15.** Parking supply in the vicinity of the San Francisco Ferry Building
10 has not changed substantially. Most of the parking facilities in the vicinity of the Ferry Building
11 are inside of high-rise office buildings, such as the Embarcadero Center. There has been no
12 major parking garage constructed or major parking facilities removed in the area. Most of the
13 new parking garages constructed as part of new developments in the vicinity were on previous
14 parking lots. Regardless of the change, the conclusion stated in the EIS that NSTI visitors who
15 would drive to the Ferry Building may not find readily available parking in the vicinity or may
16 not be willing to pay the cost of parking in downtown would not change.

17 **Response to Comment N-16.** Page F-18 of the Draft EIS (now page F.3-B-6 of the Final EIS)
18 provides the water transit policies presented in the Draft Reuse Plan (San Francisco 1996e),
19 which calls for the update of the existing docking facility on the east side of Treasure Island and
20 the construction of a new docking facility on the west side. As discussed in section 2.4.1, section
21 4.5, and in the transportation appendix (Appendix F) of the Draft EIS, a new ferry terminal
22 would be built on the west side of Treasure Island under Alternatives 1 and 2, but not under
23 Alternative 3. The reference to only using eastern terminals on page F-22 of the Draft EIS (now
24 page F.3.B-10 of the Final EIS) referred only to assumptions made for Alternative 3.

25 **Response to Comment N-17.** The Draft EIS does not conclude that truck and parking impacts
26 would be significant. Both truck impacts and parking impacts are listed in the EIS as "Not
27 Significant Impacts".

28 **Response to Comment N-18.** Please see the response to comment K-2 regarding beneficial use
29 of groundwater beneath Treasure Island.

30 **Response to Comment N-19.** Utility demand calculation summary sheets have been added to
31 Appendix E of the Final EIS. The utilities impact analysis considered proposed upgrades in its
32 methodology and evaluated the ability of the upgraded utility systems to meet the utility
33 demand requirements estimated for each alternative. Implementation of the proposed
34 upgrades is one of the critical assumptions underlying the analysis in the EIS.

35 **Response to Comment N-20.** Maps of the utility infrastructure can be viewed at the office of
36 the San Francisco Public Utilities Commission, Treasure Island Utilities Manager, Treasure
37 Island, Building 264. Most of the project alternatives would abandon the existing utility
38 infrastructure and install new infrastructure throughout NSTI, with utility mains installed in a

1 perimeter corridor. Because most of it would be abandoned, the location of the existing
2 infrastructure was not an important component of the impact analysis.

3 **Response to Comment N-21.** None of the documents or personnel consulted indicated that the
4 existing transmission line was in less than satisfactory condition or was in need of replacement.

5 **Response to Comment N-22.** Because projecting specific requirements for natural gas,
6 electricity, and telecommunications would be speculative, the analysis assumed that future
7 loads would be of the same magnitude as baseline loads. Utility providers would be expected
8 to accommodate any increases and any individual utility requirements.

9 **Response to Comment N-23.** Section 4.11.1 states that future development would require
10 expanding the capacity of the telecommunication switch. This could be accomplished through
11 replacement of the master switch.

12 **Response to Comment N-24.** The Draft Reuse Plan includes the provision of adequate public
13 services for NSTI. This can be accomplished only by establishing adequate police and fire
14 stations at NSTI, including adequate staffing and equipment levels. Therefore, the analysis
15 assumes that these conditions would be present at buildout of each alternative.

16 **Response to Comment N-25.** Please see response to comment C-12 regarding inclusion of
17 CERCLA information in the EIS.

18 **Response to Comment N-26.** Please see response to comment C-12 regarding inclusion of
19 CERCLA information in the EIS. Information on remediation activities at each site have been
20 updated in section 3.13 of the Final EIS.

21



June 27, 2002

Ms. Timare Seneca
BRAC Operations Office, SW Division
Naval Facilities Engineering Command, Code 06CM.TS
1230 Columbia Street, Suite 1100
San Diego, CA 92101-8517

Dear Ms. Seneca

We are in receipt of your request for review and comments on the DEIS for "The Disposal and Reuse of Naval Station Treasure Island". The San Francisco Railway Service Planning staff have the following comments on this primarily land use plan.

We request that Section 4.12 Public Services include the need for public transit services between the island and the main part of the City. We are currently providing extensive bus service to numerous visitors and residents of the island and this demand has grown exponentially over the past two years as the population of the island has increased.

O-1

In regards to the land use plan, if any large scale transit facilities, as were originally envisioned for the island, are anticipated in the future, accommodations for them should be made now.

Sincerely,


Peter Straus
Manager of Service Planning

1 **Response to Comments**

2 **Response to Comment O-1.** Transit service to NSTI is discussed in the transportation section of
3 the EIS. The Draft Reuse Plan (San Francisco 1996e) outlined proposed transit improvements,
4 including both ferry and bus (MUNI and AC) services. The EIS transportation analysis assumes
5 that these recommended improvements will be provided by MUNI and also acknowledged that
6 additional funding would be required (see page 4-49 of the Draft EIS).

7

ARC ECOLOGY COMMENTS
DEIS ON DISPOSAL AND REUSE OF NSTI

EXECUTIVE SUMMARY

ES.3 DISPOSAL AND REUSE PROCESS

The DEIS is unclear which portions of the property Caltrans has acquired in fee and on which portions Cal Trans has been given easements (the temporary construction easement and the permanent aerial easement referred to on page ES-3). It is also unclear why the portions of the property covered by these easements have been excluded from the EIS. The explanation offered, that "This land is no longer available for transfer by the United States and, as such, is no longer available for community reuse in accordance with the NSTI Draft Reuse Plan" does not seem to apply to the land covered by the temporary easement which will become available for transfer when construction on the bridge has been completed, within the buildout period of the Reuse Plan. The Government should not expect that sale of these sites to produce significant revenue, given the constraints on access that traffic imposes on development of Treasure Island and Yerba Buena Island as a whole

P-1

Recommendations:

- Please provide information about the location and number of acres covered by (i) the temporary construction easement and (ii) the permanent aerial easement, and (iii) identify both sites on Figure ES-2.
- Explain when, and under what authority the Navy made the policy decision to exclude the land covered by the easements from the Economic Development Conveyance. Was the public informed of this decision prior to publication of the DEIS?
- Analyze the changes the Reuse Plan needs to make to accommodate the shrinkage of the Project area.

Es.5 PUBLIC INVOLVEMENT PROCESS

We question the adequacy of the scoping process used in the preparation of this EIS because it occurred six years ago. Environmental conditions have changed since 1996. The Project itself has also changed, since 144 acres of dry land (out of a total of 552) have been removed from the Project and transferred to the Department of Labor, the Coast Guard, and the Federal Highways Administration. Rules governing the transfer of BRAC properties, CERCLA, and the use of Public Trust land at Treasure Island have also changed during the interim.

P-2

Recommendation:

- Prepare an updated Notice of Intent in order to revise and recirculate the DEIS.

Es.10 OTHER CONSIDERATIONS – ENVIRONMENTAL JUSTICE

The DEIS is too quick to dismiss the potential for disproportionate impacts on minority and low-income populations. The statement that "The potentially affected area adjacent to NSTI does not include disproportionately high minority populations or low-income populations compared to adjacent communities is misleading; NSTI itself includes high concentrations of low income and minority populations. Low income, minority children from the San Francisco Tenderloin attend a school located on Site 12, a former waste disposal area. All of the residents in the TIHDI housing and members of the Job Corps are low income and many are people of color. The significant

P-3

impacts identified by the DEIS, associated with hazardous materials and waste, could disproportionately affect these on-site minority and low-income populations, particularly as cleanup proceeds.

In addition, the Reuse Plan has the potential to displace these populations

Recommendation:

- The EIS needs to evaluate and mitigate any disproportionate impacts of cleanup actions that would occur as a result of disposal and reuse on these minority and poor populations
- The EIS also needs to evaluate and mitigate disproportionate displacement impacts of disposal and reuse.

P-3

CHAPTER 1 PURPOSE AND NEED

1.1 PURPOSE AND NEED

Additional information is needed about the portions of the site with easements given to Caltrans – how big they are, where they are, and changes to the Project that are needed.

Recommendation:

See ES.3

P-4

1.3.2 DISPOSAL PROCESS REQUIREMENTS

The description (including Table 1-1) of the property transferred to FHWA and Caltrans does not distinguish between sites that the Navy has transferred in fee and those for which it has only provided FHWA and Caltrans with easements only.

Recommendation:

See ES.3.

P-5

CHAPTER 3 AFFECTED ENVIRONMENT

TABLE 3-1 ENVIRONMENTAL ISSUES AND REGION OF INFLUENCE

The Reuse plan area is identified as the region of influence for hazardous materials and waste. The potential impacts of NSTI hazardous materials and waste issues could extend to the waters of San Francisco Bay.

Recommendation:

- Include the Bay in the ROI for hazardous materials and waste.

P-6

PAGES 3-1 –2 DISCUSSION OF BASELINES

Publishing an analysis in 2002 of Project impacts on environmental conditions that existed in 1993 (“for most of the resource areas”) is inconsistent with both the letter and the spirit of NEPA. The justification that the “trough [between the decision to close the base and its reuse] is temporary, constantly changing, and a wholly artificial situation that cannot provide a stable and meaningful basis for measuring the environmental impact of subsequent redevelopment” is inaccurate. The trough has lasted for almost a decade – long enough for any unused environmental capacity to be absorbed by subsequent development in the region. If conditions on the base are changing more than elsewhere, relying on an obsolete baseline would undermine the NEPA analysis. Finally there is no evidence that the conditions are artificial or unique.

P-7

Nor is there any provision in NEPA for using a baseline so far in the past. Although it is true that CEQA provides that, under certain conditions "the determination of whether the reuse plan may have a significant effect on the environment may, at the discretion of the lead agency, be based upon the physical conditions which were present at the time that the federal decision for the closure or realignment of the base or reservation became final", there is no evidence that NEPA allows the use of the earlier baseline. Since this EIS is not combined with the EIR, it is difficult to understand why it relies on CEQA to justify using an obsolete baseline.

P-7

In some instances a 1996-97 baseline is used. The mixing of baselines further threatens the integrity of the analysis. When the DEIS evaluates project impacts against more than a single baseline, the public and decision-makers have a much more difficult task sorting out the effects of disposal and reuse from other changes occurring over time. The mixing of baseline also raises the possibility that the document has chosen a baseline for each resource area to minimize impacts.

Recommendation:

- Revise the analysis based on current conditions.

3.1.1 REGULATORY CONSIDERATIONS

On page 3-7 the document states that "the State Lands Commission has allowed existing specialized or single-purpose facilities to continue as nonconforming public trust uses for their useful life." This is true for Treasure Island, but it is not true for other bases.

P-8

Recommendation:

- Revise the text to refer to the specific provision of the Migden Bill for Treasure Island to avoid creating the impression these provisions apply to other bases.

3.1.2 REUSE PLAN AREA

The statement on page 3-11 that "Caltrans currently possesses 97 acres (39ha) of dry and submerged land on Yerba Buena Island for the SFOBB, including 10 acres of easement property and structures that it previously occupied and maintained in fee" is very confusing.

Recommendations:

- Clarify whether "10 acres of easement property" refers to property on which Caltrans has easements now or whether this refers to a previous easement.
- What is meant by "occupied and maintained in fee"? Did Caltrans previously own property for which it now has easement rights?

P-9

3.5.1 ROADWAY NETWORK

The statement that "Figure 3-5 shows the locations of the six ramps and the Caltrans easement across Yerba Buena Island" is inaccurate. Figure 3-5 does not display any information about the location of easements.

P-10

Recommendation:

- Provide clear, straightforward information about the ownership status of land at NSTI to clarify sites that have been conveyed to Caltrans in fee, and sites for which temporary and permanent easements have been granted.

P-10

3.7.2-3 EXISTING NOISE AT TI AND YERBAN BUENA

Relying on a 1986 baseline, in conjunction with the model used to predict Project impacts, underestimates potential noise conditions. Traffic levels – which drive the noise impacts – were significantly lower sixteen years ago. The model used to project total noise levels adds Project impacts to the baseline. The total is compared to a set standard. An undercounted baseline, therefore, results in an undercount of total noise against which land use compatibility is evaluated

P-11

Recommendation:

- Use current levels of noise to describe existing conditions, and as the baseline for modeling future noise levels.

3.9.4 GEOLOGIC HAZARDS AT NSTI

Recommendation:

- Cite the Treadwell and Rollo report (San Francisco, 1995b) Existing Conditions Report, Volume II. Geotechnical Report prepared by Treadwell and Rollo, August 1995.

P-12

3.10.2 SURFACE WATER RESOURCES

It is unclear why 1998 is the baseline year for the analysis of water quality Data is available that can show trends as well as a baseline years consistent with other resources.

P-13

Recommendation:

- Use a baseline year that is current and consistent with the baseline used to analyze other resources.

3.11 UTILITIES

Question:

- What are the potential impacts of Caltrans owning the utility infrastructure on the portions of the land it has acquired?

P-14

3.13.3 INSTALLATION RESTORATION PROGRAM

No RODs, or even a complete RI, have been approved, therefore the statement, "and no further action under CERCLA is recommended" is inappropriate.

P-15

Recommendation:

- Change the phrase to "no further action under CERCLA is anticipated."

3.12 PUBLIC SERVICES

The problem of mixing baselines is demonstrated in this section. It is unclear whether the baseline is the level of fire and police protection provided in 1993 or 1997

P-16

Recommendations:

- Identify a baseline year that is consistent with the baseline used to analyze other resources
- Include information about the number of firefighters and police officers per person, including supervisory and support personnel

P-16

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

PAGE 4-2 FHWA PROPERTY

The statement on this page, that "FHWA acquired 97 acres (39 ha) of Navy dry and submerged land on Yerba Buena Island and *conveyed this land in fee* to Caltrans for the SFOBB east spans retrofit project" conflicts with the earlier statements on pages 3-11 and ES 3 that the 97 acres includes the site for which easements were given.

P-17

Recommendation:

- Please clarify as we have previously requested

4.1.1 LAND USE – ALL ALTERNATIVES

The DEIS overlooks the potential for substantial land use conflicts between the Reuse Plan (which was devised prior to plans for bridge realignment) and the bridge project. However, the DEIS dismisses these potential impacts with the following *non sequitur*: "The existing SFOBB or the proposed realignment would not be affected by changes in land use that are part of community reuse. Land on Yerba Buena transferred to FHWA to accommodate the SFOBB realignment is no longer available for transfer and reuse and consequently no land use conflict exists."

P-18

Recommendations:

- Analyze the uses that the Reuse Plan designates for portions of the property that are now under the control of Caltrans.
- To mitigate the conflict between a reuse plan devised before Caltrans obtained its property and subsequent conditions, include modifications of the Reuse Plan that would allow these pre-empted uses to occur elsewhere

4.2 VISUAL RESOURCES

The DEIS dismisses visual impacts because they are short term. In this case, short term appears to be more than the decade, through buildout in 2015. In any case, NEPA does not allow an agency to ignore impacts simply because they are not permanent.

P-19

Recommendation:

- Analyze and mitigate the impacts the visual impacts of on-going construction that will take place during the long buildout period, especially on existing and early phase residents

The DEIS dismisses potential visual impacts caused by light and glare based upon undocumented assumptions. The DEIS assumes that lighting levels "are similar to urban lighting at the San Francisco waterfront, with shielding to prevent upward glare visible to SFOBB drivers..." Nothing in this section prevents development from exceeding conditions similar to

P-20

urban lighting at the San Francisco waterfront. Nothing requires appropriate shielding. The DEIS also assumes that City Planning Commission Resolution 9212 will protect against project-related glare impacts. This resolution only addresses glare from mirrored or reflective glass surfaces, not from all shiny surfaces.

P-20

Recommendation:

- Analyze and mitigate potential light and glare impacts.

4.3 SOCIOECONOMICS

TABLE 4-1

Table 4-1 uses baseline data that is 14 years old – even more obsolete than the 1993 data that the DEIS tried to justify earlier. This table mixes data from 1988 with data from 1990. No reason is given for choosing a baseline so far in the past.

Although Table 4-1 provides information (however dated) on three related factors – jobs, resident population, and housing – the DEIS fails to explore the interaction among these variables. The discussion of the issues of employment, housing, and jobs-housing balance is part of an effort to ensure that housing will be available for the people attracted to the Bay Area by the new jobs at Treasure Island. A simple comparison of the number of jobs with the number of housing units does not address the issue.

For example, the 4,920 jobs projected for Alternative 1 would be predominantly low-paying (“Most of the jobs associated with this alternative would be created through reuse of parts of Treasure Island for a themed attraction, hotel and conference facilities, restaurants, film studios, community services, and a variety of recreational facilities.”¹). Given the extraordinarily high cost of housing in San Francisco, the assumption (based on 1997-1998 data) that 55 percent of these mostly service employees would be able to live in San Francisco² is unsupported, it is far more likely that most will have to commute from the East (and the North) Bay where affordable housing is more available. As the DEIS point out, however, there is no bus service from the East Bay to Treasure Island. For this Project, the environmental impacts of creating low paying jobs that are inaccessible by public transportation to affordable housing are especially severe.

P-21

Even if the assumption were reasonable that 55% of the Treasure Island workforce will live in San Francisco, the DEIS fails to address the housing impacts generated by the other 45%. The DEIS argues that the Reuse Plan provides more than enough housing (2,850 units) to house the 4,920 employees because only 55% (2,706) are expected to live in San Francisco where there are 1.6 workers per household (requiring 1,690 units to house the 4,920 employees in San Francisco). However, the 45% of the workers (about 2200) who would live elsewhere in the region will also need somewhere to live. Two pages earlier the DEIS states that impacts would result if the Project were to “create a demand for additional housing in San Francisco, Oakland, or the surrounding communities.” The DEIS ignores this housing impact.

The problem is not addressed by the argument³ that the projected population increase generated by the Project of 2,395 people would not have any impacts because they are “accounted for in

¹ Page 4-24

² ibid

³ page 4-23

ABAG's projected population increases." There is nothing in the methodology of ABAG's projections that suggests that the demand for housing of projected growth will be accommodated. There is no implication that the scenario projected by ABAG has mitigated its environmental impacts. ABAG did not prepare an EIR on the projections. The projections are simply projections, not an environmental envelope.

Recommendations:

- Provide baseline information from a single, current, date
- Analyze housing opportunities for the Treasure Island workforce, taking into account the low incomes that Reuse Plan jobs will produce. Revise assumptions about where the work force will live.
- Adjust trip assumptions in the transportation analysis to reflect that a higher proportion of the workforce will live in the East Bay, which is not linked to Treasure Island by public transit

P-21

4.5 TRANSPORTATION

PAGE 4-34 DEFINITION OF IMPACTS

The list of potential transportation impacts, by including "parking demand exceeding the supply", in effect precludes mitigating traffic congestion with a substantial reduced parking requirements, yet this mitigation is one of the most effective approaches known.

In addition, the list of potential impacts does not address an important indicator of increased traffic congestion on a roadway (especially one where diversion is not possible) that is already operating at capacity: the spreading of the peak.

P-22

It is surprising that there is not analysis of the potential for the Reuse Plan to cause an increase of accidents on the bridge

Recommendations

- Omit shortage of parking from the list of traffic impacts
- Add to the list of impacts the spread of the peak over an increased number of hours.
- An increase in the number of accidents as vehicles enter and exit bridge traffic should be analyzed as a potential impact

PAGE 4-34 TRAFFIC ANALYSIS METHODOLOGY

It is not legitimate to substitute projections of traffic in 2010 for traffic in 2015. Acknowledging that the reconstructed bridge will not reduce congestion is not equivalent to evidence that conditions in 2015 will be the same as they were in 2010. There is the potential for substantial growth and increase in traffic during this five year period.

It is also unacceptable to use ABAG 1994 projections of land use and demographic conditions at buildout (2015), no matter which baseline is used. ABAG projections published in 2002 are available and are more likely to present an accurate picture of conditions in 2015

P-23

It is similarly unclear why the DEIS used the 1994 Highway Capacity Manual instead of the 1998 version.

Recommendations:

- Use traffic projections for 2015.
- Use the most recent projections and methodologies available.

P-23

TABLE 4-3 ESTIMATED NSTI VEHICLE-TRIP GENERATION

The traffic day – 6:00 am to 6:00 pm - is defined to narrowly to capture the true volume of traffic, especially when the DEIS itself states that the peak period extends until 7:00 pm. In addition, there is a substantial amount of traffic between 6:00 pm and 6:00 am.

Relying on a single hour to define the peak (8:00 am – 9:00 am and 5:00 pm – 6:00 pm) undercounts the peak load and is less likely to capture changes in volume. As we suggested earlier, one of the main indications of increased congestion is a spreading of the peak period. This effect is not taken into account if the peak period is arbitrarily reduced to a single hour. Table F-5 shows a westbound peak on I-80 that in 1993 extended from 6:00 am through at least 11:00 am, and an eastbound peak extending from 2:00 pm through 8:00 pm.

P-24

Furthermore, the single hour chosen to represent the peak does not even capture the period of highest traffic volumes

Recommendations:

- Provide a 24-hour trip count for I-80.
- Analyze Project impacts on traffic volumes over the full peak period.
- Identify any spreading of the peak that will occur at 2015.

4.5.1 ALTERNATIVE 1 SIGNIFICANT AND MITIGABLE IMPACTS

The DEIS is unclear whether the significant impact of increased volume and queuing on the bridge ramps can be mitigated. The document acknowledges that the most effective mitigation proposed – to upgrade substandard ramps – may not be implementable.

Projecting that TDM measures can reduce trips by 6-12% is not justified if the package of TDM programs is not specified. The TDM examples mentioned – to encourage travel during off-peak hours, and flexible work hours – are probably infeasible since the peak extends over most of the day.

The most effective means to curtail trip generation is to limit parking, a mitigation that is missing from the list (except for visitor parking).

P-25

Mitigating transit impacts by monitoring transit demand is not a useful approach since transit demand is strongly determined by the quality of transit services (headways, distance from transit stops, etc.). The analysis of transit impacts should instead evaluate the impacts on transit systems that would be caused by meeting goals for transit usage (based on the calculated need to divert trips from automobiles to transit).

Recommendations:

- Clarify the relative contribution of each mitigation measure to reduction of impacts so that it is possible to determine the package of mitigations needed to fully mitigate impacts

- Include a drastic reduction of parking as a primary mitigation measure.
- Analyze the impacts on transit providers of providing transit with the routes and headways that would be needed to meet transit goals.

P-25

NOT SIGNIFICANT IMPACTS

The assumption that the Project would create no impacts to Bridge-I-80 operations because metering lights regulate the flow of traffic overlooks increased delays of longer meter cycles and potential for metering lights to be in operation for longer periods of time (another indication of peak spread)

The assumption that the Reuse Plan will limit truck service and freight delivery to off-peak hours is unrealistic when the peak extends over most of the day.

The judgment that construction impacts will be short term for a project that will not achieve buildout until 2015 is unrealistic.

Assuming that the Project includes “two new ferry terminals (at Candlestick Point in San Francisco and at Golden Gate Fields on the Berkeley/Albany border)” substitutes wishful thinking for an analysis of impacts and mitigations. Similarly *assuming* that transit service will be adequate because the Reuse Plan calls for service that accommodates demand is an evasion of NEPA responsibilities.

P-26

Recommendations:

- Replace mitigations that would divert traffic to off-peak hours with a rigorous analysis of capacity during the entire peak and rely on mitigations that would be effective during peak periods to mitigate peak period impacts.
- Mitigate construction impacts.
- Replace ability to meet transit demand as the standard of transit adequacy with a target of diverting a specific proportion of automobile trips to transit, and analyze the routes and headways that would be needed to achieve this goal.

4.6 AIR QUALITY

It is not clear whether air emission calculations are based on the 12-hour trip numbers or 24-hour numbers

- Base emission calculations on a 24-hour day.

P-27

4.13 HAZARDOUS MATERIALS AND WASTE

The discussion of the Installation Restoration Program does not provide for the potential conflict between the Reuse Plan and long-term groundwater monitoring and treatment.

- Provide mitigations to ensure that construction will not damage monitoring wells and will not disrupt water flows to the wells.
- Provide mitigations to ensure proper oversight of any institutional controls

P-28

CHAPTER 5 CUMULATIVE PROJECTS AND IMPACTS

5.1 CUMULATIVE ASSUMPTIONS

- Since this DEIS uses a 1993 baseline (among others), it is necessary for the cumulative analysis to take into account all development that has occurred since then within the region of influence for each resource area



P-29

CHAPTER 6 OTHER CONSIDERATIONS REQUIRED BY NEPA

6.4 ENVIRONMENTAL JUSTICE

This analysis must address the potential for hazardous materials, displacement, and traffic congestion impacts on the minority and low income residents of Treasure Island



P-30

1 **Response to Comments**

2 **Response to Comment P-1.** Please see response to comment B-2 regarding inclusion of the
3 FHWA/Caltrans easements in the EIS analysis.

4 **Response to Comment P-2.** The Navy does not concur that scoping and circulation of the Draft
5 EIS be done again. Although portions of NSTI have been transferred to US Department of
6 Labor, US Coast Guard, and FHWA/Caltrans since scoping was conducted in 1996, the project
7 area and the overall reuse concept remains largely the same. All regulations governing transfer
8 of federal property are addressed in the EIS and would not be affected by another round of
9 scoping. Consequently, it is unlikely that reinitiation of scoping would result in the
10 identification of any substantial new issues to be addressed in the EIS. In addition, the public
11 may identify any issues that it believes should be addressed in the EIS during the public review
12 and comment on the Draft EIS.

13 Finally, another round of scoping and recirculating the Draft EIS would result in extensive
14 delays in the process of transferring the property. Such delays would not be consistent with the
15 BRAC mandate for timely disposal of property for the benefit of the community and would
16 place a burden on the designated property recipient in its efforts to move forward with reuse.

17 **Response to Comment P-3.** Clean up and reuse of IR Site 12 would not disproportionately
18 affect minority or low income populations because the areas in which soil disturbance would
19 occur would be subject to land use controls and regulatory requirements that would reduce the
20 potential human health effects and environmental effects to acceptable levels. CERCLA
21 remedial actions will ensure that human health and the environment will be protected based on
22 continued residential use of the area. If the CERCLA remedy for a particular site includes land
23 use controls, the acquiring entity or entities will be required to comply with the land use
24 controls during construction or operations to ensure continued protection of human health and
25 the environment. These requirements apply to all areas requiring CERCLA actions and would
26 affect all populations using these areas of NSTI.

27 In addition, this EIS evaluates the potential effects of reuse of NSTI. A detailed evaluation of
28 the effects of CERCLA remediation on NSTI is not properly within the scope of this document.

29 The Treasure Island Homeless Development Initiative (TIHDI) was consulted in the
30 development of the reuse alternatives and in 1995 submitted a comprehensive Notice of Interest
31 for surplus property at NSTI for incorporation into the LRA's Draft Reuse Plan. The
32 alternatives include provision of economic development opportunities and employment for
33 homeless individuals and affordable housing, as described in Chapter 2, Proposed Action and
34 Alternatives. While the reuse alternatives have the potential to displace the current residents of
35 TIHDI housing (and could result in negative effects on these individuals), the reuse alternatives
36 were developed (in consultation with TIHDI and the public) to provide an overall beneficial
37 result for San Francisco's low-income populations.

38 **Response to Comment P-4.** Please see response to comment B-2 regarding easements granted
39 to FHWA/Caltrans for the SFOBB.

1 **Response to Comment P-5.** Please see response to comment B-2 regarding easements granted
2 to FHWA/Caltrans for the SFOBB.

3 **Response to Comment P-6.** The ROI for hazardous materials, as well as other resources, is the
4 reuse plan area. Because the area proposed for disposal includes submerged lands around
5 Treasure and Yerba Buena Island, this area by definition includes waters of the San Francisco
6 Bay. Analysis of potential impacts from hazardous materials and waste includes discussion of
7 migration of contaminants into the surrounding Bay waters.

8 **Response to Comment P-7.** Please see response to comment N-2 regarding the baseline for
9 analysis in the EIS.

10 **Response to Comment P-8.** Please see response to comment L-1 regarding the public trust at
11 NSTI.

12 **Response to Comment P-9.** The text has been moved to beneath the heading *Non-Navy Land*
13 *Uses* within section 3.1.3 of the Final EIS and has been revised to read:

14 The FHWA conveyed 98 acres (40 ha) on Yerba Buena Island held by Navy to
15 Caltrans for right-of-way purposes in connection with the construction,
16 operation, and maintenance of the SFOBB east spans retrofit project.
17 Approximately 20 acres (8 ha) of dry land were permanently conveyed in fee and
18 are not part of the disposal action evaluated in this EIS. The remaining 78 acres
19 (32 ha) comprises TCE or permanent aerial easements of dry and submerged
20 land on Yerba Buena Island. Land within the TCEs and aerial easements are
21 available for disposal and are part of the proposed disposal action evaluated in
22 this EIS.

23 **Response to Comment P-10.** Figure 3-5 has been revised to show the FHWA/Caltrans
24 easements.

25 **Response to Comment P-11.** The results of the noise monitoring conducted in 1986 on Treasure
26 Island are a reasonable representation of conditions on Treasure Island at the time of closure
27 (1993). Noise levels at present are likely to be similar or lower than conditions in 1986 since
28 there is currently far less activity on Treasure Island. The majority of Treasure Island is too far
29 from the SFOBB to be measurably affected by traffic noise. As noted in the text, additional
30 measurements were taken in 1998 near piers 11 and 12 to model noise levels from SFOBB traffic.
31 Traffic noise is a larger concern on the Yerba Buena Island portion of NSTI. Consequently,
32 additional noise monitoring was conducted by Navy in 1996. Noise monitoring by Caltrans in
33 1988 is also included in the EIS analysis.

34 **Response to Comment P-12.** The existing conditions geotechnical report by Treadwell and
35 Rollo is cited as San Francisco 1996b in the Geologic Resources section.

36 **Response to Comment P-13.** Please see response to comment N-2 regarding the baseline year
37 for the analysis.

1 **Response to Comment P-14.** Please see response to comment A-1 regarding utility easements
2 and rights-of-way within the lands transferred to Caltrans.

3 **Response to Comment P-15.** The decision to proceed or not proceed with an action pursuant to
4 CERCLA is based on a recommendation by Navy, which relies on information gathered
5 thorough the CERCLA process. Concurrence with the recommendation must be provided by
6 DTSC and/or the respective RWQCB. The text has not been revised.

7 **Response to Comment P-16.** Please see response to comment N-2 regarding the baseline year
8 for the analysis. Text has been added to the introduction in section 3.12 to explain the use of
9 two baselines for public services. Because the baseline ratio of the number of firefighters and
10 police officers to the number of residents was not used to determine the future demand for
11 service personnel, that ratio was not calculated and presented in the EIS. Instead, the
12 equipment and personnel requirements for each of the service providers under the reuse
13 alternatives were determined through direct consultation with the San Francisco Fire
14 Department, the San Francisco Police Department, and the San Francisco Department of Public
15 Health.

16 **Response to Comment P-17.** Please see response to comment B-2 regarding easements to
17 FHWA/Caltrans for the SFOBB. The text on page 3-11 and ES-3 in the Draft EIS, as referenced
18 in the comment, has been revised based on previous comment P-9.

19 **Response to Comment P-18.** Although the approximately 20 acres of land transferred to
20 FHWA was designated for publicly oriented, open space, and residential uses in the Draft
21 Reuse Plan (San Francisco 1996e), this represents only a small percentage of the total reuse plan
22 area designated for these uses. Since the Draft Reuse Plan provides only a very general land
23 use development concept, it is assumed that the uses proposed for the FHWA lands can be
24 accommodated elsewhere in the reuse plan area, either by slight changes in the boundaries of
25 the defined use areas or by slight changes in densities. Furthermore, the analysis dependent on
26 acreage of land uses are not measurably affected by the loss of such small areas and the loss of
27 land uses that contribute little in terms of traffic, jobs, etc. Please see response to comment B-2
28 for further discussion of the FHWA/Caltrans easements.

29 **Response to Comment P-19.** Since construction activities and the associated visual impacts
30 would shift during the different phases of redevelopment, no one viewpoint would be
31 significantly affected in the long-term. Further, it is beyond the scope of the analysis in this EIS
32 to attempt to evaluate the visual impact from specific construction activities since the locations,
33 timing, and extent of these activities are not known, nor is it known where all potentially
34 sensitive visual receptors may be found during the different phases of reuse.

35 **Response to Comment P-20.** The EIS evaluation of potential impacts from light and glare is
36 based on very conceptual land use development plans, including the Draft Reuse Plan.
37 Consequently, reasonable assumptions about conditions under reuse must be made. It is
38 reasonable to assume that, since the City and County of San Francisco would be the ultimate
39 recipient of the property, conditions on NSTI under reuse would be comparable to those on the

1 San Francisco waterfront and that San Francisco Resolution 9212 would apply. The designated
2 property recipient will be required to evaluate and, if necessary, mitigate potential impacts from
3 light and glare under the final development plan.

4 **Response to Comment P-21.** Please see response to comment N-2 regarding the baseline year
5 for the analysis. Projections of future socioeconomic conditions were derived from the most
6 current data available, since this most accurately reflects future conditions. The assumptions of
7 the analysis are based on the best available information concerning the projected employment
8 opportunities on Treasure Island, future housing availability, commuting patterns, and
9 projected population growth. Although, it is possible that more of the employees who would
10 work in these industries would live outside San Francisco, a more accurate estimate of the
11 future distribution of these employees is not available. Employees live and work in San
12 Francisco in the industries identified in the Draft Reuse Plan. Employment on Treasure Island
13 during reuse also will be composed of people already living in San Francisco (and other parts of
14 the Bay Area), who are unemployed, under-employed, or who would change jobs, as well as
15 new residents that might migrate into the area as a result of the new jobs created by the reuse
16 projects.

17 **Response to Comment P-22.** It is reasonable to identify parking shortage as an impact. While
18 not providing a sufficient number of parking spaces could suppress auto ownership, typically
19 this occurs in the center city area, where abundant transit services are available and support
20 retail stores are conveniently located within a short walking distance. Treasure Island is an
21 isolated location, unlike downtown San Francisco. However, a parking shortage is identified as
22 a not significant impact due to the City's "transit first" policy.

23 A significant and mitigable impact has been added due to peak-hour spreading, as follows:

24 Impact: Increased peak spreading on SFOBB/I-80 (Factor 1). Under Alternative 1,
25 increased traffic onto and off of the SFOBB during the A.M. peak period (6:30 to
26 9:30) and P.M. peak period (3:30 to 6:30) would cause westbound traffic on certain
27 segments of the SFOBB to deteriorate from LOS D to LOS F during the last hour
28 of the A.M. peak period (8:30 to 9:30) and to deteriorate from LOS B to LOS E or
29 LOS F during the first hour of the P.M. peak period (3:30 to 4:30) (Table F-22).
30 The increase in other connecting regional freeways would likely be less.

31 Mitigation. Monitor traffic volumes to ensure that the transportation goals and
32 objectives established by the Draft Reuse Plan are successfully implemented.
33 Monitoring traffic volumes would inform San Francisco whether traffic onto or off
34 of the SFOBB at each phase of development is resulting in deterioration of traffic
35 conditions on the SFOBB. If at some point it is determined that traffic from NSTI is
36 constraining the capacity of the SFOBB, either more aggressive TDM and transit
37 improvements must be implemented or additional developments should be
38 delayed until such improvements are implemented. Implementing this mitigation
39 measure would reduce this impact to a not significant level.

40 Similar impact statements have been added for Alternatives 2 and 3 as well.

1 Traffic on the Bay Bridge is controlled by the metering lights and, therefore, the total SFOBB
2 mainline traffic volumes would not significantly change in the future. In fact, the current
3 number of vehicles allowed by the metering lights may be decreased if the traffic from Treasure
4 Island were to increase. Current traffic accidents on the Treasure Island ramps are generally
5 low, except the westbound off-ramp on the east side of the tunnel and eastbound off-ramp on
6 the west side of the tunnel. Future increases in traffic volumes at these two ramps could
7 increase the number of accidents.

8 **Response to Comment P-23.** Please see response to comment H-6 regarding updated
9 projections for the project area.

10 **Response to Comment P-24.** The SFOBB 24-hour traffic volumes are presented in Table F-5 of
11 the Draft EIS (now Table F-7 of the Final EIS). SFOBB traffic was analyzed for the peak period,
12 and the results of the analyses are presented in Tables F-21 through F-23 of the Draft EIS (now
13 Tables F-23 and F-25 of the Final EIS). The EIS presents only the AM and PM peak-hour traffic
14 impacts, those hours having been selected to represent the worst-case condition during the day.
15 The shoulders of the two-hour peak period (the hour before and after the peak hour) are likely
16 to have less traffic or, at the most, the same amount of traffic as the peak hour, so impacts to
17 traffic conditions would be less than during the peak hour.

18 Please see the responses to comments for P-22 regarding spreading peak-hour traffic conditions.

19 **Response to Comment P-25.** The EIS for the disposal and reuse of NSTI primarily evaluates the
20 potential impacts of the federal action, disposal of the property. The potential impacts of reuse
21 are necessarily evaluated in a general way because the parameters of reuse have not yet been
22 determined. It is not known at this time which of the three reuse alternatives most accurately
23 represents the full buildout conditions of reuse. Because of the uncertainty of the reuse
24 scenario, the transportation issues and choices under reuse cannot be accurately predicted at
25 this time, so it is not possible to estimate the relative contribution of each mitigation measure to
26 overall traffic reduction. For this reason, two monitoring mitigation measures are included in
27 the mitigation program to provide feedback on the effectiveness of the various traffic
28 mitigations. Both monitoring measures suggest that if significant impact were to occur, either
29 more aggressive TDM and transit improvements must be implemented or additional
30 development should be delayed until such improvements are implemented.

31 Appendix F3 provides a list of TDM measures that would be implemented, several of which
32 involve limiting parking supply, such as restricting visitor parking, prohibiting parking for
33 certain uses, such as the themed attraction, establishing parking restrictions, and prohibiting
34 free parking.

35 Potential transit impacts are presented in the EIS and include estimated ridership level and
36 frequency. Detailed analysis would be necessary at a later date, depending on the origin and
37 destination of the residents, workers, and visitors.

38 **Response to Comment P-26.** Please see responses to comments P-24 regarding the peak period
39 analysis. As illustrated in Table F-5 of the Draft EIS (now Table F-7 of the Final EIS), it is not
40 correct to state that the peak period extends over most of the day.

1 At present there is no data available on future construction activity, and construction impacts
2 would be analyzed for each individual project at a later date. Construction activity at Treasure
3 Island would occur in phases, depending on market and availability of financing sources for
4 these projects.

5 The Water Transit Authority has been established with the responsibility of implementing a
6 regional ferry system in the Bay Area. The Water Transit Authority has identified service to
7 Treasure Island as a tier one project.

8 **Response to Comment P-27.** All emission calculations in the EIS were tabulated based on daily
9 activity estimates. Construction emissions assume daytime activity. Vehicle traffic and ferry
10 service emissions assume daily trip patterns.

11 **Response to Comment P-28.** The EIS identifies a potentially significant but mitigable impact
12 under each of the alternatives as a result of potential conflicts between construction activities
13 associated with reuse and remedial actions pursuant to CERCLA. As stated in the mitigation
14 for this potential impact, no CERCLA ROD has been signed and therefore it would be highly
15 speculative to attempt to impose measures to mitigate potential impacts at this time. It is
16 assumed that any necessary controls would be developed through the CERCLA process and
17 implemented through land use controls on the specific property or properties.

18 **Response to Comment P-29.** Because NSTI is on an island, there is no nexus between the
19 proposed disposal and reuse and many other past, present, and reasonably foreseeable actions
20 throughout the Bay Area. The cumulative analysis accounts for all projects that could
21 reasonably be expected to cumulatively interact with the proposed action. Many other smaller
22 projects have occurred or will occur in the region that will not produce measurable interactions
23 with the proposed action except through incremental changes in traffic conditions on the
24 SFOBB. To account for these changes, the traffic analysis is based on MTC regional
25 transportation model which forecasts land use changes for purposes of estimating traffic
26 conditions.

27 **Response to Comment P-30.** Clean up and reuse of NSTI would not disproportionately affect
28 minority or low-income populations, as described under comment P-3. Development at NSTI
29 under any of the three reuse alternatives would not incrementally contribute to a cumulative
30 impact from hazardous materials or waste.

31 Please see comment P-3 regarding potential for displacement impacts on the minority and low
32 income residents of Treasure Island.

33 Although low-income populations would be among those affected by cumulative traffic
34 congestion, these populations would not be particularly or disproportionately affected since
35 cumulative traffic congestion would affect all populations parking at ferry terminals that would
36 provide service to and from NSTI. The three reuse alternatives would contribute a small
37 increment to projected traffic volumes on the new SFOBB, which would be considered
38 cumulatively significant. The contribution to cumulative congestion attributable to the reuse
39 alternatives could be reduced by implementing the TDM measures identified in section 4.5,
40 Transportation.

Draft Environmental Impact Statement on
Disposal and Reuse of Naval Station Treasure Island
San Francisco, California
June 11, 2002

SPEAKER REGISTRATION/COMMENT CARD

Please check your affiliation below:

<input checked="" type="checkbox"/> Individual (no affiliation)	<input type="checkbox"/> Citizen's Group
<input type="checkbox"/> Private Organization	<input type="checkbox"/> Elected Representative
<input type="checkbox"/> Federal/State/Local Government	<input type="checkbox"/> Regulatory Agency

Name: MICHAEL DZIADEK
 Organization (if applicable): _____
 Street Address (if applicable): 1238 A NORTH POINT
 City/State/Zip (if applicable): _____
 Phone number (optional): TI
 E-mail (optional): _____

Do you wish to speak this evening? Yes No

If you prefer to provide your comments in writing instead of orally, please write your comments below, using the back of the card if necessary.

Is there any corporate involvement behind Alternative Z if yes who is backing this proposal



Q-1

Submit written comments tonight, or mail by **June 24, 2002** to
 Commander, Southwest Division, Naval Facilities Engineering Command
 Attn: Ms. Limatic Seneca (Code 06CM 1S)
 1230 Columbus Street, Suite 1100
 San Diego, CA, 92101-8517

1 **Response to Comments**

2 **Response to Comment Q-1.** The alternatives were developed by the Navy and the City and
3 County of San Francisco to reflect a range of possible development patterns for NSTI. While
4 specific elements of each alternative may have the support of corporate or development
5 interests, such interests were not involved in the development of the alternatives, nor were they
6 involved in the preparation of the EIS.

7

LETTER R

Norman L. de Vall
P.O. Box 3
Elk, California 95432
ndevall@mcn.org
(707) 877-3551 877:1861

June 24, 2002

US Navy, Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
BRAC Operations Office
San Diego, California 92101-8517
(6129)532-0955 532:0940
transmitted via fax 6.24.02

Attn: Ms. Timarie Seneca

re: Draft Environmental Impact
Statement for the Disposal and
Reuse of Naval Station
Treasure Island, San Francisco,
California

Dear Ms. Seneca,

Please accept the following as my Comment Letter relative to the above
referenced DEIS.

First and foremost, I wish to protest the lack of availability of the DEIS and the
very short comment period allowed. Most upsetting is that after attending the
Meeting of the Treasure Island Development Authority on June 12, 2002 in San
Francisco, also attended by Mr. Steve Edde of BRAC Operations, Code
O6CA.SE, where I was assured that I would receive a copy of the document,
none has been received to date, the last day of comment.

R-1

Therefore, with such protest having been made, and only having an hour to
review a desk reference copy, I wish to state:

1. The DEIS is woefully inadequate relative to the prospective options and
opportunities presented by the island as a neighborhood of the City of San
Francisco.

R-2

2. The DEIS recommends that Alternative 1 and 2 include a marina with mooring buoys. As a sailor with over 45 years of experience on the Bay, I submit that the location of such a facility is adverse to the public interest, poorly located, a cause for further impacting of the traffic on the Oakland-San Francisco Bay Bridge, and would create an environmentally negative impact.

Decision makers must ask "Why would this be a desirable marina? The DEIS does not address the need for on-shore facilities, such as radio repairs shops, a rigging shop, or sailmaker, nor does the marina create a facility of a "critical mass" size; therefore, all boat owners, except for the most simple purchase at the Chandlery, will travel to either Oakland or Sausalito for the necessary repairs and equipment.

The number of motor vehicle moves, relative to the use of boats and their crews is measurable, especially on three day weekends, national holidays and Opening Day. The DEIS does not address traffic patterns of users of the proposed marina.

3. The proposed marina at the Cove would take up and change the use of a very special asset in the Bay of San Francisco. Centrally located it is the ideal place for sail training, not to mention the phenomenal beauty of the Cove. The DEIS does not address the negative impacts to the visual character that such a facility would create.

4. Nor does the DEIS address whether or not the Public will be allowed on the floats of the marina. While there is questionable need for locked gates, the further taking of public assets for private benefit is not in the public interest. The DEIS should address this issue.

5. The DEIS does not address the presence of the existing piers on the east side of the Island, nor does it address the possibility of locating the marina there or anywhere else. Such glaring oversights should be addressed.

In conclusion, the DEIS serves more as an Economic Development Master Plan rather than as a Draft Environmental Impact Statement. It appears to this reader that the Navy is attempting to "polish the apple" well enough for the City and County of San Francisco to buy into a huge redevelopment project with endless problems and limitations.

In fact, the No Option Alternative should not be discarded. Treasure Island can eventually become the most expensive land for the City of San Francisco to provide city and county services.

R-3

R-4

R-5

R-6

R-7

And lastly, I again protest the lack of availability of the DEIS, which in my mind is grounds enough to seek judicial remediation.

R-8

Sincerely,



Norman L. de Vall

Mendocino County Board of Supervisors, 5 Dist., Retired

- cc: US. Representative Michael Thompson, CA 1 District
California State Senator Wesley Chesboro
Zan Hensen. Esq.
Latitude 38
President, County of San Francisco, Board of Supervisors
Annamarie Conroy, Exec. Director, TIDA

1 **Response to Comments**

2 **Response to Comment R-1.** The Navy has made a diligent effort to make the Draft EIS
3 available for the public to review. A notice of availability of the Draft EIS was published in the
4 Federal Register on May 10, 2002 and notices of the public hearing, including where to get
5 copies of the EIS, were published in the Oakland Tribune and San Francisco Chronicle on May
6 26 and 27, 2002. The Draft EIS was distributed to 175 individuals and organizations, including
7 libraries in San Francisco and Oakland. Notices were also sent to another 1,300 individuals and
8 organizations. A copy of the Final EIS will be provided to all individuals and agencies who
9 received or who commented on the Draft EIS, including the commentor. The commentor may
10 review the Final EIS and provide comments to the Navy on whether specific issues have been
11 adequately addressed.

12 **Response to Comment R-2.** As described in Chapter 2 of the EIS, the alternatives analyzed in
13 the EIS were developed to reflect the extensive public input and planning that took place during
14 the formulation of reuse concepts for NSTI. Alternative 1 was developed to reflect the land use
15 plan presented in the Draft Reuse Plan (San Francisco 1996e). The Draft Reuse Plan itself was
16 prepared under the guidance of the citizen reuse committee and included a number of public
17 meetings and workshops. Alternatives 2 and 3 were developed to reflect other input on the
18 reuse potential of NSTI, including the review of the Draft Reuse Plan by the Urban Land
19 Institute, the City's Alternatives Report, public input on these studies, and public scoping
20 comments on the EIS. Finally, the final development plan is likely to be similar in the general
21 types of land uses proposed to the alternatives presented in the EIS, but it may differ in any
22 number of small ways.

23 **Response to Comment R-3.** Although development of a marina is considered under
24 alternatives 1 and 2, details of commercial facilities associated with the marina are not
25 considered at the level of analysis provided in the EIS. Such facilities would be developed by
26 the designated property recipient in the final development plans for NSTI. The potential traffic
27 impact analysis provided in section 3.5 includes assumed vehicle trips generation by the marina
28 for each of the reuse alternatives.

29 **Response to Comment R-4.** The EIS acknowledges that the expanded marina under
30 Alternatives 1 and 2 would add new visual elements to Clipper Cove. The impact of the marina
31 expansion is deemed to be less than significant since this development would not substantially
32 affect sensitive views. The text in section 4.2 of the Final EIS has been revised read:

33 The expanded marina with approximately 300 slips and 100 tie-up buoys,
34 compared to the existing 100 slips, would add new visual elements to what is
35 now a relatively undisturbed cove with primarily open water, although the
36 expanded marina would be to some extent visually consistent with the existing
37 marina and pier features along Clipper Cove.

38 **Response to Comment R-5.** Although development of a marina is considered under
39 alternatives 1 and 2, details of the marina and its operation are not considered at the level of

1 analysis provided in the EIS. Such details would be developed by the designated property
2 recipient in the final development plans for the property.

3 **Response to Comment R-6.** The only pier that currently is on the east side of the Treasure
4 Island is Pier 1, which would be retrofited under all reuse alternatives for use as a ferry
5 terminal. Another pier previously was located on the east side of Treasure Island, north of Pier
6 1, but this pier was dismantled and is not addressed in the EIS.

7 **Response to Comment R-7.** The federal action evaluated in the EIS is the disposal of property
8 at NSTI. The EIS does not propose or advocate any reuse alternatives but analyzes the
9 reasonable reuse alternatives for NSTI that have been developed by through the reuse planning
10 process. The final alternative will be selected in the Navy ROD for the proposed action;
11 however, the ultimate reuse scenario will be developed by the designated property recipient.

12 **Response to Comment R-8.** Please see response to comment R-1 regarding the availability of
13 the Draft EIS.

14

Ruth Gravanis
74 Mizpah Street
San Francisco, CA 94131
(415) 585-5304
gravanis@earthlink.net

June 24, 2002

Attn: Ms. Timarie Seneca
Code 06CM.TS

Commander, Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, CA 92101-8517

FAX: (619) 532 0940

Re: Draft EIS for Disposal and Reuse of Naval Station Treasure Island
5090 - Ser 06CA.TS/0472

Dear Ms. Seneca:

I appreciate the opportunity to comment on the DEIS for Disposal and Reuse of Naval Station Treasure Island (DEIS-NSTI). My comments are limited to two topics:

Wildlife Habitat

The discussion of Existing Conditions indicates that there are remnants of native wildlife habitat on Yerba Buena Island. Yet Table 2-2 shows zero acres of Wildlife Habitat for Alternatives 1 and 3, and the 18 acres shown for Alternative 2 presumably refers to the new habitat to be created on Treasure Island. The habitat areas on YBI have significant value that should be recognized as such and not referred to merely as open space/recreation.

S-1

Traffic and Transportation

The table on page 2-25 implies that constraints to vehicular circulation would be a negative environmental impact. In fact, the limited capacity of the on-ramps should serve as a positive inducement to create a transportation plan that reduces private automobile trips, thereby improving the environment in a number of ways (noise, air quality, runoff, etc.). Upgrading the on- and off ramps should not be regarded as environmental mitigation. And the constraints to upgrading them are not merely geology and structural limitations, as noted in the DEIS, but also the negative impacts that would result from the associated destruction of open space and habitat.

S-2

DEIS comments
Page Two

Table 2-4 (and the discussion in Section 4-5) mentions some useful mitigation measures (encouraging ferry and bus use), but omits or gives short shrift to other mitigation measures that will prevent the problem (too many cars for the conditions) rather than treating the symptom (congestion): encouraging rail transit on the Bay Bridge, with a station stop on YBI; a City Car-Share Program on the islands; convenient bicycle rentals; and limits to parking on the islands, with appropriate pricing for the few spaces that are provided. Monitoring measures are not mitigation. Spreading out the peak periods to cover more hours is not mitigation.



S-3

Please feel free to contact me if clarification would be useful.

Yours truly,

Ruth Gravanis

1 **Response to Comments**

2 **Response to Comment S-1.** Text has been added as a footnote to Table 2-2 to indicate that open
3 space includes areas of native habitat on Yerba Buena Island. Native habitat on Yerba Buena
4 Island is addressed by habitat type in the biological resources section of Chapter 3. While it is
5 true that native habitat does exist on Yerba Buena Island, there is not an impact assessment on
6 these habitat types unless they are designated by the USFWS as being critical habitat, are
7 designated as being rare or sensitive by the CDFG, or otherwise provide habitat for any rare or
8 endangered species. There is no record of these habitat areas supporting any sensitive species.
9 Furthermore, these habitat types are in the open space areas and would not be affected by the
10 closure or reuse plans.

11 **Response to Comment S-2.** Comment noted. The adequate flow of traffic on NSTI under the
12 reuse scenarios is regarded as a negative impact; however, the commentor is correct that a
13 reduction in vehicle trips would reduce potential impacts to other resources. Vehicle trip
14 reduction is the objective of the TDM measures identified in the recommended traffic mitigation
15 measures. As noted in the EIS, upgrades to the on- or off-ramps are suggested as possible
16 mitigations measures but such upgrades may be constrained by geology of the site and
17 structural limitations.

18 **Response to Comment S-3.** Mitigation measures suggested in the comment, such as car-share
19 or bicycle rentals, may be effective at limiting potential traffic impacts and have been added to
20 the TDM assumptions in Appendix F as additional examples of TDM measures that may be
21 implemented to reduce potential transportation impacts. Measures such as encouraging rail
22 service on the SFOBB is not reasonably within the scope of the potential reuse scenarios
23 evaluated in this EIS. Restriction in the available visitor parking on NSTI is assumed in the EIS
24 as a component of the TDM measures for all alternatives.

25 Although monitoring measures do not in and of themselves mitigate potential traffic impacts,
26 such measures are recommended as part of TDM and transit service mitigations to ensure that
27 these measures effectively address potential impacts. While measures to shift vehicle trips
28 toward off-peak hours do not reduce the number of vehicle trips, these measures do mitigate
29 potential traffic impacts by reducing vehicle trips during peak hours when the transportation
30 system is at capacity.

31

Draft Environmental Impact Statement on
Disposal and Reuse of Naval Station Treasure Island
San Francisco, California
June 11, 2002

SPEAKER REGISTRATION/COMMENT CARD

Please check your affiliation below:

- | | |
|---|---|
| <input type="checkbox"/> Individual (no affiliation) | <input type="checkbox"/> Citizen's Group |
| <input type="checkbox"/> Private Organization | <input type="checkbox"/> Elected Representative |
| <input type="checkbox"/> Federal/State/Local Government | <input type="checkbox"/> Regulatory Agency |

Name: RICHARD T. HANSEN

Organization (if applicable): _____

Street Address (optional): 2331 COASTLAND ST.

City/State/Zip (optional): SAN FRANCISCO, CA 94121

Phone number (optional): 4151752-9412

E-mail (optional): _____

Do you wish to speak this evening? Yes No

If you prefer to provide your comments in writing instead of orally, please write your comments below, using the back of the card if necessary.

PLEASE EXTEND COMMENT PERIOD TO

PERMIT NINE WEEK TIME FOR ANALYSIS

PERIODS, ENDING ON JULY 24, 2002

IS PREFERRED.

submit written comments tonight, or mail by **June 24, 2002** to:
Commander, Southwest Division, Naval Facilities Engineering Command
Attn: Ms. Timarie Seneca (Code 06CM TS)
1730 Columbia Street, Suite 1100
San Diego, CA, 92101-8517

1 **Response to Comments**

2 **Response to Comment T-1.** The BRAC legislation requires that the Navy complete transfer of
3 property within a specified time frame in order to support efficient reuse of the property. In
4 addition, CEQ guidelines state that a lead agency may grant an extension of the comment
5 period but the guidelines further state that an extension shall not be granted solely because an
6 interested party has not had sufficient time for review of the document.

7 The Navy has attempted to allow maximum public participation in the review of the Draft EIS,
8 including mailing the EIS to 174 interested agencies and individuals and notices to another
9 1,300 interested agencies and individuals, as well as publishing notices in local papers and the
10 Federal Register. A total of three requests for an extension of the comment period were
11 received during the review period based on insufficient time for review of the document.

12 The Navy has determined that these requests did not meet the CEQ recommendations for
13 granting an extension, nor did they represent a substantial public interest an extension.
14 Furthermore, it should be noted that the public will have the opportunity to review and
15 comment on the Final EIS during the 30-day no action period prior to issuance of a ROD on the
16 proposed action. Copies of the Final EIS will be distributed to all parties who commented on
17 the Draft EIS or otherwise requested a copy.

18

LETTER U

VIA FAX TO : (619)532-0940

Emeric Kalman
211 Granville Way
San Francisco, CA 94127
(415)665-5777

June 24, 2002

Ms. Timarie Seneca
BRAC Operations Office
Naval Facilities Engineering Command
Code 06CM.TS,
1230 Columbia Street, Suite 1100,
San Diego, CA 92101-8517

Dear Ms. Seneca:

I am pleased to provide you my comments on the DEIS for "The Disposal and Reuse of Naval Station Treasure Island" in the context of the Stewart B. McKinney Homeless Assistance Act; the Base Closure Community Development and Homeless Act of 1994 and the provisions of 10 U.S.C.2687, Armed Forces.

The documentation is incomplete with no information to the size and nature of the homeless population in San Francisco, the availability of existing services to meet the needs of the homeless in San Francisco and the totality of the buildings and property in the Treasure Island complex suitable for maximum use for the needs of the homeless in San Francisco. (10 USC 2687 Sec.2905(b)(7)(H)(i) (I) and subsequent non-conformity to subclauses (II);(III);(IV);(V):).

U-1

I do believe that the DEIS for "The Disposal and Reuse of Naval Station Treasure Island", by exclusion without justification of a MAXIMUM HOMELESS USE ALTERNATIVE PLAN is not serving its purpose and mandate.

U-2

The Draft Reuse Plan was approved by HUD on November 26, 1996 and commended as a model for base redevelopment and balancing the (homeless) needs of San Francisco.

The tragic reality is that, literally in plain view, human beings are let to die by the hundreds do to the inadequacy of homeless assistance leading agencies approach and oversight by HUD and other federal and state agencies!

Would you amend the "Reuse" plans to save lives?

U-3

If you have any questions, or wish to discuss my comments, please call me at (415)665-5777.

Thank you.

Sincerely,

Emeric Kalman

Emeric Kalman

1 **Response to Comments**

2 **Response to Comment U-1.** DBRCA legislation calls for surplus federal property, such as
3 NSTI, to be transferred to a local reuse entity for use in a manner that benefits the full needs on
4 the community. As part of the disposal process, the Navy is required under the Stewart B.
5 McKinney Homeless Assistance Act, to consider benefits to the homeless community as a key
6 part of the process. The homeless assistance planning process for NSTI is described in section
7 2.3 of the EIS. This process resulted in the development of the 1995 Homeless Assistance Plan,
8 which provides economic development opportunities and employment for homeless
9 individuals.

10 **Response to Comment U-2.** Comment noted.

11 **Response to Comment U-3.** Alternative 1 evaluated in the Draft EIS is based on the Draft
12 Reuse Plan (San Francisco 196e). Upon completion of transfer of the property, TIDA will select
13 a development partner and develop a Final Reuse Plan. As acknowledged in the Draft Reuse
14 Plan, the Plan is by no means reflective of the only way development may occur. The
15 designated property recipient and/or development partner would be required to comply with
16 CEQA and evaluate potential environmental impacts of the specific development plan
17 ultimately chosen for the property.

18

LETTER V

Sailing Yacht Service

CONSULTATION - MAINTENANCE
REPAIR - RIGGING - DELIVERY

by WARWICK M. TOMPKINS • 50 PORTOLA LANE • MILL VALLEY • CALIFORNIA 94941 • TEL/FAX (415) 383-0949

24 June 2002

US Navy SW Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1106
BRAC Operations Office
San Diego, CA 92101-8517

Attention : Timarie Seneca, FAX # 619 532 0940

Or To Whom It May Concern:

I attended the Tuesday 11 June 02 meeting convened on Treasure Island to hear public comment on the Draft Environmental Impact Statement (DEIS) prepared by the Navy and made public on 09 May 02.

Two other speakers and I requested an extension of the period available for study and comment of the DEIS. I handed, on that occasion, a letter to Ms Timarie Seneca, noting *several objections to the DEIS, and formally requesting an extension of the period* available for public study and comment. The period I requested was a further forty-five days (45).

On 21 June I received a telephone message from Ms Seneca, informing me that the Navy was "disinclined", I believe were the words used, to extend the period allowed for public study and or comment. Today, 24 June, the final day of the original forty-five day public commentary period, I was informed by Ms Seneca that "informally, the time for public comment was to be extended until the end of this week."

I wish to go on record as objecting strenuously to this brief, informal extension. Firstly, virtually no-one can be aware that the extension has been made, therefore its usefulness is next to non-existent. Secondly, the DEIS is a dense and complicated document, packed with information which cannot be digested quickly. Unless an individual were able to devote himself exclusively to reading and analysis of such a document, the time allowed is insufficient. The ability to focus solely on such a document does not describe any member of the public of whom I am aware.

I am conscious that the process of transferring title of Treasure Island/Yerba Buena from the Navy to the City of San Francisco is a lengthy and time consuming one, and that as Ms Seneca stated to me there are target dates to be met. Time pressures notwithstanding the public commentary aspect is critical if the ultimate goal of open and aboveboard government and management is to be met.

Please reconsider and grant those of us in the public domain a further forty-five (45) days to study and comment upon your document. My and the other two requests for extension were the only public comments offered. One of the other speakers made reference to her difficulty in obtaining the DEIS as did I, both orally and in my letter.

Failure to grant this extension makes a mockery of the public commentary process

Respectfully submitted,

Warwick M. Compkins

Cc: Barbara Boxer
John Burton
San Francisco Chronicle

1 **Response to Comments**

2 **Response to Comment V-1.** Please see response to comment T-1 regarding an extension of the
3 public comment period on the Draft EIS.

4

LETTER W

Sailing Yacht Service

CONSULTATION MAINTENANCE
REPAIR RIGGING DELIVERY

By WARWICK M. TOMPKINS • 50 PORTOLA LANE • MILL VALLEY • CALIFORNIA 94941 • TEL/FAX (415) 383 0949

US Navy, Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
BRAC Operations Office
San Diego, CA 92101-8517
Attn: Ms. Timarie Seneca

Dear Ms. Seneca:

I am writing with regard to the DRAFT ENVIRONMENTAL IMPACT STATEMENT published by the Navy on 09 May 2002.

I find sections of the Statement incomplete, and others inaccurate.

The incomplete issues relate to the effects that dredging and pile driving are likely to have on the wildlife in the area. The noise level of these activities are discussed and then dismissed. The issue of the toxicity caused by the bottom paints of the vessels in the proposed Marina, or the effect of wastes discharged from these vessels is not mentioned.

W-1

My scaling of the area suggests that dredging and pile driving will take place, at its closest, within five hundred feet (500') of the Yerba Buena shoreline, rather than the twelve hundred (1200") mentioned in the Statement.

Further, obtaining copies of this document has been difficult, negatively impacting the time available to study it in its entirety. Three of the seven libraries listed as having copies of the DEIS could not locate it. In addition, the telephone numbers listed in the document are all FAX numbers, which precluded direct contact with you.

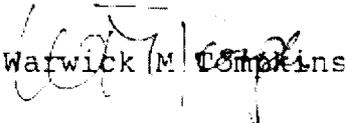
W-2

Treasure Island and its development are a highly visible and potentially very significant addition to the ambience of this area. It would be shameful if the development of the islands were done hastily or improperly.

In view of the above I officially request an additional forty-five (45) day review period.

W-3

Sincerely,


Warwick M. Tompkins 11 June 2002

1 **Response to Comments**

2 **Response to Comment W-1.** The potential impacts on wildlife of dredging and noise from pile-
3 driving are discussed in section 4.8 (Biological Resources). The existing marina at Clipper Cove
4 is approximately 500 feet from the eelgrass beds; however, expansion of the marina in Clipper
5 Cove is proposed to occur east of the existing marina, approximately 1,200 feet from the
6 eelgrass beds. As noted in the EIS, any in-water construction activities associated with marina
7 expansion would require a permit from the COE and consultation with CDFG and NMFS. Such
8 a permit would include conditions to reduce potential impacts to this habitat. In addition to
9 permit approvals to address potential sources of contamination from marina construction, as
10 described in section 3.10, the marina would also require an industrial stormwater permit to
11 ensure potential contamination is avoided during operation.

12 **Response to Comment W-2.** Please see response to comment R-1 regarding availability of the
13 Draft EIS.

14 **Response to Comment W-3.** Please see response to comment T-1 regarding an extension of the
15 public comment period on the Draft EIS. As described in response to comment T-1, the Navy
16 has determined that an extension of the comment period was not warranted. While the Navy
17 made no express commitment to its ability to address comments received after the close of
18 public comment period, in order to try and accommodate requests by members of the public,
19 the Navy did offer to try and incorporate comments received by these individuals after the close
20 of the formal comment period. The Navy has addressed concerns that were submitted after the
21 close of the comment period.

22

1 not references. It's just the way that it is laid
2 out.

3 RON PLASEIED: If it's just how the text
4 was written, if it's written more CEQA-wise in your
5 mind, rather than NEPA-wise, feel free to throw out
6 a comment on that. We'll gladly get back to you.

7 Why don't we take a ten minute break.
8 We'll come back and we'll start hearing our
9 comments. Thank you very much.

10 (A short recess was taken.)

11 RON PLASEIED: Welcome back. We'd like to
12 start our second phase with the public hearing,
13 which is, of course, the public comment period.

14 We're having some technical difficulties.
15 It's a simple slide. The goal of this entire public
16 hearing is to hear public comments. It's a very,
17 very important part of this process.

18 We now turn our attention to that.
19 Speakers will be called in order of the receipt of
20 the cards. I have one. We ask that when you do
21 come up and speak you limit yourself to five minutes
22 so everyone can get a turn. I think we'll have
23 plenty of time. Don't worry, we'll also allow time
24 to following on speakers if you have more questions
25 or want to make a general comment.

1 I do ask that when you do get up you speak
2 clearly and more slowly than I did during the
3 presentation, so that the court reporter here can
4 accurately capture all the information. Please give
5 your name, community you're with, organization you
6 represent or whatever the pertinent information is.
7 We'll make sure that we get that down.

8 Written comments are also encouraged whether you
9 give them tonight or whether you get them postmarked
10 to us by the 24th. At the end, we'll put up a slide
11 that will give you the address of where those
12 comments should go.

13 When you're called if you wouldn't mind just coming
14 up to the podium. We only ask that so that you can
15 get closer to the court reporter so we can
16 accurately transcribe everything that is said. And
17 please forgive me, I have a difficult name myself,
18 so that gives me the purview and right to slaughter
19 other people's names.

20 Warwick Tompkins?

21 **WARWICK TOMPKINS:** That's close. It's an
22 English name. The second "W" doesn't get
23 pronounced.

24 **RON PLASEIED:** Ah, Warwick?

25 **WARWICK TOMPKINS:** Warwick Tompkins is my

1 name. I'm a sailor. I represent myself. I'm
2 trying to be a good citizen, and I'm here because
3 I'm concerned about Clipper Cove and it's use in the
4 future.

5 The environmental impact statement -- the
6 whole political process surrounding this is sort of
7 strange to me, it's new. I'm not an activist, and
8 I'm learning. It's a little painful. I'm meeting a
9 lot of nice people. I know a lot of hard work has
10 gone into all this so far.

11 My comments are really not so much about
12 your statement as they are about the cove and what
13 might happen. And I will say about the statement
14 that I haven't had enough time to look at it, and I
15 have filed with Timarie a request for more time for
16 me and others like me to study. I found difficulty
17 in getting the statement. When I did get it, I
18 studied it for a couple of hours today, and I found
19 things that I thought were hasty, incomplete, and
20 sometimes I thought inaccurate. Mainly with the
21 cove, and the rest of the island I don't know about.
22 I'm not even sure exactly how the draftee's plan is
23 going to go, but I am a sailor of considerable
24 experience, and I have real positive ideas about the
25 cove, and I will say them tonight.

1 Am I speaking loudly enough? Slowly
2 enough?

3 Clipper Cove, in my view, is a very unique
4 sheet of water. It separates the two islands in a
5 very obvious way. Everybody who came here a little
6 earlier than I probably saw a small boat sailing out
7 there.

8 There is a marina planned for the
9 development, and it is apparently the apple of the
10 development authority's eye. It certainly would be,
11 and I am the first to agree that a marina is very
12 much in order for this part of the bay.

13 It's a central location. For all the
14 reasons that Clipper Cove is unique, a marina in
15 this area would also be unique. It would be, in my
16 view, a great tragedy to build a marina on such a
17 unique body of water. It's an obvious place to
18 build a marina, but if you think about how the
19 sailing which is presently taking place as we speak
20 on Clipper Cove is going to be eliminated by a
21 marina -- and it will be because of the wind
22 direction -- and the way it's used by sailing boats
23 of all sizes, that sailing will be a thing of the
24 past.

25 I attended a fundraiser for the Treasure

PH-1

1 Island Sailing Foundation, and all of their slide
2 presentations showed activity in the water which
3 will be occupied by the marina.

4 It appears that the San Francisco No
5 Treasure Island Sailing Center Foundation is in
6 league with the developers of the marina, and they
7 are committed to supporting the marina, and they are
8 doing so.

9 My vision of this area, for the record, is
10 that the southern shore of Treasure Island should be
11 turned into a marina or park, and there should be a
12 good enough looking topography that you'd say, "I
13 want to take my family there and have a picnic. I
14 want to go there with my sweetie and hold hands."
15 If the buildings are kept the way they're said to be
16 kept, building number 1 and 180 were eliminated, you
17 could build an interesting land site there, which
18 would be covered, in my view.

19 In any case, if you could build a handsome
20 place there, those people in that park would look
21 across a stretch of water which would be filled with
22 small boat activity for a good share of each day,
23 and they would look at the north shore of Yerba
24 Buena Island, which is just as beautiful as Angel
25 Island, and this could be a jewel of a place.

PH-2

1 Presently, when I drive down the causeway,
2 I see breathtaking views to the west across the city
3 across the Golden Gate, the Marin hills, it's a
4 spectacular view. When you look to the right, you
5 see Treasure Island, which is sorely in need of
6 help, and a little lagoon. And the lagoon is a
7 jewel, and I think could be kept that way. And I
8 think if it were, that it would be a real asset to
9 the community. Public access to the water via a
10 park and small boats sailing via something either
11 run by the public park or an independent franchise
12 maintained mainly roughly 40 to 50 boats of
13 different sizes using that water would be a
14 brilliant use of the area, in my view.

15 Additionally, to the east on Treasure
16 Island, I think the parking lot should be made
17 accessible to the water's edge so it would be a
18 launching area for major international activities
19 would come to San Francisco bay.

20 As a sailor, the uniqueness of this area
21 and the closeness to all wonderful sailing centers
22 is special. It's very special, and it should be
23 preserved in my view.

24 That concludes my comments. Thank you.

25 RON PLASEIED: Did we get any more comment

PH-2

1 cards?

2 **RICHARD HANSEN:** My name is Richard
3 Hansen, and I'd like to request that the deadline be
4 extended by one month, until the 24th of July, to
5 prepare -- to provide people with additional
6 opportunity to read the recommendations and to make
7 a better assessment of what's coming.

8 I personally am disappointed that the
9 meeting is so poorly attended, and I'm disappointed
10 that the city could not make a more detailed
11 presentation as to what their plans could be, but it
12 seems to me it's an important topic that deserves
13 more time, more attention. So one month would be
14 helpful.

15 **RON PLASEIED:** Thank you. Any more? One
16 more?

17 **SUSAN DeVICO:** It's real quick. I'm Susan
18 DeVico. I'm a resident, and I wanted to echo the
19 sentiment of the gentleman that just spoke.
20 Residents did not have an understanding of the
21 importance of this meeting. I can tell you that as
22 someone who tries to stay abreast of the things
23 going on. I urge you -- this is a very digital
24 community -- to please post this online
25 electronically. You have a beautiful representation

PH-3

PH-4

1 with maps and a PDF file, something that could be
2 download. We have a community bulletin board here.
3 I didn't see anything online about it at all. TIDA
4 and the Navy is well aware of that.

5 RON PLASEIED: Thank you. Any others?

6 Okay. Would anyone like to have any
7 follow-up questions comments or concerns? Okay.

8 **DALE SMITH:** I have one.

9 When the transfer of land to CalTrans took
10 place to facilitate the expansion of the east
11 extension of the Bay Bridge, does that remove it
12 from clean up?

13 RON PLASEIED: No.

14 DALE SMITH: This is kind of an
15 off-the-wall thing.

16 RON PLASEIED: The clean up
17 responsibilities for the areas which were backed by
18 that conveyance, the property is CalTrans property,
19 state property. The clean up responsibility still
20 rests with the Navy, and it's still a part of our
21 program.

22 We have to now do a little more
23 coordination with the state contractors, but we will
24 be doing that clean up.

25 Any more questions?

PH-4

PH-5

1 Okay. If there's no more questions or
2 comments, again, thank you very much for your
3 attendance tonight. We are still actively seeking
4 any comments. We have until the 24th. Any comments
5 you have will be postmarked by the 24th to that
6 address.

7 Thank you very much. This concludes the
8 public hearing meeting. Have a great evening.

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1 **Response to Comments**

2 **Response to Comment PH-1 (Mr. Warwick Tompkins).** Please note that expansion of the
3 marina is considered only under alternatives 1 and 2, with a smaller expansion under
4 Alternative 1. The details of marina expansion and related shoreline development will be
5 determined in the final development plan by the designated property recipient.

6 **Response to Comment PH-2 (Mr. Warwick Tompkins).** Please see response to comment PH-1
7 above regarding changes to Clipper Cove.

8 **Response to Comment PH-3 (Mr. Richard Hansen).** Please see response to comment T-1
9 regarding an extension of the public comment period on the Draft EIS. The purpose of the
10 public meeting held on June 11, 2002, was to receive comments on the Draft EIS prepared by the
11 Navy for disposal of NSTI. Specific development plans for NSTI are part of a separate process
12 being conducted by the designated property recipient. TIDA is currently reviewing a detailed
13 Draft development plan for NSTI. This plan can be reviewed at the TIDA website
14 (www.ci.sf.ca.us/treasureisland).

15 **Response to Comment PH-4 (Ms. Susan DeVico).** Although the Draft EIS was not available
16 on-line, it was made available through a number of other means, including direct mailing and
17 area libraries.

18 **Response to Comment PH-5 (Mr. Dale Smith).** The Navy is responsible to complete all
19 remedial activities currently being pursued under CERCLA on property that was conveyed to
20 Caltrans for realignment of the SFOBB.

21

APPENDICES

APPENDIX A

Glossary

APPENDIX A GLOSSARY

100-year flood zone	Land area having a one percent chance of being flooded during a given year.
Ambient air quality standards	Standards established on a state or federal 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) (also see Attainment area, below).
Aquifer	A layer of underground sand, gravel, or spongy rock in which water collects.
Arterial	A roadway from which local routes branch.
Artifact	Any product or human cultural activity; more specifically, any tools, weapons, artworks, etc., found in archeological contexts.
Asbestos	A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.
Assemblage	The complete inventory of artifacts from a single, defined archaeological unit (such as a stratum or component).
Attainment area	An area which meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act or meets state air quality standards.
A-weighted decibel (dBA)	A number representing the sound level which is frequency weighted according to a prescribed frequency response established by the American National Standards Institute (ANSI-S1.4-1971) and accounts for the response of the human ear.
Best-management practices (BMPs)	Includes schedule of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Appendix A. Glossary

Burial	Human remains disposed of by interment. Burials may be <i>simple</i> (containing the remains of one person) or <i>complex</i> (containing the remains of two or more individuals), <i>primary</i> (including the remains as originally interred), or <i>secondary</i> (where a re-interment follows a temporary disposal elsewhere).
Capacity (transportation)	The maximum rate of flow at which vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions.
Capacity (utilities)	The maximum load a system is capable of carrying under existing service conditions.
Caretaker	The U.S. Navy process of maintaining a closed facility.
Clean Air Act (CAA)	The CAA 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 CWA is the major federal legislation concerning improvement of the nations 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.
Climate	The prevalent or characteristic meteorological conditions (and their extremes) of any given location or region.
Community Environmental Response Facilitation Act (CERFA)	A 1992 amendment to CERCLA, CERFA expedites the identification of uncontaminated real property within closing federal military facilities which offer the greatest opportunity for reuse and redevelopment.
Community noise equivalent level (CNEL)	Noise compatibility level established by California Administrative Code, Title 21, Section 5000. The 24-hour average A-weighted sound level with a 5 dB weighting added to levels occurring between 10:00 PM and 7:00 AM.

Comprehensive Environmental Response, Compensation, And Liability Act (CERCLA)	CERCLA, 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 (NPL) which sets forth the sites considered to have the highest priority for cleanup under Superfund.
Contamination	The degradation of naturally occurring water, air, or soil quality either directly or indirectly as a result of human activities.
Council on Environmental Quality (CEQ)	Established by NEPA, the CEQ consists of three members appointed by the President. CEQ regulations (40 CFR 1500-1508, as of July 1, 1986) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and timing and extent of public participation.
Cultural	(1) The nonbiological and socially transmitted system of concepts, institutions, behavior, and materials by which a society adapts to its effective natural and human environment; (2) Similar or related assemblages of approximately the same age from a single locality or district, thought to represent the activities of one social group.
Cultural history	The archeological sequence of cultural activity through time, within a defined geographic space or relating to a particular group.
Cultural resource	Prehistoric or historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason.
Cumulative impacts	The combined impacts resulting from the addition of incremental impact of the proposed action to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes them.
Day-night average sound level (Ldn)	The 24-hour average-energy 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 annoyance due to noise during the night.
Decibel (dB)	A unit of measurement on a logarithmic scale which describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.
Developed	When land, a lot, a parcel, or an area has been built upon, or where public services have been installed prior to residential or commercial construction.

Appendix A. Glossary

Disposal	Legal transfer of Navy property to other ownership.
Dredging	Removal of mud from the bottom of water bodies using a scooping machine.
Easement	An interest in land owned by another that entitles its holder to a specific limited use
Effluent	Waste material discharged into the environment.
Endangered species	A species that is threatened with extinction throughout all or a significant portion of its range.
Endangered Species Act (ESA)	The ESA requires federal agencies to determine the effects of their actions on endangered species and their critical habitats.
Environmental impact statement (EIS)	A document required of federal agencies by NEPA for major projects or legislative proposals significantly affecting the environment. A tool for decisionmaking, the EIS describes the positive and negative effects of the undertaking and lists alternative actions.
Equivalent noise levels (Leq)	Equivalent noise levels are used to develop single-value descriptions of average noise exposure over various periods of time.
Fault	Fracture in earth's crust accompanied by a displacement of one side of the fracture with respect to the other and in a direction parallel to the fracture.
Feasibility study (FS)	The feasibility study, part of the CERCLA remediation process, identifies and evaluates all applicable site cleanup alternatives. For most sites, a long list of alternatives are 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 FS are performed concurrently.
Feature	A large, complex archeological artifact or part of a site such as a hearth, cairn, housepit, rock alignment, or activity area.
Flora	Plants; organisms of the plant kingdom taken collectively.
Ground water	Water within the earth that supplies wells and springs.

Hazard Ranking System (HRS)	This system provides a uniform method of scoring or ranking of the potential risk of a facility site where a hazardous substance has been present. The EPA developed the HRS to prioritize their cleanup efforts. The EPA evaluates the draft HRS packages and proposes any facilities scoring over 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities which are listed on the NPL receive the highest priority.
Hazardous material	A substance or mixture of substances that poses a substantial present or potential risk to human health or the environment. Any substance designated by the EPA 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 waste	A waste or combination of wastes which, because of its 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 pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under RCRA.
Historic	A period of time after the advent of written history dating to the time of first Euro-American contact in an area. Also refers to items primarily of Euro-American manufacture.
Historic district	National Register of Historic Places designation of a geographically defined area (urban or rural) possessing a significant concentration, linkage, or continuity of sites, structures, or objects united by past events or aesthetically by plan of physical development.
Impacts	An assessment of the changes in the characteristics of an environmental resource caused by the project; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique. Impacts analyzed under CEQA must be related to a physical change.
Infrastructure	The basic installations and facilities on which the continuance and growth of a locale depend (roads, schools, power plants, transportation, and communication systems).
Installation Restoration Program (IRP)	A program established by the Department of Defense to meet requirements of CERCLA of 1980 and SARA of 1986 which 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. Usually given a letter grade from A to F, with A being free-flow; E, capacity; and F, forced-flow. Factors considered in LOS analyses include speed, travel time, traffic interruptions, freedom of maneuver, safety, driving comfort, and convenience. In 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 population.
Liquefaction	The transformation during an earthquake of unconsolidated, water-saturated sediment into a liquid form.
Long-term	Impacts that would occur over an extended period of time, whether they start during the construction or operations phase. Most impacts from the operations phase are expected to be long term since program operations essentially represent a steady-state condition (i.e., impacts resulting from actions that occur repeatedly over a long period of time). However, long-term impacts could also be caused by construction activities if a resource is destroyed or irreparably damaged or if the recovery rate of the resource is very slow.
Marsh	A type of wetland that does not accumulate appreciable peat deposits and is dominated by herbaceous vegetation. Marshes may be either fresh or salt water and tidal or nontidal.
McKinney Act	The McKinney Act gives recognized providers of assistance to the homeless a high priority in acquiring unneeded land and buildings on federal properties. The property can be used only for the homeless and only for two years. Homeless providers must be able to finance upgrades of facilities, pay a proportionate share of municipal service costs, and fund its program operations.
Migratory Bird Treaty Act	This act 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 project impacts, including application of existing plans, policies, and laws.
Multi-family housing	Townhouse or apartment units that accommodate more than one family though each dwelling unit is only occupied by one household.

National Environmental Policy Act (NEPA)	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 also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made.
National Historic Preservation Act (NHPA)	The NHPA protects cultural resources. Section 106 of the act 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 which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the EPA or state.
National Priorities List (NPL)	A list of sites (regulated by either a federal or state agency) 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 Resources	Properties listed on the National Register of Historic Places, properties formally determined 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)	NAGPRA defines the ownership and control of Native American human remains and associated funerary objects discovered or recovered from federal or tribal land.
Native Americans	Used in the collective sense to refer to individuals, bands, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contacts.
Native vegetation	Plant life that occurs naturally in an area without agricultural or cultivational 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.
Nonnative species	Species that have invaded or been introduced into an area.
PCB-contaminated equipment	Equipment which contains a concentration of PCBs from 50 to 449 ppm or greater. Disposal and removal are regulated by the EPA.

Appendix A. Glossary

Peak hour	The hour of highest traffic volume on a given section of roadway between 7:00 A.M. and 9:00 A.M. or between 4:00 P.M. and 6:00 P.M.
Permit	An authorization, license, or equivalent control document to implement the requirements of an environmental regulation.
Polychlorinated biphenyls (PCBs)	Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as an environmental pollutant that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.
Potable water	Water that is suitable for drinking.
Prehistoric	The period of time before the written record.
Prehistory	The archeological record of nonliterate cultures; the cultural past before the advent of written records.
Preliminary assessment (PA)	The PA, part of the CERCLA remediation process, identifies areas of potential contamination and evaluates each area to determine if a threat to human health or the environment exists. A PA report is developed from readily available information such as past inventory records, aerial photographs, employee interviews, existing analytical data, and a site visit. A PA 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.
Record of Decision (ROD)	The document prepared under the federal government pursuant to NEPA that documents the reasoning behind the decision.
Recycling	The process of minimizing the generation of waste by recovering usable products that might otherwise become waste.
Region of influence (ROI)	For each resource, the region affected by the proposed action or alternatives and used for analysis in the affected environment and impact discussion.

Remedial action	During the remedial action (RA) phase, part of the CERCLA remediation process, the selected cleanup technology is implemented. RA can be as simple as soil excavation or as complicated as a complete ground water treatment system that operates for many years. Remedial action work plans for long term remediations will include Operation and Maintenance (O&M) plans. O&M efforts continue until the cleanup is complete.
Remedial investigation (RI)	This investigation, part of the CERCLA remediation process, is performed to more fully define the nature and extent of the contamination at a site and 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)	RCRA 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 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.
Runoff	The noninfiltrating water entering a stream or other conveyance channel shortly after a rainfall event.
Seismicity	Relative frequency and distribution of earthquakes.
Short-term	Transitory effects of the proposed program that are of limited duration and are generally caused by construction activities or operations start-up.

Appendix A. Glossary

Significance	The importance of a given impact on a specific resource as defined under the Council on Environmental Quality regulations.
Single-family housing	A conventionally built house consisting of a single dwelling unit occupied by one household.
Site	The location of past cultural activity; a defined space with more or less continuous archeological evidence.
Site discovery	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 site inspection collects any information needed for hazard ranking. The SI may recommend a site for no action, further study, or an immediate removal action.
Soil	A natural body consisting of layers or horizons of mineral and/or organic constituents of variable thickness and differing from the parent material in their morphological, physical, chemical, and mineralogical properties and biological characteristics.
Soil types	A category or detailed mapping unit used for soil surveys based on phases or changes within a series (e.g., slope, salinity).
Solid waste management	Supervised handling of waste materials from their source through recovery processes to disposal.
State Historic Preservation Officer (SHPO)	The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as a liaison for purposes of implementing the National Historic Preservation Act.
Stratigraphy	The study of cultural and natural strata or layers in archeological and geological deposits, particularly with the aim of determining the relative age of strata.
Superfund Amendments and Reauthorization Act (SARA)	SARA was enacted in 1986 to increase the Superfund to \$8.5 billion, modify contaminated site cleanup criteria scheduling, and 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.

Surface water	All water naturally open to the atmosphere and all wells, springs, or other collectors which are directly influenced by surface water.
Threatened species	Plant and wildlife species likely to become endangered in the foreseeable future.
Toxic	Harmful to living organisms.
Toxic Substances Control Act (TSCA)	TSCA provides authority to test and regulate chemicals to protect human health. Substances regulated under TSCA include asbestos and PCBs.
Traffic, peak hour	The highest number of vehicles observed to traverse a section of roadway during 60 consecutive minutes.
Transfer	Deliver U.S. government property to another federal agency.
U.S. Environmental Protection Agency (USEPA)	The independent federal agency established in 1970 to regulate federal environmental matters and oversees the implementation of federal environmental laws.
Waters of the United States	Waters that are subject to Section 404 of the Clean Water Act. These include both deep water aquatic habitats and special aquatic sites, including wetlands.
Zoning	The division of a municipality into districts for the purpose of regulating land use, types of buildings, required yards, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirement for each zoning category.

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APPENDIX B

Overview of Federal and State Disposal Laws and Regulations

APPENDIX B

OVERVIEW OF FEDERAL AND STATE DISPOSAL LAWS AND REGULATIONS

FEDERAL REUSE PLANNING PROGRAMS AND PROCEDURES

This section briefly highlights some of the key federal planning programs and procedures that guide the base closure process at NSTI.

Defense Base Closure and Realignment Act of 1990 (10 U.S.C. § 2687)

This act established procedures to minimize the economic hardships on local communities adversely affected by base closures and to facilitate the economic recovery of such communities. In order to maximize the local benefit from the reutilization and redevelopment of the installation, the Secretary of the military department must consider local economic needs and priorities in the disposal process.

For NSTI, the Treasure Island Development Authority (TIDA) is recognized as the local redevelopment authority (LRA). The LRA is the entity recognized by the DoD through its Office of Economic Adjustment to prepare and direct the implementation of the reuse plan. In determining economic needs and priorities, and in preparing the Record of Decision (ROD) for an EIS, the federal lead agency must take into account and give substantial deference to the reuse plan developed by the LRA for the installation. A reuse plan is provided for the reuse or redevelopment of the closed military installation.

President Clinton's Five Point Program

This program was announced by former President Clinton in July 1993 in an effort to offset the negative effects of military base closures on local communities. The program emphasizes expeditious disposal of federal property for uses that will create new jobs for the local community. Job creation and economic development are given the highest priority in the reuse of closed military bases.

National Defense Authorization Act of 1994 (Pub. L. No. 103-160, 107 Stat. 1547)

This act is an amendment to the DBCRA of 1990. Under this act, the federal government should attempt to facilitate the economic recovery of communities that experience adverse economic circumstances as a result of base closure or realignment. The federal government works with such communities to identify and implement means of redeveloping and revitalizing closed military installations in a beneficial manner and accelerate the environmental cleanup and restoration of closed military installations. The federal government may also make real property at closed military installations available to local communities at less than fair market value, or without consideration, if appropriate.

Stewart B. McKinney Homeless Assistance Act of 1987, as amended (Public Law No. 100-77)

Under this act, a homeless services provider may prepare and submit an application to acquire surplus federal property for purposes of assisting the homeless. As authorized by the act, DON must report the potential availability of all underutilized, unutilized, excess and/or surplus buildings and land to HUD. The suitability of these properties for use by the homeless is then determined by HUD. Homeless assistance providers have 60 days after the notice of availability is published in the Federal Register to express interest in the property to HHS and 90 days to submit an application. HHS has 25 days from receipt of the application to review and approve/deny it. With extremely limited exceptions, once an application is submitted to and approved by HHS, the holding agency (in this case DON) must assign the property to HHS for conveyance to the approved applicant.

An assignment of real property to another federal agency is categorically excluded under NEPA. However, under the provisions of 45 C.F.R. § 12.10, the other federal agency would be required to complete an environmental evaluation and to otherwise comply with NEPA prior to making a final conveyance of the property.

Base Closure Community Redevelopment and Homeless Assistance Act (42 U.S.C. § 11411)

The provisions of the Base Closure Community Redevelopment and Homeless Assistance Act, passed as part of the National Defense Authorization Act of 1994, support and put into law the intent of the President's efforts to support local communities affected by closure. This act, also referred to as the "Redevelopment Act," creates a locally controlled reuse process for redevelopment of a closing base. The act requires that the DoD recognize a local redevelopment authority for each closing installation in order to develop a reuse plan for each installation. The LRA is responsible for completing the screening and use of the base for state, local government, and homeless uses. The Department of Housing and Urban Development (HUD) reviews the community redevelopment plan to ensure that homeless needs have been adequately considered.

Surplus Property Act of 1994 (50 U.S.C. app. § 1601) and Federal Property and Administrative Services Act of 1949 (40 U.S.C. 471)

These acts established the authority for the transfer of excess real property to other federal agencies and the disposal of surplus property. The acts and implementing regulations provide for public benefit conveyances for health, education, and other purposes to tax exempt, nonprofit organizations, and public entities. The acts and regulations establish the process for the disposal of property through negotiated sales to public entities and through advertised competitive bidding.

STATE AND LOCAL PLANNING PROGRAMS AND PROCEDURES

This section briefly highlights some of the key local planning programs and procedures that guide the reuse process of NSTI.

California Planning and Zoning Law (Government Code Title 7, Division 1, §§ 65000-66037)

This law established regulations for long-term policies for use of property and related improvements, as well as the framework for zoning and subdivision regulations to implement those policies by city, county, and other local government agencies. California State law requires each city to adopt a comprehensive, long-term general plan for its physical development.

California Community Redevelopment Law (Health and Safety Code, § 33000 et. seq.)

This law establishes regulations for use by cities and counties to revitalize deteriorating and blighted urban areas. It authorizes a city or a county to establish a redevelopment agency and one or more redevelopment project areas. The law provides a redevelopment agency with powers that are typical for a local governmental agency and two unique powers: the ability to use the power of eminent domain (condemnation) to acquire property for resale to another private entity or organization; and the power to collect property tax increment in order to finance the redevelopment programs of the community, including the provision of public infrastructure and other improvements. Most of the NSTI reuse planning area is within the boundaries of a proposed redevelopment project area.

California Local Military Base Recovery Area Act (Government Code § 7105-7117)

In order to stimulate business and industrial growth in areas affected by military base closures, the State Legislature established the concept of local military base recovery areas (LAMBRA) that could provide relaxed regulatory controls, tax credits, and other economic incentives to private sector investors. Local jurisdictions can apply for LAMBRA status for a base, provided it is not already within a state-designated enterprise zone. The act authorizes the California Trade and Commerce Agency (CTCA) to designate no less than one LAMBRA in each of the state's five regions, and limits the Agency to designating no more than eight LAMBRA.

Governor Wilson's Executive Order W-81-94

This Executive Order by Governor Pete Wilson directs State agencies to pursue successful economic conversion of military bases by implementing State programs, regulatory pursuits, and allocation of resources for State-funded capital outlay projects. It includes provisions to expedite economic assistance and regulatory and resource reviews. It also designates the Director of the Office of Planning and Research (OPR) as the State lead public contact for redevelopment of military bases, and directs OPR to coordinate a comprehensive program to implement recommendations provided by the Governor's Military Base Reuse Task Force through state and federal legislation. All State departments and agencies are directed to cooperate in this effort.

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APPENDIX C

Agency Correspondence



United States Department of the Interior

recd April 11 '95

"C94-179"

FISH AND WILDLIFE SERVICE

911 NE 11th Avenue
Portland, Oregon 97232-4181

IN REPLY REFER TO:

FWS/ARW-RE

APR 11 1995

Dennis P. Drennan, Jr.
Director, Real Estate Division
Department of the Navy
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-2402

Dear Mr. Drennan:

The U.S. Fish and Wildlife Service (Service) has been informed by Duane Marti of the U.S. Bureau of Land Management that the U.S. Navy will be disposing of Naval Station Treasure Island, which includes Yerba Buena Island.

The Service recognizes Yerba Buena Island as habitat for colonial seabirds. According to a 1990 census, the island supported small nesting colonies of Brandt's cormorants (4 nests), pelagic cormorants (2 nests), western gulls (31 nests), and black oystercatcher (1 breeding bird). The Brandt's cormorant colony and the pelagic cormorant colony are the only ones in San Francisco Bay. The Brandt's and pelagic cormorants are located at site O3 within site SFB-SF-07 as depicted on the enclosed map. Gulls are located at sites O1 through O5. The oystercatcher is located at site O1.

While we recognize that Yerba Buena Island does not warrant incorporation into the National Wildlife Refuge System, the natural resources of the island should be protected. Access to and activities around the nesting birds on Yerba Buena Island should be restricted. We recommend that the following covenant be included in any deed conveying the property to a non-Federal entity:

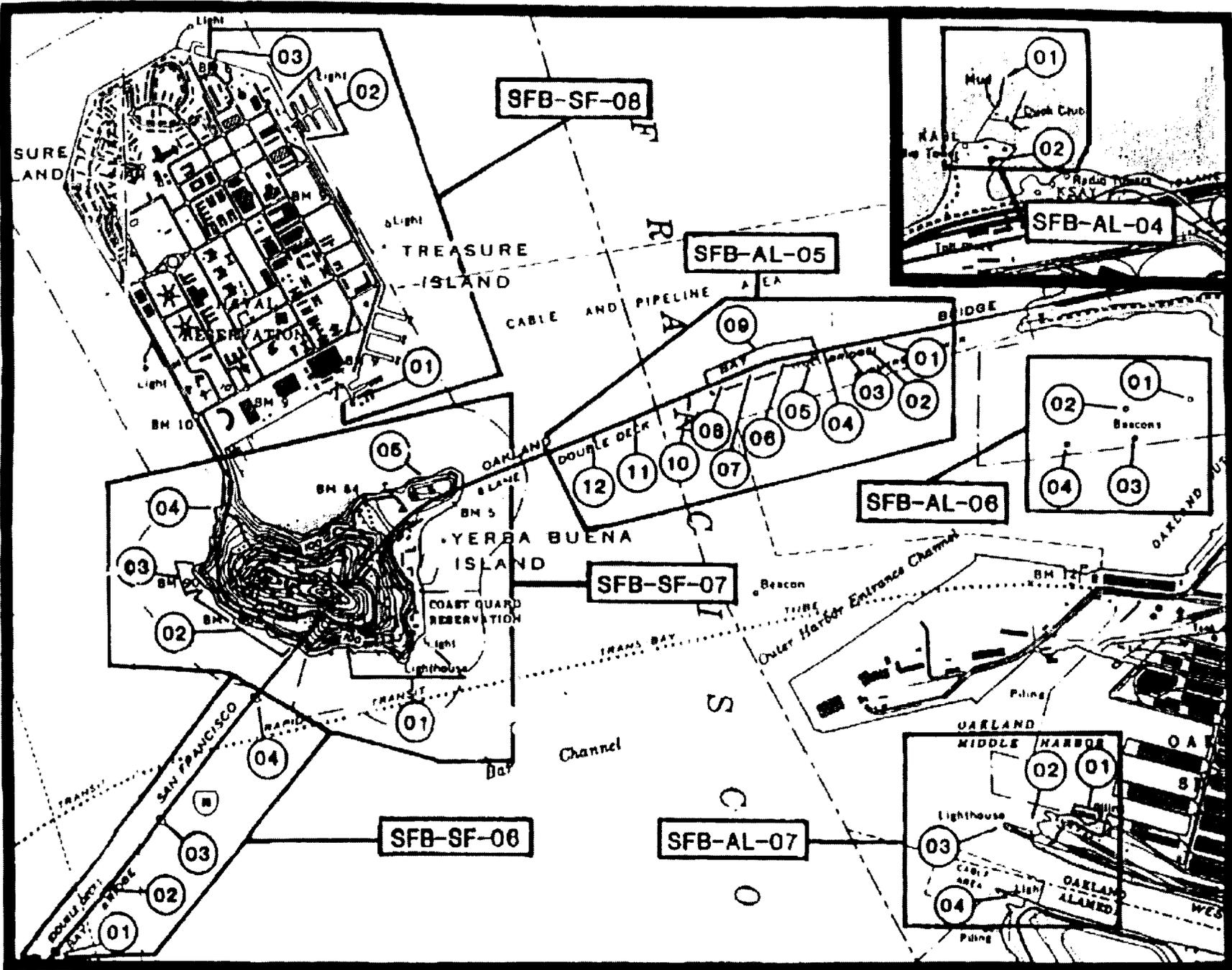
The owner shall not use, or authorize the land to be used by others specifically during the breeding and nesting period between March 15 through August 30 of each year, for any purpose that would substantially or adversely interfere with its use as a seabird nesting area.

If you have any questions, please contact Richard Moore, Realty Supervisor, at (503) 231-6209 in Portland, Oregon. Thank you for your cooperation.

Sincerely,

Regional Director

Enclosure



0-2

U.S. GOVERNMENT PRINTING OFFICE: 1967 O 348 000
 GPO : 1967 O 348 000



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

IN REPLY REFER TO:

1-1-97-I-839

February 27, 1997

Mr. Douglas Pomeroy
Group Leader, Base Conversion/Biology Section
U.S. Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5005

Subject: Request for Concurrence for the Proposed Closure of Naval Station Treasure Island, San Francisco County, California, on Federally Listed Plant Species

Dear Mr. Pomeroy:

The U.S. Fish and Wildlife Service (Service) has reviewed the Navy's Special-Status Plant Survey and Habitat Assessment prepared for Yerba Buena Island. The Service concurs that closure of Naval Station Treasure Island, including Yerba Buena Island, is not likely to adversely affect any federally listed plant species.

No further action pursuant to the Endangered Species Act of 1973, as amended, is necessary for listed plants. We have included an attachment of federally listed animal species in the area of Treasure Island for use in developing the draft Environmental Impact Statement (DEIR). Several special-status avian species are known to occur within the project vicinity (i.e. California brown pelican, western snowy plover, California least tern, American peregrine falcon) and should be addressed individually in the DEIR. Please feel free to contact the Service should you require further information or technical assistance. We look forward to reviewing the DEIR upon its completion.

If you have questions regarding this response, please contact Meri Moore of my staff at (916) 979-2752.

Sincerely,

Wayne S. White
Field Supervisor

Attachment

cc: CDFG, Environmental Services, Sacramento, CA
FWS, Habitat Conservation, Sacramento, CA

THREATENED & ENDANGERED ANIMALS IN THE AREA OF
OR AFFECTED BY PROJECTS IN THE AREA OF
TREASURE ISLAND, CALIFORNIA
JANUARY 27, 1997

OAKLAND WEST

- Eagle, bald, *Haliaeetus leucocephalus* (T)
- Falcon, American peregrine, *Falco peregrinus anatum* (E)
- Frog, California red-legged frog, *Rana aurora draytonii* (T)
- Goby, tidewater, *Eucyclogobius newberryi* (E)
- Mouse, salt marsh harvest, *Reithrodontomys raviventris* (E)
- Pelican, California brown, *Pelecanus occidentalis californicus* (E)
- Plover, western snowy, *Charadrius alexandrinus nivosus* (T)
- Rail, California clapper, *Rallus longirostris obsoletus* (E)
- Salamander, California tiger, *Ambystoma californiense* (C)
- Salmon, Coho - central CA coast, *Oncorhynchus kisutch* (T)
- Salmon, winter-run chinook, *Oncorhynchus tshawytscha* (E)
- Salmon, winter-run chinook critical habitat, *Oncorhynchus tshawytscha* (E)
- Smelt, delta, *Hypomesus transpacificus* (T)
- Splittail, Sacramento, *Pogonichthys macrolepidotus* (PT)
- Steelhead, Central California, *Oncorhynchus mykiss* (PE)
- Tern, California least, *Sterna antillarum (=albifrons) browni* (E)
- Whipsnake, Alameda, *Masticophis lateralis euryxanthus* (PE)

SAN FRANCISCO NORTH

- Butterfly, San Bruno affin, *Incisalia mossli bayensis* (E)
- Butterfly, mission blue, *Icaricia icarioides missionensis* (E)
- Eagle, bald, *Haliaeetus leucocephalus* (T)
- Falcon, American peregrine, *Falco peregrinus anatum* (E)
- Frog, California red-legged frog, *Rana aurora draytonii* (T)
- Mouse, salt marsh harvest, *Reithrodontomys raviventris* (E)
- Pelican, California brown, *Pelecanus occidentalis californicus* (E)
- Plover, western snowy, *Charadrius alexandrinus nivosus* (T)
- Rail, California clapper, *Rallus longirostris obsoletus* (E)
- Salamander, California tiger, *Ambystoma californiense* (C)
- Salmon, Coho - central CA coast, *Oncorhynchus kisutch* (T)
- Salmon, winter-run chinook, *Oncorhynchus tshawytscha* (E)
- Salmon, winter-run chinook critical habitat, *Oncorhynchus tshawytscha* (E)
- Smelt, delta, *Hypomesus transpacificus* (T)
- Splittail, Sacramento, *Pogonichthys macrolepidotus* (PT)
- Steelhead, Central California, *Oncorhynchus mykiss* (PE)



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-00-SP-1247

March 21, 2000

Mr. Terry Witherspoon
Project Manager
Tetra Tech, Inc.
180 Howard Street, Suite 250
San Francisco, California 94105-1617

Subject: Species List for EIR/EIS, Disposal and Reuse of Naval Station Treasure Island, San Francisco County, California

Dear Mr. Witherspoon:

We are sending the enclosed list in response to your March 20, 2000, request for information about endangered and threatened species (Enclosure A). The list covers the following U.S. Geological Survey 7½ minute quad or quads: San Francisco South and Oakland West Quads.

Please read *Important Information About Your Species List* (enclosed). It explains how we made the list and describes your responsibilities under the Endangered Species Act. Please contact Harry Mossman, Biological Technician, at (916) 414-6650, if you have any questions about the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of Mr. Mossman at this address. You may fax requests to him at 414-6710 or 6711.

Sincerely,

For Karen J. Miller
Chief, Endangered Species Division

Enclosures

ENCLOSURE A

Endangered and Threatened Species that May Occur in or be Affected by
PROJECTS IN SAN FRANCISCO COUNTY

Reference File No. 1-1-00-SP-1247

March 21, 2000

Listed Species

Mammals

- sei whale, *Balaenoptera borealis* (E)
- blue whale, *Balaenoptera musculus* (E)
- finback (=fin) whale, *Balaenoptera physalus* (E)
- right whale, *Eubalaena glacialis* (E)
- humpback whale, *Megaptera novaeangliae* (E)
- sperm whale, *Physeter catodon* (=macrocephalus) (E)
- salt marsh harvest mouse, *Reithrodontomys raviventris* (E)
- Guadalupe fur seal, *Arctocephalus townsendi* (T)
- Critical Habitat, Steller (=northern) sea-lion, *Eumetopias jubatus* (T)
- Steller (=northern) sea-lion, *Eumetopias jubatus* (T)

Birds

- California brown pelican, *Pelecanus occidentalis californicus* (E)
- California clapper rail, *Rallus longirostris obsoletus* (E)
- western snowy plover, *Charadrius alexandrinus nivosus* (T)
- bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

- leatherback turtle, *Dermochelys coriacea* (E)
- loggerhead turtle, *Caretta caretta* (T)
- green turtle, *Chelonia mydas* (incl. agassizi) (T)
- olive (=Pacific) ridley sea turtle, *Lepidochelys olivacea* (T)

Amphibians

- California red-legged frog, *Rana aurora draytonii* (T)

Fish

- tidewater goby, *Eucyclogobius newberryi* (E)
- Critical habitat, winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- delta smelt, *Hypomesus transpacificus* (T)
- Central California steelhead, *Oncorhynchus mykiss* (T)
- Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

- mission blue butterfly, *Icaricia icarioides missionensis* (E)
- San Bruno elfin butterfly, *Incisalia mossii bayensis* (E)

Plants

- Presidio manzanita, *Arctostaphylos hookeri* ssp. *ravenii* (E)
- Presidio clarkia, *Clarkia franciscana* (E)
- San Francisco lessingia, *Lessingia germanorum* (E)
- Marin dwarf-flax, *Hesperolinon congestum* (T)
- marsh sandwort, *Arenaria paludicola* (E)*
- beach layia, *Layia carnosus* (E)*

Proposed Species

Birds

- short-tailed albatross, *Diomedea albatrus* (PE)

Candidate Species

Amphibians

- California tiger salamander, *Ambystoma californiense* (C)

Species of Concern

Mammals

- gray whale, *Eschrichtius robustus* (D)
- Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)
- greater western mastiff-bat, *Eumops perotis californicus* (SC)
- long-eared myotis bat, *Myotis evotis* (SC)
- fringed myotis bat, *Myotis thysanodes* (SC)
- long-legged myotis bat, *Myotis volans* (SC)
- Yuma myotis bat, *Myotis yumanensis* (SC)
- San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)
- salt marsh vagrant shrew, *Sorex vagrans halicoetes* (SC)

Birds

- little willow flycatcher, *Empidonax traillii brewsteri* (CA)
- black rail, *Laterallus jamaicensis coturniculus* (CA)
- bank swallow, *Riparia riparia* (CA)
- American peregrine falcon, *Falco peregrinus anatum* (D)
- tricolored blackbird, *Agelaius tricolor* (SC)
- grasshopper sparrow, *Ammodramus savannarum* (SC)
- Bell's sage sparrow, *Amphispiza belli belli* (SC)
- American bittern, *Botaurus lentiginosus* (SC)
- feruginous hawk, *Buteo regalis* (SC)
- Vaux's swift, *Chaetura vauxi* (SC)
- lark sparrow, *Chondestes grammacus* (SC)
- olive-sided flycatcher, *Contopus cooperi* (SC)
- hermit warbler, *Dendroica occidentalis* (SC)
- white-tailed (=black shouldered) kite, *Elanus leucurus* (SC)

Pacific-slope flycatcher, *Empidonax difficilis* (SC)
common loon, *Gavia immer* (SC)
saltmarsh common yellowthroat, *Geothlypis trichas sinuosa* (SC)
loggerhead shrike, *Lanius ludovicianus* (SC)
Alameda (South Bay) song sparrow, *Melospiza melodia pusillula* (SC)
long-billed curlew, *Numenius americanus* (SC)
ashy storm-petrel, *Oceanodroma homochroa* (SC)
rufous hummingbird, *Selasphorus rufus* (SC)
Allen's hummingbird, *Selasphorus sasin* (SC)
red-breasted sapsucker, *Sphyrapicus ruber* (SC)
elegant tern, *Sterna elegans* (SC)
Xantus' murrelet, *Synthliboramphus hypoleucus* (SC)
Bewick's wren, *Thryomanes bewickii* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
southwestern pond turtle, *Clemmys marmorata pallida* (SC)
California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)
river lamprey, *Lampetra ayresi* (SC)
Pacific lamprey, *Lampetra tindentata* (SC)
longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

Opler's longhorn moth, *Adela oplerella* (SC)
sandy beach tiger beetle, *Cicindela hirticollis gravida* (SC)
globose dune beetle, *Coelus globosus* (SC)
Ricksecker's water scavenger beetle, *Hydrochara nickseckeri* (SC)
bumblebee scarab beetle, *Lichnanthe ursina* (SC)

Plants

San Francisco Bay spineflower, *Chorizanthe cuspidata* var. *cuspidata* (SC)
San Francisco wallflower, *Erysimum franciscanum* (SC)
fragrant fritillary, *Fritillaria liliacea* (SC)
San Francisco gumplant, *Grindelia hirsutula* var. *maritima* (SC)
Mann checkermallow, *Sidalcea hickmanii* ssp. *vindis* (SC)
Mission Delores campion, *Silene verecunda* ssp. *verecunda* (SC)
San Francisco owl's-clover, *Triphysaria floribunda* (SC)
San Francisco popcornflower, *Plagiobothrys diffusus* (CA)*

alkali milk-vetch, *Astragalus tener* var. *tener* (SC) *

compact cobweb thistle, *Cirsium occidentale* var. *compactum* (SC) *

Diablo helianthella (=rock-rose), *Helianthella castanea* (SC) *

Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata* ssp. *sericea* (SC) *

adobe sanicle, *Sanicula maritima* (SC) *

San Francisco manzanita, *Arctostaphylos hookeri* ssp. *franciscana* (SC) **

coast lily, *Lilium maritimum* (SC) ?*

KEY:

(E) <i>Endangered</i>	Listed (in the Federal Register) as being in danger of extinction.
(T) <i>Threatened</i>	Listed as likely to become endangered within the foreseeable future.
(P) <i>Proposed</i>	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(PX) <i>Proposed</i> <i>Critical Habitat</i>	Proposed as an area essential to the conservation of the species.
(C) <i>Candidate</i>	Candidate to become a <i>proposed</i> species.
(SC) <i>Species of</i> <i>Concern</i>	Other species of concern to the Service.
(D) <i>Delisted</i>	Delisted. Status to be monitored for 5 years.
(CA) <i>State-Listed</i>	Listed as threatened or endangered by the State of California.
· <i>Extirpated</i>	Possibly extirpated from the area.
** <i>Extinct</i>	Possibly extinct
<i>Critical Habitat</i>	Area essential to the conservation of a species.

ENCLOSURE A

Endangered and Threatened Species that May Occur in
or be Affected by Projects in the Selected Quads Listed Below

Reference File No. 1-1-00-SP-1247

March 21, 2000

QUAD : 466C SAN FRANCISCO NORTH

Listed Species

Mammals

- Guadalupe fur seal, *Arctocephalus townsendi* (T)
- sei whale, *Balaenoptera borealis* (E)
- blue whale, *Balaenoptera musculus* (E)
- finback (=fin) whale, *Balaenoptera physalus* (E)
- right whale, *Eubalaena glacialis* (E)
- Critical Habitat, Steller (=northern) sea-lion, *Eumetopias jubatus* (T)
- Steller (=northern) sea-lion, *Eumetopias jubatus* (T)
- sperm whale, *Physeter catodon* (=macrocephalus) (E)
- salt marsh harvest mouse, *Reithrodontomys raviventris* (E) *

Birds

- western snowy plover, *Charadrius alexandrinus nivosus* (T)
- bald eagle, *Haliaeetus leucocephalus* (T)
- California brown pelican, *Pelecanus occidentalis californicus* (E)
- California clapper rail, *Rallus longirostris obsoletus* (E) *

Amphibians

- California red-legged frog, *Rana aurora draytonii* (T)

Fish

- delta smelt, *Hypomesus transpacificus* (T)
- Critical habitat, coho salmon - central CA coast, *Oncorhynchus kisutch* (T)
- coho salmon - central CA coast, *Oncorhynchus kisutch* (T)
- Central California steelhead, *Oncorhynchus mykiss* (T)
- Critical habitat, winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)
- Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

- mission blue butterfly, *Icaricia icarioides missionensis* (E)
- San Bruno elfin butterfly, *Incisalia mossii bayensis* (E)

Plants

- Presidio manzanita, *Arctostaphylos hookeri* ssp. *ravenii* (E)
- marsh sandwort, *Arenaria paludicola* (E) *
- Presidio clarkia, *Clarkia franciscana* (E)
- Mann dwarf-flax, *Hesperolinon congestum* (T)
- beach layia, *Layia carnosa* (E) *
- San Francisco lessingia, *Lessingia germanorum* (E)

Proposed Species

Birds

- short-tailed albatross, *Diomedea albatrus* (PE)

Fish

- Critical Habitat, Central Valley spring-run chinook, *Oncorhynchus tshawytscha* (PX)

Candidate Species

Amphibians

- California tiger salamander, *Ambystoma californiense* (C)

Fish

- Central Valley fall/wate fall-run chinook salmon, *Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

- Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)
- gray whale, *Eschrichtius robustus* (D)
- greater western mastiff-bat, *Eumops perotis californicus* (SC)
- long-eared myotis bat, *Myotis evotis* (SC)
- fringed myotis bat, *Myotis thysanodes* (SC)
- long-legged myotis bat, *Myotis volans* (SC)
- Yuma myotis bat, *Myotis yumanensis* (SC)
- San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)
- Point Reyes jumping mouse, *Zapus trinotatus orarius* (SC)

Birds

- tricolored blackbird, *Agelaius tricolor* (SC)
- Bell's sage sparrow, *Amphispiza belli belli* (SC)
- feruginous hawk, *Buteo regalis* (SC)
- little willow flycatcher, *Empidonax traillii brewsteri* (CA)
- American peregrine falcon, *Falco peregrinus anatum* (D)

saltmarsh common yellowthroat, *Geothlypis trichas sinuosa* (SC)

black rail, *Laterallus jamaicensis coturniculus* (CA)

ashy storm-petrel, *Oceanodroma homochroa* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

southwestern pond turtle, *Clemmys marmorata pallida* (SC)

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

Fish

longfin smelt, *Spinichus thaleichthys* (SC)

Invertebrates

Opler's longhorn moth, *Adela oplerella* (SC)

sandy beach tiger beetle, *Cicindela hirticollis gravida* (SC)

globose dune beetle, *Coelus globosus* (SC)

Ricksecker's water scavenger beetle, *Hydrochara rickseckeri* (SC)

bumblebee scarab beetle, *Lichnanthe ursina* (SC)

Plants

San Francisco manzanita, *Arctostaphylos hookeri* ssp. *franciscana* (SC) **

alkali milk-vetch, *Astragalus tener* var. *tener* (SC) *

San Francisco Bay spineflower, *Chorizanthe cuspidata* var. *cuspidata* (SC)

San Francisco gumplant, *Grindelia hirsutula* var. *maritima* (SC)

Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata* ssp. *sericea* (SC) *

San Francisco popcornflower, *Plagiobothrys diffusus* (CA) *

adobe sanicle, *Sanicula maritima* (SC) *

Marin checkermallow, *Sidalcea hickmanii* ssp. *viridis* (SC)

Mission Delores campion, *Silene verecunda* ssp. *verecunda* (SC)

San Francisco owl's-clover, *Triphysaria floribunda* (SC)

QUAD : 466D OAKLAND WEST

Listed Species

Mammals

salt marsh harvest mouse, *Reithrodontomys raviventris* (E)

Birds

- western snowy plover, *Charadrius alexandrinus nivosus* (T)
- bald eagle, *Haliaeetus leucocephalus* (T)
- California brown pelican, *Pelecanus occidentalis californicus* (E)
- California clapper rail, *Rallus longirostris obsoletus* (E)
- California least tern, *Sterna antillarum (=albifrons) browni* (E)

Reptiles

- Alameda whipsnake, *Masticophis lateralis euryxanthus* (T)

Amphibians

- California red-legged frog, *Rana aurora draytonii* (T)

Fish

- tidewater goby, *Eucyclogobius newberryi* (E)
- delta smelt, *Hypomesus transpacificus* (T)
- coho salmon - central CA coast, *Oncorhynchus kisutch* (T)
- Central California steelhead, *Oncorhynchus mykiss* (T)
- Critical habitat, winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)
- Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Proposed Species

Fish

- Critical Habitat, Central Valley spring-run chinook, *Oncorhynchus tshawytscha* (PX)

Plants

- Santa Cruz tarplant, *Holocarpha macradenia* (PT) *

Candidate Species

Amphibians

- California tiger salamander, *Ambystoma californiense* (C)

Fish

- Central Valley fall/late fall-run chinook salmon, *Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

- Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)
- Berkeley kangaroo rat, *Dipodomys heermanni berkeleyensis* (SC) *
- greater western mastiff-bat, *Eumops perotis californicus* (SC)

long-eared myotis bat, *Myotis evotis* (SC)
 fringed myotis bat, *Myotis thysanodes* (SC)
 long-legged myotis bat, *Myotis volans* (SC)
 Yuma myotis bat, *Myotis yumanensis* (SC)
 San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)
 Alameda Island mole, *Scapanus latimanus parvus* (SC)
 salt marsh vagrant shrew, *Sorex vagrans halicoetes* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)
 Bell's sage sparrow, *Amphispiza belli belli* (SC)
 ferruginous hawk, *Buteo regalis* (SC)
 little willow flycatcher, *Empidonax traillii brewsteri* (CA)
 American peregrine falcon, *Falco peregrinus anatum* (D)
 saltmarsh common yellowthroat, *Geothlypis trichas sinuosa* (SC)
 black rail, *Laterallus jamaicensis coturniculus* (CA)
 Alameda (South Bay) song sparrow, *Melospiza melodia pusillula* (SC)

Reptiles

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
 southwestern pond turtle, *Clemmys marmorata pallida* (SC)
 California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

Fish

longfin smelt, *Spinichus thaleichthys* (SC)

Invertebrates

Bridges' Coast Range shoulderband snail, *Helminthoglypta nickliniana bridgesi* (SC)
 Ricksecker's water scavenger beetle, *Hydrochara rickseckeri* (SC)
 San Francisco lacewing, *Nothochrysa californica* (SC)

Plants

alkali milk-vetch, *Astragalus tener* var. *tener* (SC) *
 San Francisco Bay spineflower, *Chorizanthe cuspidata* var. *cuspidata* (SC) *
 northcoast bird's-beak, *Cordylanthus mantinus* ssp. *palustris* (SC) *
 Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata* ssp. *sencea* (SC) *

adobe sanicle, *Sanicula maritima* (SC) *

KEY:

- | | |
|---|---|
| (E) <i>Endangered</i> | Listed (in the Federal Register) as being in danger of extinction. |
| (T) <i>Threatened</i> | Listed as likely to become endangered within the foreseeable future. |
| (P) <i>Proposed</i> | Officially proposed (in the Federal Register) for listing as endangered or threatened. |
| (PX) <i>Proposed
Critical Habitat</i> | Proposed as an area essential to the conservation of the species. |
| (C) <i>Candidate</i> | Candidate to become a <i>proposed</i> species. |
| (SC) <i>Species of
Concern</i> | May be endangered or threatened. Not enough biological information has been gathered to support listing at this time. |
| (D) <i>Delisted</i> | Delisted. Status to be monitored for 5 years. |
| (CA) <i>State-Listed</i> | Listed as threatened or endangered by the State of California. |
| (*) <i>Extirpated</i> | Possibly extirpated from this quad. |
| (**) <i>Extinct
Critical Habitat</i> | Possibly extinct.
Area essential to the conservation of a species. |



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
777 Sonoma Avenue, Ste. 325
Santa Rosa, California 95404

April 12, 2000

F/SWR:4 BMM

Terry Witherspoon
Tetra Tech, Incorporation
180 Howard Street, Suite 250
San Francisco, California 94105-1617

Dear Terry Witherspoon:

Thank you for your letter requesting a list of species of concern from the National Marine Fisheries Service (NMFS) that are found in the project area impacted by the Disposal and Reuse of Naval Station Treasure Island in San Francisco County, California.

The following fish species federally-listed under the Endangered Species Act are located within the project area:

Sacramento River winter-run chinook salmon (*Oncorhynchus tshawytscha*)- endangered
Central Valley ESU spring-run chinook salmon- (*Oncorhynchus tshawytscha*) - threatened
Central California Coast ESU steelhead (*Oncorhynchus mykiss*) - threatened
Central Valley ESU steelhead (*Oncorhynchus mykiss*) - threatened

The project is located within designated critical habitat for the above listed species.

The project location is also designated as Essential Fish Habitat (EFH) for fish species managed with the following Fishery Management Plans under the Magnuson-Stevens Fishery Conservation and Management Act:

Pacific Groundfish Fishery Management Plan
Coastal Pelagics Fishery Management Plan

Information on EFH and the Fishery Management Plans, as well as species lists for the project area, are located on our website under Habitat Conservation Division (<http://swr.ucsd.edu>).

Two species of marine mammals are located in the project area: the California sea lion and the Harbor seal. These species are protected by the Marine Mammal Protection Act.



The U. S. Fish and Wildlife Service (USFWS) may also have listed species or critical habitat under its jurisdiction in the project area. Please contact USFWS at 2800 Cottage Way, Sacramento, California 95825, or (916) 414-6600, regarding the presence of listed species or critical habitat under their jurisdiction that may be affected by your project.

If you have any questions concerning these comments, please contact Brian Mulvey at (707) 575-6056.

Sincerely,



James R. Bybee
Habitat Program Manager
Northern California Region

cc: Christina Fahy, NMFS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO
1-1-02-SP-306

November 26, 2001

Ms. Jeannette Weisman
Biologist
Tetra Tech, Inc.
180 Howard Street, Suite 250
San Francisco, California 94105

Subject: Species List for Environmental Impact Statement for Disposal and Reuse
of Naval Station Treasure Island, San Francisco County, California

Dear Ms. Weisman:

We are sending the enclosed list in response to your November 19, 2001, request for information about endangered and threatened species (Enclosure A). The list covers the following U.S. Geological Survey 7½ minute quad or quads: San Francisco North and Oakland West Quads.

Please read *Important Information About Your Species List* (enclosed). It explains how we made the list and describes your responsibilities under the Endangered Species Act. Please contact Harry Mossman, Biological Technician, at (916) 414-6674, if you have any questions about the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of Mr. Mossman at this address. You may fax requests to him at 414-6712 or 6713.

Sincerely,


for Jan C. Knight
Chief, Endangered Species Division

Enclosures

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute *quads*. The United States is divided into these quads, which are about the size of San Francisco. If you requested your list by quad name or number, that is what we used. Otherwise, we used the information you sent us to determine which quad or quads to use.

Animals

The animals on your species list are ones that occur within, *or may be affected by projects within*, the quads covered by the list. Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.

Plants

Any plants on your list are ones *that have actually been observed* in the quad or quads covered by the list. We have also included either a county species list or a list of species in nearby quads. We recommend that you check your project area for these plants. Plants may exist in an area without ever having been detected there.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. For plant surveys, we recommend using the enclosed *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Species*. The results of your surveys should be published in any environmental documents prepared for your project.

State-Listed Species

If a species has been listed as threatened or endangered by the State of California, but not by us nor by the National Marine Fisheries Service, it will appear on your list as a Species of Concern. *However you should contact the California Department of Fish and Game for official information about these species.* Call (916) 322-2493 or write Marketing Manager, California Department of Fish and Game, Natural Diversity Data Base, 1416 Ninth Street, Sacramento, California 95814.

Your Responsibilities Under the Endangered Species Act

All plants and animals identified as *listed* on Enclosure A are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the *take* of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal. Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a *formal consultation* with the Service. Such consultation would result in a *biological opinion* addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an *incidental take permit*. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project. Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that mitigates for the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the mitigation plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as *critical habitat*. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Maps and boundary descriptions of the critical habitat may be found in the *Federal Register*. The information is also reprinted in the *Code of Federal Regulations* (50 CFR 17.95).

Candidate Species

We recommend that you address impacts to *candidate* species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Your list may contain a section called *Species of Concern*. This term includes former *category 2 candidate species* and other plants and animals of concern to the Service and other Federal, State and private conservation agencies and organizations. Some of these species may become candidate species in the future.

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed, candidate and special concern species in your planning, this should not be a problem. We also continually strive to make our information as accurate as possible. Sometimes we learn that a particular species has a different range than we thought. This should not be a problem if you consider the species on the county or surrounding-quad lists that we have enclosed. If you have a long-term project or if your project is delayed, please feel free to contact us about getting a current list. You can also find out the current status of a species by going to the Service's Internet page: www.fws.gov



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

In reply please refer to:
151422-SWR-01-SR-937:ME

DEC - 3 2001

Jeanette Weisman, Biologist
Tetra Tech Inc.
180 Howard Street, Suite 250
San Francisco, California 94105

Dear Ms. Weisman:

Thank you for your letter dated November 21, 2001, regarding the presence of Federally listed threatened or endangered species or critical habitat that may be affected by the U.S. Navy's proposed Disposal and Reuse of Naval station Treasure Island, in San Francisco, California.

Available information indicates that the following listed species (Evolutionarily Significant Units) and designated critical habitat may occur in the project areas:

- Sacramento River winter-run chinook salmon (*Oncorhynchus tshawytscha*)**
 - endangered (January 4, 1994, 59 FR 440)
 - critical habitat (June 16, 1993, 58 FR 33212)
- Central Valley spring-run chinook salmon (*Oncorhynchus tshawytscha*)**
 - threatened (September 16, 1999, 64 FR 50394)
 - critical habitat (February 16, 2000, 65 FR 7764)
- Central California Coast coho (*Oncorhynchus kisutch*)**
 - threatened (October 31, 1996, 64 FR 56138)
 - critical habitat (May 5, 1999, 64 FR 24049)
- Central California Coast steelhead (*Oncorhynchus mykiss*)**
 - threatened (August 18, 1997, 62 FR 43937)
 - critical habitat (February 16, 2000, 65 FR 7764)
- Central Valley steelhead (*Oncorhynchus mykiss*)**
 - threatened (March 19, 1998, 63 FR 13347)
 - critical habitat (February 16, 2000, 65 FR 7764)

The project location is also within an area designated as Essential Fish Habitat (EFH) for fish species managed with the following Fishery Management Plans (FMP) under the Magnuson-



Stevens Fishery Conservation and Management Act:

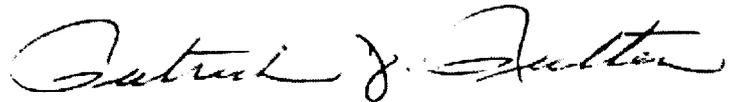
Pacific Groundfish FMP - (English sole, spiny dogfish, big skate, leopard shark, etc.)

Coastal Pelagics FMP - (northern anchovy, Pacific sardine)

Pacific Coast Salmon FMP - (chinook salmon)

If you have questions concerning these comments, please contact Maura Eagan of my staff at (707) 575-6092.

Sincerely,



Patrick J. Rutten
Northern California Supervisor
Protected Resources Division

cc: Jim Lecky, NMFS



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

AUG - 8 2002

In reply please refer to:
151422SWR01SR937: DPW

Michael C. Stroud
U.S. Department of the Navy
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5190

Dear Mr. Stroud:

Thank you for your request of April 8, 2002, to initiate Endangered Species Act (ESA) section 7 consultation with the National Marine Fisheries Service (NOAA Fisheries) for the proposed disposal of the Naval Station at Treasure Island (NSTI), located in San Francisco Bay, California. Your letter also requested direction regarding compliance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA). NOAA Fisheries has evaluated potential adverse effects to listed species under the jurisdiction of NOAA Fisheries and Essential Fish Habitat associated with the Navy's disposal of NSTI. NOAA Fisheries did not evaluate potential adverse effects to fisheries and habitat arising from reuse of the project area.

The Navy proposes to close its base on Yerba Buena Island and Treasure Island. A total of 922 acres is proposed for transfer to the City and County of San Francisco (City). The May 2002 draft Environmental Impact Statement (EIS) for this project describes Navy disposal alternatives and subsequent reuse alternatives. Navy disposal of surplus property is the federal action evaluated in the EIS, but the document also evaluates reasonably foreseeable impacts arising from reuse. The City's reuse plans include the expansion of an existing marina, construction of two ferry terminals, construction of housing, and construction of a 30-acre theme park. Several activities associated with the reuse plan, such as dredging, pile driving, and stormwater runoff, may adversely affect species and habitat protected under both the ESA and MSA. However, the Navy expects the Local Reuse Authority for the site to obtain permits for these actions associated with reuse and NOAA Fisheries will consult on these reuse activities in the future, when applications for federal permits are processed. Based on discussions between my staff and Mr. Robert Palmer of your staff, this current consultation is limited solely to the Navy's proposed transfer of surplus property.



On June 5, 2002, representatives from NOAA Fisheries, the Navy, and the Navy's consultation, Tetra Tech, visited NSTI and discussed the proposal disposal and reuse alternatives.

Endangered Species Act

The following listed species (Evolutionarily Significant Units) and designated critical habitat under the jurisdiction of NOAA Fisheries may occur in the project area:

Sacramento River winter-run chinook salmon (*Oncorhynchus tshawytscha*)

endangered (January 4, 1994, 59 FR 440)

critical habitat (June 16, 1993, 58 FR 33212)

Central Valley spring-run chinook salmon (*Oncorhynchus tshawytscha*)

threatened (September 16, 1999, 64 FR 50394)

Central California Coast steelhead (*Oncorhynchus mykiss*)

threatened (August 18, 1997, 62 FR 43937)

Central Valley steelhead (*Oncorhynchus mykiss*)

threatened (March 19, 1996, 63 FR 13347)

Based on the best available information, the transfer of Naval Station Treasure Island property to the City and County of San Francisco is not likely to adversely affect the threatened and endangered species listed above or their designated critical habitat. However, several actions proposed by the City associated with reuse alternatives may adversely affect listed species or designated critical habitat under the jurisdiction of NOAA Fisheries. The City should ensure that there is proper coordination and project-level review by NOAA Fisheries pursuant to the Federal Endangered Species Act (ESA) prior to taking any reuse actions that may effect listed anadromous salmonids.

This concludes consultation in accordance with 50 CFR §402.14(b)(1) for the proposed transfer of NSTI to the City and County of San Francisco. However, further consultation may be required if (1) new information becomes available indicating that listed species or critical habitat may be adversely affected by the project in a manner not previously considered; (2) the project is modified in a manner that affects listed species or critical habitat; or (3) a new species is listed that may be affected by this action.

Magnuson-Stevens Act - Essential Fish Habitat

The aquatic portion of NSTI is an area identified as Essential Fish Habitat (EFH) for various life stages of fish species managed with the following Fishery Management Plans (FMP) under the MSA:

Pacific Groundfish FMP - (English sole, brown rockfish, starry flounder, leopard shark, etc.)

Coastal Pelagics FMP - (northern anchovy, Pacific sardine)

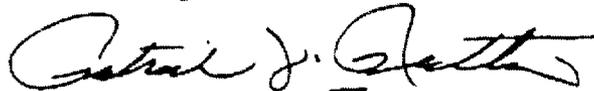
Pacific Coast Salmon FMP - (chinook salmon)

NOAA Fisheries has evaluated the proposed transfer of property for potential adverse effects to EFH pursuant to Section 305(b)(2) of the

MSA. Because the action of transferring property does not alter EFH, Conservation Recommendations are not necessary. However, as stated above for the ESA, the City should ensure that there is proper coordination and project-level review by NOAA Fisheries pursuant to the MSA prior to taking any reuse actions that may adversely affect EFH.

Please contact David Woodbury of my staff at (707) 575-6088 if you have any questions regarding this consultation.

Sincerely,



Rodney McInnis
Acting Regional Administrator

cc: Jim Lecky, NMFS, Long Beach
Penny Ruvelas, NMFS, Long Beach
Robert Palmer, US Navy, San Diego



OFFICE OF THE ASSISTANT SECRETARY FOR
COMMUNITY PLANNING AND DEVELOPMENT

November 26, 1996

Larry Florin
Manager of Military Base Conversion
City and County of San Francisco
401 Van Ness Avenue, Room 336
San Francisco, CA 94102

Dear Mr. Florin:

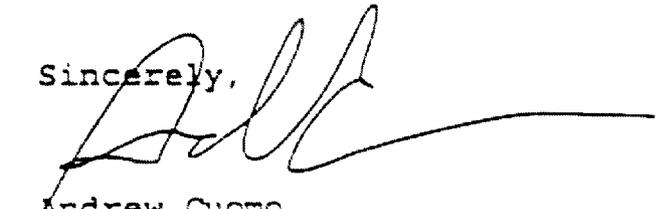
I am pleased to inform you that the Department of Housing and Urban Development (HUD) has approved your base reuse plan for the Naval Station Treasure Island under the Base Closure Community Redevelopment and Homeless Assistance Act of 1994. This means that you can now move forward with implementing your plan.

Specifically, we have determined that the plan meets the requirements under the Act regarding outreach to homeless assistance providers and balancing the economic redevelopment, other development, and homeless needs of your community. We are pleased that the City and County of San Francisco and the Treasure Island Homeless Development Initiative agreed on a mutually acceptable arrangement that is reflected in the enclosed legally binding agreement which provides for participation in housing and economic development opportunities for the clients of fourteen homeless providers.

Congratulations on your success in balancing the diverse needs of your community. The creative combination of interim use of the base housing and funding from part of the proceeds of its future development is a model for base redevelopment.

I wish you continued success in implementing your base reuse plan. HUD stands ready to assist you in your revitalization efforts.

Sincerely,



Andrew Cuomo
Assistant Secretary

Enclosure

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
916) 653-6624
FAX: (916) 653-9824

October 15, 1997



REPLY TO: USN970708A

Louis S. Wall, Cultural Resources Program Coordinator
Environmental Planning Branch
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
SAN BRUNO CA 94066-24402

Dear Mr. Wall:

RE: CLOSURE OF NAVAL STATION TREASURE ISLAND, SAN FRANCISCO

Thank you for forwarding the above referenced undertaking to my office for review and comment pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations found at 36 CFR Part 800.

The undertaking is the closure of Naval Station Treasure Island, San Francisco pursuant to the Base Realignment and Closure Act. As part of its responsibilities under Section 106 the Navy has evaluated properties at the Naval Station to determine if any are eligible for inclusion in the National Register of Historic Places. The documentation for the Navy's determinations is found in "Cultural Resource Inventory and Evaluation Investigations: Yerba Buena Island and Treasure Island Naval Station Treasure Island, San Francisco, California," prepared by JRP Historical Consulting Services in March 1997, and in "Archeological Inventory and Assessment of Naval Station Treasure Island Disposal and Reuse Project, San Francisco County, California," prepared by PAR Environmental Services in June 1997. As a result of these studies, the Navy has determined that the following properties are eligible for inclusion in the National Register of Historic Places: Senior Officers' Quarters Historic District, Yerba Buena Island; Quarters 8, Quarters 9, and Building 262, Yerba Buena Island; and that archeological sensitivity zones 1 through 4 have the potential to yield important information about the prehistory or history of Yerba Buena Island, and may qualify for listing in the National Register. The Navy has noted that consensus determinations of eligibility between the SHPO and the Navy exist for Buildings 1, 2, and 3 on Treasure Island, and has not asked for my concurrence in their National Register eligibility at this time. The Navy has further determined that the balance of buildings and archeological properties at the Naval Station are not eligible for inclusion in the National Register. My comments on your various determinations appear below.

Senior Officers' Quarters Historic District, Yerba Buena Island: You have determined that this district is eligible for inclusion in the National Register under criteria A and C at the local level of significance. The period of significance for the district extends from 1900-1947. Contributors include Quarters 1-7 (Quarters 1 is individually listed in the National Register), Building 83, Building 205, and Building 230. Boundaries for the district are outlined at Figure 1 of the District Record form. The period of significance extends from 1900-1947. I agree with the concept of the proposed historic

district, but I think it is important to clarify some additional characteristics of the district at this time. While you have acknowledged that landscape elements tie buildings in the district together, you have not identified them as contributors to the district. I recommend that you include the site of the district as an additional contributor including collectively the 1940 tennis court, walkways, terraced gardens, masonry walls, greensward in front of Quarters 1-4, and whatever other elements you believe appropriate. Also, what non-contributors exist within the district boundaries? There is one small building identified by the initials G.H. near Building 205., I am assuming this is a non-contributor, along with Building 200 which you have show inside the boundaries. Is this assumption correct?

Quarters 8, Yerba Buena Island: I concur with your determination that Quarters 8, built in 1905, is individually eligible for inclusion in the National Register under criteria A and C at the local level of significance. Its period of significance extends from 1905-1947.

Quarters 9, Yerba Buena Island: I concur with your determination that Quarters 9, built c. 1916, is individually eligible for inclusion in the National Register under criteria A and C at the local level of significance. Its period of significance extends from 1916-1947.

Building 262, Yerba Buena Island: I concur with your determination that Building 262, constructed in 1891 and known historically as the Torpedo Assembly Building, is individually eligible for inclusion in the National Register under criteria A and C at the state level of significance. Its period of significance extends from 1891-1947.

Archeological Sensitivity Zones 1 through 4: I agree that Sensitivity Zones 1 through 4 appear to have the potential to contain important information in history and prehistory. This information has largely been recovered over the years during construction activities in the various sensitivity areas. Your current submittal, however, documents evidence that each of the sensitivity zones has been sufficiently damaged over the years to possess only limited integrity. Thus far, the Navy has formally identified CA-SFr-4 (sensitivity zone 1), while the three other sensitivity zones (2 through 4) have not been recorded nor have trinomial assignments been assigned. I agree that while lacking definitive information on the sensitivity zone deposits they may still be eligible for the National Register as the Navy asserts. To date, however, there is nothing to support a determination that any of the sensitivity zones or CA-SFr-4 are eligible for the National Register.

Miscellaneous Archeological Properties: The Navy requests that I concur with its determination that none of the other prehistoric sites or historic archeological features are eligible for inclusion in the National Register. Other than CA-SFr-4 and the sensitivity zones discussed above, what other prehistoric sites/features are there? I am also very interested to know how the Navy supports its determination that the historic era features P-35-000135 through P-38-000156 are not eligible. It seems that certain of these features, for example the 1916 Recruit Mess Hall/Kitchen Complex (P-38-000135), might have buried deposits. The Navy should determine whether this a

Mr. Wall
October 15, 1997
Page 3

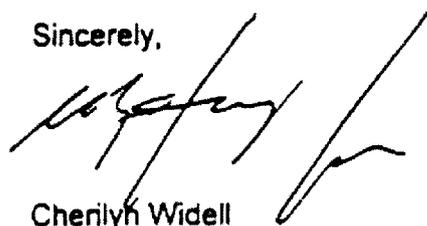
possibility before formalizing its National Register eligibility determination for the 22 historic era features.

Non-eligible Buildings/Structures: I concur with your determination that the buildings/structures listed in Table 3.2 of JRP Historical Consulting Services "Cultural Resource Inventory and Evaluation Investigations", pp. 4-10 are not eligible for inclusion in the National Register.

Treasure Island: Treasure Island was built in 1936 by the San Francisco District Corps of Engineers on the Yerba Buena Shoals. JRP Historical Consulting Services describe the feat, "filling a 400 acre island with millions of cubic yards of rock and sand—in about 18 months" as a "Herculean task." You have not addressed the eligibility of this property. What are the views of the Navy regarding the National Register eligibility of this structure (excluding later improvements) created by the engineering talents of the Corps of Engineers?

I look forward to hearing from you at your earliest convenience regarding the Senior Officers' Quarters Historic District on Yerba Buena Island, archeological properties outside of the identified sensitivity zones on Yerba Buena Island, and Treasure Island. If you have questions or comments regarding historic buildings or structures, please contact staff historian Lucinda Woodward at (916) 653-9116. Questions or comments regarding prehistoric or historic sites or features should be addressed to staff archeologist Steve Grantham at (916) 653-8920.

Sincerely,



Cherilyk Widell
State Historic Preservation Officer

APPENDIX D

Notice of Intent (NOI) and Availability

[Federal Register: September 24, 1996 (Volume 61, Number 186)]

[Notices]

[Page 50004]

From the Federal Register Online via GPO Access [wais.access.gpo.gov]

[DOCID:fr24se96-31]

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Intent To Prepare a Joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Disposal and Proposed Reuse of Naval Station Treasure Island, San Francisco, CA

Summary: Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508), the California Environmental Quality Act (CEQA) Section 15170, the Department of the Navy, in coordination with the City and County of San Francisco, California, announces its intent to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the disposal and proposed reuse of the Naval Station Treasure Island (NSTI) property and structures located in the City and County of San Francisco, California. The Navy will be the lead agency for NEPA documentation and the City and County of San Francisco will be the lead agency for CEQA documentation. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the base closure process of 1993, directed the Navy to close NSTI. NSTI is scheduled for closure in September, 1997.

NSTI is located in the San Francisco Bay between the cities of Oakland and San Francisco within the boundaries of the City and County of San Francisco. NSTI occupies about 403 acres on Treasure Island, with about 150 military buildings, 908 family housing units, and nine barrack-style housing facilities. NSTI also occupies approximately 115 acres on Yerba Buena Island, with approximately 10 military buildings and 105 housing units. Yerba Buena Island is bisected by the San Francisco-Oakland Bay Bridge.

The EIS/EIR will address Navy disposal of the property, including a Navy "no action" alternative, and the potential environmental impacts resulting from community reuse development proposed in the Naval Station Treasure Island Reuse Plan prepared by the City and County of San Francisco. The reuse plan's Land Use Plan, dated July 1996, will serve as the basis for the EIS/EIR reuse alternatives. Three community reuse alternatives are expected to be evaluated in the EIS/EIR: the Maximum Density Alternative, Reduced Density Alternative, and Residential Neighborhood Alternative. The Navy "no action" alternative will evaluate NSTI as closed but remaining in federal caretaker status.

The Maximum Density Alternative includes publicly oriented uses such as a theme park, sports field, film production center, hotels, museum, and conference center. It also includes institutional uses, educational and child care facilities, a fire fighting training school, community services, recreational facilities, public open space along the Treasure Island shoreline and Yerba Buena western hillside, and up to 2,800 residential units. The Reduced Density Alternative includes the publicly oriented, institutional uses, and recreational facilities identified above, as well as the public open space along the Treasure Island shoreline and Yerba Buena western hillside. There would be no housing development on Treasure Island under this alternative. Up to 300 housing units would be located on Yerba Buena Island. The Residential Neighborhood Alternative focuses on the creation of new housing opportunities at NSTI, with up to 5,000 dwelling units located on Treasure Island, and an additional 235 units located on Yerba Buena Island. It includes publicly oriented uses such as a film production center and a small hotel, as well as institutional uses, educational and child care

facilities, recreational facilities, and public open space along the Treasure Island shoreline and Yerba Buena western hillside.

ADDRESSES: Federal, state and local agencies, and interested individuals are encouraged to participate in the scoping process to assist the Navy in determining the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on Wednesday, October 9, 1996, at 7:00 p.m., in the Port Commission Room, Third Floor, Suite 3100, Ferry Building, San Francisco, California. Navy and City and County of San Francisco representatives will briefly summarize the community reuse planning process, the environmental impact analysis processes, and will then solicit public comments. In the interest of allowing everyone a chance to participate, each speaker will be requested to limit oral comments to five minutes. Longer comments should be summarized at the public meeting and/or mailed to the address listed at the end of this announcement.

FOR FURTHER INFORMATION CONTACT: All written comments must be submitted within 30 days of the published date of this notice to Ms. Mary Doyle (Code 185), Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone (415) 244-3024, fax (415) 244-3737. For information concerning the EIR, please contact the City and County of San Francisco, Planning Department, Ms. Carol Roos, telephone (415) 558-6378, or fax (415) 558-6426. For further information regarding the Naval Station Treasure Island Reuse Plan, please contact Ms. Alison Kendall, City and County of San Francisco, Planning Department, telephone (415) 558-6290, or fax (415) 558-6426.

Dated: September 19, 1996.

D.E. Koenig,

LCDR, JAGC, USN, Federal Register Liaison Officer.

[FR Doc. 96-24427 Filed 9-23-96; 8:45 am]

[Federal Register: May 10, 2002 (Volume 67, Number 91)]
[Notices]
[Page 31791-31793]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr10my02-43]

DEPARTMENT OF DEFENSE

Department of the Navy

Public Hearing for the Draft Environmental Impact Statement (DEIS) for Disposal and Reuse of Naval Station Treasure Island (NSTI), San Francisco, CA

AGENCY: Department of the Navy, DOD.

ACTION: Notice.

SUMMARY: Pursuant to section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as implemented by the Council on Environmental Quality regulations (40 CFR parts 1500-1508), the Department of the Navy (Navy) has prepared and filed with the United States Environmental Protection Agency (EPA) the DEIS for Disposal and Reuse of NSTI. A public hearing will be held to receive oral and written comments on the DEIS. Federal, state, and local agencies and interested individuals are invited to be present or represented at the hearing.

DATES AND ADDRESSES: A public hearing will be held on Tuesday, June 11, 2002, from 7:00 p.m. to 9:30 p.m. at the Nimitz Conference Center, Building 140, corner of "D" and "California" streets, Treasure Island, San Francisco, CA 94130 for the purpose of receiving oral and written comments on the DEIS.

FOR FURTHER INFORMATION CONTACT: Ms. Timarie Seneca, Community Planner, BRAC Operations Office at (619) 532-0955, by fax at (619) 532-0940 or write to Commander, Southwest Division, Naval Facilities Engineering Command, Attn: Ms. Timarie Seneca, Code 06CM.TS, 1230 Columbia Street, Suite 1100, San Diego, CA 92101-8517.

SUPPLEMENTARY INFORMATION: The DEIS has been prepared in accordance with the Defense Base Closure and Realignment Act of 1990 (10 U.S.C. 2687) and the recommendations of the Defense Base Closure and Realignment Commission approved by the President and accepted by Congress in 1991, 1993, and 1985.

A Notice of Intent (NOI) to prepare the DEIS was published in the Federal Register at 61 FR 50004, Sep. 24, 1996. A public scoping meeting was held on October 9, 1996, at the San Francisco Ferry Building.

The meeting was advertised in the San Francisco Chronicle, Marin Independent Journal, San Jose Mercury News, and Oakland Tribune on Sunday, September 29, 1996, and Tuesday, October 1, 1996.

The proposed action is the disposal of Navy property for subsequent reuse and redevelopment, in accordance with the 1990 Defense Base Closure and Realignment Act, and the 1993 Base Realignment and Closure Commission recommendations. NSTI was operationally closed on September 30, 1997. NSTI is located on two islands in the San Francisco Bay approximately midway between the shores of the cities of San Francisco

and Oakland. The larger island, called Treasure Island, consists of 402 acres (160 hectare (ha)) of dry land created with artificial fill in the 1930s. Approximately 681 acres (276 ha) of dry and submerged land are available for disposal on Treasure Island. Yerba Buena Island is a natural island connected to Treasure Island by a causeway. Approximately 239 acres (97 ha) of dry and submerged land are available for disposal on Yerba Buena Island. Approximately 36 acres (14 ha) of land on Treasure Island have been transferred to the Department of Labor, approximately 97 acres (39 ha) on Yerba Buena Island have been transferred to Caltrans, and a total of 22 acres (9 ha) are ultimately scheduled for transfer to the Coast Guard.

The DEIS evaluates three reuse alternatives. Navy disposal is assumed as part of each of the reuse alternatives. Alternative 1 represents full implementation of the development scenario described in the Naval Station Treasure Island Draft Reuse Plan developed by the Local Redevelopment Authority (LRA). Alternative 2 is based on comments received during the scoping process, including the recommendations of an Urban Land Institute advisory panel. Alternative 3 represents a lower level of redevelopment than proposed in the Draft Reuse Plan. A fourth alternative, No Action, assumes no disposal of property and retention of the property by the Navy in an inactive or caretaker status. Under the No Action Alternative, existing leases would continue until they expire or are terminated, no new leases would be entered into, and all buildings and other facilities would remain vacant and unused.

Alternative 1 (Preferred Alternative) features a combination of publicly oriented development, open space and recreation, and extensive residential development at full build out. Under Alternative 1, publicly oriented development on Treasure Island would include a theme attraction similar to Disneyland; with lighting displays, some tall structures, such as a roller coaster, and at least one landmark structure assumed to be up to 100 feet (305 meters (m)) tall. Development would also include a 300-room hotel and a 1,000-room hotel with three restaurants and offices. Publicly oriented uses on Yerba Buena Island would include a 150-room hotel, conference facilities, and a restaurant. Clipper Cove Marina would also be expanded and a new yacht club would be developed. Community uses on both islands would include public parks and open space, schools, a bikeway and pedestrian path. Industrial uses would include a new wastewater treatment plant, a new police station, and a new fire station on Treasure Island; these facilities and an existing fire station on Yerba Buena Island would be staffed with fire, paramedic, and police personnel. The elementary school, child development center, fire training school, and brig would be retained and reused for their original uses, with some modifications. Residential housing use would include reuse of existing housing as well as construction of new housing on both islands. No decision on the proposed action will be made until the NEPA process has been completed.

Potential impacts evaluated in the DEIS include, but are not limited to: Land use, visual resources, socio-economics, public services, utilities, cultural resources, biological resources, geology and soils, water resources, traffic and circulation, air quality, noise, and hazardous materials and waste. Potentially significant impacts that can be mitigated include: land use impacts related to inconsistencies with the general plan designation and zoning classification; traffic impacts to westbound and eastbound on and off ramps on Yerba Buena Island under Alternative 1; impacts to transit operations due to lack of bus service between NSTI and the East Bay under all alternatives; biological impacts to mudflats, wading shorebirds and essential fish habitat due to increased pedestrian and boating activities under all alternatives; potential exposure of individuals and property to ponding under Alternatives 1 and 3 and flooding hazards under all alternatives; and potential health and safety implications from future development activities interfering with remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act. The one significant impact that cannot be mitigated would be to cultural resources from demolition of two buildings on Treasure Island eligible for listing on the National Register of Historic Places under Alternative 2.

The DEIS has been distributed to affected Federal, state, and local agencies and other interested parties. In addition, copies of the DEIS are available for review at the following public libraries:

- San Francisco Main Library, 100 Larkin St (at Grove), San Francisco, CA 94102, (415) 557-4400

- Bayview/Waden Branch Library, 5075 3rd St (at Revere Ave), San Francisco, CA 94124, (415) 715-4100
- Potrero Branch Library, 1616 20th St (between Arkansas and Connecticut St), San Francisco, CA 94107, (415) 695-6640
- Chinatown Branch Library, 1135 Powell St (near Jackson St), San Francisco, CA 94108, (415) 274-0275
- North Beach Branch Library, 2000 Mason St (at Columbus Ave), San Francisco, CA 94133, (415) 274-0270
- Oakland Public Library (Main Branch), 125 14th St, Oakland, CA 94612, (510) 238-3134
- Oakland Library (Eastmont Branch), Eastmont Mall--2nd Flr, 7200 Bancroft Ave, Ste 211, Oakland, CA 94605, (510) 615-5726

A public hearing will be held to inform the public of the DEIS findings and to solicit and receive oral and written comments. Federal, state, and local agencies and interested parties are invited to be present at the hearing. Oral comments will be heard and transcribed by a court recorder; written comments are also requested to ensure accuracy of the record. Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. All comments, both oral and written, will become part of the official record. Comments should clearly describe specific issues or topics with the DEIS. In the interest of allowing everyone a chance to participate, speakers will be requested to limit their oral comments to five (5) minutes. Longer comments should be summarized at the public hearing and submitted in writing either at the hearing or mailed to: Commander, Southwest Division, Naval Facilities Engineering Command, Attn: Ms. Timarie Seneca, Code 06CM.TS, 1230 Columbia St, Suite 1100, San Diego, CA 92101-8517. Comments must be postmarked by June 24, 2002, to be considered in this environmental review process.

Dated: May 2, 2002.

R.F. Vincent II, Lieutenant Commander, Judge Advocate General's Corps, U.S. Navy, Federal Register Liaison Officer.

[FR Doc. 02-11773 Filed 5-9-02; 8:45 am]

APPENDIX E

Reuse Alternative Assumptions

APPENDIX E REUSE ALTERNATIVE ASSUMPTIONS

REUSE ALTERNATIVE ASSUMPTIONS

In addition to the assumptions made for each reuse alternative (Tables E-3 to E-5 at the end of this Appendix), certain analyses required further assumptions. These are described below by resource area. Only those resource areas that required further assumptions are listed. The absence of a resource area in this list means that the analysis for that resource area was possible without further assumptions or that assumptions are provided in a separate appendix, as is the case with Transportation and Socioeconomics. Figure E-1, Building Numbers, identifies the location of buildings referenced in Tables E-3 through E-5 and is presented at the end of this appendix.

Although the Draft Reuse Plan presents a possible phasing strategy for reuse development, phasing was not assumed in the analysis in this EIS. As stated in the Reuse Plan, "phasing is illustrative and is expected to vary depending on actual market conditions, funding, and policy decisions" (San Francisco 1996e). The EIS therefore assesses the socioeconomic and environmental conditions at full buildout for each of the alternatives in order to avoid inaccurate impact characterization under a phased reuse implementation.

Subsequent to completion of the federal screening process and Navy determination that the property at Treasure Island was surplus to the needs of the United States on July 6, 1995, FHWA acquired 98 acres (40 ha) on Yerba Buena Island held by Navy. FHWA conveyed this property to Caltrans for construction of the east span of the SFOBB. The deed conveying the right-of-way also granted Caltrans a temporary construction easement (TCE) over approximately 78 acres (32 ha) of dry and submerged land on the Yerba Buena Island, as well as two permanent aerial easements of approximately 0.3 acres each.

Earlier negotiations between TIDA and Navy concluded that the property transferred to FHWA/Caltrans need not be conveyed to the designated property recipient until the easements had been relinquished. Further, the prospective completion date for the new SFOBB east span was beyond the period in which the Navy could convey the property under the BRAC authority. All lands transferred to FHWA, including the TCEs, were therefore excluded from evaluation in the Draft EIS. Due to new understandings between the Navy and TIDA, the Navy has determined that the TCE and aerial easements are available for disposal. These areas, consisting of approximately 78 acres (32 ha) of dry and submerged lands, are considered in the analysis presented in the Final EIS.

The land transferred to FHWA/Caltrans was considered in the 1995 Draft Reuse Plan and was designated for residential, publicly oriented, and open space/recreation uses. While the EIS alternatives are based on the 1995 Draft Reuse Plan and input on the Draft Plan, the development plan presented in the Reuse Plan is intended to be illustrative of the implications of plan policies and guidelines and "is by no means reflective of the only way development may occur" (San Francisco 1996e). For this reason, the analysis in the EIS assumes that uses that were proposed for lands transferred to FHWA are essential to the objectives of the reuse plan and would be accommodated in some manner within the remaining reuse plan area (i.e. other

locations or on reduced acreages). Therefore, while only 20 acres (8 ha), or approximately 4 percent of the developable acreage proposed for disposal, was lost to reuse as a result of the FHWA transfer, the functional loss to reuse would be much less.

While it may be feasible to accommodate publicly oriented and residential uses within the remaining reuse area, it may not be feasible to accommodate all open space proposed for the FHWA/Caltrans area elsewhere within the reuse plan area, loss of some open space would not have a measurable effect on the analysis in the EIS. Open space mainly has a beneficial impact under reuse by providing recreational space and visual enhancement, and contributes very little to socioeconomic and environmental impacts (the socioeconomic analysis assumes that open space on Yerba Buena Island would provide only one job [see Appendix F]). Further, much of the open space area transferred to FHWA is steeply sloping and has limited potential for development. Should these areas not be necessary for construction or operation of the SFOBB they may remain as open space and provide similar benefits.

VISUAL RESOURCES ASSUMPTIONS

Alternative 1

Under Alternative 1, a mix of land uses would be established that emphasizes publicly oriented development, open space/recreation, and residential development. Key assumptions about proposed development components that could affect visual resources or shadow include:

Shoreline on Treasure Island. The dike would remain at its present height (14 feet [4 m] NGVD), with modest widening and no highly visible structural strengthening; a 100-foot (30.5-m) wide shoreline open space corridor with landscaping, paths and overlooks (as described in the urban design section of the reuse plan [p. 65]).

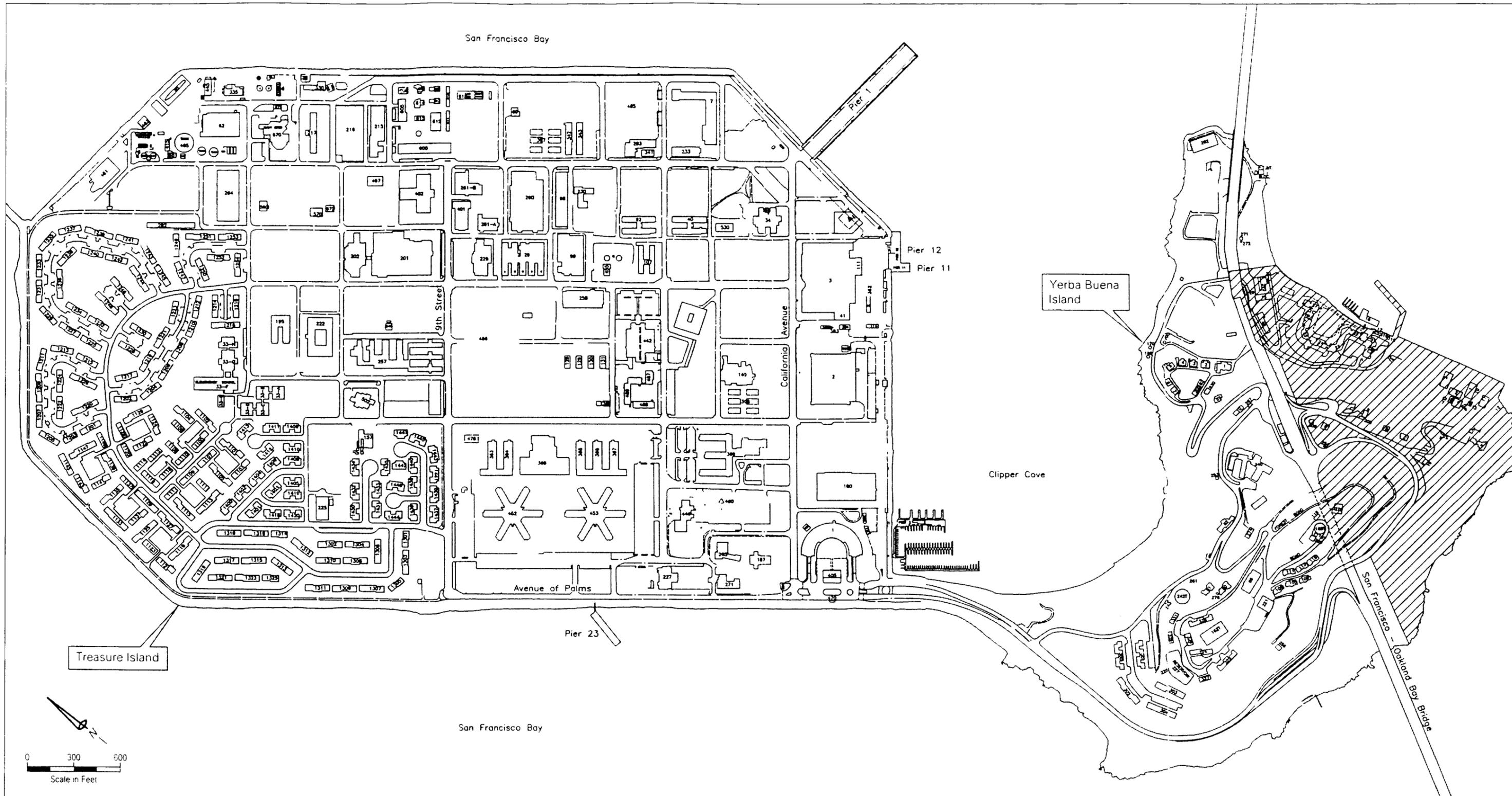
Hotels on Treasure Island. Two building complexes with height up to 75 feet (23 m), as shown in reuse plan Figure 3 (Illustrative Plan); San Francisco would apply some massing restrictions to the design of these buildings; the footprints of the buildings would not exceed 10 percent of the 75-foot (23-m) height-limit area.

Themed attraction. General appearance would be similar to Disneyland or Africa/USA, with lighting displays at night, fountains, elaborate landscaping in places, some tall structure such as a roller coaster, and at least 1 landmark structure for distant visibility in a central location (assumed to be a slender structure up to 100 feet [30.5 m] high); other buildings up to 60 feet (18 m), with building density similar to that of existing conditions.

Offices. 60-foot (18-m) height limit, with densities similar to the existing conditions.

Sports complex. No major landmark structures; building heights up to 60 feet (18 m), with the majority of the area comprising open playing fields for soccer, basketball, tennis courts, etc.

New residential on Treasure Island. 2,300 new units, replacing approximately 700 existing units on 80 acres (32.5 ha) (at an average density of almost 30 units per acre [0.4 ha]) and heights up to 40 feet (12 m) high (4-story multi-family dwellings). Two hundred existing residential units of the 1400 series would remain.



Treasure Island has approximately 150 nonresidential buildings and 905 housing units. The NSTI portion of Yerba Buena Island includes 90 housing units and 10 other buildings for storage, communications, fire safety, and administration.

Legend

 US Coast Guard

Building Numbers

Naval Station Treasure Island, California

Small hotel/bed and breakfast on Yerba Buena Island. Sited on the hilltop location, with 60-foot (18-m) height limit and building density similar to that shown in the reuse plan, Figure 3 (Illustrative Plan).

New residential on Yerba Buena Island. 250 units, with approximately 170 new units and approximately 80 new infill units within existing residential areas higher on the hill. Buildings are assumed to be multi-family and up to 40 feet (12 m) in height (4-story).

Open space and vegetation. Loss of vegetation and open space would occur on both Treasure Island and Yerba Buena Island, but new development would minimize loss of large trees (including mature Eucalyptus trees on Yerba Buena Island) by rebuilding on current building footprints.

Demolition. Buildings unsuitable for reuse would be demolished at various locations on Treasure Island and at the hilltop (Tower Park area) on Yerba Buena Island; most residential structures elsewhere on Yerba Buena Island would remain or be rebuilt on the same general footprint.

Roads and SFOBB access. No change in the appearance or configuration of the roadways and bridge ramps.

Ferry terminals at Pier 1 and Treasure Island west side. Would include covered terminal buildings of modest scale (not landmark), similar in scale to Jack London Square on Oakland.

Alternative 2

Key assumptions on major development components that could affect visual resources include:

Shoreline area. Similar to that described for Alternative 1, except that the shoreline open space would be wider (assumed 150 feet [46 m]) in most areas.

Themed attraction. As for Alternative 1, with 1 landmark structure for distant visibility but lower overall density and more open space/landscaping.

Urban entertainment center. 300,000 square feet (27,870 square m) on 6 acres (2.5 ha), located behind the museum on Clipper Cove, and up to 3 stories (40 feet [12 m]).

Amphitheater. 91,476 square feet (8,498 square m) on 7 acres (3 ha), assumed to be without a distinctive architectural feature, and approximately 40 feet (12 m) high.

Sports facilities. Similar to existing facilities.

Hotels on Treasure Island. Similar to Alternative 1, with a 700 room hotel (with 100,000 square-foot (9,290 square-m) conference facility) and 500 room resort hotel, assumed to be up to 75 feet (23 m) and configured as described for Alternative 1.

Small hotel/bed and breakfast on Yerba Buena Island. 150 units on 14 acres (6 ha)(i.e., much lower density than Alternative 1); assumes limited razing of existing housing in the area, with mainly

Appendix E. Reuse Alternative Assumptions

conversion of use; height/mass of hotel assumed to be less than 40 feet (12 m), which is less than Alternative 1 limit of 60 feet (12 m).

Demolition. Several large buildings in northern half of the island would be razed, as well as housing in the hotel/bed and breakfast area on Yerba Buena Island and Buildings 2 and 3.

New residential on Yerba Buena Island. 200 units on 7 acres (3 ha); height/mass/lower density than Alternative 1; 2-story maximum.

Golf course. 147 acres (59.5 ha) on site of present housing, assumed to be regraded and landscaped.

Wildlife area. 18 acres (7 ha), with viewing areas.

Alternative 3

Key assumptions on major development components that could affect visual resources include:

Shoreline area. New seawall and landscaping restricted to the southern perimeter of Treasure Island.

Small themed attraction. 39 acres (16 ha), with much lower intensity of development than in the other alternatives; includes 1 landmark structure for distant visibility (100 feet [30.5]); other new buildings similar in height to existing buildings.

Small hotel/bed and breakfast Yerba Buena Island. As described for Alternative 1.

New residential Yerba Buena Island. 70 new units on 9 acres (3.5 ha), at the lowest density of all alternatives; 2 to 3 stories.

Demolition. Most buildings remain intact (including hangars and barracks buildings); some razing of buildings, particularly in the themed attraction area.

Ferry pier. No new west side ferry pier.

WATER RESOURCES ASSUMPTIONS

All Three Reuse Alternatives

Levee. The height of the levee was assumed to be raised as necessary to 15 feet (4.5 m) NGVD around the entire perimeter of Treasure Island.

Dredging. All ferry piers and marina area 15 to 20 feet (4.5 to 6 m) below MLLW.

UTILITIES ASSUMPTIONS

The assumptions for utility demand under each alternative are presented in Table E-1.

Alternative 1

Under this alternative, a new reinforced utility corridor would be constructed along the perimeter of Treasure Island in conjunction with the geotechnical perimeter improvements. This corridor would contain primary infrastructure for the potable water distribution, wastewater collection, stormwater collection, electrical, natural gas, and telecommunications systems. The utility corridor also might include a recycled wastewater distribution system. Construction of the corridor would occur as a long-term phased development.

For infrastructure improvements not associated with the utility corridor, a long-term phased replacement plan coordinated with reuse and redevelopment likely would be implemented. The plan likely would coordinate upgrades and replacement with development of specific portions of the property. During the initial phases of reuse, existing infrastructure would be used to the extent possible with minor system upgrades, as necessary. Some of the required infrastructure improvements include:

- replacement of potable water pipelines composed of PVC and concrete-lined steel with ductile iron piping;
- replacement or repair of the potable water storage reservoirs;
- replacement of the wastewater collection system with a gravity-fed system composed of vitrified clay pipe; and
- construction of a new tertiary-level wastewater treatment plant.

Alternative 2

The utility corridor constructed under this alternative would not extend to the shoreline perimeter adjacent to the golf course. Infrastructure improvements and repairs not associated with this corridor likely would be implemented as part of a separate long-term phased program coordinated with reuse and redevelopment.

**Table E-1
Assumptions for Utility Demand**

<i>Utility Type</i>	<i>Current Demand</i>	<i>Projected Per Capita Demand</i>	<i>Projected Population</i>	<i>Projected Demand</i>	<i>Increase in Demand</i>	<i>Percentage Increase</i>
Alternative 1						
Potable Water - Residents (gallons per day)		130	6,895	896,350	896,350	
Potable Water - Hotel Guests (gallons per day)		130	1,450	188,500	188,500	
Potable Water - Employees (gallons per day)		42	4,920	206,640	206,640	
Potable Water - Visitors (gallons per day)		42	13,700	575,400	575,400	
Potable Water - Sports Fields (gallons per day)		6,000	47	282,000	282,000	
Potable Water - Total (gallons per day)	960,000			2,148,890	1,188,890	124
Wastewater - Total (gallons per day)				1,493,512		
Solid Waste - Commercial (tons per year/employee)		1.35	4,920	6,642		
Solid Waste - Residential (tons per year/dwelling unit)		1.02	2,840	2,897		
Total Solid Waste (tons per year)	15,240			9,539	-5,701	-37
Solid Waste - Demolition (tons)	15,240		3,059,959	110,159	94,919	623
Solid Waste - Demolition (cubic yards)	121,914		3,059,959	801,153	679,239	557
Alternative 2						
Potable Water - Residents (gallons per day)		130	710	92,300	92,300	
Potable Water - Hotel Guests (gallons per day)		130	1,200	156,000	156,000	
Potable Water - Employees (gallons per day)		42	2,820	118,440	118,440	
Potable Water - Visitors (gallons per day)		42	5,500	231,000	231,000	
Potable Water - Sports Fields (gallons per day)		6,000	165	990,000	990,000	
Potable Water - Total (gallons per day)	960,000			1,587,740	627,740	65
Wastewater - Total (gallons per day)				478,192		
Solid Waste - Commercial (tons per year/employee)		1.35	2,820	3,807		
Solid Waste - Residential (tons per year/dwelling unit)		1.02	250	255		

Table E-2
Assumptions for Utility Demand
 (continued)

<i>Utility Type</i>	<i>Current Demand</i>	<i>Projected Per Capita Demand</i>	<i>Projected Population</i>	<i>Projected Demand</i>	<i>Increase in Demand</i>	<i>Percentage Increase</i>
Total Solid Waste (tons per year)	15,240			4,062	-11,178	-73
Solid Waste - Demolition (tons)	15,240		3,588,991	129,204	113,964	748
Solid Waste - Demolition (cubic yards)	121,914		3,588,991	939,663	817,749	671
Alternative 3						
Potable Water - Residents (gallons per day)		130	3,510	456,300	456,300	
Potable Water - Hotel Guests (gallons per day)		130	0	0	0	
Potable Water - Employees (gallons per day)		42	2,195	92,190	92,190	
Potable Water - Visitors (gallons per day)		42	2,740	115,080	115,080	
Potable Water - Sports Fields (gallons per day)		6,000	40	240,000	240,000	
Potable Water - Total (gallons per day)	960,000			903,570	-56,430	-6
Wastewater - Total (gallons per day)				530,856		
Solid Waste - Commercial (tons per year/employee)		1.35	2,195	2,963		
Solid Waste - Residential (tons per year/dwelling unit)		1.02	1,065	1,086		
Total Solid Waste (tons per year)	15,240			4,050	-11,190	-73
Solid Waste - Demolition (tons)	15,240		1,359,874	48,955	33,715	221
Solid Waste - Demolition (cubic yards)	121,914		1,359,874	356,040	234,126	192

Alternative 3

The new utility corridor would only be built on the southern Treasure Island perimeter. Infrastructure improvements and repairs not associated with this corridor likely would occur as needed to support the program of reuse and redevelopment.

HAZARDOUS MATERIALS AND WASTE ASSUMPTIONS

All Three Reuse Alternatives

The reuse alternatives call for a mix of land uses, most of which could involve the use and storage of hazardous materials. The alternatives include developed recreational and entertainment, institutional, and commercial land uses that, depending on the specific type of operation, could generate hazardous wastes. Hazardous materials likely to be used upon implementation of a reuse alternative based on land use categories are identified in Table E-2.

Table E-2
Hazardous Materials Use by Land Use Category

<i>Land Use</i>	<i>Operation Process</i>	<i>Hazardous Materials</i>
Entertainment and publicly-oriented uses	Activities associated with themed attraction, hotel, and entertainment, including building and facilities maintenance and boat/ferry service and operations	Petroleum products, solvents, heavy metals, corrosives, catalysts, aerosols, fuels, heating oils, flammables, pesticides
Recreation/open space	Maintenance of existing recreation facilities and development of new facilities, including golf course, bike path, sports complex, swimming pools, and other recreation facilities	Pesticides, fertilizers, chlorine, heating oils, paints, thinners, cleaners, solvents, aerosols
Institutional	Public education, higher education, research labs, training facilities, vocational schools	Laboratory chemicals, corrosives, flammables, solvents, heating oils, solvents, lubricants, cleaners, pesticides, paints, thinners
Commercial	Activities associated with offices, film production, retail, service industries, restaurants	Fuels, heating oils, pesticides, dry cleaning chemicals, solvents, corrosives, flammables
Residential	Use and maintenance of single-family and multi-family units, landscaping	Pesticides, fertilizers, fuels, oils, chlorine, and household chemicals

Source: Developed by San Francisco 1997.

**Table E-3
Alternative 1 Assumptions**

<i>Treasure Island Land Use</i>	<i>Acres</i>	<i>FAR¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Publicly Oriented					
Themed Attraction	59	n/a		13,700 average daily visitors	
Hotel/Conference/Lodging	18	n/a		300 room hotel (unknown buildout sf) and 1,000 room hotel (unknown buildout sf)	
Retail/Specialty/Restaurant	8	n/a	225,000	includes three "landmark" restaurants	1, 227, 271
Entertainment center	0		0		
Amphitheater	0		0		
Movie Theater	0		0		
Wedding Chapel	0		0		
Museum	3	n/a	15,000	museum (see also retail/specialty/restaurant and mixed use/office)	1
Mixed Use/Office	11	n/a	100,000		1, 450, 140
Film Production	31	n/a	501,000	401,000 sf existing; expand by 100,000 sf	2, 3, 180, 111
Marina (land)	2	n/a	20,000	20,000 sf yacht club	
Marina (water)				12 water acres; 103 existing slips; 200 new slips and 100 new buoys	
Other publicly oriented uses	14	0.30	182,952	new development	
Total Publicly Oriented	146				
Residential					
Existing Residential	22	n/a		200 units	1400 series
New Residential	80	n/a		2,300 units	
Neighborhood Retail	1	n/a	24,000		
Total Residential	103				

**Table E-3
Alternative 1 Assumptions
(continued)**

<i>Treasure Island Land Use</i>	<i>Acres</i>	<i>FAR¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Institutional and Community					
Elementary school	9	n/a		existing facility	existing buildings
Child development center	4	n/a	10,123	existing facility	502
Fire training school	5	n/a	69,887	existing facilities	600-617
Warehouse/Storage	0		0		
WWTP	10	0.20	87,120	new facility	
Brig	5	n/a	26,310	existing facilities	670, 671
Fire station	4	0.20	34,848	new facility	
Police station	3	0.20	26,136	new facility	
Other institutional facilities	0		0		
Total Institutional and Community	40				
Open Space/Recreation					
Golf course	0		0		
Sports fields/complex	47	0.20	409,464	new and existing facilities (square feet calculated from FAR, not sf of existing buildings)	402, 497, 229
Shoreline promenade/open space	30	n/a			
Ferry Terminals/Piers	0		0	new ferry dock and breakwater on west side of NSTI; Pier 1 would provide ferry docking	Pier 1
Wildlife Habitat	0		0		
Total Open Space/Recreation	77				
Total Treasure Island Disposal Acreage	366			402 acres minus federal-to-federal transfer acres	
Total Treasure Island Building Square Footage			1,731,840		

Table E-3
Alternative 1 Assumptions
 (continued)

<i>Yerba Buena Island Land Use</i>	<i>Acres</i>	<i>FAR¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Publicly Oriented					
Hotel/Bed and Breakfast	3	n/a		150 room hotel (hilltop)	
Conference/Reception	4	n/a	90,241	Quarters 1-7 (30,241 sf) and new 60,000 sf conference facility	Quarters 1-7
Restaurant	2	n/a		restaurant is part of new 60,000 sf conference facility	
Total Publicly Oriented Uses	9				
Residential					
Existing Housing	28	n/a		approximately 90 units	100, 200, 300 series, excluding 326, 324, 320 and 162T (tank)
New Housing	5	n/a		approximately 250 units	
Mixed Use	1	n/a	12,000	approximately 10 live-work units	
Total Residential	34				
Institutional and Community	0				
Open Space/Recreation	41	n/a			
Total Yerba Buena Island Disposal Acreage	84			115 acres minus federal-to-federal transfers	
Total Yerba Buena Island Building Square Footage			102,241		

¹ A Floor Area Ratio (FAR) of 0.20 was used for community facilities; 0.25 was used for neighborhood commercial facilities; 0.30 was used for visitor serving facilities.

**Table E-4
Alternative 2 Assumptions**

<i>Treasure Island Land Use</i>	<i>Acres</i>	<i>Far¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Publicly Oriented					
Themed Attraction	74	n/a		5,480 average daily visitors	2, 3*
Hotel/Conference/Lodging	26	n/a		700 room hotel (unknown buildout sf) with 100,000 sf conference; 500 room tourist hotel (unknown buildout sf)	
Retail/Specialty/Restaurant	0		0		
Entertainment center	6	n/a	300,000		
Amphitheater	7	0.30	91,476	5,000 seats	
Movie Theater	0		0		
Wedding Chapel	1		9,884	existing facility	187
Museum	4		149,799	existing facility	1
Mixed Use/Office	0		0		
Film Production	0		0		
Marina (land)	0		0		
Marina (water)				65 water acres; between 500 and 675 slips and buoys	
Other publicly oriented uses	14	0.30	182,952	new development	
Total Publicly Oriented	132				
Residential					
Existing Residential	0		0		
New Residential	0		0		
Neighborhood Retail	0		0		
Total Residential	0				

**Table E-4. Alternative 2 Assumptions
(continued)**

<i>Treasure Island Land Use</i>	<i>Acres</i>	<i>Far¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Institutional and Community					
Elementary school	0		0		
Child development center	0		0		
Fire training school	5	n/a	69,887	existing facilities	600-617
Warehouse/Storage	0		0		
WWTP	5	0.20	43,560	new facility	
Brig	4	n/a	26,310	existing facilities	670, 671
Fire station	2	0.20	17,424	new facility	
Police station	2	0.20	17,424	new facility	
Other institutional facilities	0		0		
Total Institutional and Community	18				
Open Space/Recreation					
Golf course	147	n/a	20,000	20,000 sf clubhouse	
Sports fields/complex	18	n/a	36,325	square feet includes only existing facilities	402, 497
Shoreline promenade/open space	33	n/a			
Ferry Terminals/Piers	0		0	new ferry dock and breakwater on west side of NSTI; Pier 1 would provide ferry docking	Pier 1
Wildlife Habitat	18	n/a			
Total Open Space/Recreation	216				
Total Treasure Island Disposal Acreage	366			403 acres minus federal-to-federal transfer acres	
Total Treasure Island Building Square Footage			965,041		

**Table E-4. Alternative 2 Assumptions
(continued)**

<i>Yerba Buena Island Land Use</i>	<i>Acres</i>	<i>Far¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Publicly Oriented					
Hotel/Bed and Breakfast	14	n/a		150 room hotel/bed and breakfast	
Conference/Reception	5	n/a	30,241	Quarters 1-7	Quarters 1-7
Restaurant	1	n/a	12,000	Torpedo Depot	262
Total Publicly Oriented Uses	20				
Residential					
Existing Housing	16	n/a		approximately 50 units	100, 200, 300 series, excluding buildings within the hotel/bed and breakfast area
New Housing	5	n/a		approximately 200 units	
Mixed Use	0		0		
Total Residential	21				
Institutional and Community	0				
Open Space/Recreation	43				
Total Yerba Buena Island Disposal Acreage	84			115 acres minus federal-to-federal transfers	
Total Yerba Buena Island Building Square Footage			42,241		

¹ A Floor Area Ratio (FAR) of 0.20 was used for community facilities; 0.25 was used for neighborhood commercial facilities; 0.30 was used for visitor serving facilities.

*Buildings 2 & 3 may be demolished.

**Table E-5
Alternative 3 Assumptions**

<i>Treasure Island Land Use</i>	<i>Acres</i>	<i>Far¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Publicly Oriented/Visitor Attraction					
Themed Attraction	39	n/a		2,740 average daily visitors	
Hotel/Conference/Lodging	6	n/a	80,000	80,000 sf conference	140
Retail/Specialty/Restaurant	1	n/a	13,200	Fogwatch restaurant	227
Entertainment center	0		0		
Amphitheater	0		0		
Movie Theater	0		0		
Wedding Chapel	2	n/a	9,884	existing facility	187
Museum	4	n/a	15,000	portion of existing facility (see also mixed use/office)	1
Mixed Use/Office	6	n/a	214,605	existing facilities (square feet calculated by using existing building 1 sf minus 15,000 sf, plus the square feet for building 265 and 450)	1, 265, 450
Film Production	33	n/a	501,000	existing facilities	2, 3, 180, 111
Marina (land)	2	n/a	20,000	20,000 sf yacht club	
Marina (water)				6 water acres; 103 existing slips	
Other publicly oriented uses	20	n/a	256,080	existing facility (7,788) plus possible new development (19 acres x 0.30 FAR x 43,560 = 248,292 sf)	271
Total Publicly Oriented	113				
Residential					
Existing Residential	110	n/a	360,370	905 units and 75 beds in barracks (360,370 sf)	1100, 1200, 1300, 1400 series; Barracks 452 and 453
New Residential	0		0		
Neighborhood Retail	0		0		

**Table E-5. Alternative 3 Assumptions
(continued)**

<i>Treasure Island Land Use</i>	<i>Acres</i>	<i>Far¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Total Residential	110				
Institutional and Community					
Elementary school	9	n/a		existing facility	existing buildings
Child development center	4	n/a	10,123	existing facility	502
Fire training school	5	n/a	69,887	existing facility	600-617
Warehouse/Storage	4	0.20	34,848	new facility	
WWTP	3	n/a		existing facility	415, 416, 417, 421, 465, 466, 467, 468
Brig	5	n/a	36,543	existing facilities	670, 671, 217
Fire station	2	n/a	10,215	existing facility	157
Police station	3	n/a	2,836	new facility in existing buildings	462, 463
Other institutional facilities	8	n/a	129,147	existing facilities	233, 7, 461
Total Institutional and Community	43				
Open Space/Recreation					
Golf course	0		0		
Sports fields/complex	40	n/a	150,557	existing facilities (150,557 sf) and possible new facilities (unknown sf)	402, 497, 201, 202
Shoreline promenade/open space	60	n/a			
Ferry Terminals/Piers	0		0	Piers 1 and 12 would provide ferry docking	Piers 1 and 12
Wildlife Habitat	0		0		
Total Open Space/Recreation	100				
Total Treasure Island Disposal Acreage	366			403 acres minus federal-to-federal transfer acres	
Total Treasure Island Building Square Footage			1,914,285		

**Table E-5
Alternative 3 Assumptions (continued)**

<i>Yerba Buena Island Land Use</i>	<i>Acres</i>	<i>Far¹</i>	<i>Buildout (sf)</i>	<i>Other</i>	<i>Existing Buildings To Be Reused</i>
Publicly Oriented					
Hotel/Bed and Breakfast	3	n/a		150 room hotel (hilltop)	
Conference/Reception	5	n/a	30,241	existing buildings	Quarters 1-7
Restaurant	1	n/a	12,150	Torpedo Depot	262
Total Publicly Oriented Uses	9				
Residential					
Existing Housing	28	n/a		approximately 90 units	100, 200, 300 series, excluding 326, 324, 320, 162T (tank)
New Housing	5	n/a		approximately 70 units	
Mixed Use	0		0		
Total Residential	33				
Institutional and Community	0				
Open Space/Recreation	42				
Total Yerba Buena Island Disposal Acreage	84			115 acres minus federal-to-federal transfers	
Total Yerba Buena Island Building Square Footage			42,391		

¹ A Floor Area Ratio (FAR) of 0.20 was used for community facilities; 0.25 was used for neighborhood commercial facilities; 0.30 was used for visitor serving facilities.

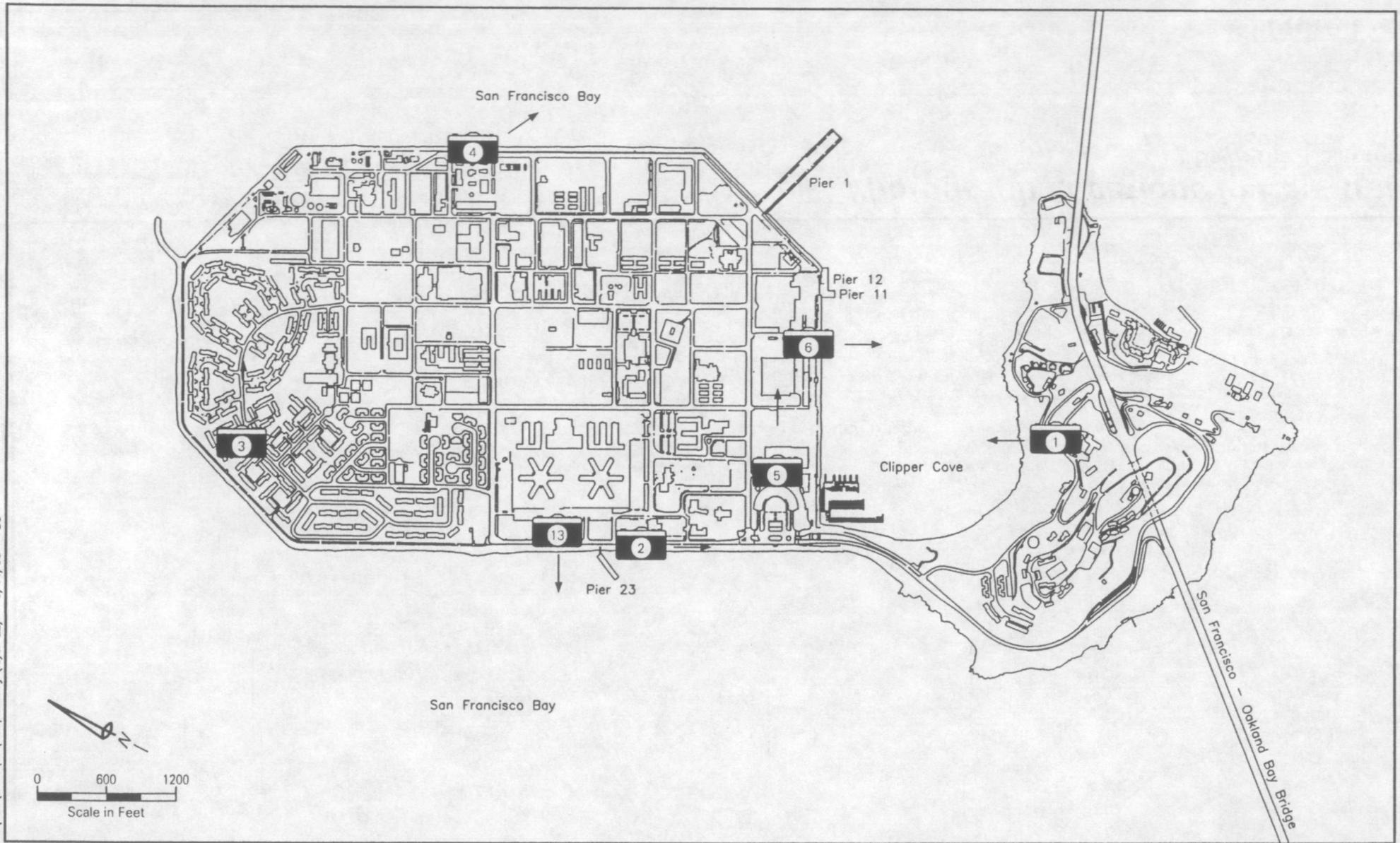
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APPENDIX F

Supporting Technical Information

APPENDIX F-1

Photographic Documentation



Upon reuse, Treasure Island and Yerba Buena Island would provide recreational viewing opportunities for the public.

Legend:



Photograph Location

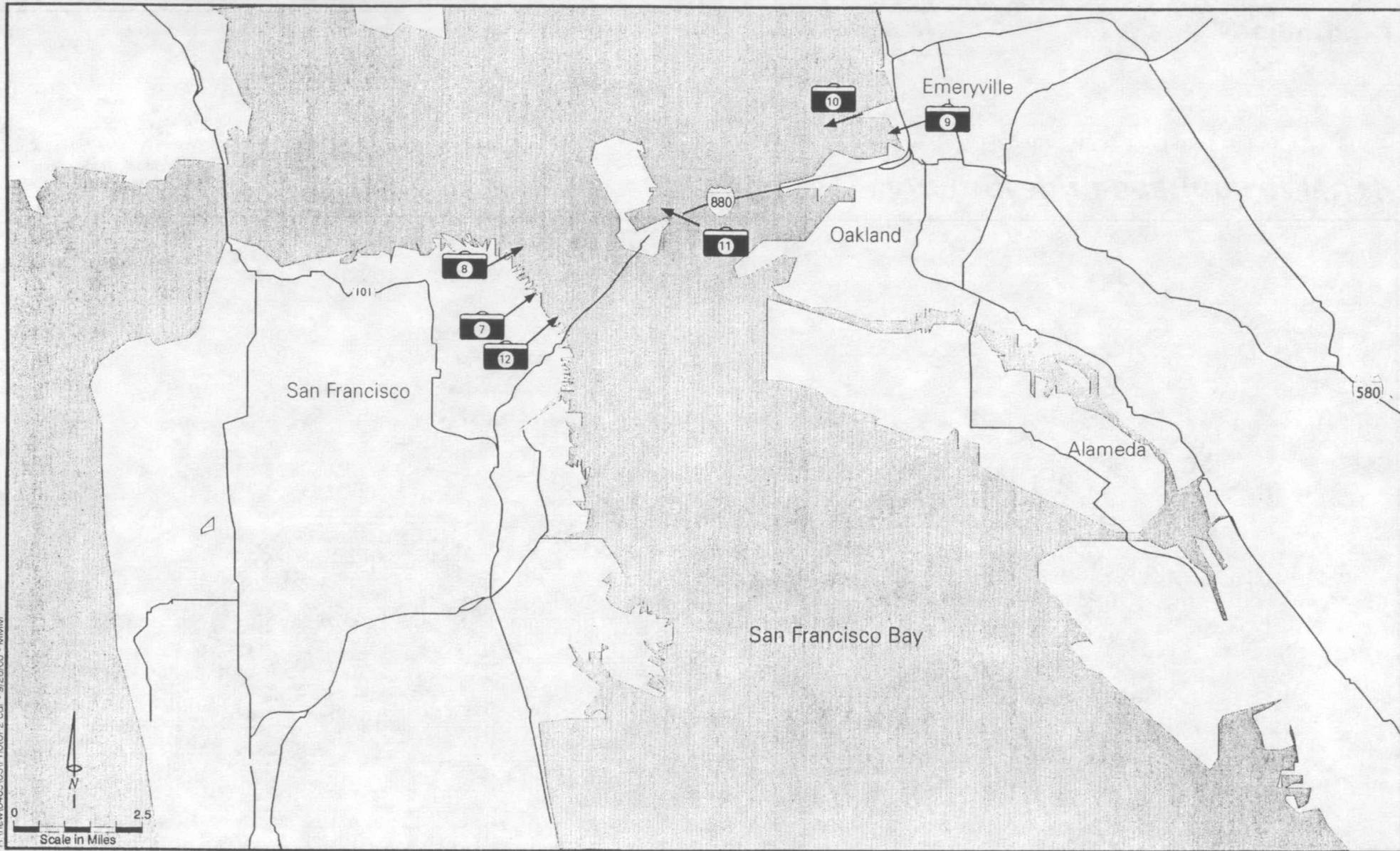


Photograph Direction

Photograph Locations at NSTI

Naval Station Treasure Island, California

Figure F-1



F-2

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Treasure Island and Yerba Buena Island can be seen from various vantage points throughout the Bay Area.

LEGEND:



Photograph Location



Photograph Direction

Photograph Locations in Bay Area
Bay Area, California

Figure F-2

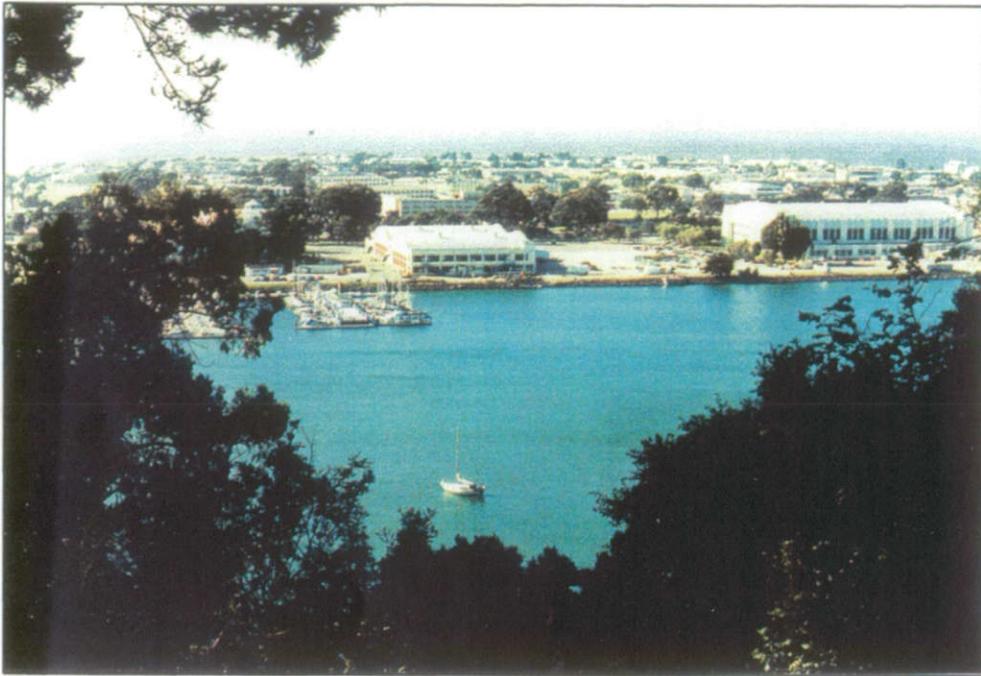


Photo 1: Overview of Treasure Island from Yerba Buena Island



Photo 3: View of the Residential Area



Photo 2: View of the Entry Area, Seen from the Avenue of Palms

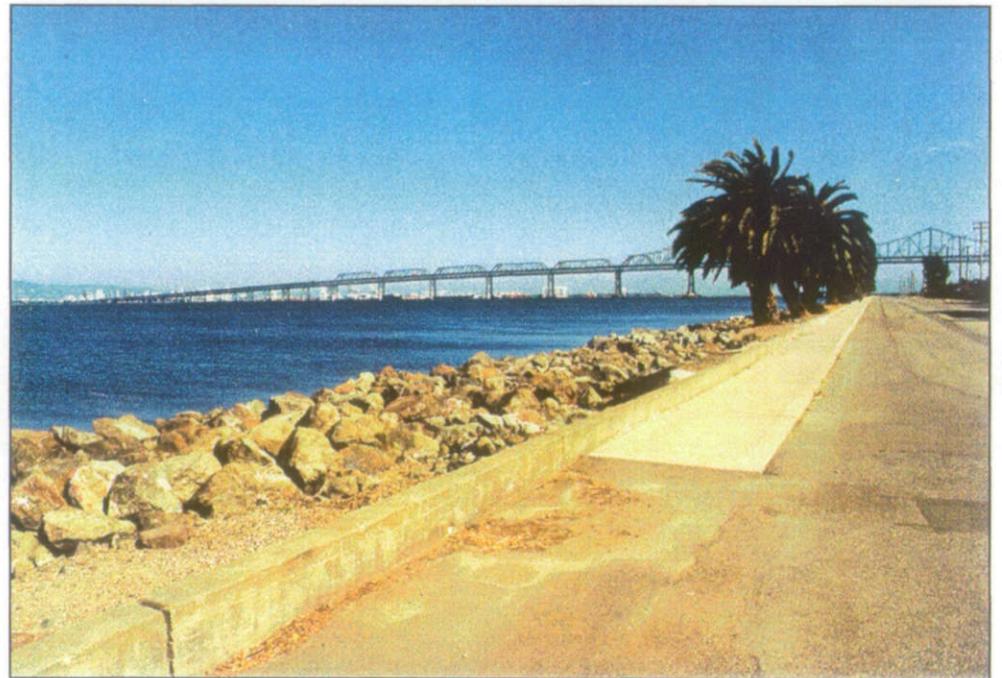


Photo 4: View of the East Side of the Waterfront



Photo 5: View of the Former Hangar Building (Building 2)



Photo 6: View of Clipper Cove from Treasure Island



Photo 7: View from Recreational Pier 7, San Francisco Embarcadero



Photo 9: View from Interstate 80 in Emeryville



Photo 8: View from Coit Tower Vista Point in San Francisco



Photo 10: View from Emeryville Waterfront



Photo 12: View Along Howard Street View Corridor Near Spear Street

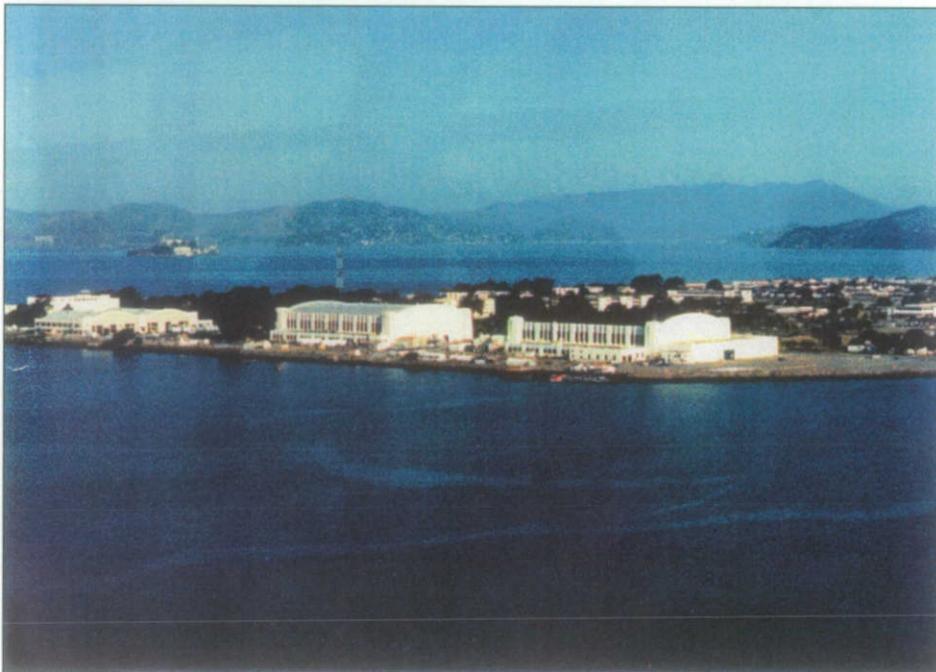


Photo 11: View of Treasure Island from a Bus Traveling West on the Bay Bridge



Photo 13: View from Pier 23 toward San Francisco

APPENDIX F-2
Socioeconomics

APPENDIX F-2 SOCIOECONOMICS

POPULATION AND EMPLOYMENT ASSUMPTIONS

This appendix describes the assumptions that were used to estimate population and employment impacts associated with the three NSTI reuse alternatives considered in the EIS. Sources are noted throughout the text with full references provided at the end of the appendix.

Population Estimation Assumptions

For the purpose of this analysis, household size for existing housing units at NSTI was estimated to be 3.2 persons, while household size for newly constructed units was estimated to be 2.3 persons (Mara Feeney & Associates estimate). The rationale for these assumptions is presented in the following paragraphs.

Factors that might attract larger households to Treasure Island include the availability of an elementary school and childcare center. However, the access constraints could be a major deterrent to families with children who might have to be shuttled to a variety of after-school activities, medical appointments, shopping, etc.

According to the 1990 U.S. Census, the average household size in San Francisco was 2.3, and at NSTI was 3.7, reflecting the larger size of military families in comparison to typical San Francisco households. At NSTI, existing military family housing units have two to four bedrooms. It seems likely that in the future these units would be allocated to relatively large households (e.g., Coast Guard personnel with larger household sizes as reflected in the census data; or larger San Francisco families having the greatest need for space, and/or TIHDI to provide support services for families or groups of adults).

A variety of assumptions have been made regarding household size in current base closure and reuse studies. The Presidio Planning Socioeconomic Analysis Report assumed an average household size of 3.2 for Presidio reuse, based on San Francisco's average *family* size in 1990, as opposed to average household size (Jones & Jones, Inc. 1994). The NSTI Reuse Plan assumed 1.5 persons per household for new construction at Yerba Buena Island and 1.8 persons per household for new housing construction on Treasure Island (San Francisco 1996). The Mayor's Office currently is assuming an average household size of 2.5 persons per household in its NSTI projections (EPS 1997).

Based on a consideration of the above information, it was decided that using two different household sizes—one for existing units and one for new units (which are likely to be built at higher densities)—would provide the most accurate population estimates. Therefore, for existing units, a household size of 3.2 persons is assumed, while a household size of 2.3 is projected for new units.

Population associated with live-work units was estimated at 1.25 persons per unit (Mara Feeney & Associates estimate). Treasure Island population estimates also include the brig inmate population, which is estimated to be 90 (HMH 1997).

Employment Estimation Assumptions

The employment density factors in Table F-1 were used to estimate employment from land uses proposed under each NSTI reuse scenario (Tables F-2 to F-4).

**Table F-1
Employment Multipliers for Each Land Use**

<i>Land Use</i>	<i>Employment Density Factor</i>	<i>Source</i>
Publicly Oriented		
Themed Attraction	0.7 jobs per 1,000 visitors, with FTEs ¹ calculated as half of total jobs	EPS 1997a
Hotels	1 employee per room	San Francisco 1996; ROMA 1994; EPS 1997
Conference Facilities	1 employee per 5,000 sf	EPS 1997
Retail and Restaurants	1 employee per 500 sf	Jones & Jones, Inc. 1994; ROMA 1994; EPS 1997
Entertainment Center/ Amphitheater	1 employee per 2,500 sf	Mara Feeney & Associates estimate
Wedding Chapel	1 FTE ¹	Mara Feeney & Associates estimate
Museum	1 employee per 2,500 sf	San Francisco 1996; EPS 1997
Mixed Use/Office	1 employee per 385 sf	Jones & Jones, Inc. 1994
Film Production	1 employee per 1,000 sf	EPS 1997
Marina	3 employees per 100 slips/buoys	Mara Feeney & Associates estimate
Yacht Club	1 employee per 1,000 sf	Mara Feeney & Associates estimate
Other public-oriented Uses	1 employee per 1,000 sf	Mara Feeney & Associates estimate

Table F-1
Employment Multipliers for Each Land Use (continued)

<i>Land Use</i>	<i>Employment Density Factor</i>	<i>Source</i>
Residential		
New Residential	1 job per live-work unit and 1 employee per 500 sf neighborhood retail	Jones & Jones, Inc. 1994
Institutional and Community		
Elementary School	1 teacher per 30 students (approx.) and 1 staff person per 200 students	San Francisco 1996
Child Development Center	1 staff person per 12 children (approx.) or one employee per 1,000 sf (approx.)	San Francisco 1996
Fire Training School	20 staff year-round	HMH 1997
Warehousing	1 employee per 5,000 sf	Jones & Jones, Inc. 1994
Wastewater Treatment Plant	1 employee per 5,000 sf	Mara Feeney & Associates estimate
Police and Fire Stations	1 employee per 1,000 sf	Mara Feeney & Associates estimate
Other Institutional	1 employee per 1,000 sf	Jones & Jones, Inc. 1994
Open Space/Recreation		
Sports Complex	1 employee per 60,000 sf (ballfields) and 1 employee per 10,000 sf (gymnasium)	EPS 1997

**Table F-2
Estimated Population and Employment for Alternative 1**

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
TREASURE ISLAND LAND USE		
Publicly Oriented		
Themed Attraction		1,750
Hotel/Conference/Lodging		1,300
Retail/Specialty/Restaurant		450
Entertainment center		
Amphitheater		
Movie Theater		
Wedding Chapel		
Museum		6
Mixed Use/Office		260
Film Production		501
Marina (land)		20
Marina (water)		12
Other publicly oriented uses		183
Total Publicly Oriented		4,482
Residential		
Existing Residential	640	
New Residential	5,290	
Neighborhood Retail		48
Total Residential	5,930	48

Table F-2
Estimated Population and Employment for Alternative 1
 (continued)

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
Institutional and Community		
Elementary school		32
Child development center		10
Fire training school		20
Warehouse/Storage		
WWTP		17
Brig	90	60
Fire station		35
Police station		26
Other institutional facilities		
Total Institutional and Community	90	200
Open Space/Recreation		
Golf course		
Sports fields/complex		7
Shoreline promenade/open space		
Ferry Terminals/Piers		2
Wildlife Habitat		
Total Open Space/Recreation		9
Total Treasure Island	6,020	4,739

Table F-2
Estimated Population and Employment for Alternative 1
 (continued)

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
YERBA BUENA ISLAND LAND USE		
Publicly Oriented		
Hotel/Bed and Breakfast		150
Conference/Reception		18
Restaurant		
Total Publicly Oriented Uses		168
Residential		
Existing Housing	288	
New Housing	575	
Mixed Use	13	10
Total Residential	876	10
Institutional and Community	N/A	N/A
Open Space/Recreation		1
Total Yerba Buena Island	876	179
NSTI TOTALS	6,896	4,918

¹Full-time equivalent.

Table F-3
Estimated Population and Employment for Alternative 2

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
TREASURE ISLAND LAND USE		
Publicly Oriented		
Themed Attraction		700
Hotel/Conference/Lodging		1,400
Retail/Specialty/Restaurant		
Entertainment center		150
Amphitheater		4
Movie Theater		
Wedding Chapel		1
Museum		60
Mixed Use/Office		
Film Production		
Marina (land)		
Marina (water)		15
Other publicly oriented uses		183
Total Publicly Oriented		2,513
Residential		
Existing Residential		
New Residential		
Neighborhood Retail		
Total Residential		

Table F-3
Estimated Population and Employment for Alternative 2
 (continued)

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
Institutional and Community		
Elementary school		
Child development center		
Fire training school		
Warehouse/Storage		
WWTP		9
Brig	90	60
Fire station		17
Police station		17
Other institutional facilities		
Total Institutional and Community	90	103
Open Space/Recreation		
Golf course		20
Sports fields/complex		1
Shoreline promenade/open space		
Ferry Terminals/Piers		2
Wildlife Habitat		
Total Open Space/Recreation		23
Total Treasure Island	90	2,639

Table F-3
Estimated Population and Employment for Alternative 2
 (continued)

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
YERBA BUENA ISLAND LAND USE		
Publicly Oriented		
Hotel/Bed and Breakfast		150
Conference/Reception		6
Restaurant		24
Total Publicly Oriented Uses		180
Residential		
Existing Housing	160	
New Housing	460	
Mixed Use		
Total Residential	620	
Institutional and Community	N/A	N/A
Open Space/Recreation		1
Total Yerba Buena Island	620	181
NSTI TOTALS	710	2,820

¹Full-time equivalent.

**Table F-4
Estimated Population and Employment for Alternative 3**

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
TREASURE ISLAND LAND USE		
Publicly Oriented/Visitor Attraction		
Themed Attraction		350
Hotel/Conference/Lodging		16
Retail/Specialty/Restaurant		26
Entertainment center		
Amphitheater		
Movie Theater		
Wedding Chapel		1
Museum		6
Mixed Use/Office		557
Film Production		501
Marina (land)		20
Marina (water)		3
Other publicly oriented uses		256
Total Publicly Oriented		1,736
Residential		
Existing Residential	2,971	
New Residential		
Neighborhood Retail		
Total Residential	2,971	

Table F-4
Estimated Population and Employment for Alternative 3
 (continued)

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
Institutional and Community		
Elementary school		32
Child development center		10
Fire training school		20
Warehouse/Storage		7
WWTP		5
Brig	90	60
Fire station		10
Police station		3
Other institutional facilities		129
Total Institutional and Community	90	276
Open Space/Recreation		
Golf course		
Sports fields/complex		3
Shoreline promenade/open space		
Ferry Terminals/Piers		
Wildlife Habitat		
Total Open Space/Recreation		3
Total Treasure Island	3,061	2,015

Table F-4
Estimated Population and Employment for Alternative 3
 (continued)

	<i>Estimated Population</i>	<i>Estimated Employment¹</i>
YERBA BUENA ISLAND LAND USE		
Publicly Oriented		
Hotel/Bed and Breakfast		150
Conference/Reception		6
Restaurant		24
Total Publicly Oriented Uses		180
Residential		
Existing Housing	288	
New Housing	161	
Mixed Use	0	
Total Residential	449	
Institutional and Community	N/A	N/A
Open Space/Recreation		1
Total Yerba Buena Island	449	181
NSTI TOTALS	3,510	2,196

¹Full-time equivalent.

APPENDIX F-3
Transportation

F.3-A. TECHNICAL MEMORANDUM

UPDATE OF TREASURE ISLAND EIS TRAFFIC ANALYSIS

Based on public comments provided by several government agencies on the *Draft Environmental Impact Statement for the Disposal and Reuse of Naval Station Treasure Island (DEIS)*, this technical memorandum updates the freeway mainline and ramp analyses to year 2025. The DEIS included a future year cumulative analysis for year 2010. Year 2010 was a reasonable future horizon year when the preparation of the initial EIS document began in 1996. As stated above, several government agencies requested that the future cumulative year be updated to 2025. These requests are reasonable since year 2025 is commonly used as the future horizon year for the cumulative analysis now. The following sections describe which assumptions were updated, how the updates were performed, and the findings of the analysis.

Analysis Tool

The DEIS used the FREEQ11 traffic simulation model as the software to perform the freeway mainline and ramp analyses. The FREEQ model was developed by the Institute of Transportation Studies of the University of California, Berkeley. In order to provide consistency between the current analysis methodologies and results with the original analyses, FREEQ11 was used for the updates.

Analysis Assumptions

Reuse Alternative Assumptions

The three reuse alternatives, or land use scenarios, analyzed in the DEIS have not changed. The year 2025 updates analyzed traffic impacts generated by the same three land use scenarios as those used in the DEIS.

Transportation Assumptions

For consistency purposes, most of the transportation assumptions for the year 2025 updates remain the same as those used in the DEIS for the year 2010 (refer to the following transportation technical data section of this Appendix) except for the future year freeway mainline traffic volumes (discussed below in F.3-B).

TRIP GENERATION - Since the year 2010 trip generation analysis was prepared for full build-out of NSTI and the land use scenarios have not changed, person and vehicle trip generation estimates for year 2025 remain the same as those presented in the DEIS for year 2010.

TRIP DISTRIBUTION AND MODAL SPLIT ASSUMPTIONS AND TRAFFIC ASSIGNMENT PATTERNS - For consistency, trip distribution and modal split assumptions and traffic assignment patterns remain the same as those presented in the DEIS for year 2010.

YEAR 2025 RAMP VOLUMES - Since the year 2010 trip generation estimates was prepared for full build-out of NSTI, the year 2025 Treasure Island/Yerba Buena Island ramp volumes remain the same as those presented in the DEIS for year 2010.

FREEWAY SYSTEMS - Assumptions for the freeway mainline, weaving section, and on- and off-ramp capacities and free flow speed remain the same as in the DEIS for the year 2010, except for those relating to the eastbound on-ramp on the east side of the tunnel. This ramp will be reconstructed as part of the SFOBB East Span project. Caltrans has estimated that the capacity for the new ramp would be approximately 900-1000 vehicles per hour, compared to the 330 vehicles per hour used in the DEIS.

FUTURE YEAR FREEWAY MAINLINE VOLUMES - Year 2025 freeway mainline volumes were updated using the same methodology used in the DEIS for the year 2010. MTC model output data were used to calculate the growth rates from 1994 and 2025. The growth rates were then applied to the 1994 observed freeway traffic volumes to estimate the year 2025 traffic volumes.

Results of Freeway Mainline and Ramp Analysis

Freeway Mainline LOS Analysis

Table F-5 presents the observed SFOBB traffic volumes in 1994, associated freeway levels of service, and estimated year 2025 traffic volumes for the baseline and three project reuse alternatives. While the MTC model shows that the year 2025 SFOBB baseline traffic demand would be higher than that of year 2010, the number of vehicles can actually get onto SFOBB during the peak hours would be limited. The number of vehicles traveling westbound from the East Bay to SFOBB is controlled by the metering lights and is restricted to approximately 10,500 vehicles during the AM peak hour and 9,000 vehicles during the PM peak hour. The eastbound traffic volumes would be restricted to 9,500 vehicles during both the AM and PM peak hours due to the capacity and congestion of the downtown segments of I-80.

WEEKDAY AM AND PM PEAK HOURS, EASTBOUND DIRECTION - Due to the projected increase in traffic volumes between the 2010 and 2025 future years in the eastbound direction during AM and PM peak hours, travel speed on SFOBB in 2025 would decrease marginally compared to the 2010 analysis (Table 4.8, DEIS). However, the levels of service on SFOBB would stay the same between the two future years in all development scenarios.

WEEKDAY AM AND PM PEAK HOURS, WESTBOUND DIRECTION - Due to the projected increase in traffic volumes between the 2010 and 2025 future years in the westbound direction during AM and PM peak hours, travel speed on SFOBB in 2025 would decrease marginally compared to the 2010 analysis (Table 4.8, DEIS). However, the levels of service on SFOBB would stay the same between the two future years in all development scenarios.

WEEKEND MIDDAY - Due to the projected increase in traffic volumes between the 2010 and 2025 future years in the both eastbound and westbound directions during typical weekend midday travel, speed on SFOBB would decrease marginally compared to the 2010 analysis (Table 4.8, DEIS). However, the levels of service on SFOBB would stay the same between the two future years in all development scenarios.

Ramp LOS Analysis

Table F-6 presents the observed SFOBB ramp volumes and queue in 1994 and the estimated ramp volumes and queue in year 2025 for the baseline and three project reuse alternatives.

There are only two changes to the Treasure Island/Yerba Buena Island ramp levels of services, both of which would occur during a typical weekend midday condition. The length of the vehicle queue at the westbound on-ramp on the west side of the tunnel would increase from 239 vehicle in year 2010 (Table 4.6, DEIS) to 242 vehicles in year 2025. Vehicle queuing on the eastbound on-ramp on the east side of the tunnel would disappear because of the increased capacity of the new on-ramp on the east side of the tunnel that will be constructed as part of the SFOBB East Span project. The DEIS projected a 150 vehicle queue on this ramp during the weekend midday peak hour in 2010 (Table 4.6, DEIS).

Conclusions

The year 2025 update of the freeway mainline and ramp analyses revealed that no additional significant impacts would occur when compared to the year 2010 analysis presented in Section 4.5 of the DEIS.

Table F-5. SFOBB/I-80 Operations Existing and Year 2025 Weekday and Weekend Peak Hour Conditions

Peak Hour/Direction	Existing (1994) (Operational Base)		2025 Background Conditions (No Action)		2025 Alternative 1		2025 Alternative 2		2025 Alternative 3	
	Speed ³	LOS ⁴	Speed ³	LOS ⁴	Speed ³	LOS ⁴	Speed ³	LOS ⁴	Speed ³	LOS ⁴
Weekday AM peak hour⁵										
Eastbound ¹	57	B	56	B	56	B	56	B	56	B
Westbound ²	45	D	20	F	20	F	21	F	21	F
Weekday PM peak hour⁶										
Eastbound ¹	46	D	44	D	43	D	44	D	44	D
Westbound ²	56	B	16	F	16	F	16	F	17	F
Weekend midday peak hour⁷										
Eastbound ¹	57	B	56	B	56	B	56	B	56	B
Westbound ²	57	B	57	B	57	B	57	B	57	B

¹ Eastbound SFOBB/I-80 east of Yerba Buena Island tunnel.

² Westbound SFOBB/I-80 west of Yerba Buena Island tunnel.

³ Speed is expressed in miles per hour.

⁴ LOS is based on mainline travel speeds, consistent with San Francisco Congestion Management LOS designations.

⁵ The AM peak hour of 8:00 to 9:00 AM occurs within the AM peak period of 6:00 to 9:00 AM.

⁶ The PM peak hour of 5:00 to 6:00 PM occurs within the PM peak period of 3:00 to 7:00 PM.

⁷ The midday peak hour of 12:00 to 1:00 PM occurs within the midday peak period of 10:00 AM to 1:00 PM.

Note: Degraded operating conditions on the SFOBB/I-80 in 2010 (without reuse) would be attributable to regional growth. The additional vehicle-trips associated with each reuse alternative would contribute to increases in queues at the SFOBB toll plaza, congestion and queues in downtown San Francisco, and in the duration of the peak periods.

Source: DON 1997d.

**Table F-6. SFOBB/I-80 Yerba Buena Island Ramp Volumes and Maximum Queue
Existing and Year 2025 Weekday and Weekend Peak Hour Conditions**

<i>Peak Hour/Ramp³</i>	<i>Existing (1994) (Operational Base)</i>		<i>2025 Background Conditions (No Action)</i>		<i>2025 Alternative 1</i>		<i>2025 Alternative 2</i>		<i>2025 Alternative 3</i>	
	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>	<i>Volume</i>	<i>Queue⁴</i>
Weekday AM Peak Hour										
westbound on-ramp ¹ (east side)	40	—	15	—	145	—	40	—	75	—
westbound on-ramp ² (west side)	90	—	35	—	335	7	90	—	170	—
westbound off-ramp (east side)	190	—	45	—	160	—	145	—	160	—
eastbound on-ramp (east side)	215	—	80	—	300	—	135	—	190	—
eastbound on-ramp (west side)	120	—	95	—	235	—	205	—	235	—
eastbound on-ramp (east side)	20	—	5	—	145	—	135	—	145	—
Total ramp volumes	675		275		1320		750		975	
Weekday PM Peak Hour										
westbound on-ramp (east side)	25	—	15	—	85	—	70	—	65	—
westbound on-ramp (west side)	135	—	60	—	355	27	295	—	270	—
westbound off-ramp (east side)	240	—	35	—	375	—	145	—	160	—
eastbound on-ramp (east side)	250	—	80	—	300	—	275	—	250	—
eastbound on-ramp (west side)	60	—	55	—	535	36	190	—	240	—
eastbound on-ramp (east side)	20	—	5	—	145	—	45	—	60	—
Total ramp volumes	730		250		1795		1020		1045	

Table F-6. SFOBB/I-80 Yerba Buena Island Ramp Volumes and Maximum Queue Existing and Year 2025 Weekday and Weekend Peak Hour Conditions

(continued)

Peak Hour/Ramp ³	Existing (1994) (Operational Base)		2025 Background Conditions (No Action)		2025 Alternative 1		2025 Alternative 2		2025 Alternative 3	
	Volume	Queue ⁴	Volume	Queue ⁴	Volume	Queue ⁴	Volume	Queue ⁴	Volume	Queue ⁴
Weekend midday Peak Hour										
westbound on-ramp (east side)	20	--	15	--	195	--	90	--	110	--
westbound on-ramp (west side)	125	--	35	--	570	242	260	--	320	--
westbound off-ramp (east side)	130	--	45	--	175	--	150	--	100	--
eastbound on-ramp (east side)	155	--	80	--	480	--	295	--	320	--
eastbound on-ramp (west side)	75	--	95	--	230	--	210	--	160	--
eastbound on-ramp (east side)	20	--	5	--	60	--	50	--	30	--
Total ramp volumes	525		275		1710		1055		1040	

¹ Ramp located east of Yerba Buena Island tunnel.

² Ramp located west of Yerba Buena Island tunnel.

³ Maximum on-ramp capacity = 330 vehicles per hour per ramp, except the eastbound on-ramp on the east side of the tunnel = 900 vehicle; maximum eastbound off-ramp capacity (west of the tunnel) = 500 vehicles per ramp. Other off-ramps = 560 vehicles per ramp. Total on-ramp capacity = 1,560 vehicles per hour and total off-ramp capacity = 1,620 vehicles per hour.

⁴ Number of vehicles

Source: DON 1997d.

F.3-B TRANSPORTATION

Transportation Analysis Methodology and Assumptions

This appendix presents the methodology and assumptions used in the transportation analysis of this EIS.

Existing Freeway Volumes

Table F-7 presents 24-hour volumes and average daily vehicle trips (ADT's) from traffic counts conducted by Caltrans for the Bay Bridge/I-80 during weekday and weekend periods (Caltrans 1993).

Ramp Volumes

Table F-8 presents the westbound and eastbound traffic volumes on the on- and off-ramps between Yerba Buena Island and the Bay Bridge/I-80. 1994 Caltrans traffic count information for 1994 was used for the ramps.

Land Use Program

The reuse alternatives in Chapter 2, Proposed Action and Alternatives, were defined using 26 classifications of land use assigned to approximately 15 delineated areas of the NSTI property. For purposes of the traffic analysis, these 15 areas were aggregated into 8 Traffic Analysis Zones (TAZs), 7 on Treasure Island and 1 on Yerba Buena Island. The 8 TAZs are shown on the Figure F-3 for Alternatives 1, 2, and 3, respectively. Land use classifications were then used to calculate total trips that would be generated from projected reuses.

Table F-9 presents aggregated acreages, units, or trips for the individual land use categories for each of the community reuse alternatives. The EIS developed land use data for the reuse alternatives based on information from the Reuse Plan and the San Francisco Planning Department.

Policy Summary

The following policies from the Draft Reuse Plan address regional access, street systems, transit, and water transportation; these were developed during the community reuse planning process.

- Develop waterborne transportation as the primary means of access to Treasure Island;
- Establish transit and pedestrian-based development on Treasure Island;
- Establish a multimodal internal circulation system that emphasizes non-auto modes; and
- Promote a regional system of ferry landings that are accessible by a diversity of travel modes.

Table F-7
24-hour Mainline Counts and Total Daily Trips

I-80 Westbound			I-80 Eastbound		
Time	Weekday (vph)	Weekend (vph)	Time	Weekday (vph)	Weekend (vph)
12 - 1 AM	1,249	2,080	12 - 1 AM	2,499	4,491
1 - 2	792	1,226	1 - 2	1,442	3,367
2 - 3	597	747	2 - 3	986	2,669
3 - 4	689	727	3 - 4	679	1,368
4 - 5	1,342	812	4 - 5	735	946
5 - 6	4,689	1,886	5 - 6	1,653	1,218
6 - 7	9,798	3,227	6 - 7	4,517	2,293
7 - 8	10,762	4,365	7 - 8	7,925	3,936
8 - 9	10,026	5,865	8 - 9	8,356	5,307
9 - 10	8,461	7,760	9 - 10	6,216	6,281
10 - 11	7,423	8,476	10 - 11	5,900	7,077
11 - 12	6,898	8,940	11 - 12	6,442	7,028
12 - 1 PM	6,435	8,373	12 - 1 PM	6,585	6,937
1 - 2	6,408	8,527	1 - 2	7,056	6,974
2 - 3	6,475	7,534	2 - 3	8,855	8,021
3 - 4	7,554	7,152	3 - 4	10,266	8,792
4 - 5	8,289	7,597	4 - 5	9,156	7,608
5 - 6	8,505	7,804	5 - 6	9,747	9,625
6 - 7	7,528	7,753	6 - 7	9,931	9,193
7 - 8	5,752	7,052	7 - 8	8,505	6,961
8 - 9	4,170	5,280	8 - 9	6,071	5,411
9 - 10	4,064	5,759	9 - 10	6,157	5,585
10 - 11	3,804	5,488	10 - 11	5,458	6,074
11 - 12	2,429	4,083	11 - 12	4,833	6,009
Daily Total	134,139	128,513	Daily Total	139,970	133,171

Source: Caltrans 1993.

Table F-8. Ramp Volumes - 1994 Conditions

I-80 Westbound (Weekday)					I-80 Eastbound (Weekday)				
Time	On-Ramp		Total	Off-Ramp	Time	Off-Ramp		Total	On-Ramp
	Macalla Rd.	T.I. Road		T.I. Road		T.I. Road	T.I. Road		T.I. Road
	Vph	vph	vph	(vph)		vph	vph	vph	(vph)
12 - 1 AM	1	24	25	28	12 - 1 AM	10	7	17	27
1 - 2	0	12	12	20	1 - 2	4	3	7	8
2 - 3	0	6	6	15	2 - 3	8	4	12	7
3 - 4	3	3	6	10	3 - 4	3	1	4	7
4 - 5	0	8	8	27	4 - 5	5	1	6	12
5 - 6	2	26	28	178	5 - 6	22	3	25	63
6 - 7	15	53	68	470	6 - 7	118	52	170	344
7 - 8	42	86	128	198	7 - 8	122	16	138	226
8 - 9	32	64	96	98	8 - 9	64	32	96	139
9 - 10	18	62	80	142	9 - 10	73	17	90	127
10 - 11	23	83	106	179	10 - 11	74	23	97	125
11 - 12	25	120	145	150	11 - 12	79	20	99	161
12 - 1 PM	29	93	122	177	12 - 1 PM	74	31	105	149
1 - 2	31	85	116	127	1 - 2	79	29	108	157
2 - 3	21	165	186	183	2 - 3	82	23	105	248
3 - 4	45	179	224	210	3 - 4	85	32	117	313
4 - 5	24	142	166	242	4 - 5	78	33	111	206
5 - 6	22	65	87	183	5 - 6	78	16	94	136
6 - 7	19	62	81	168	6 - 7	64	15	79	148
7 - 8	16	47	63	135	7 - 8	57	45	102	102
8 - 9	12	40	52	122	8 - 9	54	12	66	71
9 - 10	32	84	116	104	9 - 10	50	25	75	79
10 - 11	5	48	53	65	10 - 11	39	15	54	50
11 - 12	3	22	25	46	11 - 12	27	14	41	24
Daily Total	420	1,579	1,999	3,277	Daily Total	1,349	469	1,818	2,929

Source: Caltrans 1994.

Table F-9
Land Use Program for the Community Reuse Alternatives

Alternative One			Alternative Two			Alternative Three		
Land Use	Size	Unit	Land Use	Size	Unit	Land Use	Size	Unit
ZONE 1:						ZONE 1:		
Museum	15	kuf	Themed Attraction	19	acres	Museum	15	kuf
Film Production	501	kuf	Entertainment Center	300	kuf	Film Production	501	kuf
Manna	403	steps	Museum	49,799	kuf	Manna	503	steps
			Manna	500	steps			
ZONE 2:						ZONE 2:		
Themed Attraction	59	acres	Themed Attraction	41	acres	Themed Attraction	39	acres
Outdoor Recreation	6.1	acres	Amphitheater	5000	seats	Open Space	36	acres
			Outdoor Recreation	10.8	acres	Community / Institutional	89,623	kuf
ZONE 3:						ZONE 3:		
Office	100	kuf	Themed Attraction	15	acres	Office	178,837.5	kuf
Community / Institutional	183	kuf	Community / Institutional	182,952	kuf	Conference	80	kuf
Job Corps	635	trips	Job Corps	635	trips	Job Corps	635	trips
						Community / Institutional	128,04	kuf
ZONE 4:						ZONE 4:		
Restaurant	225	kuf	Office	100	kuf	Restaurant	13.2	kuf
Retail	24	kuf	Hotel	1200	rooms	Wedding Chapel	9,884	kuf
Open Space	30	acres	Open Space	15.3	acres	Office	35,767.5	kuf
Hotel	1300	rooms	Conference	100	kuf	Community / Institutional	12,804	kuf
			Wedding Chapel	9,884	kuf	Open Space	24	acres
						Warehouse	34,848	kuf
ZONE 5:						ZONE 5:		
Water Treatment Plant	10	acres	Police, Fire & Medical	60,984	kuf	Fire School	244	trips
Bng	109	trips	Fire School	244	people	Community / Institutional	25,608	kuf
Fire School	244	trips	Open Space	15.3	acres	Water Treatment Plant	3	acres
Police, Fire & Medical	61	kuf	Bng	109	trips	Bng	109	trips
			Water Treatment Plant	10	acres	Police, Fire & Medical	2.61	kuf
			Community / Institutional	34,848	kuf			
ZONE 6:						ZONE 6:		
Outdoor Recreation	40.9	acres	Outdoor Recreation	7.2	acres	Outdoor Recreation	3.5	acres
Residential	1250	units	Open Space	20.4	acres	Police, Fire & Medical	10,441	kuf
Elementary School	152	trips	Golf Course	8	holes	Elementary School	152	trips
Child Development Center	10	kuf			Child Development Center	10,123	kuf	
ZONE 7:						ZONE 7:		
Residential	1250	units	Golf Course	10	holes	Residential	980	units
						Police, Fire & Medical	2.61	kuf
ZONE 8:						ZONE 8:		
Open Space	58	acres	Open Space	57	acres	Open Space	57	acres
Conference	4	acres	Conference	30,241	kuf	Conference	30,241	kuf
Restaurant	12	kuf	Restaurant	12	kuf	Restaurant	12,15	kuf
Hotel	150	rooms	Hotel	150	rooms	Hotel	150	rooms
Mixed	12000	sq. ft.	Residential	250	units	Residential	160	units
Residential	340	units	Community / Institutional	0	kuf	Community / Institutional	348.48	kuf
Community / Institutional	348	kuf						
TOTALS:						TOTALS:		
Amphitheatre			Amphitheatre	5000	seats	Amphitheatre		
Bng	109	trips	Bng	109	trips	Bng	109	trips
Child Development Center	10	kuf	Child Development Center			Child Development Center	10	kuf
Community/Institutional	531	kuf	Community/Institutional	218	kuf	Community/Institutional	605	kuf
Conference	4	acres	Conference	130	kuf	Conference	110	kuf
Elementary School	152	trips	Elementary School			Elementary School	152	trips
Entertainment Center			Entertainment Center	300	kuf	Entertainment Center		
Film Production	501	kuf	Film Production			Film Production	501	kuf
Fire School	244	trips	Fire School	244	trips	Fire School	244	trips
Golf Course			Golf Course	18	holes	Golf Course		
Hotel	1450	rooms	Hotel	1350	rooms	Hotel	150	rooms
Job Corps	635	trips	Job Corps	635	trips	Job Corps	635	trips
Manna	403	steps	Manna	500	steps	Manna	503	steps
Mixed Use	12000	sq. ft.	Mixed Use			Mixed Use		
Museum	15	kuf	Museum	50	kuf	Museum	15	kuf
Office	100	kuf	Office	100	kuf	Office	215	kuf
Open Space	88	acres	Open Space	108	acres	Open Space	117	acres
Outdoor Recreation	47	acres	Outdoor Recreation	18	acres	Outdoor Recreation	3.5	acres
Police Fire Medical	61	kuf	Police Fire Medical	61	kuf	Police Fire Medical	16	kuf
Residential	2840	units	Residential	250	units	Residential	1140	units
Restaurant (Quality)	237	kuf	Restaurant	12	kuf	Restaurant	25	kuf
Retail	24	kuf	Retail			Retail		
Themed Attraction	59	acres	Themed Attraction	75	acres	Themed Attraction	39	acres
Warehouse			Warehouse			Warehouse	35	kuf
Water Treatment Plant	10	acres	Water Treatment Plant	10	acres	Water Treatment Plant	3	acres
Wedding Chapel			Wedding Chapel	10	kuf	Wedding Chapel	10	kuf

Regional Access Policies

- Establish ferry service to Treasure Island in conjunction with publicly oriented uses, and increase service as visitor volumes expand;
- Place a priority on making seismic improvements to the causeway; and
- Encourage Caltrans to consider seismic and geometric improvements to the SFOBB as part of the bridge retrofit.

Street System Policies

- Establish a network of streets that builds upon the existing Treasure Island grid to accommodate travel demand and distribute traffic;
- Emphasize shoreline-to-shoreline connections across the island that provide direct linkages from the destinations within the island to the water's edge, aid in orienting users to the site, and maximize opportunities for public access to the shoreline;
- Develop multimodal streets on Treasure Island that accommodate significant levels of bicycle and pedestrian traffic as well as shuttles, transit buses, and automobiles;
- Promote high visibility and accessibility of the ferry terminals through the design of the street system;
- Incorporate amenities in the design of the street network for pedestrians and bicyclists; and
- Maintain the existing street network on Yerba Buena Island.

Transit System Policies

- Establish bus and shuttle services on the islands; and
- Establish a coordinated transit plan for providing access to Treasure Island that brings together Muni, Alameda-Contra Costa Transit District (AC Transit), and ferry operations.

Water Transportation System Policies

- Upgrade facilities to accommodate ferry service on the east side, and establish a new ferry terminal on the west side of Treasure Island. Design both facilities to accommodate water taxis;
- Develop ferry access to be widely available, frequent, and attractive to patrons. Encourage the use of water taxis to supplement regularly scheduled ferries for occasional trips; and
- Ensure that all development agreements, owner participation agreements (OPAs) and leases contribute to the establishment of the Treasure Island ferry access system, commensurate with the level of demand projected for each use.

The following 15 policies from the *Naval Station Treasure Island Reuse Plan Transportation Background Report* were developed during the community reuse planning process to assist in the

formulation of a Reuse Plan. These policies support the use of transit in the form of ferries and buses to NSTI, and the assumptions used in the estimation of trip generation.

1. Support the earliest possible development of ferry service to NSTI from both San Francisco and the East Bay.
2. Ferry access should be widely available, frequent and attractively priced. Regularly scheduled ferries would be supplemented by ferry taxis for occasional trips.
3. Support a visitor-oriented development that requires most visitors to travel by ferry and all visitors to travel via high occupancy modes. Enforce this policy by requiring ticket sales to be completed at landside terminals for tickets that combine ferry and admission. Prohibit visitor parking and ticket sales at the themed attraction to ensure that visitors would in fact take the ferry.
4. All children attending the planned elementary school would arrive via school bus. Pick up and drop off by parents would be prohibited, except for emergencies.
5. Bus transit services would continue to have a role at NSTI. Bus services would be developed connecting the ferry terminal to island destinations (island shuttle) and providing local on-site circulation.
6. Bus services between the island and the mainland would continue to play a role in moving people between the island and the mainland areas.
7. Ferry service should be initially established in the area of Pier 1/Pier 1/2 on the east side of the island, and would accommodate ferries from both the East Bay and San Francisco. This would serve as the "front door" to the visitor-oriented use. Convenient shuttle services would connect this location with other sites on the island.
8. Ferry service would ultimately be implemented at a new terminal on the west side of the island, separating the travel to and from the East Bay and San Francisco locations. Regularly scheduled ferry service would ultimately be offered from multiple locations in both East Bay and San Francisco. The initial services would be offered from San Francisco Ferry Building and Jack London Square in Oakland.
9. The ferry plan must consider the landside impacts, including parking demand on the landside and traffic impacts for travel to the ferry terminals.
10. All employers on the island would be encouraged to provide transit passes at no charge to employees to encourage transit use.
11. All employers providing parking on the island would be required to charge employees for parking, minimizing auto use.
12. All development agreements would include detailed Travel Demand Management (TDM) plans designed to show how the developer would ensure that traffic generation is minimized.

13. Any residential development planned for the NSTI, beyond the initial Phase I units, would be developed as a "unique community," which would limit auto ownership and auto use so as not to unduly impact the SFOBB.
14. Other TDM measures, including flextime, employer provided shuttles and subsidy of transit services should be aggressively pursued on the island.
15. Encourage the use of alternative fuels for all transit vehicles on the island, including the island shuttle.

Transportation Features Assumed for the Three Reuse Alternatives

The following discussion summarizes the transportation features assumed for the three Community Reuse Alternatives:

- The Treasure Island street grid system would maximize the use of existing streets and access points;
- All street rights-of-way on Treasure Island would contain sidewalks;
- Pedestrian and bicycle facilities would be provided;
- Ferry service would be provided between Treasure Island and San Francisco and the East Bay;
- Bus and shuttle service would be provided on NSTI and to NSTI from San Francisco and the East Bay;
- A coordinated transit plan for access to NSTI with the San Francisco Municipal Railway (Muni) and ferry operators would be established;
- A transportation demand management (TDM) program would be established. Measures that would be implemented would include the following:
 - establish ferry ridership targets for new users;
 - restrict visitor parking;
 - require employers to provide incentives to reduce vehicular demand;
 - establish an employee transportation coordinator;
 - require that residential development develop and implement measures to minimize auto usage (limits on parking, road pricing, integrated community design);
 - prohibit parking for certain uses such as the themed attraction;
 - require school students from San Francisco to arrive by bus;
 - establish parking restrictions;

- prohibit free parking;
- require TDM plans for all new users to meet transit ridership targets and require monitoring;
- require facilities for bicycles in new uses, as well as in all ferries; and
- consider car-share and bicycle rental programs

Planned Seismic Retrofit of the SFOBB/I-80. The suspension bridge that connects San Francisco and Yerba Buena Island will undergo major work on its towers, superstructure, foundation, and approaches during the planning horizon. A new replacement east span will be constructed in place of the existing bridge. The SFOBB east span project will include an upgrade of the eastbound on-ramp on the east side of the tunnel. This on-ramp will be built to Caltrans standards with improved sight and merging distances. A bicycle lane from Oakland to Yerba Buena Island on the new east span is also a possible component of that project.

In evaluating the reuse alternatives it has been assumed that the SFOBB/I-80 structure and connecting ramps to NSTI would remain as they are, except the eastbound on-ramp on the east side of the tunnel. The capacity of this ramp has been assumed to be 900-1,000 vph instead of 330 vph as it exists today. The substandard geometries of other ramps limit their vehicle processing capacities.

Transportation Plan Assumptions

In order to fulfill the transportation policies for NSTI listed above, a number of transportation improvements would need to be in place. The reuse planning effort developed a transportation plan for various phases of development on NSTI. The transportation service assumptions that were assumed for each community reuse alternative are summarized below. The transportation plan for the Reuse Plan was presented in the *Naval Station Treasure Island Reuse Plan Transportation Background Report*.

Alternatives 1 and 2 - Phase 3 of the Reuse Plan Transportation Plan

- Both Alternatives 1 and 2 depend heavily on ferry service to NSTI to handle the predicted levels of visitors. On Treasure Island, the southeastern pier (either Pier 1 or Pier 12) would still be in service. In addition, a new pier on the western side of the island would be constructed.
- Ferry access would be extended on both sides of the bay. New terminals could be created at Golden Gate Fields on Gilman Street, along the border of Albany and Berkeley, and at Candlestick Point in San Francisco.

Due to the increased intensity of land uses, there would be a heightened demand for ferry service. The numbers of parking spaces identified in the plan that would be needed at ferry terminals are as follows:

- 1,100 parking spaces at the San Francisco Ferry Building;
- 1,100 parking spaces at Candlestick Point; and,

-- 1,850 parking spaces in the East Bay, evenly split between Jack London Square and Golden Gate Fields.

- The Reuse Plan Implementation Strategy identified the need to provide off-site parking at the San Francisco Ferry Building, Jack London Square, Candlestick Point and the East Bay (Golden Gate Fields).
- Additional vessels would be needed to handle the ferry service increase in the bay. The new facilities at Golden Gate Fields and Candlestick Point would each require two dedicated ferries. In addition, there would be an extra vessel for the Ferry Building during peak periods, plus limited use of supplemental ferries during peak periods.

Frequency during peak periods:

- 10 trips per hour from the Ferry Building (6 minute headways);
- 5 trips per hour from Candlestick Point (12 minute headways); and
- 8 trips per hour from the East Bay, divided between the 2 terminals (15-minute headways for each terminal).
- Shuttle bus service around the two islands would be provided. A total of four vehicles, plus one back-up vehicle would be provided. Furthermore, two additional back-up vehicles would be used to cover the peak periods, plus a secondary shuttle loop.
- The AC Transit T route would also be expanded, with headways shortened to 10 minutes during the peak and 15 minutes during the non-peak times. Since this service is no longer provided, the service requirement to accommodate demand during the peak and non-peak periods was determined, and included in section 4.5, Transportation as mitigation.

Alternative 3 - Phase 2 of the Reuse Plan Transportation Plan

- The intensity of the land uses in Alternative 3 is sufficient to warrant the addition of ferry service to NSTI. Either Pier 1 or Pier 12 would be used, both located on the southeast corner of Treasure Island. Modifications would have to be made for either pier, so they can be used by conventional ferries, and in order to meet American with Disabilities Act (ADA) requirements.
- For the ferry service, four vessels would be in use, two each from the San Francisco Ferry Building and from Jack London Square in Oakland. At the Ferry Building, an additional float would be needed to handle the new ferry service, while no modifications would be needed for the Jack London Square service.
- Parking requirements for the new ferry service include a need for significant parking at the two terminal sites. The off-site parking requirement was identified to be 950 and 950 parking spaces, at Jack London and the Ferry Building, respectively.
- On NSTI, a shuttle bus service would be implemented. This service would be necessary to connect the Treasure Island ferry terminal to the major activity centers of the two islands. A fleet of 3 buses would be needed for this service, and would run approximately every 15 minutes.

- In addition to the on-island buses, there also would be expanded AC Transit T route service to both Treasure Island and Yerba Buena Island. No new stops are planned, but headways would be decreased to 15 minutes during the peak, and between 20 and 30 minutes off-peak. Similar to Alternatives 1 and 2, since the AC Transit service is no longer provided, the service requirement to accommodate demand during the peak and non-peak periods was determined, and included in section 4.5, Transportation, as mitigation.

Travel Demand

Travel demand refers to new auto, transit and pedestrian traffic generated by proposed land uses. These include traffic (in trips) entering and leaving NSTI, as well as trips between the various land uses on NSTI. Preliminary trip generation estimates were conducted during the reuse planning effort. Trip generation, trip distribution and mode split estimates were determined for the various land uses proposed on NSTI. Due to the isolated nature of NSTI, standard San Francisco and national rates were adjusted. The reuse planning team conducted this effort in cooperation with the San Francisco Planning Department.

For this EIS, the work conducted by the reuse planning team and the San Francisco Planning Department was reviewed. In general, trip generation rates, distribution and mode split estimates developed by the reuse planning team were used. Travel demand information needed to be developed, however, for other land uses not evaluated for the Reuse Plan. In addition, auto occupancy factors for vehicle trips to NSTI, and vehicle trips to ferry terminals were reviewed, and adjusted in some cases.

Trip Generation

Tables F-10 and F-11 summarize the trip generation rates used to estimate community reuse alternative-generated traffic, for weekday and weekend conditions, respectively. Tables F-12 and F-13 present the work/non-work split for weekday and weekend conditions, respectively.

Overall community reuse alternative travel demand to and from NSTI was estimated from person-trip generation rates obtained from a variety of sources, including the San Francisco Planning Department's *Citywide Travel Behavior Survey (CTBS)* and *Guidelines for Environmental Review: Transportation Impacts* (July 1991), the *Port of San Francisco Waterfront Land Use Plan Draft EIR* (December 1996), *Hunters Point Transportation Plan* (1996), information from existing operations on NSTI (e.g., brig and elementary schools), as well as input from the San Francisco Planning Department. Weekday and weekend person-trips projected to be generated in 2010 under the three reuse alternatives are shown in Tables F-14 and F-15, respectively, as summarized below.

The Reuse Plan for NSTI provides for a balanced mix of land uses that would serve to create a new neighborhood. As such, it is anticipated that there would be a substantial number of trips that would occur between the various land uses, such as between residential and retail uses and between themed attraction and restaurant uses. Such trips were classified as "internal" trips. Internal trips within NSTI would also occur due to the fact that the development would occur on the islands that have delay penalties for bridge crossings due to congestion and substandard ramp configurations, and, therefore, residents and visitors would limit the number of crossings they would make throughout the day.

**Table F-10
Trip Generation and In/Out Split – Weekday**

Land Use	Units	Person-Trip		AM Peak				PM Peak				
		Rate	Peak		Worker		Visitor		Worker		Visitor	
		Daily	AM	PM	In	Out	In	Out	In	Out	In	Out
Themed Attraction (1)	acres	30400.00	1.7%	9.8%	1.00	0.00	1.00	0.00	0.37	0.63	0.30	0.70
Themed Attraction	acres	12200.00	1.7%	9.8%	1.00	0.00	1.00	0.00	0.37	0.63	0.30	0.70
Themed Attraction	acres	6100.00	1.7%	9.8%	1.00	0.00	1.00	0.00	0.37	0.63	0.30	0.70
Office (2)	ksf	18.10	13.8%	17.3%	1.00	0.00	0.50	0.50	0.00	1.00	0.50	0.50
Hotel (3)	rooms	6.92	3.3%	9.5%	0.37	0.63	1.00	0.00	0.37	0.63	0.47	0.53
Retail (4)	ksf	168.00	0.0%	9.2%	1.00	0.00	0.50	0.50	0.00	1.00	0.50	0.50
Outdoor Recreation (5)	acres	50.00	4.0%	8.0%	0.70	0.30	1.00	0.00	0.30	0.70	0.30	0.70
Open Space (6)	acres	20.00	4.0%	8.0%	0.70	0.30	1.00	0.00	0.30	0.70	0.30	0.70
Marina (7)	slips	2.96	2.7%	6.4%	0.33	0.67	0.33	0.67	0.60	0.40	0.60	0.40
Museum (8)	ksf	50.00	0.0%	9.2%	1.00	0.00	1.00	0.00	0.30	0.70	0.30	0.70
Brig (9)	trips	109.00	37.9%	33.1%	0.67	0.33	0.90	0.10	0.40	0.60	0.40	0.60
Job Corps (10)	trips	635.00	43.0%	43.5%	1.00	0.00	0.50	0.50	0.00	1.00	0.50	0.50
Elementary School (11)	trips	152.00	49.3%	19.7%	1.00	0.00	0.60	0.40	0.00	1.00	0.00	1.00
Film Production (12)	ksf	1.14	0.0%	0.4%	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Fire School (13)	trips	244.00	46.0%	50.0%	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Conference (14)	ksf	5.93	9.8%	9.8%	1.00	0.00	0.90	0.10	0.00	1.00	0.10	0.90
Residential (15)	units	10.00	13.8%	17.3%	0.00	1.00	0.34	0.66	1.00	0.00	0.32	0.68
Restaurant (16)	ksf	96.51	1.0%	7.9%	0.94	0.06	0.94	0.06	0.70	0.30	0.70	0.30
Warehouse (17)	ksf	4.88	11.7%	15.2%	0.72	0.28	0.72	0.28	0.35	0.65	0.35	0.65
Golf Course (18)	holes	37.59	8.6%	8.9%	0.83	0.17	0.83	0.17	0.52	0.48	0.52	0.48
Water Treatment Plant (19)	acres	0.00										
Entertainment Center (20)	ksf	46.81	0.0%	3.0%	1.00	0.00	0.50	0.50	0.50	0.50	0.50	0.50
Amphitheater (21)	seats	2.01	0.0%	30.0%	1.00	0.00	0.50	0.50	0.50	0.50	0.50	0.50
Community / Institutional (22)	ksf	50.00	10.0%	10.0%	1.00	0.00	0.50	0.50	0.00	1.00	0.00	1.00
Child Development Center (23)	ksf	0.00										
Police, Fire & Medical (24)	ksf	24.00	10.0%	10.0%	1.00	0.00	0.50	0.50	0.20	0.80	0.20	0.80
Wedding Chapel (25)	ksf	0.00										
Mixed Use (26)	ksf	45.50	2.0%	2.0%	1.00	0.00	0.50	0.50	0.00	1.00	0.50	0.50

Sources:

- (1) Korve Engineering, Distribution of visitors to So. Cal. themed attraction; N/N 3/25 memo to Dave Fellham
Trip generation based on projected number of visitors for each development alternative.
- (2) CTBS Table A3, Table 39, AM Peak from ITE AM Peak/Weekday ADT relationship
- (3) CTBS SD1, AM Peak from ITE relationship, PM Peak per 4/11/96 DCP memo, weekend rate per 4/1/96 DCP memo

Table F-10
Trip Generation and In/Out Split – Weekday (continued)

- (4) S.F. Waterfront EIR SD 2,3,4, weekend rate per 4/11/96 DCP memo
- (5) Draft Hunter's Point Transportation Plan, 1996; weekday, weekend same per 4/23 memo
- (6) Draft Hunter's Point Transportation Plan, 1996; passive open space
- (7) ITE (420)
- (8) Draft Hunter's Point/Weekday-weekend relationship from Exploritorium, 4/11/96, and work/non-work splits from CTBS Cultural
- (9) San Francisco City and County Sheriff, based on 180 inmates
- (10) Job Corps Environmental Evaluation
- (11) 4/9/96 DCP Memorandum
- (12) Conversation with Robin Eisman at SF Film and Video Arts Commission 4/10/96
- (13) 4/10/96 DCP memo; Conversation with Assistant Director of Navy Fire Training Facility 4/10/96, Butte College Fire Sciences Dept. 4/6/96
- (14) Presidio Transportation Planning & Analysis Technical Report, Oct 1993
- (15) DCP Guidelines - ITE AM Peak/ADT relationship, weekend same as PM weekday, per 4/24/96 DCP memo
- (16) ITE (831)
- (17) ITE (150)
- (18) ITE (430)
- (19) Trip generation rate assumed to be 0.0, due to minimal number of trips. Korve Engineering, April 1997
- (20) ITE (320)
- (21) Trip generation rate based on two visitor trips per seat and one worker per 100 seats. All amphitheater events would occur in the evening, with one event per day. Korve Engineering, April 1997
- (22) CTBS SD1 - Institutional
- (23) Trip generation rate assumed to be 0.0. Majority of trips linked to Job Corps, Elementary School, and residential. Korve Engineering, April 1997
- (24) ITE (630)
- (25) Wedding Chapel not anticipated to generate trips on a daily basis. Korve Engineering, April 1997
- (26) Draft Hunter's Point Transportation Plan, 1996

Table F-11. Trip Generation and In/Out Split—Weekend

Land Use	Units	Person-Trip		Midday			
		Rate		Worker		Visitor	
		Daily	Peak	In	Out	In	Out
Themed Attraction (1)	acres	30400.00	5.5%	0.0%	1.00	0.90	0.10
Themed Attraction	acres	12200.00	5.5%	0.0%	1.00	0.90	0.10
Themed Attraction	acres	6100.00	5.5%	0.0%	1.00	0.90	0.10
Office (2)	k sf	0.00	17.3%	0.0%	1.00	0.50	0.50
Hotel (3)	rooms	6.92	8.2%	37.0%	0.63	0.47	0.53
Retail (4)	k sf	168.00	9.9%	0.0%	1.00	0.50	0.50
Outdoor Recreation (5)	acres	50.00	8.0%	30.0%	0.70	0.30	0.70
Open Space (6)	acres	20.00	8.0%	30.0%	0.70	0.30	0.70
Marina (7)	slips	3.22	27.0%	44.0%	0.56	0.44	0.56
Museum (8)	k sf	75.00	14.4%	70.0%	0.30	0.70	0.30
Brig (9)	trips	195.00	33.1%	40.0%	0.60	0.40	0.60
Job Corps (10)	trips	1646.00	12.1%	0.0%	1.00	0.50	0.50
Elementary School (11)	trips	0.00					
Film Production (12)	k sf	1.14	4.0%	50.0%	0.50	0.50	0.50
Fire School (13)	trips	1.00	9.2%	0.0%	1.00	0.00	1.00
Conference (14)	k sf	5.93	9.8%	50.0%	0.50	0.50	0.50
Residential (15)	units	10.00	17.3%	0.0%	1.00	0.50	0.50
Restaurant (16)	k sf	92.65	11.9%	53.0%	0.47	0.53	0.47
Warehouse (17)	k sf	1.22	9.8%	64.0%	0.36	0.64	0.36
Golf Course (18)	holes	42.43	10.8%	72.0%	0.28	0.72	0.28
Water Treatment Plant (19)	acres	0.00					
Entertainment Center (20)	k sf	46.81	10.0%	50.0%	0.50	0.50	0.50
Amphitheater (21)	seats	2.01	20.0%	50.0%	0.50	0.50	0.50
Community / Institutional (22)	k sf	75.00	5.0%	0.0%	1.00	0.00	1.00
Child Development Center (23)	k sf	0.00					
Police, Fire & Medical (24)	k sf	24.00	10.0%	20.0%	0.80	0.20	0.80
Wedding Chapel (25)	k sf	0.00					
Mixed Use (26)	k sf	45.50	10.0%	50.0%	0.50	0.50	0.50

Sources:

- (1) Korve Engineering, Distribution of visitors to So. Cal. themed attraction; N/N 3/25 memo to Dave Fellham
Trip generation based on projected number of visitors for each development alternative.
- (2) CTBS Table A3, Table 39, AM Peak from ITE AM Peak/Weekday ADT relationship
- (3) CTBS SD1, AM Peak from ITE relationship, PM Peak per 4/11/96 DCP memo, weekend rate per 4/1/96 DCP memo
- (4) S.F. Waterfront EIR SD 2,3,4, weekend rate per 4/11/96 DCP memo
- (5) Draft Hunter's Point Transportation Plan, 1996; weekday, weekend same per 4/23 memo
- (6) Draft Hunter's Point Transportation Plan, 1996; passive open space
- (7) ITE (420)
- (8) Draft Hunter's Point/Weekday-weekend relationship from Exploritorium, 4/11/96, and work/non-work splits from CTBS Cultural
- (9) San Francisco City and County Sheriff, based on 180 inmates
- (10) Job Corps Environmental Evaluation
- (11) 4/9/96 DCP Memorandum
- (12) Conversation with Robin Eisman at SF Film and Video Arts Commission 4/10/96
- (13) 4/10/96 DCP memo; Conversation with Asst. Director of Navy Fire Training Facility 4/10/96, Butte College Fire Sciences Dept. 4/6/96
- (14) Presidio Transportation Planning & Analysis Technical Report, Oct 1993
- (15) DCP Guidelines - ITE AM Peak/ADT relationship, weekend same as PM weekday, per 4/24/96 DCP memo
- (16) ITE (831)
- (17) ITE (150)
- (18) ITE (430)
- (19) Trip generation rate assumed to be 0.0, due to minimal number of trips. Korve Engineering, April 1997
- (20) ITE (320)
- (21) Trip generation rate based on two visitor trips per seat and one worker per 100 seats. All amphitheater events would occur in the evening, with one event per day. Korve Engineering, April 1997
- (22) CTBS SD1 - Institutional
- (23) Trip generation rate assumed to be 0.0. Majority of trips linked to Job Corps, Elementary School, and residential. Korve Engineering, April 1997
- (24) ITE (630)
- (25) Wedding Chapel not anticipated to generate trips on a daily basis. Korve Engineering, April 1997
- (26) Draft Hunter's Point Transportation Plan, 1996

Table F-12
Work, Non-work Splits – Weekday

Land Use	Daily		AM Peak		PM Peak	
	Workers	Visitors	#of		#of	
			Workers	Visitors	Workers	Visitors
Themed Attraction	0.10	0.90	0.19	0.81	0.19	0.81
Office	0.08	0.92	0.50	0.50	0.50	0.50
Hotel	0.10	0.90	0.45	0.55	0.45	0.55
Retail	0.08	0.92	0.08	0.92	0.08	0.92
Outdoor Recreation	0.05	0.95	0.05	0.95	0.05	0.95
Open Space	0.05	0.95	0.05	0.95	0.05	0.95
Marina	0.08	0.92	0.08	0.92	0.08	0.92
Museum	0.08	0.92	0.08	0.92	0.08	0.92
Brig	0.79	0.21	0.97	0.03	0.97	0.03
Job Corps	0.37	0.63	0.57	0.43	0.57	0.43
Elementary School	0.47	0.53	0.50	0.50	1.00	0.00
Film Production	1.00	0.00	1.00	0.00	1.00	0.00
Fire School	0.11	0.89	0.11	0.89	0.11	0.89
Conference	0.08	0.92	0.08	0.92	0.08	0.92
Residential	0.33	0.67	0.50	0.50	0.50	0.50
Restaurant (1)	0.08	0.92	0.08	0.92	0.08	0.92
Warehouse (2)	0.10	0.90	0.10	0.90	0.08	0.92
Golf Course (3)	0.08	0.92	0.08	0.92	0.08	0.92
Entertainment Center (4)	0.08	0.92	0.08	0.92	0.08	0.92
Amphitheatre (5)	0.005	0.995	0.00	0.00	0.10	0.90
Community/Institutional (6)	0.08	0.92	0.08	0.92	0.08	0.92
Police/Fire/Medical (7)	0.05	0.95	0.50	0.50	0.50	0.50
Mixed Use	0.08	0.92	0.08	0.92	0.08	0.92

Notes:

- (1) Based on Specialty Retail
- (2) From Korve Engineering, May 1997
- (3) Based on Museum
- (4) Based on Specialty Retail
- (5) From Korve Engineering, May 1997
- (6) Based on Museum
- (7) Based on Office

Table F-13
Work, Non-work Splits – Weekend

Land Use	Daily #of		Midday Peak #of	
	Workers	Visitors	Workers	Visitors
Themed Attraction	0.10	0.90	0.00	1.00
Office	0.00	0.00	0.00	0.00
Hotel	0.10	0.90	0.45	0.55
Retail	0.08	0.92	0.08	0.92
Outdoor Recreation	0.05	0.95	0.05	0.95
Open Space	0.05	0.95	0.05	0.95
Marina	0.08	0.92	0.08	0.92
Museum	0.08	0.92	0.08	0.92
Brig	0.79	0.21	0.97	0.03
Job Corps	0.37	0.63	0.57	0.43
Elementary School	0.00	0.00	0.00	0.00
Film Production	1.00	0.00	1.00	0.00
Fire School	0.00	0.00	0.00	0.00
Conference	0.08	0.92	0.08	0.92
Residential	0.10	0.90	0.10	0.90
Restaurant (1)	0.08	0.92	0.08	0.92
Warehouse (2)	0.10	0.90	0.10	0.90
Golf Course (3)	0.08	0.92	0.08	0.92
Water Treatment Plant	1.00	0.00	1.00	0.00
Entertainment Center (4)	0.08	0.92	0.08	0.92
Amphitheatre (5)	0.005	0.995	0.01	0.99
Community/Institutional (6)	0.08	0.92	0.08	0.92
Child Development Center	0.50	0.50	0.08	0.92
Police/Fire/Medical (7)	0.05	0.95	0.50	0.50
Wedding Chapel	0.50	0.50	0.08	0.92
Mixed Use	0.08	0.92	0.08	0.92

Notes:

- (1) Based on Specialty Retail
- (2) From Korve Engineering, May 1997
- (3) Based on Museum
- (4) Based on Specialty Retail
- (5) From Korve Engineering, May 1997
- (6) Based on Museum
- (7) Based on Weekday percentages

Table F-14
Estimated Person-trip Generation by Travel Mode¹
Weekday Daily, AM and PM Peak Hour (2010)²

Mode	Maximum Construction Alternative			Medium Construction Alternative			Minimum Construction Alternative		
	Daily	AM	PM	Daily	AM	PM	Daily	AM	PM
	Person-trips								
Auto	19,570	1,645	2,660	11,660	715	1,365	10,440	1,075	1,430
Vanpool/ Other	5,890	310	610	4,120	255	455	2,665	280	335
Bus	9,600	700	1,280	7,100	285	910	3,925	430	585
Ferry	34,635	1,530	3,900	35,040	555	4,410	9,580	735	1,260
Internal ³	48,285	2,835	4,830	17,790	1,150	1,405	18,755	1,820	2,185
Total Person- trips	117,980	7,020	13,280	75,710	2,960	8,545	45,365	4,340	5,795

¹Includes inbound and outbound trips.

²The AM peak hour of 8:00 to 9:00 AM occurs within the AM peak period of 6:00 to 9:00 AM. The PM peak hour of 5:00 to 6:00 PM occurs within the PM peak period of 3:00 to 7:00 PM.

³Internal person-trips are by walking, bicycle, and shuttle, internal to the two islands.

Source: Korve Engineering 1997.

Table F-15
Estimated Person-trip Generation by Travel Mode¹
Weekend Daily and Midday Peak Hour (2010)²

<i>Mode</i>	<i>Maximum Construction Alternative</i>		<i>Medium Construction Alternative</i>		<i>Minimum Construction Alternative</i>	
	Daily	Midday	Daily	Midday	Daily	Midday
Person-trips						
Auto	18,640	2,630	15,780	1,585	13,655	1,555
Vanpool/Other	6,340	585	7,080	525	5,180	340
Bus	8,760	1,110	8,170	875	4,650	510
Ferry	32,120	3,115	36,170	4,235	9,675	1,005
Internal ³	53,470	4,950	36,365	1,920	40,780	2,550
Total Person-trips	119,330	12,390	103,565	9,140	73,940	5,960

¹Includes inbound and outbound trips.

²The midday peak hour of 12:00 to 1:00 PM occurs within the midday peak period of 10:00 AM to 1:00 PM.

³Internal person-trips are by walking, bicycle, and shuttle, internal to the two islands.

Source: Korve Engineering 1997.

Alternative 1 is estimated to generate approximately 117,980 weekday daily person-trips, including 7,020 weekday AM peak hour and 13,280 weekday PM peak-hour person-trips. Under weekend conditions, Alternative 1 would generate approximately 119,330 daily person-trips, including 12,390 midday peak-hour person-trips. Internal trips would represent approximately 40 percent of the daily and peak hour person-trips.

Under Alternative 2, approximately 75,710 weekday daily person-trips would be generated, including 2,960 weekday AM peak hour and 8,545 weekday PM peak hour person-trips (Table F-14). Under weekend conditions, Alternative 2 would generate approximately 103,565 daily person-trips, including 9,140 midday peak hour person-trips (Table F-15).

The number of daily and peak-hour person-trips generated by Alternative 2 would be less than the number generated by Alternative 1. During the weekday, the number of daily person-trips generated by Alternative 2 would be approximately 64 percent of Alternative 1, while during the weekend, the number of daily person-trips generated by Alternative 2 would be approximately 87 percent of Alternative 1. Internal trips would range between approximately 16 to 37 percent of daily and peak hour trips.

Under Alternative 3, it is estimated that approximately 45,365 daily person-trips would be generated during a typical weekday, including approximately 4,340 AM peak hour and approximately 5,795 PM peak hour person-trips (Table F-14). During weekend conditions, Alternative 3 would generate approximately 73,940 daily person-trips, including approximately 5,960 midday peak hour person-trips (Table F-15).

Except as noted, this alternative would generate fewer daily and peak hour person-trips than the other reuse alternatives. During the weekday and weekend trips, Alternative 3 would generate from approximately 40 to 60 percent of Alternative 1 person-trips and from approximately 60 to 70 percent of Alternative 2 person-trips. However, during the weekday AM peak hour, the number of person-trips would be greater than Alternative 2, reflecting the greater number of residential dwelling units in Alternative 3 (approximately 1,065 units in Alternative 3 versus approximately 250 units in Alternative 2).

Trip Distribution

Travel distribution to and from Treasure Island was based on existing factors from the *CTBS* and the *Waterfront Land Use Plan Draft EIR*. Trip distribution factors are specific to the type of trip generated. For example, work trips to the visitor-oriented attractions would not be expected to follow the same distribution patterns as those of the visitors. Table F-16 presents the trip distributions between NSTI and four areas—San Francisco, the East Bay, the North Bay and the South Bay.

Mode Split

Mode split assumptions were made primarily based on a combination of existing and modified policies that emphasized high occupancy modes and recognized the impact of capacity constraints on mode choice. See Policy Summary of this appendix. In general, mode splits were adjusted to recognize the limited roadway access to the islands and accordingly to emphasize non-auto travel modes. Table F-17 presents the mode split assumptions, while Tables F-18 and

Appendix F. Transportation

F-19 present, respectively, the average vehicle occupancy for vehicle trips to and from NSTI and to the ferry terminals.

**Table F-16
Person-trip Distribution – Weekday and Weekend**

Land Use	San Francisco		East Bay		South Bay/Peninsula		North Bay		Internal	
	Work %	Visitor %	Work %	Visitor %	Work %	Visitor %	Work %	Visitor %	Work %	Visitor %
Themed Attraction	55.4	52.5	24.2	45.0	14.3	0.0	6.1	2.5	0.0	0.0
Office	56.6	11.6	25.4	5.8	13.7	1.4	4.3	1.2	0.0	80.0
Hotel	55.4	19.9	24.2	17.5	14.3	9.3	6.1	3.3	0.0	50.0
Retail	45.4	0.0	24.2	0.0	14.3	0.0	6.1	0.0	10.0	100.0
Outdoor Recreation	55.4	70.0	24.2	30.0	14.3	0.0	6.1	0.0	0.0	0.0
Open Space	55.4	70.0	24.2	30.0	14.3	0.0	6.1	0.0	0.0	0.0
Marina	55.4	52.5	24.2	45.0	14.3	0.0	6.1	2.5	0.0	0.0
Museum	55.4	58.0	24.2	29.0	14.3	7.0	6.1	6.0	0.0	0.0
Brig	55.4	50.0	24.2	50.0	14.3	0.0	6.1	0.0	0.0	0.0
Job Corps	55.4	50.0	24.2	50.0	14.3	0.0	6.1	0.0	0.0	0.0
Elementary School	55.4	100.0	24.2	0.0	14.3	0.0	6.1	0.0	0.0	0.0
Film Production	55.4	50.0	24.2	50.0	14.3	0.0	6.1	0.0	0.0	0.0
Fire School	55.4	50.0	24.2	50.0	14.3	0.0	6.1	0.0	0.0	0.0
Conference	55.4	58.0	24.2	29.0	14.3	7.0	6.1	6.0	0.0	0.0
Residential	69.1	15.8	17.2	3.4	1.7	0.3	2.0	0.4	10.0	80.0
Restaurant (1)	55.4	15.0	24.2	15.0	14.3	0.0	6.1	0.0	0.0	70.0
Warehouse (2)	55.4	50.0	24.2	50.0	14.3	0.0	6.1	0.0	0.0	0.0
Golf Course (3)	55.4	70.0	24.2	30.0	14.3	0.0	6.1	0.0	0.0	0.0
Water Treatment Plant	55.4	50.0	24.2	50.0	14.3	0.0	6.1	0.0	0.0	0.0
Entertainment Center (4)	55.4	52.5	24.2	45.0	14.3	0.0	6.1	2.5	0.0	0.0
Amphitheatre (5)	55.4	52.5	24.2	45.0	14.3	0.0	6.1	2.5	0.0	0.0
Community/Instructional (6)	55.4	15.0	24.2	15.0	14.3	0.0	6.1	0.0	0.0	70.0
Child Development Center	55.4	100.0	24.2	0.0	14.3	0.0	6.1	0.0	0.0	0.0
Police/Fire/Medical (7)	55.4	0.0	24.2	0.0	14.3	0.0	6.1	0.0	0.0	100.0
Wedding Chapel	55.4	20.0	24.2	17.5	14.3	9.3	6.1	3.3	0.0	50.0
Mixed Use	27.7	40.6	12.1	20.3	7.2	4.9	3.1	4.2	50.0	30.0

Notes:

- (1) Based on Hotel, with modifications to reflect predominantly internal trips for visitors.
- (2) Based on Film Production
- (3) Based on Outdoor Recreation
- (4) Based on Themed Attraction
- (5) Based on Themed Attraction
- (6) Based on Museum, with modifications to reflect predominantly internal trips for visitors.
- (7) Based on Brig, with modifications to reflect predominantly internal trips for visitors.

Table F-17. Mode Split—Weekday and Weekend

Land Use	Mode	San Francisco		East Bay		South Bay/Peninsula		North Bay		Internal	
		WORK	NON-WORK	WORK	NON-WORK	WORK	NON-WORK	WORK	NON-WORK	WORK	NON-WORK
		%	%	%	%	%	%	%	%	%	%
Themed Attraction Amphitheater Entertainment Center	Auto	34.0	0.0	39.0	0.0	57.4	0.0	51.0	0.0	7.7	8.8
	Carpool	14.0	0.0	4.0	0.0	2.0	0.0	5.0	0.0	0.0	0.0
	Bus	13.0	10.0	43.0	10.0	10.2	10.0	0.0	10.0	39.6	28.1
	Ferry	39.0	90.0	14.0	90.0	30.4	90.0	44.0	90.0	0.0	0.0
	Other*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	63.1
Office, Museum, Brig Mixed Use, Job Corp Elem Sch; Police, Fire, Med Comm/Inst.	Auto	34.0	36.0	39.0	47.0	57.4	60.0	51.0	71.0	7.7	9.6
	Carpool	14.0	30.0	4.0	28.0	2.0	16.0	5.0	19.0	0.0	0.0
	Bus	13.0	9.0	43.0	19.0	10.2	6.0	0.0	7.0	39.6	28.7
	Ferry	39.0	26.0	14.0	6.0	30.4	18.0	44.0	3.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	61.7
Hotel Conference Restaurant	Auto	34.0	35.5	39.0	47.0	57.4	60.0	51.0	71.4	7.7	8.8
	Carpool	14.0	30.0	4.0	28.0	2.0	16.0	5.0	19.4	0.0	0.0
	Bus	13.0	9.0	43.0	19.0	10.2	6.0	0.0	7.2	39.6	28.1
	Ferry	39.0	25.5	14.0	6.0	30.4	18.0	44.0	2.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	63.1
Retail	Auto	34.0	50.0	39.0	50.0	57.4	0.0	51.0	0.0	7.7	8.8
	Carpool	14.0	0.0	4.0	0.0	2.0	0.0	5.0	0.0	0.0	0.0
	Bus	13.0	50.0	43.0	50.0	10.2	0.0	0.0	0.0	39.6	28.1
	Ferry	39.0	0.0	14.0	0.0	30.4	0.0	44.0	0.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	63.1
Outdoor Recreation Golf Course	Auto	34.0	36.0	39.0	47.0	57.4	60.0	51.0	71.0	7.7	8.8
	Carpool	14.0	30.0	4.0	28.0	2.0	16.0	5.0	19.0	0.0	0.0
	Bus	13.0	9.0	43.0	19.0	10.2	6.0	0.0	7.0	39.6	28.1
	Ferry	39.0	26.0	14.0	6.0	30.4	18.0	44.0	2.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	63.1
Open Space Marina	Auto	34.0	84.0	39.0	84.0	57.4	84.0	51.0	84.0	7.7	8.8
	Carpool	14.0	0.0	4.0	0.0	2.0	0.0	5.0	0.0	0.0	0.0
	Bus	13.0	12.0	43.0	12.0	10.2	12.0	0.0	12.0	39.6	28.1
	Ferry	39.0	4.0	14.0	4.0	30.4	4.0	44.0	4.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	63.1
Film Production Warehouse	Auto	58.0	36.0	66.0	47.0	89.0	60.0	52.0	71.0	7.7	8.8
	Carpool	19.0	30.0	0.0	28.0	5.0	16.0	10.0	19.0	0.0	0.0
	Bus	6.0	9.0	17.0	19.0	3.0	6.0	19.0	7.0	39.6	28.1
	Ferry	17.0	26.0	17.0	6.0	3.0	18.0	19.0	2.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	63.1
Fire School	Auto	34.0	34.0	39.0	39.0	57.4	57.4	51.0	51.0	7.7	8.8
	Carpool	14.0	14.0	4.0	4.0	2.0	2.0	5.0	5.0	0.0	0.0
	Bus	13.0	13.0	43.0	43.0	10.2	10.2	0.0	0.0	39.6	28.1
	Ferry	39.0	39.0	14.0	14.0	30.4	30.4	44.0	44.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	63.1
Residential	Auto	34.0	66.0	66.0	84.0	34.0	62.5	66.0	0.0	7.7	9.6
	Carpool	2.0	2.0	2.0	0.0	2.0	3.0	2.0	0.0	0.0	0.0
	Bus	16.0	24.0	24.0	12.0	16.0	9.0	24.0	10.0	39.6	28.7
	Ferry	48.0	8.0	8.0	4.0	48.0	25.5	8.0	90.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	61.7

Note: * Other = Pedestrian or bicycle.

	Work	Non-Work
Vehicle Occupancy Rates: Carpool	3.0	8.0
Auto	1.5	3.0

Table F-18
Average Vehicle Occupancy for Trips to NSTI
(persons per vehicle)

<i>Vehicle type</i>	<i>Work</i>	<i>Non-work</i>
Vanpool/Other	3	8
Auto	1.5	3

Table F-19
Average Vehicle Occupancy for Vehicle Trips to Ferry Terminals
(persons per vehicle)

<i>Vehicle type</i>	<i>Work</i>	<i>Non-work</i>
Vanpool/Other	3	8
Auto	1.5	3

SFOBB/I-80 Analysis

Freeway Operation Analysis

This section presents the approach to and results of the freeway operation analysis conducted for the existing conditions and all the community reuse alternatives. It also includes the on- and off-ramp analysis for Yerba Buena Island. Table F-20 provides level of service definitions for freeway sections. Analyses of freeway operations were conducted for the following freeway sections and directions:

- Westbound direction I-80 in the AM peak period
- Westbound direction I-80 in the PM peak period
- Eastbound direction I-80 in the AM peak period
- Eastbound direction I-80 in the PM peak period

Table F-20
Level of Service Definitions for Freeway Sections

<i>LOS</i>	<i>Average Speed (mph)</i>
A	≥ 60
B	≥ 55
C	≥ 49
D	≥ 41
E	≥ 30
F	<30

Network Development

The freeway operations area studied included the section of I-80 freeway from east of Treasure Island to the west of the I-80/U.S. 101 junction. This study area is approximately 4.3 miles (7 km) long and includes the mainline freeway and the associated ramps.

The analysis employed the *FREQ11* software program, a freeway corridor simulation model developed by the Institute of Transportation Studies of the University of California at Berkeley. This program evaluates the basic freeway segments, ramp junctions, and weaving areas based on the 1985 *Highway Capacity Manual* (HCM) procedures as a system, and provides system wide average speeds and queue spillback data over a three-hour peak period. The purpose of the three-hour analysis period is to analyze the network before, during and after the peak hour to analyze the congestion build-up and dissipation. The calibrated AM and PM peak conditions network developed for the *Alternatives to Replacement of the Embarcadero Freeway and the Terminal Separator Structure* (November 1994) was used as a base for this exercise. This network included the section of I-80 freeway from west of Treasure Island to the west of the I-80/U.S. 101 junction based on 1993/1994 traffic conditions.

For the NSTI Disposal and Reuse EIS, the *FREQ11* freeway network was expanded to include NSTI and the on- and off-ramps associated with it in both the eastbound and westbound directions. Ramp volumes from 1994 Caltrans counts were used as an input into the expanded network.

In addition to the AM and PM peak networks, a third network, the weekend midday peak period, was developed. Since weekend ramp volumes were not available for year 1993/1994, it was assumed that ramp traffic volumes during the weekend midday peak period are similar to the AM peak. Mainline volumes for weekend conditions were obtained from Caltrans for 1996/1997 conditions, and these volumes were used as an input into the model.

The following input parameters were adjusted to calibrate the new model to the existing conditions as reported in *Alternatives to Replacement of the Embarcadero Freeway and the Terminal Separator Structure* and existing conditions observed in 1997:

- Speed flow curves for each freeway subsection was developed to reflect the maximum flow rate of 2,100 passenger cars per hour per lane.
- A speed-flow curve (65-mph) was used, based on the data on the I-80 freeway provided by FREQ11.
- Weaving section capacities were based on the existing operations. The weaving section capacities in the model were adjusted to reflect the existing operation.
- On- and off-ramp capacities were based on existing counts and HCM procedures. The field-measured counts were used at ramp locations where the actual ramp counts exceeded the HCM maximum recommended capacity.

Development of SFOBB/Yerba Buena Island Ramp Capacities

Since the existing ramps, especially the westbound and eastbound on-ramps, have substandard geometries, a number of approaches were taken to determine the on- and off-ramp capacities of these ramps. These methods included an HCM methodology procedure, linear regression methodology, and field measured maximum volume throughput counts.

Linear Regression Methodology

The HCM uses a methodology that calculates the capacity of an on-ramp merge area in terms of the maximum total flow that can enter the merge influence area. This is the sum of the ramp flow plus the flow in lanes one and two. A survey was conducted to find the relationship between the on-ramp volume, the time it takes for a given vehicle to enter the traffic stream from the on-ramp, the measured lane one (right-most lane) volume and the calculated lane two volume. A regression analysis was conducted with the above data, in which a relationship was not found between the collected data (i.e., R square value of 0.08).

HCM Methodology

The Yerba Buena on-ramps to I-80/SFOBB function similar to a STOP controlled T-intersection due to the existing configuration. As a result, the on-ramps were evaluated using the 1985 Highway Capacity Manual (Special Report 209, Transportation Research Board, 1994 Update) operations methodology, as outlined in Chapter 10 (Unsignalized Intersections). This method determines the capacity of the minor street intersection approach (on-ramp) by estimating the availability and the usefulness in gaps in major street traffic (so that vehicles on the minor street can merge with traffic on the major street). A survey was conducted to measure the time it takes for a given vehicle to enter the traffic stream from the on-ramp. This value (averaged by the total number of vehicles) was used as an accepted gap value. This method was not used because actual counts on the on-ramps exceeded the HCM maximum recommended capacity.

Field Measured Data

Using 1994 on-ramp and off-ramp traffic counts (a complete set of ramp volume counts for when NSTI was operational was only available for 1994 conditions) provided by Caltrans, the maximum number of serviced vehicles were used as the capacity of the on- and off-ramps. Caltrans data indicate that the eastbound on-ramp from Yerba Buena Island had the highest demand. In addition, during field surveys in 1994, a queue at the eastbound on-ramp was

observed during the ramp peak hour, this signifying that the on-ramp was operating at capacity. The merging distances for the eastbound on-ramp is less than 50 feet (15 m) and the bridge piers severely restrict sight distances for drivers trying to get onto the bridge. With the operational constraints on the eastbound on-ramp, this ramp was used as a worst-case scenario, and an on-ramp capacity of 330 vph was used for all on-ramps. An off-ramp capacity of 560 vph was used for all off-ramps, except for the eastbound off-ramp west of the tunnel in which a lower capacity of 500 vph was used due to its steep grade and tight turning radius.

The capacity data input into the FREQ11 model for the freeway and ramps is presented in Table F-21.

Table F-21
Freeway and Ramp Capacity at Yerba Buena Island (vph)

Freeway Mainline	Eastbound SFOBB/I-80			Westbound SFOBB/I-80		
	off-ramp (west of YBI ¹)	off-ramp (east of YBI ¹)	on- ramp	on-ramp (east of YBI ¹)	off- ramp	on-ramp (west of YBI ¹)
10,500	500	560	900	330	560	330

¹Yerba Buena Island.

Future Travel Forecasts

SFOBB/I-80

Year 2010 conditions AM and PM peak period traffic volumes were estimated using the MTC travel demand model. An annualized growth rate, which was determined by comparing the existing 1994 counts and year 2015 model volumes obtained from the *Alternatives to Replacement of the Embarcadero Freeway and the Terminal Separator Structure Report*, was applied to existing 1994 traffic counts to derive Year 2010 baseline volumes. These growth rates were based on ABAG Projections '94. Recently developed San Francisco 2015 Cumulative Update to the ABAG Projections '96 land use database was not used in the analyses. Such data is useful only when the project under review is broadly physically integrated into the larger region. NSTI is connected to the region by 1 route - the SFOBB/I-80. Since the SFOBB/I-80 is already operating at capacity, the new data would not affect any analyses done using the Projections '94 data.

Based on the growth rate developed for the *Alternatives to the Replacement of the Embarcadero Freeway and Terminal Separator Structure EIS/EIR*, the AM peak traffic hour demand on the SFOBB is anticipated to increase over 1994 by approximately 6 percent in the westbound direction and 14 percent in the eastbound direction east of Treasure Island by the year 2010. Overall increases in traffic volumes during the PM peak hour are anticipated to be approximately 13 percent in the westbound direction and an additional 3 percent in the westbound direction east of Treasure Island by the year 2010.

For the EIS, year 2010 conditions needed to be developed for weekend conditions. The year 2010 weekend midday peak hour volumes were developed using 1996/1997 mainline traffic volumes for weekday and weekend conditions, and projected growth for weekday conditions. The existing relationship between the weekend midday peak and weekday AM peak period was calculated. This distribution was then applied to the projected year 2010 weekday AM peak hour volumes to obtain year 2010 weekend midday peak period mainline traffic volumes.

The weekend midday peak hour traffic demand growth on the SFOBB is projected to be similar to the AM peak. The increase would be approximately 6 percent in the westbound direction and 14 percent in the eastbound direction east of Treasure Island by the year 2010.

Year 2025 forecast and analyses were prepared and included in Appendix F.3-A for both SFOBB freeway mainline and on- and off-ramps to NSTI, using the same methodology for the year 2010 analyses.

On- and Off-ramps

The land use components of Alternatives 1, 2, and 3 were used to determine the projected travel to and from NSTI during the weekday AM and PM peak hours, and the weekend midday peak hour.

Conditions in 2010 without the Project

SFOBB /I-80 Operations

During peak period of operation, traffic demand projected for future year 2010 conditions is expected to exceed the current maximum volumes on the SFOBB of 10,000 vph. However, existing metering practices in the westbound direction at the toll plaza would limit the number of vehicles that could access the SFOBB/I-80. Westbound traffic accessing the SFOBB/I-80 is restricted to approximately 10,500 vehicles during the AM peak hour and 9,000 vehicles during the PM peak hour. More vehicles are metered in the PM peak due to congestion and backups from I-80 in San Francisco. With the projected increases in traffic demand, the peak period is anticipated to spread over a longer period than under existing conditions. During both the AM and PM peak hours, the westbound traffic on the SFOBB/I-80 is projected to operate at capacity for more than three hours during the peak period.

In the eastbound direction, the capacity and congestion in downtown segments of I-80 restrict the number of vehicles accessing the SFOBB/I-80 to approximately 9,500 vph. This condition is anticipated to continue, as there are no planned improvements at the downtown San Francisco approach of the SFOBB/I-80. As in the westbound direction, the increase in eastbound demand results in the spread of the peak period.

Ramp Operations

As a result of the closure of the NSTI, traffic volume on the ramps connecting the SFOBB/I-80 with Yerba Buena Island would decrease. During both the weekday AM and PM peak hours, the ramp volumes are anticipated to be approximately a third of the 1994 levels. Under No Action conditions, total traffic entering and exiting NSTI in both the eastbound and westbound directions would be approximately 277 vph during the AM peak hour, and 249 vph during the

PM peak hour. During the weekend midday peak hour, volumes are estimated to be similar to weekday AM conditions (277 vph). These vehicles would include trips to and from the Coast Guard Station, the museum, and sightseeing trips.

Analysis Results

Table F-22 presents a summary of the analysis results of the SFOBB/I-80 freeway operations for the peak hour conditions. Tables F-23 and F-24 present the SFOBB/I-80 operations for the three-hour FREQ11 run, for the eastbound and westbound directions, respectively. Traffic volumes, speeds and LOS are presented for five segments of the SFOBB/I-80. Table F-25 presents the SFOBB/I-80 results for weekend conditions. Table F-26 presents the SFOBB/I-80 ramp volumes and queues for the Yerba Buena Island on- and off-ramps.

Intersection Analysis

Operating characteristics of intersections are described by use of the concept of Level of Service (LOS). LOS designations are a qualitative description of an intersection's performance based on traffic delays. An intersection's LOS could range from LOS A, representing free-flow conditions, to LOS F, representing congested conditions. All intersections analyzed for the community reuse alternatives are unsignalized, and Table F-27 provides detailed descriptions of the various LOS operating conditions for unsignalized intersections.

Operations at unsignalized intersections (both two-way and all-way stop-controlled) were evaluated using the methodology outlined in Chapter 10 of the 1994 Update to the 1985 *Highway Capacity Manual*. For two-way stop-controlled intersections, the analysis method determines the conflicting traffic volumes, the capacity of the gaps in the major traffic stream, and estimates the average total delay for each movement. Total delay is defined as the total elapsed time from when a vehicle joins the queue until the vehicle departs from the stopped position at the head of the queue. Level of service is then based on the average total delay. Level of service for unsignalized intersections ranges from LOS A, which is generally free-flow conditions with easily made turns by the minor street traffic, to LOS F, which indicates very long delays for the minor street traffic. For all-way STOP-controlled intersections, the analysis methodology estimates the capacity and delay for each roadway approach based upon the intersection geometry and the turning movements at the intersection. The LOS is then determined based on the average total delay for the intersection as a whole.

Table F-28 presents a summary of the weekday and weekend peak hour analyses for the 5 study intersections.

Table F-22
Summary of SFOBB / I-80 Weekday and Weekend Peak Hour Traffic Conditions

Scenario / Time	Eastbound		Westbound	
	Speed	LOS	Speed	LOS
<i>Weekday AM Peak Hour (7:30 - 8:30)</i>				
Existing	57	B	45	D
No Action (Year 2010)	57	B	23	F
Maximum Alternative (Year 2010)	57	B	22	F
Medium Alternative (Year 2010)	57	B	23	F
Minimum Alternative (Year 2010)	57	B	23	F
<i>Weekday PM Peak Hour (4:30 - 5:30)</i>				
Existing	46	D	56	B
No Action (Year 2010)	46	D	18	F
Maximum Alternative (Year 2010)	46	D	17	F
Medium Alternative (Year 2010)	46	D	17	F
Minimum Alternative (Year 2010)	46	D	17	F
<i>Weekend Midday Peak Hour (12:30 - 1:30)</i>				
Existing	57	B	57	B
No Action (Year 2010)	57	B	57	B
Maximum Alternative (Year 2010)	56	B	57	B
Medium Alternative (Year 2010)	57	B	57	B
Minimum Alternative (Year 2010)	56	B	57	B

(1) Eastbound I-80/SFOBB east of the tunnel

(2) Westbound I-80/SFOBB east of the tunnel

(3) LOS is based on mainline travel speeds consistent with San Francisco CMP LOS designations

Source: Korve Engineering, Inc., May 1997

Table F-23
Freeway Mainline Travel Speeds, Volumes, and LOS (SFOBB / I-80 Eastbound) –
Weekday Conditions

AM Peak Period

Scenario / Time Period	Fremont On-ramp to I-80 Mainline			I-80 Bay Bridge to TI Road Left Off-ramp			TI Road Left Off-ramp to TI Road Right Off-ramp			TI Road Right Off-ramp To TI Road On-ramp			TI Road On-ramp to I-80 Mainline		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
Existing															
6:30-7:30 AM	6,889	53	C	6,889	57	B	7,051	57	B	6,721	57	B	7,049	57	B
7:30-8:30 AM	7,048	53	C	7,048	57	B	7,367	57	B	6,916	57	B	7,133	57	B
8:30-9:30 AM	6,328	53	C	6,328	57	B	6,870	57	B	6,249	57	B	6,387	57	B
No Action															
6:30-7:30 AM	7,135	52	C	7,135	57	B	6,984	57	B	7,046	57	B	7,127	57	B
7:30-8:30 AM	7,410	52	C	7,410	57	B	7,376	57	B	7,366	57	B	7,407	57	B
8:30-9:30 AM	6,922	52	C	6,922	57	B	6,835	57	B	6,867	57	B	6,908	57	B
Maximum Alternative															
6:30-7:30 AM	7,186	52	C	7,186	57	B	6,985	57	B	6,864	57	B	7,162	57	B
7:30-8:30 AM	7,483	52	C	7,483	57	B	7,376	57	B	7,310	57	B	7,459	57	B
8:30-9:30 AM	6,962	52	C	6,962	57	B	6,836	57	B	6,761	57	B	6,910	57	B
Medium Alternative															
6:30-7:30 AM	7,176	52	C	7,176	57	B	7,001	57	B	6,889	57	B	7,024	57	B
7:30-8:30 AM	7,468	52	C	7,468	57	B	7,376	57	B	7,317	57	B	7,385	57	B
8:30-9:30 AM	7,339	52	C	6,955	57	B	6,847	57	B	6,776	57	B	6,844	57	B
Minimum Alternative															
6:30-7:30 AM	7,185	52	C	7,185	57	B	6,984	57	B	6,864	57	B	7,053	57	B
7:30-8:30 AM	7,483	52	C	7,483	57	B	7,376	57	B	7,310	57	B	7,405	57	B
8:30-9:30 AM	6,961	52	C	6,961	57	B	6,835	57	B	6,760	57	B	6,855	57	B

PM Peak Period

Scenario / Time Period	Fremont On-ramp to I-80 Mainline			I-80 Bay Bridge to TI Road Left Off-ramp			TI Road Left Off-ramp to TI Road Right Off-ramp			TI Road Right Off-ramp To TI Road On-ramp			TI Road On-ramp to I-80 Mainline		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
Existing															
3:30-4:30 PM	9,451	47	D	9,451	46	D	9,393	46	D	9,373	46	D	9,620	46	D

**Table F-23
Freeway Mainline Travel Speeds, Volumes, and LOS (SFOBB / I-80 Eastbound) –
Weekday Conditions (continued)**

PM Peak Period

Scenario / Time Period	Fremont On-ramp to I-80 Mainline			I-80 Bay Bridge to TI Road Left Off-ramp			TI Road Left Off-ramp to TI Road Right Off-ramp			TI Road Right Off-ramp To TI Road On-ramp			TI Road On-ramp to I-80 Mainline		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
4:30-5:30 PM	9,456	47	D	9,456	46	D	9,394	46	D	9,359	46	D	9,473	46	D
5:30-6:30 PM	8,965	51	D	8,965	46	D	8,897	47	D	8,875	47	D	9,005	46	D
No Action															
3:30-4:30 PM	9,499	47	D	9,499	46	D	9,423	46	D	9,421	46	D	9,460	46	D
4:30-5:30 PM	9,457	47	D	9,457	46	D	9,399	46	D	9,393	46	D	9,471	46	D
5:30-6:30 PM	8,965	51	D	8,965	46	D	8,937	46	D	8,936	46	D	8,975	46	D
Maximum Alternative															
3:30-4:30 PM	9,450	47	D	9,450	46	D	9,206	46	D	9,140	46	D	9,290	46	D
4:30-5:30 PM	9,455	47	D	9,455	46	D	8,933	47	D	8,790	47	D	9,090	46	D
5:30-6:30 PM	8,965	51	C	8,965	46	D	8,706	47	D	8,633	47	D	8,783	47	D
Medium Alternative															
3:30-4:30 PM	9,450	47	D	9,450	46	D	9,360	46	D	9,339	46	D	9,476	46	D
4:30-5:30 PM	9,456	47	D	9,450	46	D	9,260	46	D	9,214	46	D	9,487	46	D
5:30-6:30 PM	8,965	51	C	8,965	46	D	8,869	47	D	8,847	47	D	8,984	46	D
Minimum Alternative															
3:30-4:30 PM	9,450	47	D	9,450	46	D	9,338	46	D	9,311	46	D	9,435	46	D
4:30-5:30 PM	9,458	47	D	9,458	46	D	9,211	46	D	9,150	46	D	9,397	46	D
5:30-6:30 PM	8,965	51	C	8,965	46	D	8,845	47	D	8,814	47	D	8,938	46	D

LOS is based on mainline travel speeds consistent with San Francisco CMP LOS designations

Source: Korve Engineering, Inc., May 1997

Table F-24
Freeway Mainline Travel Speeds, Volumes, and LOS (SFOBB / I-80 Westbound) --
Weekday Conditions

AM Peak Period

Scenario / Time Period	I-80 Bay Bridge to YBI On-ramp			YBI On-ramp to YBI Off-ramp			YBI Off-ramp to YBI On-ramp			YBI On-ramp to I-80 Mainline			I-80 Mainline to Fremont Off-ramp		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
Existing															
6:30-7:30 AM	10,540	34	E	10,628	36	E	10,429	46	D	10,472	37	E	10,500	28	F
7:30-8:30 AM	9,571	45	D	9,644	45	D	9,540	46	D	9,572	55	B	9,823	25	F
8:30-9:30 AM	8,120	49	C	8,184	49	C	8,034	50	C	8,056	57	B	8,056	57	B
No Action															
6:30-7:30 AM	9,115	21	F	9,130	21	F	9,090	21	F	9,125	22	F	9,125	22	F
7:30-8:30 AM	9,568	23	F	9,575	23	F	9,553	23	F	9,571	24	F	9,571	24	F
8:30-9:30 AM	8,422	48	D	8,429	49	C	8,410	42	D	9,041	27	F	9,041	22	F
Maximum Alternative															
6:30-7:30 AM	8,729	20	F	8,876	21	F	8,725	20	F	9,005	22	F	9,055	22	F
7:30-8:30 AM	9,274	22	F	9,348	22	F	9,260	22	F	9,439	23	F	9,439	23	F
8:30-9:30 AM	8,883	27	F	8,957	21	F	8,887	20	F	9,057	22	F	9,057	22	F
Medium Alternative															
6:30-7:30 AM	9,297	22	F	9,336	22	F	9,198	21	F	9,291	23	F	9,291	23	F
7:30-8:30 AM	9,553	23	F	9,572	23	F	9,502	23	F	9,549	24	F	9,549	24	F
8:30-9:30 AM	8,473	42	D	8,494	27	F	8,431	24	F	9,046	22	F	9,046	22	F
Minimum Alternative															
6:30-7:30 AM	9,126	21	F	9,200	22	F	9,045	21	F	9,217	22	F	9,217	22	F
7:30-8:30 AM	9,474	23	F	9,510	23	F	9,431	22	F	9,517	24	F	9,517	24	F
8:30-9:30 AM	8,482	35	E	8,519	22	F	8,963	20	F	9,049	27	F	9,049	22	F

PM Peak Period

Scenario / Time Period	I-80 Bay Bridge to YBI On-ramp			YBI On-ramp to YBI Off-ramp			YBI Off-ramp to YBI On-ramp			YBI On-ramp to I-80 Mainline			I-80 Mainline to Fremont Off-ramp		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
Existing															
3:30-4:30 PM	8,191	56	B	8,327	56	B	8,072	57	B	8,097	57	B	8,097	56	B
4:30-5:30 PM	8,347	56	B	8,423	56	B	8,210	56	B	8,233	56	B	8,199	19	F
5:30-6:30 PM	7,966	57	B	8,047	56	B	7,890	57	B	7,909	57	B	7,909	57	B
No Action															

Table F-24
Freeway Mainline Travel Speeds, Volumes, and LOS (SFOBB / I-80 Westbound) –
Weekday Conditions (continued)

PM Peak Period

Scenario / Time Period	I-80 Bay Bridge to YBI On-ramp			YBI On-ramp to YBI Off-ramp			YBI Off-ramp to YBI On-ramp			YBI On-ramp to I-80 Mainline			I-80 Mainline to Fremont Off-ramp		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
3:30-4:30 PM	9,000	56	B	9,008	56	B	8,990	56	B	7,822	38	E	7,822	18	F
4:30-5:30 PM	7,960	18	F	7,975	18	F	7,941	17	F	8,001	18	F	8,001	18	F
5:30-6:30 PM	8,498	20	F	8,506	20	F	8,489	20	F	8,520	20	F	8,520	20	F
Maximum Alternative															
3:30-4:30 PM	7,722	48	D	7,764	37	E	7,568	32	E	7,790	23	F	7,745	17	F
4:30-5:30 PM	7,795	17	F	7,879	18	F	7,513	16	F	7,923	17	F	7,843	18	F
5:30-6:30 PM	8,406	19	F	8,449	20	F	8,259	19	F	8,474	19	F	8,435	20	F
Medium Alternative															
3:30-4:30 PM	7,687	47	D	7,724	37	E	7,650	32	F	7,798	23	F	7,798	18	F
4:30-5:30 PM	7,697	17	F	7,768	17	F	7,627	16	F	7,922	17	F	7,922	18	F
5:30-6:30 PM	8,365	19	F	8,401	19	F	8,329	19	F	8,476	19	F	8,476	20	F
Minimum Alternative															
3:30-4:30 PM	7,708	51	C	7,740	40	E	7,568	35	E	7,745	24	F	7,790	18	F
4:30-5:30 PM	7,743	17	F	7,810	17	F	7,513	16	F	7,843	17	F	7,923	18	F
5:30-6:30 PM	8,388	19	F	8,420	19	F	8,259	19	F	8,435	19	F	8,474	20	F

LOS is based on mainline travel speeds consistent with San Francisco CMP LOS designations

Source: Korve Engineering, Inc., May 1997

**Table F-25
Freeway Mainline Travel Speeds, Volumes, and LOS (SFOBB / I-80)
Weekend Conditions**

EASTBOUND WEEKEND MIDDAY PEAK

Scenario / Time Period	Fremont On-ramp to I-80 Mainline			I-80 Bay Bridge to TI Road Left Off-ramp			TI Road Left Off-ramp to TI Road Right Off-ramp			TI Road Right Off-ramp To TI Road On-ramp			TI Road On-ramp to I-80 Mainline		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
Existing															
11:30-12:30 PM	6,584	53	C	6,584	57	B	6,510	58	B	6,487	58	B	6,640	57	B
12:30-1:30 PM	7,152	53	C	7,152	57	B	7,050	57	B	7,038	57	B	7,171	57	B
1:30-2:30 PM	7,435	53	C	7,435	57	B	7,329	57	B	7,304	57	B	7,409	57	B
No Action															
11:30-12:30 PM	7,378	52	C	7,378	57	B	7,330	57	B	7,328	57	B	7,369	57	B
12:30-1:30 PM	7,692	52	C	7,692	57	B	7,604	57	B	7,600	57	B	7,681	57	B
1:30-2:30 PM	7,434	52	C	7,434	57	B	7,390	57	B	7,389	57	B	7,430	57	B
Maximum Scenario															
11:30-12:30 PM	7,403	52	C	7,403	57	B	7,292	57	B	7,264	57	B	7,504	57	B
12:30-1:30 PM	7,795	52	C	7,795	56	B	7,587	57	B	7,533	57	B	7,863	56	B
1:30-2:30 PM	7,435	52	C	7,435	57	B	7,334	57	B	7,308	57	B	7,638	57	B
Medium Scenario															
11:30-12:30 PM	7,399	52	C	7,399	57	B	7,298	57	B	7,272	57	B	7,420	57	B
12:30-1:30 PM	7,778	52	C	7,778	56	B	7,589	57	B	7,543	57	B	7,838	57	B
1:30-2:30 PM	7,434	52	C	7,434	57	B	7,343	57	B	7,321	57	B	7,469	57	B
Minimum Scenario															
11:30-12:30 PM	7,391	52	C	7,391	57	B	7,312	57	B	7,297	57	B	7,457	57	B
12:30-1:30 PM	7,744	52	C	7,744	56	B	7,598	57	B	7,570	57	B	7,890	56	B
1:30-2:30 PM	7,434	52	C	7,434	57	B	7,363	57	B	7,350	57	B	7,510	57	B

WESTBOUND WEEKEND MIDDAY PEAK

Scenario / Time Period	I-80 Bay Bridge to YBI On-ramp			YBI On-ramp to YBI Off-ramp			YBI Off-ramp to YBI On-ramp			YBI On-ramp to I-80 Mainline			I-80 Mainline to Fremont Off-ramp		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
Existing															
11:30-12:30 PM	7,600	57	B	7,727	57	B	7,586	57	B	7,609	57	B	7,609	57	B
12:30-1:30 PM	7,131	57	B	7,283	57	B	7,094	57	B	7,106	57	B	7,106	57	B
1:30-2:30 PM	7,087	57	B	7,233	57	B	7,094	57	B	7,111	57	B	7,111	57	B

Table F-25
Freeway Mainline Travel Speeds, Volumes, and LOS (SFOBB / I-80)
Weekend Conditions (continued)

WESTBOUND WEEKEND MIDDAY PEAK

Scenario / Time Period	I-80 Bay Bridge to YBI On-ramp			YBI On-ramp to YBI Off-ramp			YBI Off-ramp to YBI On-ramp			YBI On-ramp to I-80 Mainline			I-80 Mainline to Fremont Off-ramp		
	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS	Volume (vph)	Speed (mph)	LOS
No Action															
11:30-12:30 PM	8,064	57	B	8,071	57	B	8,050	57	B	8,067	57	B	8,067	57	B
12:30-1:30 PM	7,611	57	B	7,624	57	B	7,582	57	B	7,616	57	B	7,616	57	B
1:30-2:30 PM	7,498	57	B	7,504	57	B	7,485	57	B	7,504	57	B	7,504	57	B
Maximum Scenario															
11:30-12:30 PM	8,130	57	B	8,227	56	B	8,146	57	B	8,432	56	B	8,432	56	B
12:30-1:30 PM	7,744	57	B	7,937	57	B	7,770	57	B	8,100	57	B	8,100	57	B
1:30-2:30 PM	7,563	57	B	7,859	57	B	7,582	57	B	7,912	57	B	7,912	57	B
Medium Scenario															
11:30-12:30 PM	8,118	57	B	8,163	57	B	8,090	57	B	8,221	56	B	8,221	56	B
12:30-1:30 PM	7,717	57	B	7,807	57	B	7,664	57	B	7,925	57	B	7,925	57	B
1:30-2:30 PM	7,550	57	B	7,594	57	B	7,528	57	B	7,660	57	B	7,660	57	B
Minimum Scenario															
11:30-12:30 PM	8,093	57	B	8,148	57	B	8,099	57	B	8,257	56	B	8,257	56	B
12:30-1:30 PM	7,669	57	B	7,778	57	B	7,682	57	B	7,999	57	B	7,999	57	B
1:30-2:30 PM	7,526	57	B	7,581	57	B	7,537	57	B	7,697	57	B	7,697	57	B

LOS is based on mainline travel speeds consistent with San Francisco CMP LOS designations

Source: Korve Engineering, Inc., May 1997

Table F-26
Volume and Maximum Queue on Connector Ramps – Weekday & Weekend
Conditions

Ramp	No Action		Maximum Alternative		Medium Alternative		Minimum Alternative	
	Volume (vph)	Queue (veh.)	Volume (vph)	Queue (veh.)	Volume (vph)	Queue (veh.)	Volume (vph)	Queue (veh.)
Weekday AM Peak								
Westbound On- (east of Tunnel)	14	0	147	0	39	0	74	0
Westbound Off-	44	0	160	0	144	0	162	0
Westbound On- (west of Tunnel)	35	0	337	3	93	0	172	0
Eastbound Off- (west of Tunnel)	97	0	237	0	206	0	237	0
Eastbound Off- (east of Tunnel)	6	0	143	0	133	0	143	0
Eastbound On-	81	0	298	0	135	0	190	0
Weekday PM Peak								
Westbound On- (east of Tunnel)	15	0	85	0	72	0	66	0
Westbound Off-	34	0	375	0	142	0	161	0
Westbound On- (west of Tunnel)	61	0	352	22	295	0	272	0
Eastbound Off- (west of Tunnel)	55	0	536	22	191	0	241	0
Eastbound Off- (east of Tunnel)	6	0	146	0	46	0	60	0
Eastbound On-	78	0	300	0	273	0	247	0
Weekend Midday Peak								
Westbound On- (east of Tunnel)	14	0	194	0	90	0	109	0
Westbound Off-	44	0	176	0	151	0	102	0
Westbound On- (west of Tunnel)	35	0	569	239	261	0	318	0
Eastbound Off- (west of Tunnel)	97	0	232	0	210	0	161	0
Eastbound Off- (east of Tunnel)	6	0	59	0	50	0	31	0
Eastbound On-	81	0	480	150	295	0	320	0

*Note: On-ramp queue based on a measured capacity of 330 vph on the Treasure Island On-ramps.

Off-ramp queue based on a measured capacity of 560 for all off-ramps except the EB Treasure Island off-ramp (east of T.I.) with a capacity of 500 vph.

Source: Korve Engineering, Inc., May 1997

Table F-27
Level of Service Definitions for
Two-Way and All-Way Stop-Controlled Intersections

LOS	Average Total Delay (sec/veh)	Typical Traffic Condition
A	0 - 5	Little or no delay
B	5.1 - 10	Short traffic delays
C	10.1 - 20	Average traffic delays
D	20.1 - 30	Long traffic delays
E	30.1 - 45	Very long traffic delays
F	>45	(1)

- (1) For two-way stop-controlled intersections, LOS F exists when there are insufficient gaps of suitable size to allow side street demand to cross safely through major street traffic stream. This LOS is generally evident from extremely long total delays experienced by side street traffic and by queuing on the minor approaches. When demand volume exceeds the capacity of the lane, extreme delays would be encountered with queuing, which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement to the intersection.

Source: *Highway Capacity Manual*, Special Report No. 209, Transportation Research Board, 1985, Updated 1994.

Table F-28
Intersection Level of Service—Year 2010 Conditions
Weekday AM and PM Peak Hours

Study Intersection	Maximum Construction Alternative				Medium Construction Alternative				Minimum Construction Alternative			
	AM		PM		AM.		PM		AM		PM	
	Delay (1)	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Avenue of Palms/ California Avenue	6.2	B	28.9	D	0.7	A	3.4	A	2.8	B	3.8	A
Avenue C/ California	0.1	A	0.9	A	0.1	A	0.0	A	0.1	A	1.2	A
Avenue C/ 9th Street	0.2	A	2.4	B	0.2	A	0.1	A	0.3	A	2.5	A
Avenue H/ 4th Street	0.3	A	0.3	B	0.4	A	0.6	A	0.5	A	0.4	A
Avenue H/ 9th Street	2.5	A	4.5	A	1.1	A	1.3	A	1.2	A	1.2	A

Weekend Midday Peak Hour

Intersection	Alternative 1		Alternative 2		Alternative 3	
	Delay (1)	LOS	Delay	LOS	Delay	LOS
Avenue of Palms/California Avenue	21.9	D	3.4	A	3.5	A
Avenue C/ California Avenue	0.1	A	0.0	A	0.1	A
Avenue C/ 9th Street	0.2	A	0.2	A	0.5	A
Avenue H/ 4th Street	0.0	A	0.2	A	0.1	A
Avenue H/ 9th Street	4.1	A	1.1	A	1.1	A

Delay is expressed in seconds per vehicle.

Source: Korve Engineering 1997.

Transit Analysis

Ferry Service

The key determinants to the ferry requirement tables (Figures 40, 44 and 47 in the *Naval Station Treasure Island Reuse Plan Transportation Background Report*) were the number of vessels and trips required to meet the peak travel hour/peak direction requirements. For example, if the peak direction ferry travel demand to Treasure Island is 709 passengers, 3 vessels would be required during that hour assuming a standard vessel capacity of 300 persons and a single ferry route. Table F-29 summarizes peak hour/peak direction ferry travel demand to Treasure Island for the community reuse alternatives.

**Table F-29
Summary of Treasure Island Ferry Trips
Peak Hour/Peak Direction**

<i>Analysis Period</i>	<i>Maximum Construction Alternative</i>	<i>Medium Construction Alternative</i>	<i>Minimum Construction Alternative</i>
Weekday daily	34,632	35,036	9,578
Weekday AM peak	1,529	554	739
Weekday PM/peak direction	3,898/2,082	4,416/2,482	1,260/709
Weekend daily	32,118	36,170	9,681
Weekend midday peak/peak direction	3,118/1,706	4,233/2,262	1,004/633

If the peak demand hour is during a commute period, when all available vessels are in service, the entire fleet of vessels required to NSTI must be dedicated to that service. In contrast, if the peak travel demand for NSTI is midday or evenings during the weekdays or any time on the weekend, there would be some reserve capacity in the existing and projected Bay Area ferry fleet to provide additional trips to NSTI, and somewhat less than 100 percent of the fleet requirement would need to be dedicated to NSTI service. Because of this, the Reuse Plan ferry analysis focused on the weekday demand when excess vessels are not available. In comparing the daily and peak hour ferry demand calculated for the Reuse Plan and for the alternatives in the EIS, the following conclusions were developed.

- The Reuse Plan Phase 3 ferry plan would be adequate to serve the trip demand generated by Alternatives 1 and 2. Although the 30,668 trips using the ferries during Phase 3 of the Reuse Plan would be less than the 34,632 daily riders under Alternative 1 and less than the 35,036 under Alternative 2, the weekday PM peak hour/peak directional use was projected to be 2,300 for the Phase 3 plan, compared with the demand of 2,082 and 2,482 peak directional trips with Alternatives 1 and 2, respectively.

Although Alternative 2 would generate eight percent more ferry trips during the 5:00 to 6:00 PM peak hour than the Reuse Plan Phase 3 ferry plan, due to differences in land

uses from the Reuse Plan, Alternative 2 has somewhat different distributions to the Ferry Building, Candlestick Point, and the East Bay terminals. Thus, in comparison with the Phase 3 plan, Alternative 2 would result in 3 percent fewer trips to the Ferry Building, 15 percent more trips to the East Bay, and 19 percent more trips to Candlestick Point. However, since ferry increments serve up to 300 passengers, the comparison trips indicates that the same number of peak hour and peak period (the peak hour for ferry was assumed to be 7:00 to 8:00 PM), trips could carry the incremental peak hour demand. For example, 2 ferry trips are required to carry 506 persons from NSTI to Candlestick Point, the same number of ferry trips required to carry 436 persons between 5:00 and 6:00 PM in the Phase 3 plan.

Because of parking deficiencies at the Ferry Building and Jack London Square, the Phase 3 plan included additional vessels from Candlestick Point in San Francisco and Golden Gate Fields on the Albany/Berkeley border, locations where additional parking capacity is available. This level of service required three vessels from the Ferry Building, three vessels from Candlestick Point, and four from the two East Bay ferry terminals.

- The Reuse Plan Phase 2 would be adequate to serve the trip demand generated by Alternative 3. The Phase 2 plan was developed to serve weekday daily transportation of 10,222 trips by ferry, as compared to 9,578 daily weekday trips for Alternative 3. Assuming 15-knot vessels between the Ferry Building and Treasure Island, and 25-knot vessels operating from Jack London Square, a total of 4 vessels would be required to serve the travel demand.

During development of the Reuse Plan ferry program, at least 2 ferry trips were assigned per hour from each terminal so that wait times would never exceed 30 minutes. Since 4 vessels could provide 2 trips per hour from Oakland and 3 trips per hour from the Ferry Building, they would have a capacity of 900 persons per hour in the peak direction from the Ferry Building and 600 passengers an hour from Jack London Square, significantly above the indicated demand for 790 passenger trips during the weekday PM peak hour for Alternative 3.

Proposals for additional ferry service from NSTI and Larkspur, Vallejo, Alameda and Oakland have been discussed as part of the community reuse alternative definition. While ferry service is expected from Oakland (and a stop at Alameda is possible), service from Larkspur and Vallejo is unlikely to be warranted, with passengers from those locations taking regularly scheduled service to the Ferry Building and transferring to the short route from the Ferry Building to NSTI. Demand from those locations would be insufficient to justify new vessels for dedicated service on Larkspur to NSTI or Vallejo to NSTI routes. Adding an additional NSTI stop to existing San Francisco trips from these terminals would have an adverse impact on existing ridership and would disrupt standard sequential schedules (typically service once every hour or two).

Bus Service

AC Transit bus service between NSTI, San Francisco, and the East Bay was discontinued in 1996. Subsequently, San Francisco Muni has provided bus service between NSTI and San Francisco. The *Naval Station Treasure Island Reuse Plan Transportation Plan* assumed that bus service would be provided to and from both San Francisco and the East Bay.

With the three proposed community reuse alternatives, the existing Muni service would be inadequate. The number of projected bus trips to Treasure Island was, therefore, calculated for each of the three community reuse alternatives. These trips were determined for both inbound and outbound of San Francisco and the East Bay. Due to the bus connections from the North Bay and South Bay within San Francisco (Golden Gate Transit and SamTrans, respectively), all transit trips from these two regions were combined with the San Francisco trips. Bus transit person-trips are summarized in Table 4.5-5 in section 4.5, Transportation.

Under Alternative 1, approximately 9,600 weekday daily and approximately 8,760 weekend daily bus transit patrons are estimated between NSTI and the East, North, and South Bays (including San Francisco). During the weekday, approximately 700 AM and 1,280 PM peak bus transit person-trips are estimated, as well as 1,110 weekend midday bus person-trips.

Under Alternative 2, approximately 7,100 weekday daily and approximately 8,170 weekend daily bus transit patrons are estimated between NSTI and the East, North, and South Bays (including San Francisco). During the weekday, approximately 285 AM and 910 PM peak bus transit person-trips are estimated, as well as 875 weekend midday bus person-trips.

Approximately 3,925 weekday daily and approximately 4,650 weekend daily bus transit patrons are estimated under Alternative 3 between NSTI and the East, North, and South Bays (including San Francisco). During the weekday, approximately 430 AM and 585 PM peak hour bus transit person-trips are estimated, as well as 510 weekend midday bus person-trips.

For both eastbound and westbound travel, the average bus size was estimated to be 40 passengers and the maximum load factor was taken to be 1.55 passengers/seat, based on bus size and load factor standards for San Francisco Muni. From these values and the projected number of transit users, the headways necessary to ensure adequate transit service were calculated for weekday AM and PM peak hours and off-peak conditions. A similar effort was conducted for weekend midday and off-peak conditions. These headways are summarized in Table F-30.

Parking Analysis

Long-term and short-term parking demand for all the proposed land uses was determined based on the methodology outlined in Appendix 5.1 of the *San Francisco Guidelines for Environmental Review: Transportation Impacts (SF Guidelines)*. For the proposed residential uses, long-term parking demand was estimated for residents using a rate of 1.5 spaces per unit. For the proposed commercial uses (i.e., all uses other than residential), both long-term parking demand was estimated for employees and short-term parking demand was estimated for visitors.

Table F-30
Summary of Bus Service Requirements

<i>Alternative</i>	<i>Weekday Headways</i>	<i>Weekend Headways</i>
Maximum Construction	10 minutes	15 minutes
Medium Construction	15 minutes	15 minutes
Minimum Construction	20 minutes	

Long-term parking demand for employees of the commercial uses was based on the estimated number of work trips by auto, while short-term parking demand for visitors was based on the estimated number of non-work trips by auto. As described in the *SF Guidelines*, the use of parking turnover rates¹ is required in order to estimate short-term parking demand. Parking turnover rates were obtained from the *Naval Station Treasure Island Reuse Plan Transportation Background Report* and are summarized in Table F-31 for each land use.

Table F-31
Parking Turnover Rates

<i>Land Use</i>	<i>Parking Turnover Rate (Vehicles Per Space)</i>
Brig, child development center, entertainment center, film production, fire school, golf, police, themed attraction, water treatment plant, and wedding chapel	1.0
Amphitheater, mixed-use, restaurant, and retail	1.5
Community/institutional, conference, elementary school, hotel, and job corps	2.0
Museum, office, and warehouse	4.0
Marina, open space, and outdoor recreation	5.0

Source: Naval Station Treasure Island Reuse Plan Transportation Background Report.

¹ A parking turnover rate represents the number of vehicles, in a parking lot or garage, that occupy one parking space during the day (i.e., the number of times one parking space turns over throughout the day).

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APPENDIX F-4

Air Quality

APPENDIX F-4. AIR QUALITY

OZONE, CARBON MONOXIDE, AND PM₁₀

Ozone usually is considered the primary indicator of photochemical smog, a complex mixture of secondary pollutants created by chemical reactions that occur in the presence of ultraviolet light. Because photochemical reaction rates depend on the intensity of ultraviolet light and warm air temperatures, photochemical smog is primarily a summer and early fall air pollution problem. The constituents of photochemical smog include respiratory irritants, such as ozone, nitrogen dioxide, sulfuric acid, and sulfate aerosols; eye irritants, such as aldehydes (including acrolein and formaldehyde), nitrogen dioxide, and organic nitrates; a range of toxic or potentially carcinogenic organic compounds; and visibility-reducing aerosols. Ambient air quality standards have been set for two of the major components of photochemical smog, namely ozone and nitrogen dioxide. All combustion processes, including motor vehicle engines, produce emissions of ozone precursors (reactive organic compounds and nitrogen oxides).

Carbon monoxide is primarily a winter period pollution problem, with motor vehicles being the dominant emission source in most areas. The winter seasonality occurs because vehicle emission rates increase at low temperatures and because meteorological factors that limit pollutant dispersion (low wind speeds and strong temperature inversions) are more prevalent during the winter than at other times of the year. Ambient air quality standards for carbon monoxide have been set for both one- and eight-hour periods.

Inhalable particulate matter (PM₁₀) is an aggregation of solid particles and liquid aerosols capable of penetrating to the lower respiratory tract. PM₁₀ includes directly emitted particulate matter plus secondary aerosols formed from gaseous pollutants through chemical reactions and condensation processes. Major categories of secondary aerosols include low-volatility organic compounds, nitrate salts, and sulfate salts. The constituents of PM₁₀ include a range of particle sizes, shapes, densities, and chemical compositions. Federal and state PM₁₀ standards have been set for concentrations averaged over 24-hour and annual periods. PM₁₀ concentrations are expressed on a weight basis as micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

The "10" in PM₁₀ does not refer to a particle size limit but refers to a statistical measure of monitoring equipment performance called a cutpoint diameter. A cutpoint diameter is the size range at which 50 percent of the mass of ambient particles will be collected by a sampling device. A PM₁₀ sampler collects 50 percent by weight of the particles in the 9.5 to 10.5 micron size range, more than 50 percent by weight of particles in smaller size ranges, and less than 50 percent by weight of particles in larger size ranges. The Federal and state PM₁₀ standards do not define any absolute upper size limit for the included particles, but particles with aerodynamic equivalent diameters larger than 50 microns are unlikely to be collected.

APPLICABLE FEDERAL AND STATE AIR REGULATIONS

The Federal Clean Air Act, 42 U.S.C.A. §§ 7401-7671q (West 1995 & Supp. 1998), requires each state 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 US Environmental Protection Agency (EPA). In California, the state

implementation plan consists of separate elements for different regions of the state. SIP elements are generally 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 region, SIP document preparation has been a coordinated effort involving three regional agencies: the Bay Area Air Quality Management District (BAAQMD), the Association of Bay Area Governments (ABAG), and the Metropolitan Transportation Commission (MTC).

Areas that violate a Federal or state ambient air quality standard are generally categorized as nonattainment areas. Ozone, carbon monoxide, and PM₁₀ nonattainment designations are further categorized by severity of the problem. Those areas that meet Federal or state ambient air quality standards are categorized as attainment areas. Areas that lack sufficient monitoring data are generally categorized as unclassified areas.

In July 1997, the EPA revised the violation criteria for the existing Federal PM₁₀ standards, adopted a new 8-hour ozone standard (an 8-hour average of 0.08 parts per million [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).

In June 1998, the San Francisco Bay Area was reclassified from an attainment/maintenance area to an unclassified nonattainment area for the federal 1-hour ozone standard. The urbanized portions of the San Francisco Bay Area are presently categorized as attainment areas for the Federal carbon monoxide standards. The Bay Area is currently designated as unclassified for the Federal PM₁₀ standard (Libretti 1998). If future monitoring data results in a nonattainment designation for the Federal PM_{2.5} standards, a PM_{2.5} SIP would be required (probably in 2005).

The California Clean Air Act of 1988, 1988 Cal. Stat. 1568, 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 (ARB) is responsible for developing a plan for meeting state PM₁₀ standards. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the state ozone standard. The Bay Area is also classified as a nonattainment area for the state PM₁₀ standard. The entire San Francisco Bay Area is currently classified as an attainment area for the state carbon monoxide 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". Emission control programs that must be implemented are more stringent for areas that do not expect rapid attainment of the ozone and carbon monoxide standards.

CLEAN AIR ACT CONFORMITY REQUIREMENTS

Section 176(c) of the Clean Air Act, 42 U.S.C.A. § 7506(c), requires Federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the Clean Air Act and with Federally enforceable air quality management plans. EPA has promulgated

separate rules that establish conformity analysis procedures for transportation-related actions and for other (general) Federal agency actions.

A formal conformity determination is required for Federal actions occurring in nonattainment or maintenance areas (such as the San Francisco Bay area) when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The Federal nonattainment and maintenance pollutants subject to conformity analyses in the San Francisco Bay area include ozone precursors (reactive organic compounds and nitrogen oxides) and carbon monoxide. Applicable threshold levels for Federal actions in the San Francisco Bay Area are 100 tons (91 metric tons) per year of reactive organic compounds, 100 tons (91 metric tons) per year of nitrogen oxides, and 100 tons (91 metric tons) per year of carbon monoxide.

Several categories of Federal agency actions are identified in the general conformity rule as actions that are presumed to result in emissions below the threshold level. Transfers of ownership, interests, and titles in land, facilities, real property, or personal property to other public agencies or to private parties are presumed to have emissions below the threshold level because the agency transferring the facilities or property will not retain responsibility or control over subsequent activities. Lease arrangements, however, may be subject to the requirements of the conformity rule if the terms of the lease allow Federal agencies to control the leasee's emission-generating activities.

Air Pollution Control Programs

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 ARB 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 ARB and local air pollution control districts were expanded by the California Clean Air Act of 1988. Local air pollution control districts were given added responsibility and authority to adopt transportation control measure programs and emission reduction programs for indirect and areawide emission sources. Recent state legislation restricts the types of transportation control measure programs that can be established by air pollution control districts. Mandatory trip reduction programs can be established only if necessary to achieve Federal air quality standards.

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 throughout 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. This results in a two-step permit process for new emission sources: an initial authority to construct (ATC) permit and a subsequent permit to operate (PTO).



DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

Record of Non-Applicability

Disposal and Reuse of Naval Station Treasure Island

Pursuant to Section 176(c) of the Clean Air Act, 42 U.S.C. § 7506(c), the General Conformity Rule, 40 C.F.R. Part 93, Subpart B, and the Chief of Naval Operations Interim Guidance on Compliance with the Clean Air Act General Conformity Rule, March 8, 1995, the Department of the Navy has determined that the actions to dispose of and reuse Naval Station Treasure Island are exempt from the requirement for a conformity determination. This finding is based on the following exemptions as stated in 40 C.F.R. § 93.153(c)(2):

(xi) The granting of leases, licenses such as for exports and trade, permits, and easements where activities conducted will be similar in scope and operation to activities currently being conducted.

(xiv) Transfers of ownership, interests, and titles in land, facilities, and real and personal properties, regardless of the form or method of transfer.

(xix) Actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific, reasonable condition is met, such as promptly after the land is certified as meeting the requirements of CERCLA, and where the Federal agency does not retain continuing authority to control emissions associated with the land, facilities, title, or real properties.

(xx) Transfers of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity and assignments of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity for subsequent deeding to eligible applicants.

The Environmental Protection Agency's preamble to the General Conformity Rule explained the exemption for Federal land transfers as follows: "Under the exclusive definition of indirect emissions, Federal land transfers are unlikely to be covered since the Federal agency will not maintain authority over reuse activities on that land. Consequently, Federal land transfers are included in the regulatory list of actions that will not exceed the de minimis levels and thus are exempt from the final conformity rules." 58 Fed. Reg. 63231 (1993).

Based on the foregoing regulations and policies, I have determined that the Navy's actions to dispose of and reuse Naval Station Treasure Island are exempt from the requirement for a conformity determination.

ERNEST R. HUNTER
Captain, CEC, US Navy
Commanding Officer

5/18/1999

DATE

Table F-32
 Characteristics of Roadway Network Used for CALINE4 Dispersion Modeling

ROADWAY	SEGMENT	LINK SEGMENT COORDINATES				LINK SEGMENT		LANES	PM PEAK HOUR VOLUMES BY SCENARIO			
		X1	Y1	X2	Y2	HEIGHT	LENGTH		NO ACTION	MINIMUM	MEDIUM	MAXIMUM
UPPER DECK	EAST 1UD	2100	5170	1970	3890	55	1287	5	9000	8300	8300	8300
	EAST 2UD	1970	3890	1950	3590	55	301	5	9000	8300	8300	8300
	EAST 3UD	1950	3590	1980	3325	40	267	5	9000	8300	8300	8300
	EAST 4UD	1980	3325	2160	2810	25	546	5	9000	8300	8300	8300
	EAST 5UD	2160	2810	2480	2030	25	843	5	9000	8300	8300	8300
	TUNNELUD	2480	2030	2670	1510	25	554	5	9000	8300	8300	8300
	WEST 1UD	2670	1510	2790	1210	25	323	5	9000	8300	8300	8300
	WEST 2UD	2790	1210	3310	-140	55	1447	5	9000	8300	8300	8300
LOWER DECK	EAST 1LD	2100	5170	1970	3890	30	1287	5	9500	9500	9500	9500
	EAST 2LD	1970	3890	1950	3590	30	301	5	9500	9500	9500	9500
	EAST 3LD	1950	3590	1980	3325	15	267	5	9500	9500	9500	9500
	EAST 4LD	1980	3325	2160	2810	0	546	5	9500	9500	9500	9500
	EAST 5LD	2160	2810	2480	2030	0	843	5	9500	9500	9500	9500
	TUNNELLD	2480	2030	2670	1510	0	554	5	9500	9500	9500	9500
	WEST 1LD	2670	1510	2790	1210	0	323	5	9500	9500	9500	9500
	WEST 2LD	2790	1210	3310	-140	30	1447	5	9500	9500	9500	9500

Table F-33
Receptor Coordinates

RECEPTOR	X-COORD (FEET)	Y-COORD (FEET)	OFFSET (FEET)
N OF SEGMENT EAST3	1915	3452	50
	1890	3449	75
	1866	3446	100
	1766	3435	200
	1667	3424	300
S OF SEGMENT EAST3	2015	3463	50
	2040	3466	75
	2064	3469	100
	2164	3480	200
	2263	3491	300
N OF SEGMENT EAST5	2274	2401	50
	2251	2392	75
	2227	2382	100
	2135	2344	200
	2042	2306	300
S OF SEGMENT EAST5	2366	2439	50
	2389	2448	75
	2413	2458	100
	2505	2496	200
	2598	2534	300
N OF SEGMENT WEST1	2684	1341	50
	2660	1332	75
	2637	1323	100
	2544	1286	200
	2451	1249	300
S OF SEGMENT WEST1	2776	1379	50
	2800	1388	75
	2823	1397	100
	2916	1434	200
	3009	1471	300

Table F-34
PM Peak Hour Operating Modes, Freeway Traffic

TRIP PURPOSE	TRIP PURPOSE MIX	HOT STABLE FRACTION	COLD START FRACTION	HOT START FRACTION
H-W	50.00%	90.00%	9.25%	0.75%
H-S	10.00%	90.00%	5.27%	4.73%
H-O	20.00%	90.00%	6.81%	3.19%
O-W	10.00%	90.00%	6.24%	3.76%
O-O	10.00%	90.00%	2.87%	7.13%
CHECKSUM:	100.00%	90.00%	WTD MEAN: 7.42%	2.58%

	COLD START	HOT START
CATALYST	7.44%	2.56%
NONCATALYST	5.70%	4.30%

CATALYST FRACTION FOR LDA + LDT + MDT + MCY: 98.97%

START MODE - FIRST 505 SECONDS OF VEHICLE TRAVEL

STABLE MODE - TRAVEL AFTER 505 SECONDS OF VEHICLE OPERATION

START MODE SPLIT FACTORS:

TRIP PURPOSE	CATALYST VEHICLES		NONCAT VEHICLES	
	COLD STARTS	HOT STARTS	COLD STARTS	HOT STARTS
H-W	92.63%	7.37%	80.04%	19.96%
H-S	52.89%	47.11%	33.61%	66.39%
H-O	68.35%	31.65%	43.38%	56.62%
O-W	62.64%	37.36%	40.73%	59.27%
O-O	28.90%	71.10%	8.25%	91.75%
WTD MEAN:	74.43%	25.57%	56.96%	43.05%

Table F-35
Basic Freeway Traffic Emission Rates

SUMMARY OF EMFAC7 INPUT ASSUMPTIONS:

CALENDAR YEAR:	2010	I&M PROGRAM:	YES				
VEHICLE MIX ASSUMPTIONS:							
	LDA	LDT	MDT	HDG	HDD	BUS	MCY
	70.00%	22.20%	2.27%	2.07%	1.49%	0.99%	0.98%
AIR TEMPERATURE FOR EXHAUST RATES:	SUMMER:	70	WINTER:	50			
EVAPORATIVE EMISSIONS TEMPERATURE PATTERNS:							
	MINIMUM	8 AM	9 AM	11 AM	1 PM	MAXIMUM	
SUMMER	55	57	60	68	72	75	
WINTER	40	40	42	51	58	60	
OPERATING MODE ASSUMPTIONS:							
	COLD	HOT	HOT				
	START	START	STABLE				
	7.42%	2.58%	90.00%				

VEHICLE EMISSION RATES, GRAMS/MILE:

	GRAM/MILE RATES BY SPEED IN MPH					FIXED AMOUNT
	15	25	35	45	55	
ROG	0.44	0.25	0.20	0.16	0.16	
NOx	0.82	0.67	0.65	0.74	0.97	
CO-S	4.10	2.68	2.11	1.92	2.24	
CO-W	4.63	3.07	2.44	2.23	2.59	
PMEX	0.05	0.05	0.05	0.05	0.05	
PMTW	0.21	0.21	0.21	0.21	0.21	
HOT SOAK						0.21
DRNL/RSTL						1.21

NOTES: LDA = light duty autos
LDT = light duty trucks
MDT = medium duty trucks
HDG = heavy duty gasoline-fueled vehicles
HDD = heavy duty diesel-fueled vehicles
BUS = diesel-fueled urban buses
MCY = motorcycles
ROG = reactive organic gases (summer fuel volatility)
NOx = oxides of nitrogen (summer fuel volatility)
CO-S = carbon monoxide (summer fuel volatility)
CO-W = carbon monoxide (winter fuel volatility)
PMEX = exhaust particulate matter
PMTW = tire wear particulate matter
DRNL = summer diurnal evaporative emissions (grams/veh-day)
RSTL = summer resting loss evaporative emissions (grams/veh-day)
Hot Soak evaporative emission rate in grams/trip

Table F-36
Cold Start Emission Rates for Idle Adjustment Analyses

SUMMARY OF EMFAC7F INPUT ASSUMPTIONS

CALENDAR YEAR	2010	I&M PROGRAM	YES				
VEHICLE MIX ASSUMPTIONS:							
LDA	LDT	MDT	HDD	HDD	BUS	MCY	
70.00%	22.00%	2.07%	2.07%	1.49%	0.99%	0.98%	
AIR TEMPERATURE FOR EXHAUST RATES:				SUMMER	70	WINTER	50
EVAPORATIVE EMISSIONS TEMPERATURE PATTERNS:							
	MINIMUM	8 AM	9 AM	11 AM	1 PM MAXIMUM		
SUMMER	55	57	60	68	72	75	
WINTER	40	40	42	51	58	60	
OPERATING MODE ASSUMPTIONS:							
	COLD START	HOT START	HOT STABLE				
	100.00%	0.00%	0.00%				

VEHICLE EMISSION RATES, GRAMS/MILE:

	GRAM/MILE RATES BY SPEED IN MPH					FIXED AMOUNT
	5	10	15	20	25	
ROG	1.96	1.06	0.75	0.63	0.57	
NO _x	1.51	1.28	1.15	1.04	0.99	
CO-S	13.36	9.77	8.10	7.21	6.68	
CO-W	16.19	12.19	10.36	9.38	8.80	
PMEX	0.05	0.05	0.05	0.05	0.05	
PMTW	0.21	0.21	0.21	0.21	0.21	
HOT SOAK						0.21
DRNL/RSTL						1.21

NOTES LDA = light duty autos
LDT = light duty trucks
MDT = medium duty trucks
HDD = heavy duty gasoline-fueled vehicles
HDD = heavy duty diesel-fueled vehicles
BUS = diesel-fueled urban buses
MCY = motorcycles
ROG = reactive organic gases (summer fuel volatility)
NO_x = oxides of nitrogen (summer fuel volatility)
CO-S = carbon monoxide (summer fuel volatility)
CO-W = carbon monoxide (winter fuel volatility)
PMEX = exhaust particulate matter
PMTW = tire wear particulate matter
DRNL = summer diurnal evaporative emissions (grams/veh-day)
RSTL = summer resting loss evaporative emissions (grams/veh-day)
Hot soak evaporative emission rate in grams/trip

Table F-37
Hot Stabilized Emission Rates for Idle Adjustment Analyses

SUMMARY OF EMFACT INPUT ASSUMPTIONS.

CALENDAR YEAR:	2010	I&M PROGRAM:	YES				
VEHICLE MIX ASSUMPTIONS:							
	LDA	LDT	MDT	HDC	HDD	BUS	MCY
	70.00%	22.20%	2.27%	2.07%	1.49%	0.99%	0.98%
AIR TEMPERATURE FOR EXHAUST RATES:	SUMMER:	70	WINTER:	50			
EVAPORATIVE EMISSIONS TEMPERATURE PATTERNS:							
	MINIMUM	8 AM	9 AM	11 AM	1 PM	MAXIMUM	
SUMMER	55	57	60	68	72	75	
WINTER	40	40	42	51	58	60	
OPERATING MODE ASSUMPTIONS:							
	COLD	HOT	HOT				
	START	START	STABLE				
	0.00%	0.00%	100.00%				

VEHICLE EMISSION RATES, GRAMS/MILE:

POLLUTANT	GRAM/MILE RATES BY SPEED IN MPH					FIXED AMOUNT
	5	10	15	20	25	
ROG	1.62	0.71	0.41	0.29	0.23	
NOx	1.16	0.93	0.79	0.69	0.64	
CO-S	9.01	5.42	3.76	2.86	2.33	
CO-W	9.98	5.98	4.14	3.17	2.58	
PMEX	0.05	0.05	0.05	0.05	0.05	
PMTW	0.21	0.21	0.21	0.21	0.21	
HOT SOAK						0.21
DRNL/RSTL						1.21

NOTES: LDA = light duty van
LDT = light duty trucks
MDT = medium duty trucks
HDC = heavy duty gasoline-fueled vehicles
HDD = heavy duty diesel-fueled vehicles
BUS = diesel-fueled urban buses
MCY = motorcycle
ROG = reactive organic gases (summer fuel volatility)
NOx = oxides of nitrogen (summer fuel volatility)
CO-S = carbon monoxide (summer fuel volatility)
CO-W = carbon monoxide (winter fuel volatility)
PMEX = exhaust particulate matter
PMTW = tire wear particulate matter
DRNL = summer diurnal evaporative emissions (grams/vol-day)
RSTL = summer rising lane evaporative emissions (grams/vol-day)
Hot Soak evaporative emission rate in grams/trip

Table F-38
Estimated Vehicle Delays by Roadway Segment

ROADWAY	SEGMENT	DELAY TIME (SECONDS) BY SCENARIO				ESTIMATED VOLUME:CAPACITY RATIOS BY SCENARIO			
		NO ACTION	MINIMUM	MEDIUM	MAXIMUM	NO ACTION	MINIMUM	MEDIUM	MAXIMUM
UPPER DECK	EAST 1UD	25	18	18	18	0.90	0.83	0.83	0.83
	EAST 2UD	6	4	4	4	0.90	0.83	0.83	0.83
	EAST 3UD	5	4	4	4	0.90	0.83	0.83	0.83
	EAST 4UD	11	8	8	8	0.90	0.83	0.83	0.83
	EAST 5UD	17	12	12	12	0.90	0.83	0.83	0.83
	TUNNELUD	11	8	8	8	0.90	0.83	0.83	0.83
	WEST 1UD	6	5	5	5	0.90	0.83	0.83	0.83
	WEST 2UD	29	21	21	21	0.90	0.83	0.83	0.83
LOWER DECK	EAST 1LD	32	32	32	32	0.95	0.95	0.95	0.95
	EAST 2LD	7	7	7	7	0.95	0.95	0.95	0.95
	EAST 3LD	7	7	7	7	0.95	0.95	0.95	0.95
	EAST 4LD	14	14	14	14	0.95	0.95	0.95	0.95
	EAST 5LD	21	21	21	21	0.95	0.95	0.95	0.95
	TUNNELLD	14	14	14	14	0.95	0.95	0.95	0.95
	WEST 1LD	8	8	8	8	0.95	0.95	0.95	0.95
	WEST 2LD	36	36	36	36	0.95	0.95	0.95	0.95

Table F-39
Emission Factor Adjustments for Excess Vehicle Idling Time: SFOBB Traffic, 2010

INPUT VARIABLES	EAST1UD	EAST2UD	EAST3UD	EAST4UD	EAST5UD	UNNELUD	WEST1UD	WEST2UD	EAST1LD	EAST2LD	EAST3LD	EAST4LD	EAST5LD	UNNELLD	WEST1LD	WEST2LD
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
LINK LENGTH, FEET	1287	301	267	546	843	554	323	1447	1287	301	267	546	843	554	323	1447
DELAY PER VEHICLE, SECONDS OF IDLE	25	6	5	11	17	11	6	29	32	7	7	14	21	14	8	16
BASE EMISSION RATE, GM/MI	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07
100% STABILIZED 5 MPH RATE, GM/MI	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98
100% STABILIZED 16 MPH RATE, GM/MI	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14
100% COLD START 16 MPH RATE, GM/MI	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36
% CATALYST VEHICLES	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97	98.97
% NON CATALYST COLD STARTS	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70
% CATALYST COLD STARTS	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44	7.44
OUTPUT																
HOT STABILIZED IDLE RATE, GM/MIN	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
ADJUSTED COLD START 5 MPH RATE, GM/MI	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97	24.97
COLD START IDLE RATE, GM/MIN	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812	2.0812
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	4.79	1.12	0.99	2.03	3.14	2.06	1.20	5.39	4.79	1.12	0.99	2.03	3.14	2.06	1.20	5.39
REQUIRED EXTRA IDLE SECONDS	20.71	4.84	4.31	8.80	13.61	8.94	5.19	23.31	20.71	4.84	4.31	8.80	13.61	8.94	5.19	23.31
WEIGHTED % COLD STARTS	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244	0.9244
BASE EMISSION RATE, GM/MI	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07
ADDED IDLE ADJUSTMENT, GM/MI	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
ADJUSTED EMISSION RATE, GM/MI	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38
ADJUSTMENT FACTOR, % INCREASE	42.6%	42.7%	42.8%	42.7%	42.8%	42.8%	42.6%	42.7%	55.7%	55.8%	55.5%	55.8%	55.7%	55.6%	55.8%	55.6%

Table F-40
Basic Input Parameters Used for CALINE4 Runs

MODEL PARAMETER	INPUT VALUES	
POLLUTANT CODE:	1	
POLLUTANT NAME:	CARBON MONOXIDE	
SURFACE ROUGHNESS:	75 cm	
MOLECULAR WEIGHT:	28.01	
SETTLING VELOCITY:	0 cm/sec	
DEPOSITION VELOCITY:	0 cm/sec	
NUMBER OF RECEPTORS:	16	
NUMBER OF LINKS:	30	
SCALE FACTOR:	0.3048 feet/meter	
LINK TITLE OPTION CODE:	1	
RECEPTOR TITLE OPTION CODE:	1	
ALTITUDE:	0 feet	
LINK TYPE CODE:	4 (bridge)	1 (tunnel ends)
LINK HEIGHT:	0-30 (lower deck)	25-55 (upper deck)
MIXING CELL WIDTH:	60	
RIGHT SIDE CANYON CODE:	0	
LEFT SIDE CANYON CODE:	0	
LINK CONTINUATION CODE:	1	
RUN TYPE CODE:	1	
TRAFFIC VOLUME CHANGE CODE:	1 (first link)	0 (other links)
EMISSION RATE CHANGE CODE:	1 (first link)	0 (other links)
INTERSECTION CHANGE CODE:	0	
MET SCENARIO CHANGE CODE:	1	
WIND SPEED:	1 meters/second	
WIND DIRECTION:	0 to 350 degrees in 10 degree increments	
STABILITY CLASS:	5 (Class E, isothermal/mild inversion)	
MIXING HEIGHT LIMIT:	50 meters	
SIGMA THETA:	10 degrees	
BACKGROUND CONCENTRATION:	0 ppm	
AIR TEMPERATURE:	25 degrees C	

Note: The CALINE4 model source code was modified to accept large numbers of links and receptors, and to eliminate the inappropriate adjustment of concentration results to study area altitude and temperature; concentration results must be computed for 1 atmosphere pressure and 25 degrees C to provide a direct comparison to federal and state ambient air quality standards.

APPENDIX G

Fish Management Plan Species

APPENDIX G. FISH MANAGEMENT PLAN (FMP) SPECIES

Coastal Pelagics Fishery Management Plan	
Northern anchovy - <i>Engraulis mordax</i>	
Pacific sardine - <i>Sardinops sagax</i>	
Pacific (chub) mackerel - <i>Scomber japonicus</i>	
Jack mackerel - <i>Trachurus symmetricus</i>	
Market squid - <i>Loligo opalescens</i>	
Pacific Groundfish Fishery Management Plan	
Butter sole - <i>Isopsetta isolepis</i>	Flag rockfish - <i>Sebastes rubrivinctus</i>
Curlfin sole - <i>Pleuronichthys decurrens</i>	Gopher rockfish - <i>Sebastes carnatus</i>
Dover sole - <i>Microstomus pacificus</i>	Grass rockfish - <i>Sebastes rastrelliger</i>
English sole - <i>Parophrys vetulus</i>	Greenblotched rockfish - <i>Sebastes rosenblatti</i>
Flathead sole - <i>Hippoglossoides elassodon</i>	Greenspotted rockfish - <i>Sebastes chlorostictus</i>
Pacific sanddab - <i>Citharichthys sordidus</i>	Greenstriped rockfish - <i>Sebastes elongatus</i>
Petrale sole - <i>Eopsetta jordani</i>	Harlequin rockfish - <i>Sebastes variegatus</i>
Rex sole - <i>Glyptocephalus zachirus</i>	Honeycomb rockfish - <i>Sebastes umbrosus</i>
Rock sole - <i>Lepidopsetta bilineata</i>	Kelp rockfish - <i>Sebastes atrovirens</i>
Sand sole - <i>Psettichthys melanostictus</i>	Mexican rockfish - <i>Sebastes macdonaldi</i>
Starry flounder - <i>Platichthys stellatus</i>	Olive rockfish - <i>Sebastes serranoides</i>
Arrowtooth flounder - <i>Atheresthes stomias</i>	Pink rockfish - <i>Sebastes eos</i>
Ratfish - <i>Hydrolagus coliei</i>	Quillback rockfish - <i>Sebastes maliger</i>
Finescale codling - <i>Antimora microlepis</i>	Redbanded rockfish - <i>Sebastes babcocki</i>
Pacific rattail - <i>Coryphaenoides acrolepis</i>	Redstripe rockfish - <i>Sebastes proriger</i>
Leopard shark - <i>Triakis semifasciata</i>	Rosethorn rockfish - <i>Sebastes helvomaculatus</i>
Soupin shark - <i>Galeorhinus zyopterus</i>	Rosy rockfish - <i>Sebastes rosaceus</i>
Pacific Groundfish Fishery Management Plan (continued)	
Spiny dogfish - <i>Squalus acanthias</i>	Rougheye rockfish - <i>Sebastes aleutianus</i>
Big skate - <i>Raja binoculata</i>	Sharpchin rockfish - <i>Sebastes zacentrus</i>
Longnose skate - <i>Raja rhina</i>	Shortraker rockfish - <i>Sebastes borealis</i>
Pacific ocean perch - <i>Sebastes alutus</i>	Silvergrey rockfish - <i>Sebastes brevispinis</i>
Shortbelly rockfish - <i>Sebastes jordani</i>	Speckled rockfish - <i>Sebastes ovalis</i>
Widow rockfish - <i>Sebastes entomelas</i>	Splitnose rockfish - <i>Sebastes diploproa</i>
Aurora rockfish - <i>Sebastes aurora</i>	Squarespot rockfish - <i>Sebastes hopkinsi</i>
Bank rockfish - <i>Sebastes rufus</i>	Starry rockfish - <i>Sebastes constellatus</i>
Black rockfish - <i>Sebastes melanops</i>	Stripetail rockfish - <i>Sebastes saxicola</i>
Black-and-yellow rockfish - <i>Sebastes chrysomelas</i>	Tiger rockfish - <i>Sebastes nigrocinctus</i>
Blackgill rockfish - <i>Sebastes melanostomus</i>	Treefish - <i>Sebastes serriceps</i>
Blue rockfish - <i>Sebastes mystinus</i>	Vermilion rockfish - <i>Sebastes miniatus</i>
Bocaccio - <i>Sebastes paucispinis</i>	Yelloweye rockfish - <i>Sebastes ruberrimus</i>
Bronzespotted rockfish - <i>Sebastes gilli</i>	Yellowmouth rockfish - <i>Sebastes reedi</i>
Brown rockfish - <i>Sebastes auriculatus</i>	Yellowtail rockfish - <i>Sebastes flavidus</i>
Calico rockfish - <i>Sebastes dallii</i>	Longspine Thornyhead - <i>Sebastolobus altivelis</i>
California rockfish - <i>Scorpena guttata</i>	Shortspine Thornyhead - <i>Sebastolobus alascanus</i>
Canary rockfish - <i>Sebastes pinniger</i>	Cabazon - <i>Scorpaenichthys marmoratus</i>
Chilipepper - <i>Sebastes goodei</i>	Kelp greenling - <i>Hexagrammos decagrammus</i>
China rockfish - <i>Sebastes nebulosus</i>	Lingcod - <i>Ophiodon elongatus</i>
Copper rockfish - <i>Sebastes caurinus</i>	Pacific cod - <i>Gadus macrocephalus</i>
Cowcod rockfish - <i>Sebastes levis</i>	Pacific whiting - <i>Merluccius productus</i>
Darkblotched rockfish - <i>Sebastes crameri</i>	Sablefish - <i>Anoplopoma fimbria</i>
Dusky rockfish - <i>Sebastes ciliatus</i>	
Pacific Coast Salmon Plan	
Chinook salmon - <i>Oncorhynchus tshawytscha</i>	
Coho Salmon - <i>Oncorhynchus kisutch</i>	
Puget Sound Pink Salmon - <i>Oncorhynchus gorbuscha</i>	

Sources: PFMC 1999, CPS FMP 1998, and NMFS 1998.

APPENDIX H

**MOA between the Department of the Navy and the California
State Historic Preservation Officer for the Disposal and Reuse
of Naval Station Treasure Island**

1
2
3
4 **Memorandum of Agreement**
5 **Between**
6 **The Department of the Navy**
7 **And**
8 **The California State Historic Preservation Officer**
9 **For the Layaway, Caretaker Maintenance, Interim Leasing, Sale, Transfer,**
10 **and Disposal of Historic Properties on the Former**
11 **Naval Station Treasure Island, San Francisco, California**
12
13
14

15 **WHEREAS**, the Department of the Navy (DoN) has been directed to close, lease and
16 dispose of its property at the former Naval Station Treasure Island (NSTI) pursuant to the
17 Defense Base Closure and Realignment Act of 1990 (undertaking), has determined that
18 the undertaking will affect properties located on the former NSTI that are listed on, have
19 been determined eligible for, or may be potentially eligible for listing on the National
20 Register of Historic Places (historic properties), has consulted the California State
21 Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations
22 implementing Section 106 of the National Historic Preservation Act, as amended
23 (16.U.S.C. 470f) (NHPA)), has notified the Advisory Council on Historic Preservation
24 (Council) of the effect finding pursuant to 36 CFR Section 800.6(a)(1), and has received
25 notification that the Council declines to participate in the consultation (See Attachment
26 1); and
27

28 **WHEREAS**, NSTI is located within the limits of the City and County of San Francisco
29 (City), a Certified Local Government under Section 101(c) of the NHPA, and Article 10
30 of the San Francisco Planning Code specifically addresses *Preservation of Historical*
31 *Architectural and Aesthetic Landmarks*; and
32

33 **WHEREAS**, the Treasure Island Development Authority (TIDA), a non-profit, public
34 benefit corporation established by the City, is recognized by the Department of Defense
35 as the Local Redevelopment Authority for NSTI, and
36

37 **WHEREAS**, upon disposal of the historic properties from the DoN to a non-Federal
38 entity, any Federal jurisdiction ceases and the jurisdiction of the historic properties
39 reverts exclusively to the City;
40

41 **WHEREAS**, the DoN has informed consulting parties and members of the public about
42 the undertaking and involved such parties and the public in the consultation process using
43 agency procedures for public involvement under the National Environmental Policy Act;
44
45

1 **NOW THEREFORE**, the DoN and the SHPO agree that the layaway, caretaker
2 maintenance, interim leasing, sale, transfer, and disposal of historic properties
3 (hereinafter, "leasing and disposal") at NSTI shall be implemented in accordance with the
4 following stipulations in order to take into account the effect of the undertaking on
5 historic properties, and that these stipulations shall govern leasing and disposal at NSTI
6 until this Memorandum of Agreement (hereinafter, "MOA") is terminated.

7
8
9 **STIPULATIONS**

10 The DoN will ensure that the following measures are carried out:

11
12
13
14 **I. NATIONAL REGISTER NOMINATIONS**

- 15
16 A. The DoN will nominate the following historic properties, depicted in
17 Attachment 3, to the National Register in accordance with Section
18 110(a)(2) of the National Historic Preservation Act (16 U.S.C. 470h2):
19
20 1. The Senior Officers Quarters Historic District (Yerba Buena
21 Island): as follows:
22 (a) Quarters 1 through 7
23 (b) Building 83
24 (c) Building 205, and
25 (d) Building 230
26 2. Quarters 10 (Yerba Buena Island) Officers Quarters
27 3. Building 267 (Yerba Buena Island) Garage to Building 10
28 4. Building 262 (Yerba Buena Island) The Torpedo Building
29 5. Building 1 (Treasure Island), Administration Building, Golden
30 Gate Exposition
31 6. Building 2 (Treasure Island), Hall of Transportation, Golden Gate
32 Exposition
33 7. Building 3 (including Building 111) (Treasure Island), Palace of
34 Fine and Decorative Arts and Annex, Golden Gate Exposition
35
36 B. The DoN will submit the above nominations to the Keeper of the National
37 Register in accordance with 36 CFR § 60.9 prior to disposal.
38

39 **II. ARCHAEOLOGY**

- 40
41 A. The DoN completed an inventory of the archeological resources located
42 on the former NSTI. The potential Archeological Sensitive Zones were
43 identified in the *Archeological Resource Inventory and Assessment of*
44 *Naval Station Treasure Island Disposal and Reuse Project, San Francisco*
45 *County, California, June 1997* and are depicted in Attachment 4.
46

1 B. Prior to the DoN's disposal of NSTI, the DoN will submit a Research
2 Design/Discovery Plan to the SHPO, that clearly delineates specific
3 procedures to be taken, under various scenarios. The Navy will seek
4 SHPO concurrence prior to conducting field work. The Research Design/
5 Discovery Plan will outline the procedures to be followed, the decision-
6 making process and consultation process with SHPO and other appropriate
7 parties. As will be discussed in the Research Design/Discovery Plan, the
8 Navy will conduct additional archaeological survey and / or archaeo-
9 logical testing and mitigation within identified Archaeological Sensitive
10 Zones 1 - 4 that may be required and which may include:

- 11
- 12 1. Accurate delineation of sensitive areas and known archaeological
13 sites on DoN property, including those contiguous portions that
14 may occur on adjacent property.
- 15
- 16 2. Testing of known sensitive areas and archaeological sites to
17 determine the significance of potential buried archaeological
18 deposits.
- 19
- 20 3. Survey of submerged sensitive areas by qualified maritime
21 archaeologists to determine the presence of potentially significant
22 submerged resources.
- 23
- 24 4. Consultation with the SHPO to determine significance of any
25 buried or submerged resources discovered during the testing and
26 delineation of sensitive areas.
- 27
- 28 5. Development of treatment plans and implementation of mitigation
29 measures in consultation with the SHPO for archaeological sites
30 discovered through testing that are determined significant.
- 31
- 32 6. Consultation with the Bay Miwok prior to any ground disturbing
33 archaeological testing or mitigation activities in areas believed to
34 contain archaeological deposits that may be significant to the Bay
35 Miwok. The Navy will make every attempt to contact the Bay
36 Miwok, including correspondence, phone calls, e-mails, etc., and
37 will assume no interest on the part of the Bay Miwok if no formal
38 correspondence is received within 30 days.
- 39

40

41 C. Non-Applicability

42

- 43 1. The Federal Highway Administration obtained fee title to a portion
44 of NSTI from the DoN and subsequently conveyed that property
45 by deed dated October 26, 2000, to the California Department of
46 Transportation (CALTRANS) for purposes of the San Francisco

1 Bay Bridge Seismic Retrofit. As a result of these actions, this
2 MOA does not apply to the historic properties which are located
3 within the former NSTI and which are now owned by CALTRANS
4 (see Attachment 2). Such properties include:

5
6 a. Potential archaeological sites and sensitive zones at Yerba
7 Buena Island that are documented in the *Archeological*
8 *Resource Inventory and Assessment of Naval Station*
9 *Treasure Island Disposal and Reuse Project, San*
10 *Francisco County, California, June 1997*, including the
11 following:

- 12 1. A portion of Archeological site CA-SFr-4/H in
- 13 Zone 1; and
- 14 2. A portion of an Historic/Prehistoric archaeological
- 15 deposit in Zone 2;
- 16 3. A portion of Zone 3, (which may include
- 17 undocumented submerged resources); and
- 18 4. A portion of the Twentieth Century Landfill in Zone
- 19 4.
- 20
- 21

22 **III. HISTORIC ARTIFACTS AND RECORDS**

- 23
- 24 A. DoN-owned historic artifacts and records that were included in the
- 25 Treasure Island Naval and Marine Corps Museum will remain the
- 26 responsibility of the Director of the Naval Historical Center, Washington
- 27 Navy Yard, District of Columbia.
- 28
- 29 B. The DoN has coordinated the disposal of Naval Station Treasure Island
- 30 photographs with the National Archives Pacific-Sierra Region, San Bruno,
- 31 and will transfer them to the National Archives from the DoN's
- 32 Caretaker Site Office upon completion of preservation measures.
- 33
- 34 C. The DoN has turned over to the City Department of Public Works plans,
- 35 building drawings and construction photographs that were in the
- 36 possession of the Naval Station Treasure Island Staff Civil Engineer's
- 37 Office.
- 38
- 39 D. Financial and administrative records were transferred to Naval Station San
- 40 Diego and Naval Base San Diego, respectively, because these facilities
- 41 assumed operation responsibilities for NSTI at closure.
- 42

43 **IV. RECORDATION**

- 44
- 45 A. DoN shall ensure that the non-archaeological historic properties listed in
- 46 Stipulation I.A. of this MOA, with the exception of Building 1 (Treasure

1 Island) and Building 262 (Yerba Buena Island), are recorded prior to
2 disposal from Federal ownership.

3
4 1. Buildings 1 and 262 are called out in the City's *Naval Station*
5 *Treasure Island Reuse Plan* (June 1996) as being priorities for
6 preservation.

7
8 B. The DoN shall contact the Pacific-Great Basin System Support Office,
9 National Park Service (NPS), Oakland, California to determine what level
10 and kind of recordation is recommended by NPS for such historic
11 properties.

12
13 C. The DoN shall provide copies of the final documentation prepared
14 pursuant to paragraph A. of this stipulation to the SHPO, the City, and the
15 San Francisco International Airport Bureau of Exhibitions, Museums, and
16 Cultural Exchange.

17
18 **V. LICENSING AND LEASING OF HISTORIC PROPERTIES**

19
20 A. In order to maintain and protect historic properties covered by this
21 agreement, the DoN may enter into licenses and leases for the use of DoN
22 real property at NSTI prior to disposal in accordance with Section 5 of the
23 *Base Reuse Implementation Manual* (Attachment 5).

24
25 1. The DoN shall require all licensees/lessees to submit written plans
26 for any proposed work on historic properties for DoN review and
27 approval. Work may not proceed until the licensee/lessee has
28 received written approval from the DoN, which shall not be
29 granted unless the proposed work conforms to the Secretary of the
30 Interior's *Standards for Rehabilitation and Guidelines for*
31 *Rehabilitating Historic Buildings (Rehabilitation Standards)*.

32
33 a. DoN review of plans submitted for proposed work on
34 historic properties shall be conducted by persons who shall,
35 at a minimum, meet the Secretary of the Interior's
36 Professional Qualification Standards (Qualification
37 Standards) in the appropriate disciplines (Attachment 6).

38
39 2. No further consultation with the SHPO shall be required hereunder
40 unless the DoN determines that the proposed work does not and
41 cannot be modified to conform to the *Rehabilitation Standards*.

42
43 a. If the DoN determines that the proposed work does not and
44 cannot be modified to conform to the *Rehabilitation*
45 *Standards*, the DoN may either reject the proposed work or
46 consult pursuant to 36 CFR Part 800.

- 1
2 3. Further consultation with the SHPO will not be required for
3 painting previously painted interior and exterior surfaces in non-
4 traditional colors for temporary uses, provided that the lessee has
5 posted an adequate bond to insure that the property will be restored
6 when the temporary use is complete.
7
8 4. Lease Agreements prevent lessees from undertaking any activity
9 that may affect an identified historic or archaeological property,
10 without the approval of the DoN. The DoN shall provide a list of
11 traditional and non-traditional colors to lessees planning to paint
12 historic properties covered by this MOA and only those colors may
13 be used to paint the subject properties. The DoN shall retain the
14 option that, prior to conveyance, lessee shall be required to restore
15 historic properties to their original color scheme. The DoN will
16 prepare a Technical Memorandum Report (TMR) identifying the
17 "original conditions". The TMR will be submitted for review and
18 approval by the SHPO prior to the commencement of any such
19 restoration efforts.
20
21 5. The DoN shall retain the right to inspect leased historic properties
22 at least annually to ensure that the *Rehabilitation Standards* are
23 followed and shall take appropriate remedial action to assure
24 compliance where deviations are observed.
25

26 **VI. LONG TERM PRESERVATION PLANNING**
27

- 28 A. Upon conveyance of NSTI from the DoN, all historic properties conveyed
29 as set forth herein shall fall within the jurisdiction of the City, a Certified
30 Local Government under Section 101(c) of the NHPA. As such, all
31 historic properties conveyed as set forth herein shall be subject to the City
32 of San Francisco Planning Code, Article 10, Preservation of Historical,
33 Architectural, and Aesthetic Landmarks (Attachment 7).
34
35 B. Upon conveyance of NSTI from the Navy to the TIDA or other designated
36 property recipient, and in the event of a discovery in an Archeological
37 Sensitive Zone, the City may designate a lot or site as a landmark site
38 pursuant to Section 1004 of San Francisco Planning Code, Article 10,
39 Preservation of Historical Architectural, and Aesthetic Landmarks
40 (Attachment 7).
41

42 **VII. PERSONNEL QUALIFICATIONS STANDARDS**
43

- 44 A. The DoN shall ensure that all historic preservation work pursuant to this
45 MOA, including but not limited to the planning and physical rehabilitation
46 of historic properties is carried out by or under the direct supervision of a

1 person or persons meeting, at a minimum, the Qualification Standards in
2 the appropriate disciplines.

3
4
5
6 **VIII. DOCUMENT REVIEW AND COMMENT**

- 7
8 A. The SHPO shall be afforded forty-five (45) days after receipt to comment
9 on any documentation submitted by the Navy as a result of consultation
10 efforts or as a result of implementation of this MOA. Should the SHPO
11 decline to participate or fail to respond within forty-five (45) days to a
12 written request for comments, the DoN may assume the SHPO's
13 concurrence in the DoN's proposed action.

14
15 **IX. REPORTING**

- 16
17 A. Until the terms of this MOA have been fulfilled and /or the MOA has been
18 terminated, the DoN shall provide a written annual status report to all
19 other parties.

- 20
21 1. The annual report shall be submitted by December 15th of each
22 year and, at a minimum, shall address the following topics:
23
24 a. Status of the nomination of the Senior Officers Quarters
25 Historic District (Yerba Buena Island) and those other
26 buildings being nominated by DoN.
27
28 b. Discussion of problems or unanticipated issues related to
29 management of historic properties during the previous year,
30 including proposals for resolution of such problems and
31 issues.

32
33 **X. DISCOVERIES**

- 34
35 A. Buried cultural materials may be present on the leased properties. If such
36 materials are encountered by the City at NSTI prior to conveyance, the
37 City shall immediately notify the DoN.
38
39 1. The City shall stop work immediately and notify the DoN so that
40 the DoN can initiate consultation with the SHPO. The City shall
41 not proceed with any work without the approval of the DoN.
42
43 2. If the newly discovered property has not previously been included
44 in, or determined eligible for inclusion in, the National Register,
45 the DoN may assume that the property is eligible for purposes of
46 this MOA. Otherwise, the DoN may also proceed through the

1 process outlined in 36 CFR 800.4 for the identification of historic
2 properties.

- 3
- 4 3. The DoN will notify the SHPO at the earliest possible time and
5 consult to develop actions that will take into account any effects of
6 the undertaking on any property assumed, or determined pursuant
7 to 36 CFR 800.4, to be National Register eligible.
- 8
- 9 4. The DoN will notify the SHPO of any time constraints, and the
10 DoN and the SHPO will mutually agree upon time frames for this
11 consultation.
- 12
- 13 5. The DoN will provide the SHPO with written recommendations
14 that take the effects of the undertaking into account.
- 15
- 16 a. If the SHPO does not object to the DoN's
17 recommendations within the agreed upon time frame, the
18 DoN will modify the scope of work as necessary to
19 implement its recommendations. The DoN may then
20 authorize the action to proceed.
- 21

22 **XI. RESOLUTION OF OBJECTIONS**

23

- 24 A. Should any party object to the manner in which the terms of this MOA are
25 implemented, to any action carried out or proposed with respect to
26 implementation of the MOA, or to any documentation prepared in
27 accordance with and subject to its terms, the DoN shall immediately
28 consult with all other parties for no more than thirty (30) days to resolve
29 the objection. If the objection is resolved through such consultation, the
30 action subject to dispute may proceed in accordance with the terms of that
31 resolution. If, after initiating such consultation, the DoN determines that
32 the objection cannot be resolved through consultation, the DoN shall
33 forward all documentation relevant to the objection to the Council,
34 including the DoN's proposed response to the objection, with the
35 expectation that the Council will respond within thirty (30) days after
36 receipt of such documentation:
- 37
- 38 1. Advise the DoN that the Council concurs in the DoN's proposed
39 response to the objection, whereupon the DoN will respond to the
40 objection accordingly; or
- 41
- 42 2. Provide the DoN with recommendations, which the DoN will take
43 into account in reaching a final decision regarding its response to
44 the objection; or
- 45

- 1 3. Notify the DoN that the objection will be referred for comment
2 pursuant to 36 CFR 800.7(a)(4), and proceed to refer the objection
3 and comment. The DoN shall take the resulting comment into
4 account in accordance with 36 CFR 800.7(e)(4) and Section 110
5 (1) of the NHPA.
6
7 4. Should the Council not exercise one of the above options within 30
8 days after receipt of all pertinent documentation, the DoN may
9 assume the Council's concurrence in its proposed response to the
10 objection.
11
12 5. The DoN shall take into account any Council recommendation or
13 comment provided in accordance with this stipulation with
14 reference only to the subject of the objection. The DoN's
15 responsibility to carry out all actions under this agreement that are
16 not the subjects of the objection will remain unchanged.
17

18 B. At any time during implementation of this MOA, should an objection
19 pertaining to such implementation be raised by a member of the public,
20 the DoN shall notify in writing the other parties and take the objection into
21 account. The DoN shall consult with the objector and, if requested by the
22 objector, consult with any or all of the other parties to this MOA with
23 respect to the objection. The time frame for such consultation shall be
24 reasonably determined by the DoN. The DoN will render a decision
25 regarding the objection and notify all parties hereunder of its decision in
26 writing within a reasonable period of time following closure of this
27 consultation period. In reaching its decision, the DoN will take all
28 comments from the parties into consideration. The DoN's decision
29 regarding resolution of the objection will be final.
30

31 C. The DoN shall provide the SHPO and the Council, when Council
32 comments have been issued hereunder, and any parties that have objected
33 pursuant to paragraph B., above, with a copy of any final written decision
34 regarding any objection.
35

36 D. The DoN may authorize any action subject to objection under this
37 stipulation to proceed after the objection has been resolved in accordance
38 with the terms of this stipulation.
39

40 XII. AMENDMENTS TO THE MOA

41
42 A. If any party believes that this MOA should be amended, that party may at
43 any time propose amendments, whereupon the parties will consult to
44 consider the amendment pursuant to 36 CFR § 800.6(c)(7) and §
45 800.6(c)(8).
46

1 B. This MOA may be amended only upon the written concurrence of the
2 signatory parties and the invited signatory party.
3
4

5 **XIII. TERMINATION**
6

7 A. This MOA may be terminated only by either signatory party or by the
8 invited signatory party. If this MOA is not amended as provided for in
9 Stipulation XII., or if any of these parties proposes termination of this
10 MOA for other reasons, the party proposing termination shall in writing
11 notify all other parties, explain the reasons for proposing termination, and
12 consult with the parties for no more than 30 days to seek alternatives to
13 termination.
14

- 15 1. Should such consultation fail, the signatory party or the invited
16 signatory party proposing termination may terminate this MOA by
17 promptly notifying all other parties in writing.
18
- 19 2. Termination hereunder shall render this MOA without further force
20 or effect. Should this MOA be terminated before all historic
21 properties covered by this MOA have been conveyed out of federal
22 ownership or before the DoN, in consultation with all other parties
23 has determined that all of its terms have been fulfilled, then
24 beginning with the date of termination the DoN shall do the
25 following:
26
 - 27 a. Promptly consult with all other parties to this MOA to
28 develop a new agreement pursuant to 36 CFR Part 800.
29
 - 30 b. Ensure that until a new agreement is executed for the
31 undertaking, that the DoN will not take or sanction any
32 action or make an irreversible commitment that would
33 result in an adverse effect or foreclose alternatives that
34 could avoid or mitigate the adverse effect on historic
35 properties until the consulting process has been completed.
36

37 **XIV. DURATION OF THE MOA**
38

39 A. Unless it is terminated pursuant to Stipulation XIII above, this MOA shall
40 remain in effect until all stipulations have been fulfilled as determined by
41 the DoN in consultation with all the other parties, or until such time as the
42 historic properties covered by this MOA are no longer under federal
43 ownership, whichever occurs first. Upon a determination by the DoN that
44 either of these conditions has been met, this MOA will terminate and have
45 no further force or effect. The DoN will promptly provide the other parties
46 to this MOA with written notice of its determination and of termination of
47 this MOA.

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XV. ANTI-DEFICIENCY ACT

- A. All requirements set forth in this MOA requiring the expenditure of DoN funds are expressly subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. Section 1341).
 - 1. No obligation undertaken by the DoN under the terms of this MOA shall require or be interpreted to require a commitment to expend funds not appropriated for a particular purpose.
- B. If the DoN cannot perform any obligation set forth in this MOA because of the unavailability of funds, the DoN and the SHPO intend that the remainder of the MOA be executed.
 - 1. Any obligation under the MOA, which cannot be performed because of the unavailability of funds, must be renegotiated between the DoN and the SHPO.

EXECUTION OF THIS MEMORANDUM OF AGREEMENT by the DoN and SHPO, its transmittal by the DoN to the Council in accordance with 36 CFR 800.6(b)(1)(iv) and subsequent implementation of its terms, shall be evidence pursuant to 36 CFR 800.6(e), that this Memorandum of Agreement is an agreement with the Council for purposes of Section 110(1) of the NHPA, and shall further evidence that the DoN has afforded the Council an opportunity to comment on the "leasing and disposal" of NSTI and its effects on historic properties, that the DoN has taken into account the effects of the undertaking on historic properties, and that the DoN has satisfied its responsibilities under Section 106 of the National Historic Preservation Act and its implementing regulations codified at 36 CFR Part 800.

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SIGNATORY PARTIES:

UNITED STATES DEPARTMENT OF THE NAVY,

BY: *D.S. Bianchi* Date: 2 Jun 03
D.S. BIANCHI
Captain, CEC, USN Commanding Officer,
Engineering Field Activity West

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

BY: *Stephen D. Mellon* Date: 2 June 03
DR. KNOX MELLON
State Historic Preservation Officer

INVITED SIGNATORY PARTY:

CITY AND COUNTY OF SAN FRANCISCO, CALIFORNIA

BY: _____ Date: _____
City of San Francisco

CONCURRING PARTIES:

BAY MIWOK BAND

BY: _____ Date: _____
KATHERINE EROLINDA PEREZ
Bay Miwok Band

CALIFORNIA PRESERVATION FOUNDATION

BY: _____ Date: _____
California Preservation Foundation

1 **SAN FRANCISCO ARCHITECTURAL HERITAGE**

2
3 **BY:** _____ **Date:** _____

4 San Francisco Architectural Heritage

5
6

Box 1, Folder 6

Item 1

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