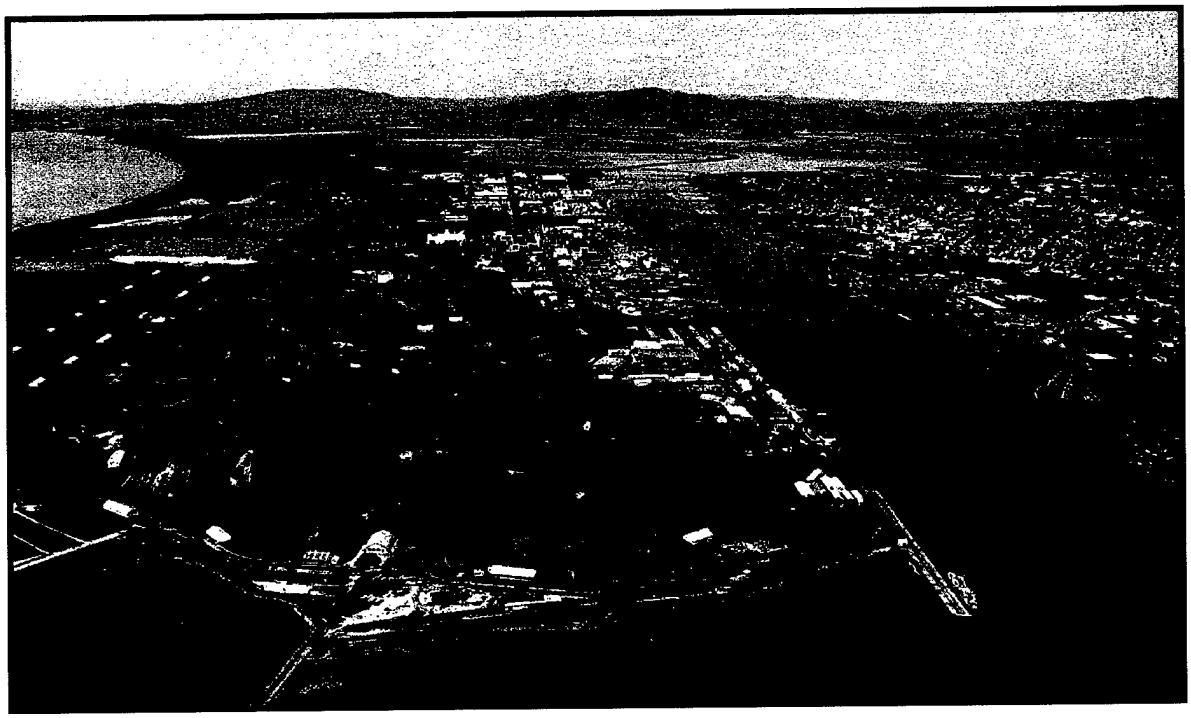
Final

Environmental Impact Statement/ Environmental Impact Report

for the Disposal and Reuse of Mare Island Naval Shipyard Vallejo, California

SCH #94093029



Volume 2

April 1998

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
and
CITY OF VALLEJO, CALIFORNIA

MARE ISLAND NAVAL SHIPYARD
DISPOSAL AND REUSE
FINAL ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT REPORT

TECHNICAL APPENDICES

U.S. Navy
Engineering Field Activity, West
900 Commodore Drive
San Bruno, California 94066

City of Vallejo
555 Santa Clara Street
Vallejo, California 94590

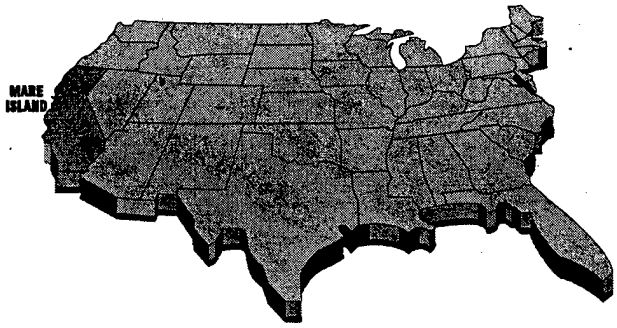
April 1998

FINAL
ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT
DISPOSAL AND REUSE OF MARE ISLAND NAVAL SHIPYARD
MARE ISLAND, CALIFORNIA

VOLUME II

TECHNICAL APPENDICES

This page intentionally left blank.



APPENDIX A

PHOTO DOCUMENTATION

APPENDIX A
PHOTO DOCUMENTATION

List of Photographs

Photo 1: Reuse Area 1. Looking south over Reuse Area 1 (Light Industry), Reuse Area 2 is in background.

Photo 2: Reuse Area 2. Looking north over part of Reuse Area 2 (Neighborhood Center), Reuse Area 1 is in background.

Photo 3: Reuse Area 3. Looking west to Reuse Area 3 (Mixed Use). Mare Island Causeway and Main Entrance are shown in foreground.

Photo 4: Reuse Area 4. Looking across Mare Island Strait from Vallejo towards Reuse Area 4.

Photo 5: Reuse Area 4. St. Peters Chapel in Reuse Area 4 (Historic District).

Photo 6: Reuse Area 5. Reuse Area 5 (Heavy Industry) from Vallejo across Mare Island Strait.

Photo 7: Reuse Areas 6, 7, and 8. Looking southwest over rifle range in Reuse Area 7 (Developed Recreation). Also shown are the residential areas of Farragut Village (Reuse Area 6) and Coral Sea Village (Reuse Area 8). Dredge ponds are shown in background.

Photo 8: Reuse Area 9. Looking west over Reuse Area 9 (Education/Offices).

Photo 9: Reuse Area 10. Looking southwest to Reuse Area 10 (Marina/Residential). Reuse Area 12 is shown in background.

Photo 10: Reuse Area 11. Looking north to part of Reuse Area 11 (Golf Course); Mare Island Strait and Vallejo are shown in the background.

Photo 11: Reuse Area 12. Looking northwest to Mare Island, Reuse Area 12 (Regional Park) in foreground.

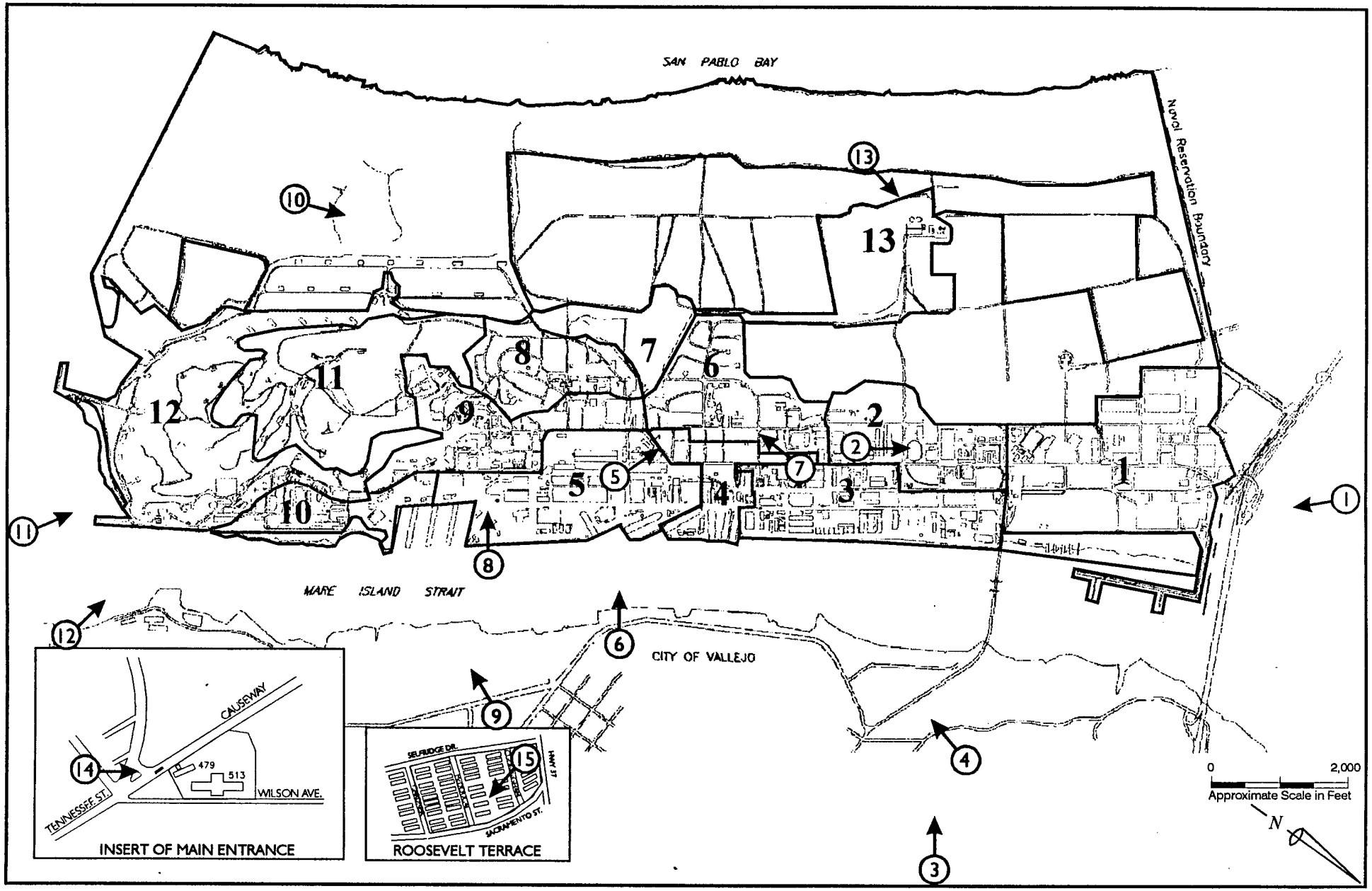
Photo 12: Reuse Area 12. Reuse Area 12 (Regional Park) looking northwest from Vallejo.

Photo 13: Reuse Area 13. Aerial photo looking north over waste treatment facility in Reuse Area 13 (Open Space).

Photo 14: Main Entrance. Looking toward guard station at Mare Island.

Photo 15: Roosevelt Terrace. Housing complex located in Vallejo.

The following photographs show the wide range of land uses present on Mare Island. The pictures are intended to be used in conjunction with Figure A-1, which shows the boundaries of each reuse area and the direction from which each photo was taken. The numbered arrows correspond with the photo numbers. Figure A-1 is provided before each photo page to aid in referencing the photos.



A-2

011B\color\Photo - 3/21/95 - PM

Directional arrows correspond to photo numbers.

LEGEND:

1 Reuse Area

15 Location of Photograph and Direction of View

Photograph Locations

Mare Island, California

Developed by: Tetra Tech, 1995

Figure A-1

Photo 1: Reuse Area 1(LightIndustry) looking south from Highway 37.

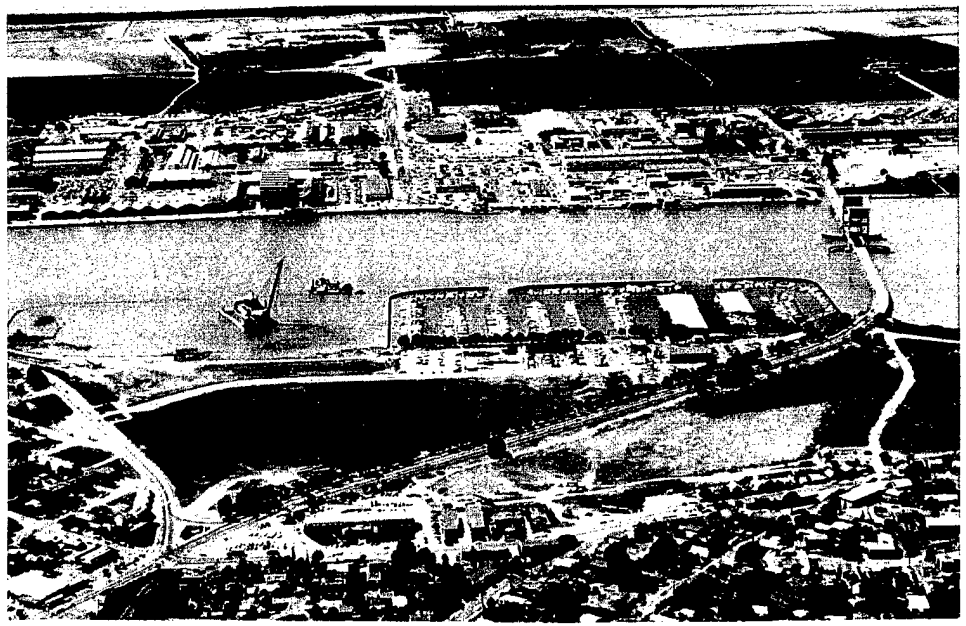


Photo 3: Reuse Area 3 (Mixed Use) and Mare Island Causeway.

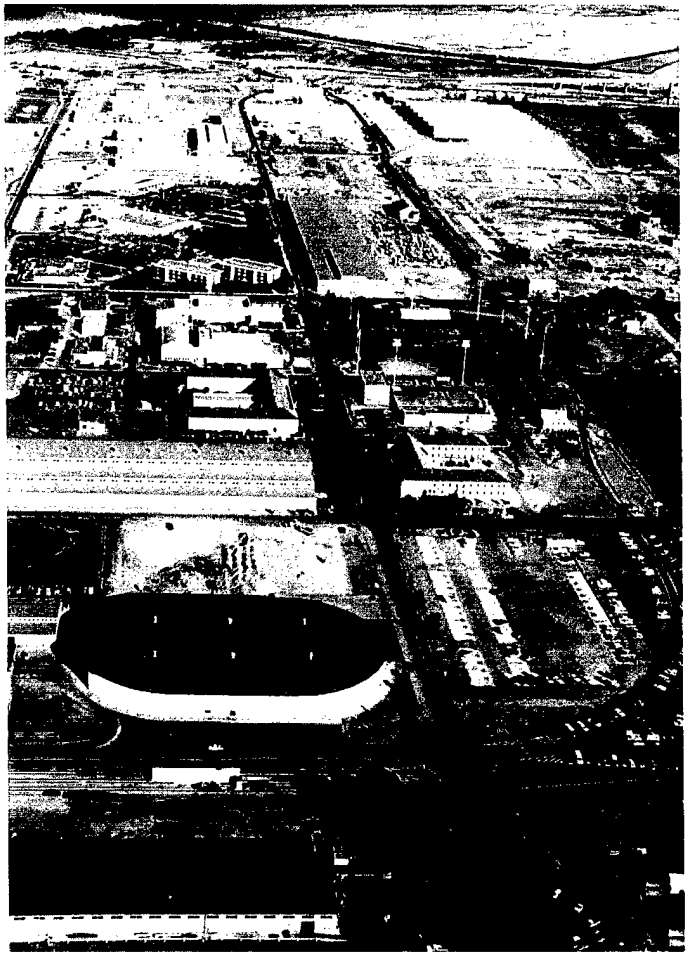
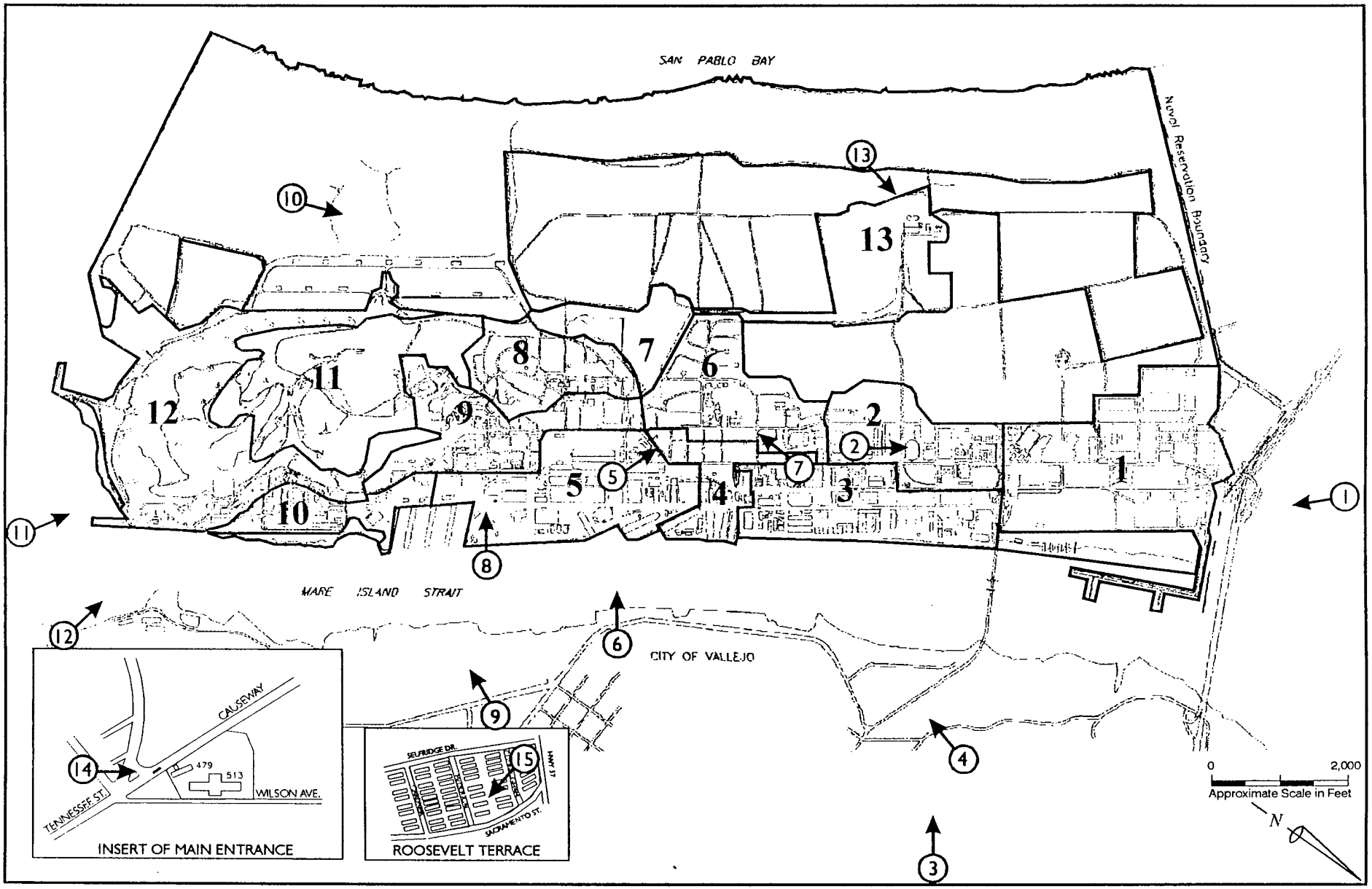


Photo 2: Reuse Area 2 (NeighborhoodCenter) looking north towards Highway 37.



Directional arrows correspond to photo numbers.

LEGEND:

1 Reuse Area

15 Location of Photograph and Direction of View

Photograph Locations

Mare Island, California

Developed by: Tetra Tech, 1995

Figure A-1

Photo 4: Reuse Area 4 (Historic District) across Mare Island Strait.

Photo 5: Reuse Area 4 - St. Peters Chapel.

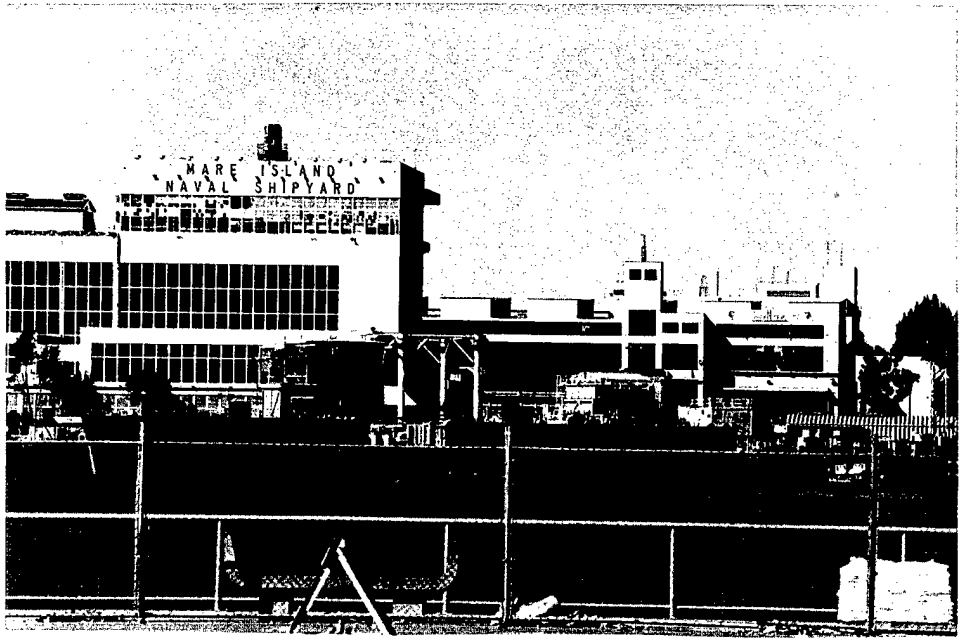


Photo 6: Reuse Area 5 (Heavy Industrial) looking west across Mare Island Strait

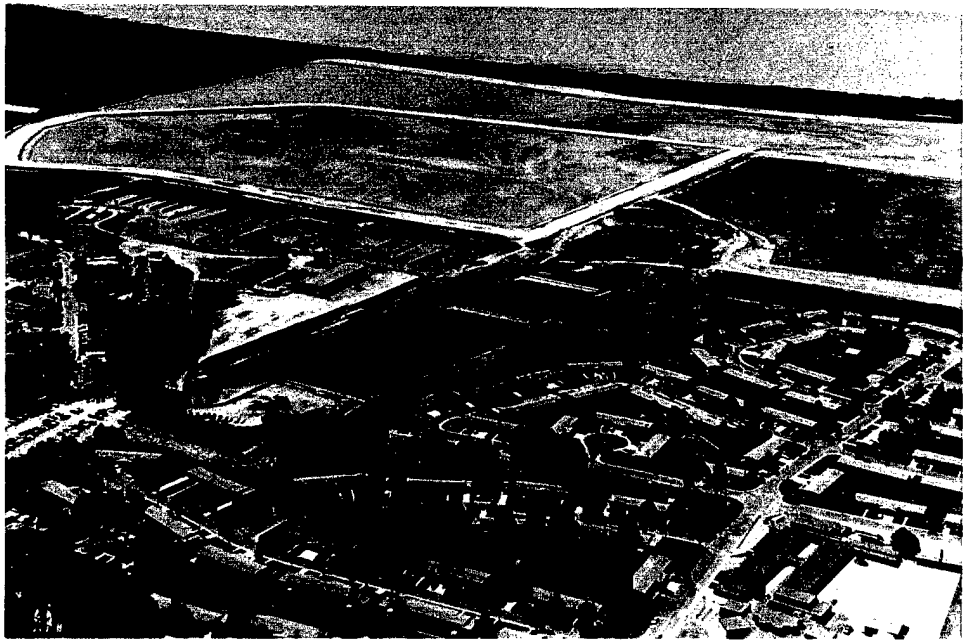
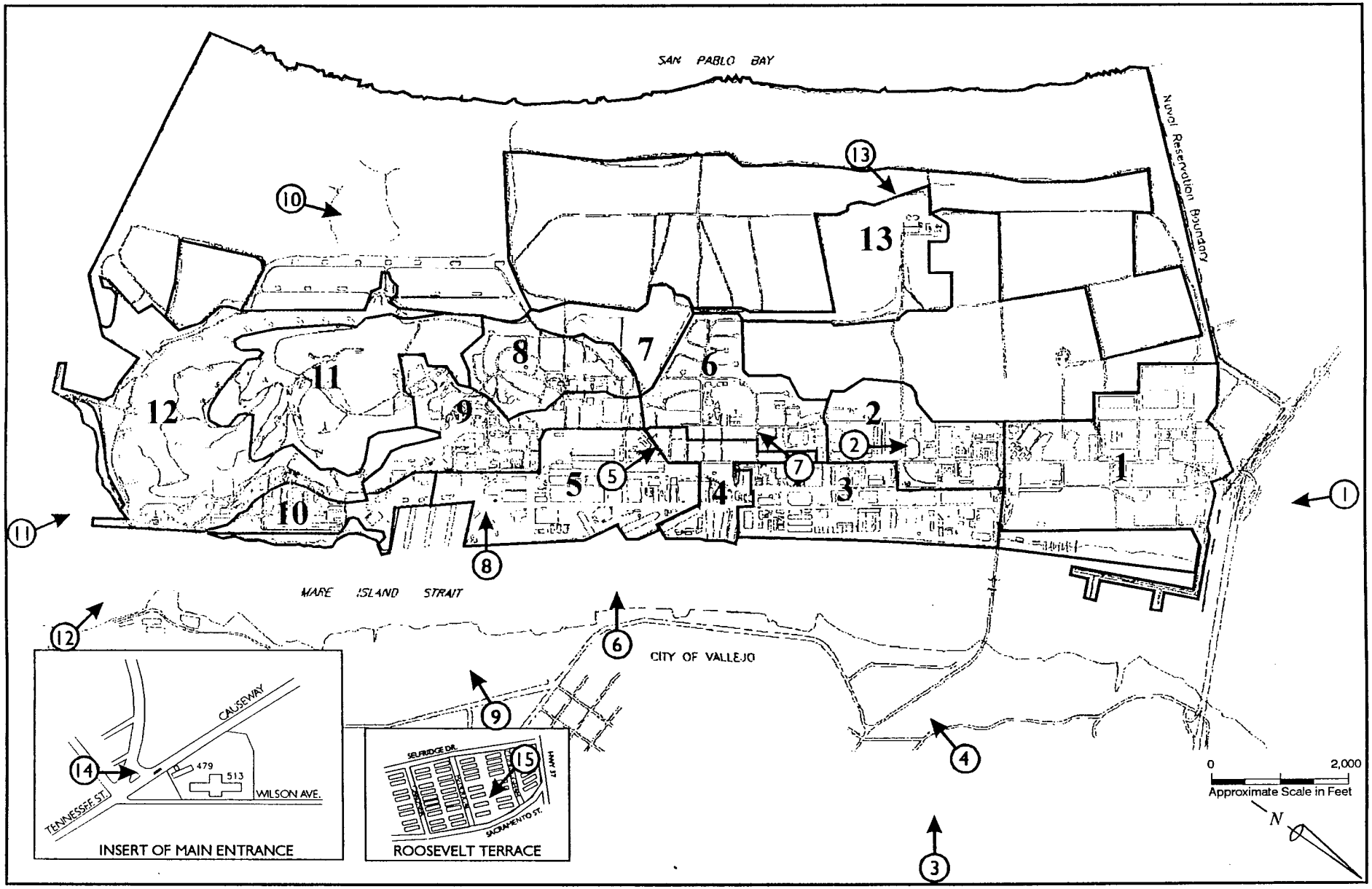


Photo 7: Reuse Areas 6 and 8 (Housing) and Reuse Area 7 (Rifle Range).



A-6

0118\color\Photo 3/21/95 - PM

Directional arrows correspond to photo numbers.

LEGEND:

1 Reuse Area

15 Location of Photograph and Direction of View

Photograph Locations

Mare Island, California

Figure A-1

Developed by: Tetra Tech, 1995

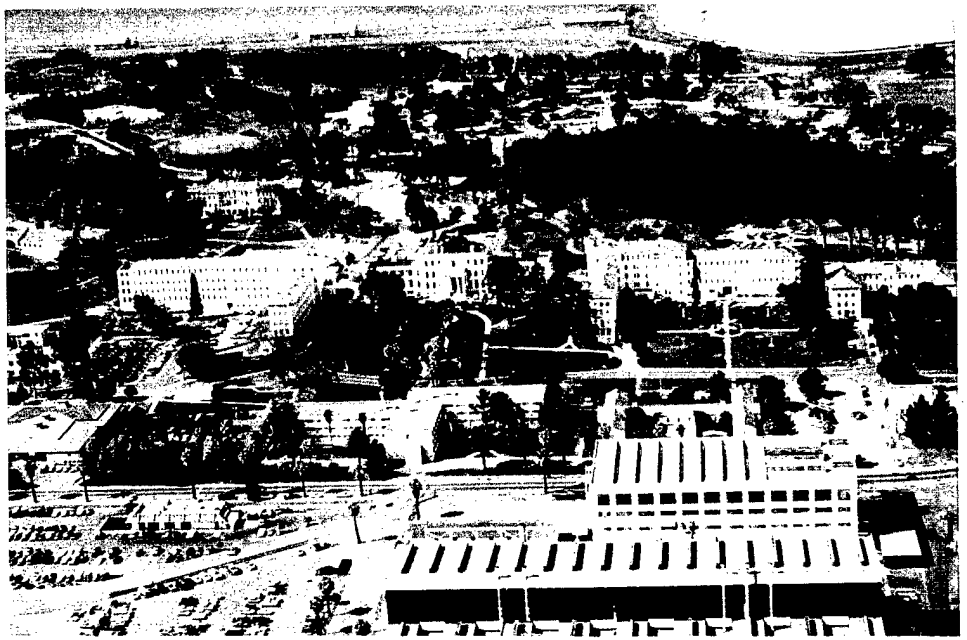


Photo 8: Reuse Area 9 (Educational/Office) looking west.

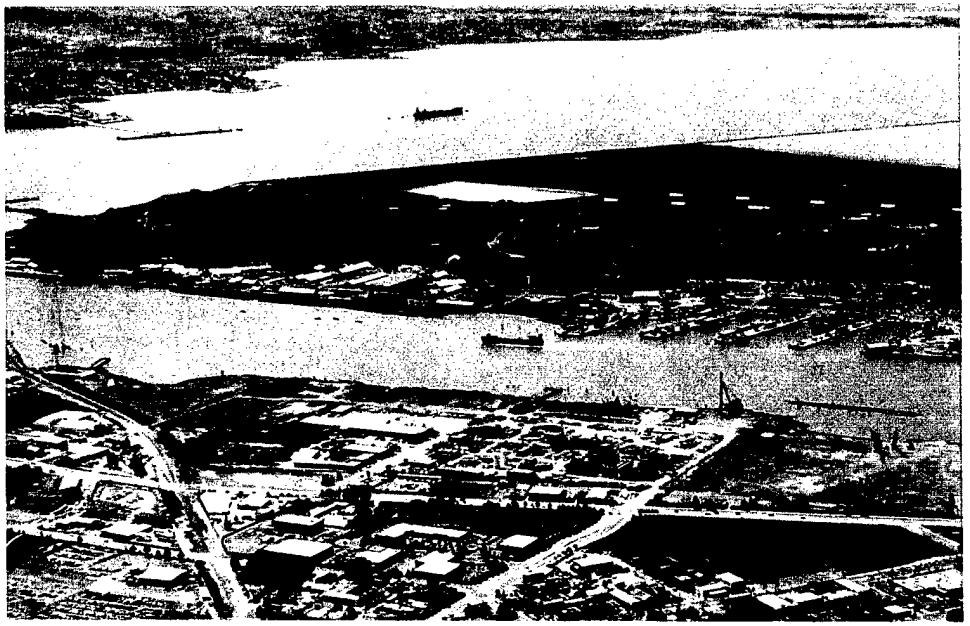


Photo 9: Reuse Area 10 (Marina/Residential) looking across Mare Island Strait.

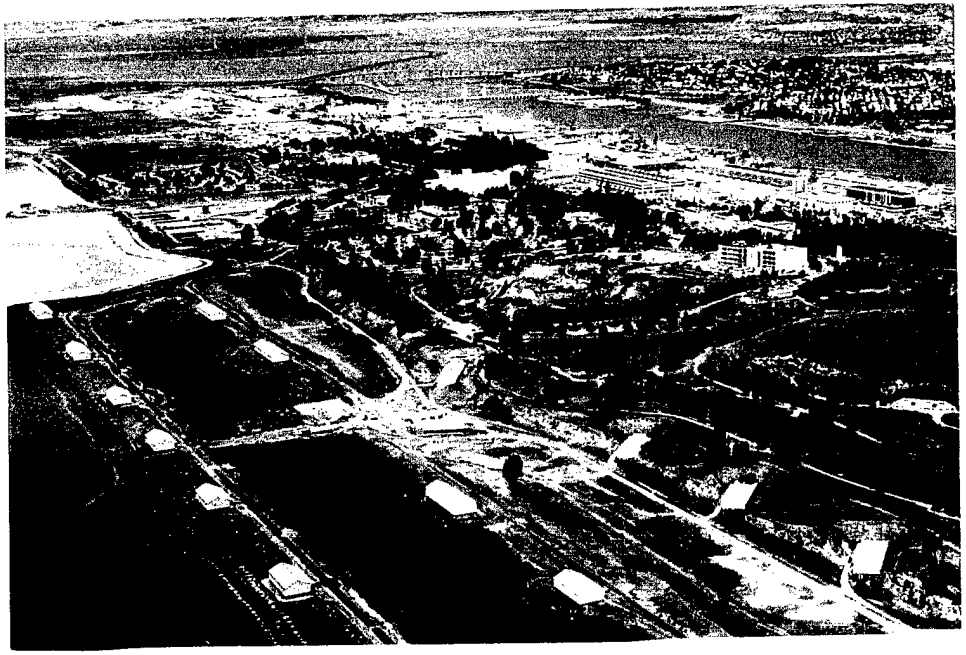
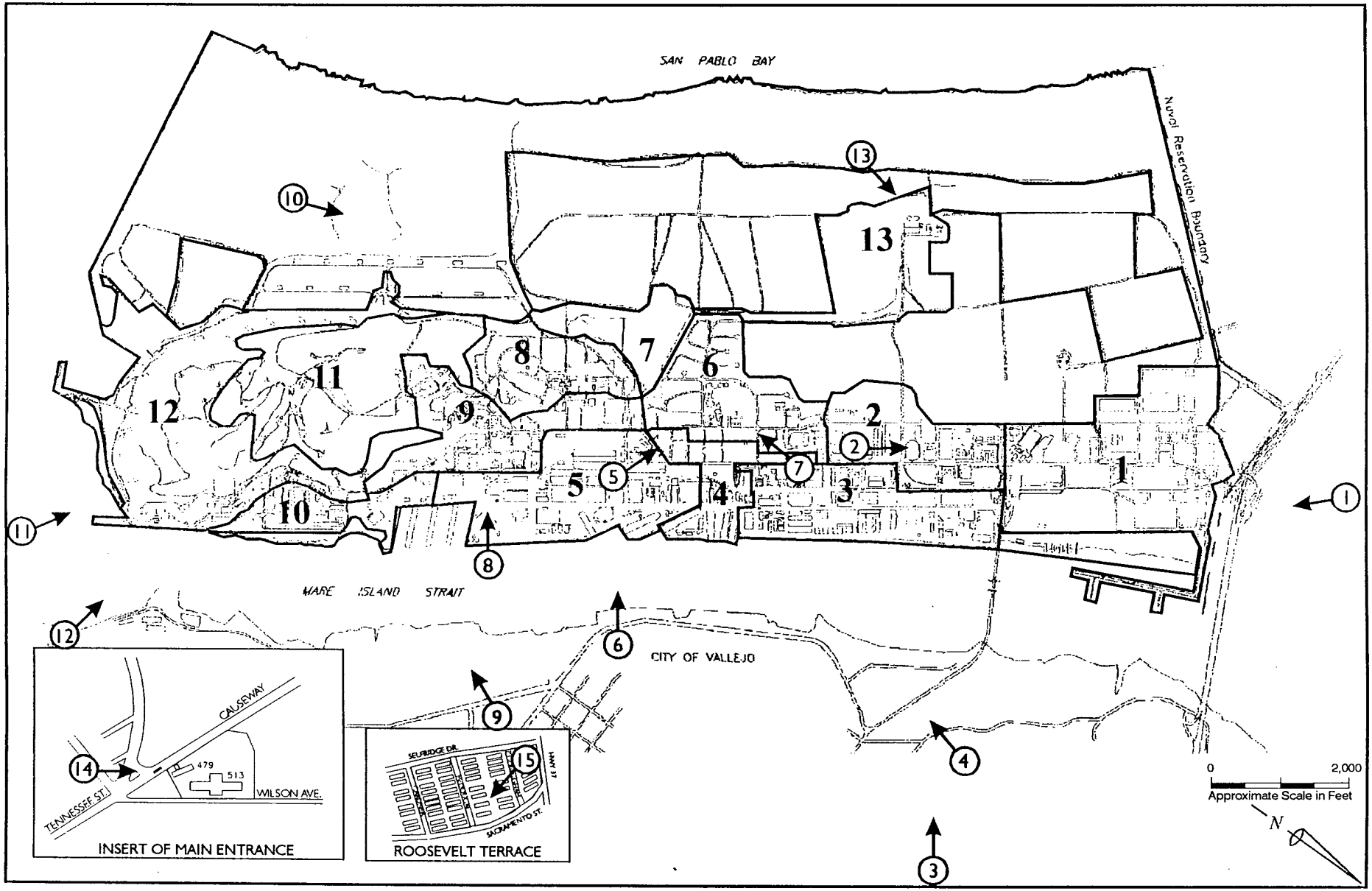


Photo 10: Reuse Area 11 (partial view of golf course).

Photo 11: Reuse Area 12 (Regional Park) with shipyard in background.



Directional arrows correspond to photo numbers.

LEGEND:

1 Reuse Area

15 Location of Photograph and Direction of View

Photograph Locations

Mare Island, California

Developed by: Tetra Tech, 1995

Figure A-1

Photo 12: Reuse Area 12 (Open Space) at southern end of island.

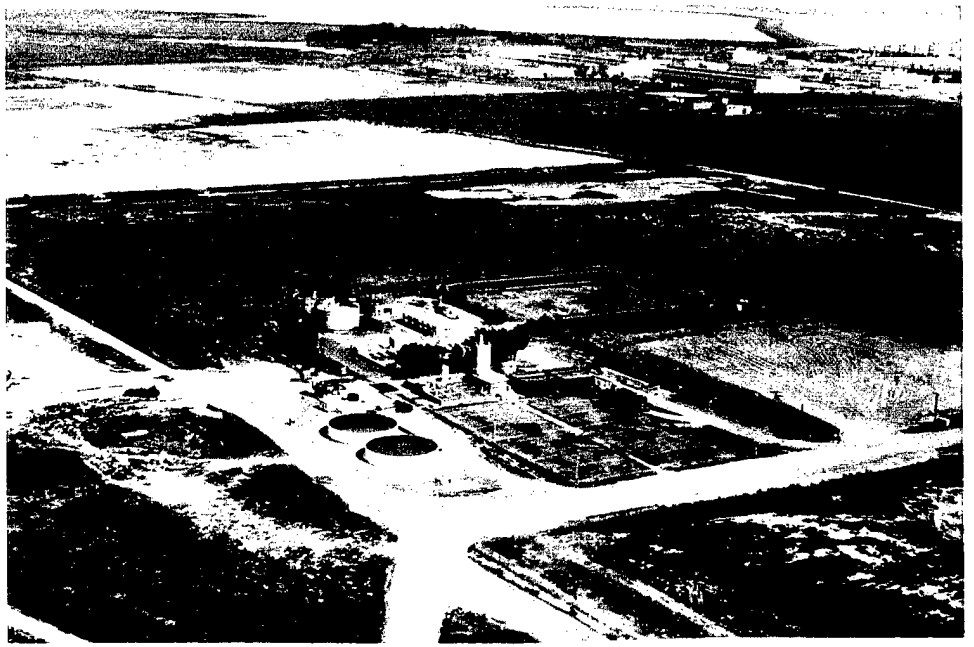


Photo 13: Reuse Area 13 (Recreation/Open Space) showing the waste treatment facility.

Photo 14: Main Entrance at Mare Island Naval Shipyard.

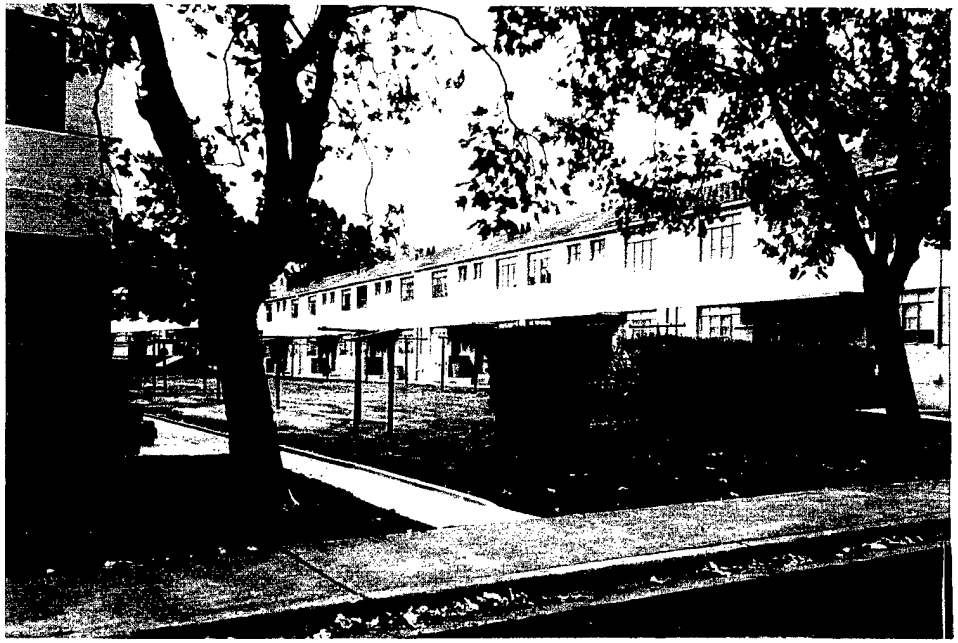
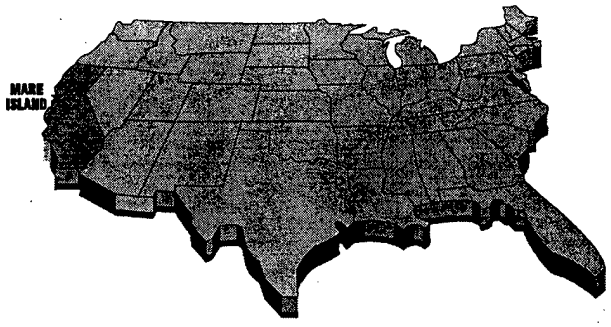


Photo 15: Roosevelt Terrace Housing Complex

This page intentionally left blank.



APPENDIX B

PUBLIC INVOLVEMENT

APPENDIX B
PUBLIC INVOLVEMENT PROCESS

PUBLIC SCOPING FOR EIS/EIR

PUBLIC REVIEW ON DRAFT EIS/EIR

DEPARTMENT OF THE NAVY
WESTERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-2402

5090.1A
09F2/P4-647
September 6, 1994

PUBLIC NOTICE

SUBJECT: NOTICE OF SCOPING OF PUBLIC CONCERNS REGARDING AN ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT (EIS/EIR) FOR THE DISPOSAL AND REUSE OF MARE ISLAND NAVAL SHIPYARD

Pursuant to Section 102 (2)(C) of the National Environmental Policy Act (NEPA), and the Council of Environmental Quality Regulations (40 CFR Part 1506.6), the Department of the Navy is preparing an environmental impact statement/environmental impact report (EIS/EIR) to evaluate the potential for significant environmental effects of the disposal and proposed reuse of the above referenced property. The Navy's Western Division, Naval Facilities Engineering Command and the City of Vallejo will be joint lead agencies for the preparation of the EIS/EIR. The Mare Island Reuse Plan, developed by the City of Vallejo, will be the proposed action evaluated in the EIS/EIR. The EIS/EIR will examine the potential impacts to the environment that may result from implementation of the Proposed Action, from two alternative reuse scenarios, as well as from the no action plan. A description of the proposed action, alternatives to be evaluated, and probable environmental effects is included as an attachment to this notice.

In accordance with federal regulations implementing NEPA, the U.S. Navy takes this opportunity to invite the public to express, in writing, their comments and concerns regarding the action above. Affected federal, state and local agencies and other interested parties are invited to submit their written comments to the address listed below. Comments must be received by October 7, 1994 to be considered in this initial scoping process.

Commander
Western Division, Naval Facilities Engineering Command
Attn: Mr. Jerry Hemstock, Code 09F2JH
900 Commodore Drive
San Bruno, CA 94066-2402
Phone (415) 244-3714
FAX (415) 244-3737

A public scoping meeting to receive verbal and written comments will be held on September 22, 1994 at 7:00 p.m., in the Joseph Room of the John F. Kennedy Library, located at 505 Santa Clara Street, in Vallejo, California. For further information regarding the Mare Island Reuse Plan, contact Ms. Ann Merideth, City of Vallejo, Planning Division, 555 Santa Clara Street, Vallejo, California 94590-5934, telephone (707) 648-4326, FAX (707) 552-0163.

Thank you for your participation in our public involvement and scoping process.

John H. Kennedy
Head, Environmental Planning Branch

ATTACHMENT A
MARE ISLAND NAVAL SHIPYARD DISPOSAL AND REUSE

I. INTRODUCTION

Mare Island Naval Shipyard has been identified for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510). Current schedules call for mission cessation at Mare Island in April, 1995 and operational closure a year later, in April, 1996.

The Mare Island Naval Shipyard has been in operation since 1852. Initially the base was used to dock the Navy's Pacific Squadron. During World War II, Mare Island grew into one of the world's largest ship construction and repair facilities, employing up to 41,053 persons at its peak. In the 1950s, the Navy Department designated the Shipyard as a building and overhaul yard for submarines. It remained in this capacity until it was designated for closure in 1993.

II. LOCATION OF MARE ISLAND

Regional

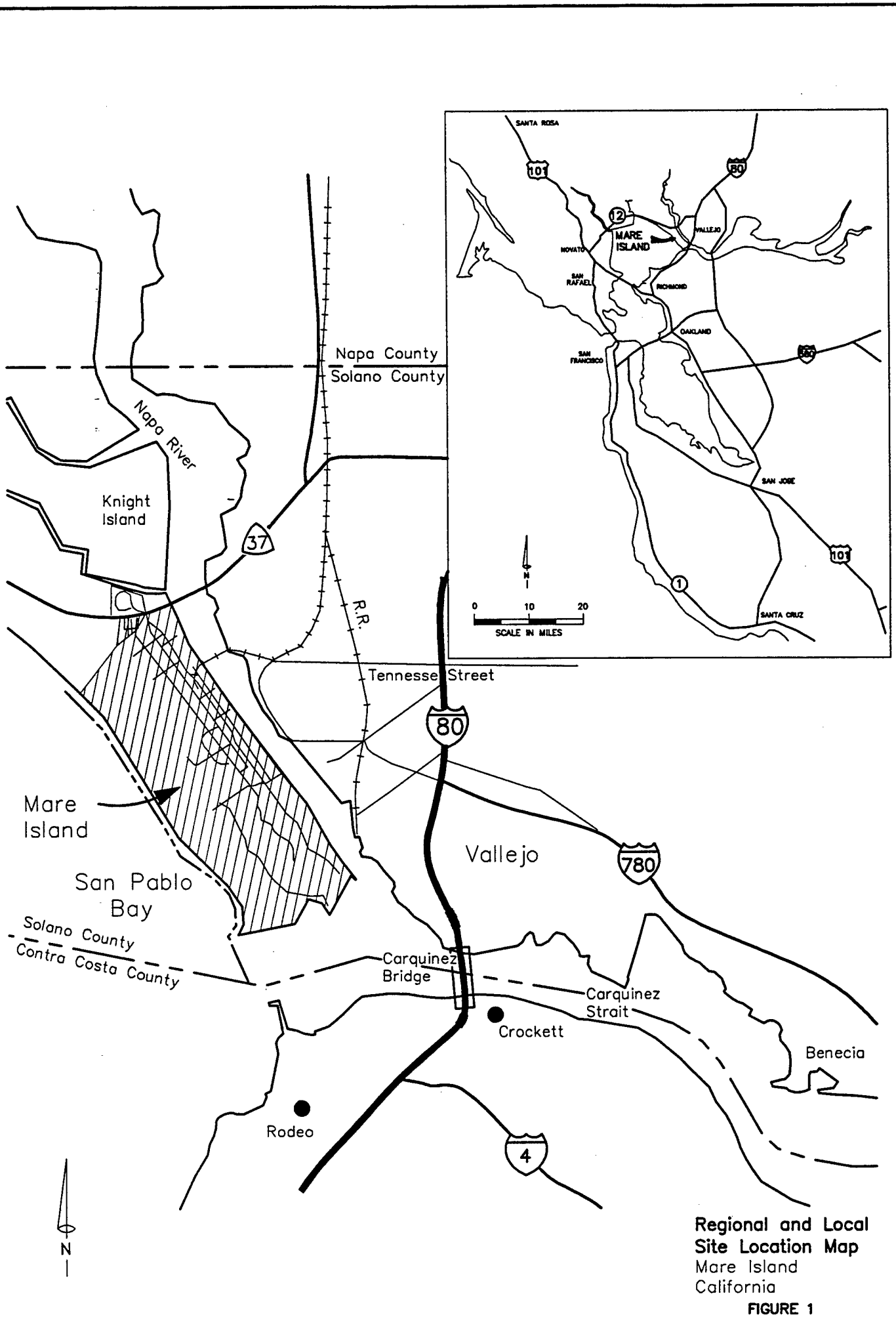
Mare Island is located on the western edge of the City of Vallejo in southwestern Solano County in Northern California. It is approximately 30 miles northeast of San Francisco in the North Bay subregion of the San Francisco Bay area. Mare Island is proximate to the major communities within Solano County (Benicia, Fairfield, and Vacaville), and adjoining Napa County (American Canyon and Napa), Contra Costa County (Concord, Martinez, and Richmond), Sonoma County (Santa Rosa and Petaluma), and Marin County (San Rafael and Novato).

Local

Mare Island is located between Mare Island Strait (part of the Napa River) on the east, San Pablo Bay on the west, Carquinez Strait on the south, and the Napa Marsh and historic diked marshlands on the north. The entire site lies within the incorporated boundaries of the City of Vallejo. Access to the site is from State Route 37, the primary route across the North Bay connecting U.S. Route 101 and Interstate 80, and across the Mare Island Causeway from Tennessee Street, one of Vallejo's main arterials and connections from Interstate 80. Figure 1 illustrates the regional and local setting.

III. DESCRIPTION OF THE ISLAND

Mare Island is approximately 3.5 miles long by one mile wide. It has approximately 5,460 acres, of which 1,650 acres are dry uplands. Tidal and nontidal wetlands comprise 1,450 acres with the remaining 2,360 acres as submerged lands. Mare Island is relatively flat ranging in elevation from sea level to 284 feet above sea level at the southern end of the site. Mare Island is currently developed with approximately 960 buildings with 10.5 million square feet of industrial, office, residential, educational, commercial, recreational, cultural, and institutional uses. There is one large upland open space area; this is the 200-acre "Hill", and it is a part of the original Mare Island. This federal facility also includes the Causeway from Mare Island to Tennessee Street, the off-site Roosevelt Terrace housing complex located on Sacramento Street, Building 513 (Employment Office and Badge and Pass Office) on Wilson Avenue, a rail spur which extends from the Island and through the City of Vallejo, and a bulkhead extending from the Sandy Beach area into the Mare Island Strait.



Regional and Local Site Location Map
Mare Island
California

FIGURE 1

IV. THE MARE ISLAND REUSE PLAN

Development of the Mare Island Reuse Plan was initiated in 1993 following confirmation of the base closure. The overall goal of the reuse plan was to utilize existing facilities and resources on the Island to generate new jobs, new revenues and new recreational opportunities for the citizens of Vallejo. The Plan identifies thirteen distinctive land use zones, plus broad wetland and dredge pond areas, and includes recommendations for reuse. Figure 2 indicates the location of the land use zones. Future uses proposed for Mare Island in the Final Reuse Plan include light and heavy industry, office, neighborhood, education, cultural, residential and recreational. Most of the proposed reuse activities would be accommodated in existing buildings. Existing wetlands and dredge ponds, located primarily in the western portion of the Island, would continue to be maintained. Copies of the Final Reuse Plan are available from the City of Vallejo Planning Department. Following is a summary of the specific features and recommendations for the thirteen reuse zones contained in the Mare Island Reuse Plan:

1. North Light Industry

The area is located at the northern-most part of the Island and characterized by concentrations of buildings surrounded by large areas of open space either paved, covered with ornamental grasses, or disturbed open field grasslands. It is proposed by the Plan for reuse as light-industrial/warehouse.

2. Neighborhood Center

This area is located south of the North Light Industrial area and currently contains the existing civic core buildings (e.g., the Rodman theater, gymnasium, and ballfields). Reuse within the Neighborhood Center under the Plan would be as a mixed-use center providing Island-wide community and social services and additional residences.

3. Mixed Use: Office/Light Industry

This area is located east of the Neighborhood Center and currently contains industrial, historic, medical buildings and large open space areas of paved surfaces used for parking and storage. Reuse of the existing structures as recommended under the Plan could include development of a small business incubation complex, and creation of loft spaces by subdividing existing structures. A waterfront promenade is proposed to extend the entire length of this zone along the Mare Island Strait.

4. Historic District

The Historic District is located centrally on the island and fronting the waterfront. The District includes National Historic Landmarks and would become either a State or National Park under the Plan, to allow for private companies to operate in historic buildings subject to preservation regulations. As indicated in the Reuse Plan, the historic residences could be sold as private residences or offices, operated by small non-profit organizations or used as guest housing to complement the historic park.

5. Heavy Industry

This area is located south of the Historic District along the waterfront and contains some of the largest buildings on the island, three working dry docks, and several overhead cranes. Several historic structures are also within this zone. Rail service freight is available. Use of existing structures for manufacturing of small goods such as scientific instruments, metal processing/fabrication, and chemical/biotechnology is considered possible.

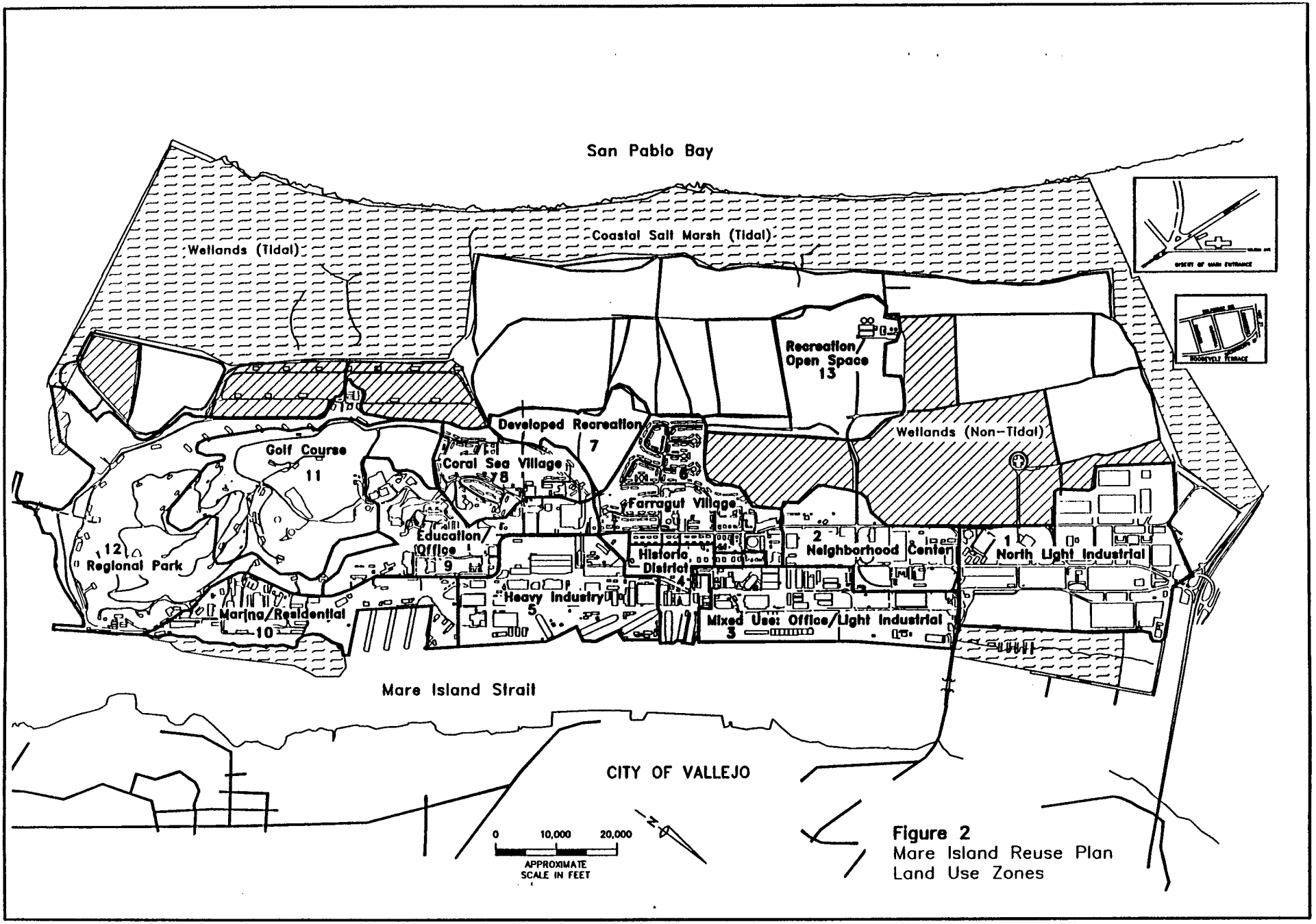


Figure 2
Mare Island Reuse Plan
Land Use Zones

6. Farragut Village

This area, adjacent to the Historic District, is predominantly residential and contains approximately 310 one- and two-story residential duplexes. In addition to the duplexes are dormitory style barracks and an elementary school. Continued use of the area as residential is indicated in the Plan. Under the Plan, the City of Vallejo or Vallejo Unified School District would assume control of the newly constructed elementary school and adjacent playground.

7. Developed Recreation

This area is currently occupied by a rifle range that contains facilities for rifle and pistol shooting, plus a small classroom building, storage shed, and two observation towers. The Reuse Plan proposes continued operation of the range for three years following closure of Mare Island. During this three year period, the range operators would develop a plan and financing to move the range elsewhere on the Island. Upon relocation of the shooting range, recommended use of this area under the Plan is for other development recreation, such as play fields.

8. Coral Sea Village

This housing area is located south of the rifle range and contains approximately 103 predominantly duplex units similar to those found in Farragut Village. The central core of the Village is the Marine Barracks and parade grounds located in front of the Barracks. Continued residential use of the area is proposed under the Plan, with possible conversion of the Barracks to market rate apartment units or condominiums. The Plan recommends development of the parade ground for recreation purposes

9. Education/Office

This area contains what was formerly the Navy's Combat Systems Technical School. The central campus is located south of the Heavy Industry area and defined by structures lining both sides of the main entry roads. Periphery parking serves the campus buildings. Landscaped courtyards and formal open spaces are also located in this area. Continued educational use is proposed in the Plan for this area.

10. Marina Residential

This zone faces the waterfront on the southeastern side of the Island. The Plan identifies the three finger piers as potentially viable for a new small marina, and pending clean-up operations, this part of the island is considered under the Plan as providing new residential construction, particularly multi-family housing. Land would be reserved for the potential future southern bridge crossing in this area, under the Plan, and a waterfront promenade would be constructed as part of the marina.

11. Golf Course

Mare Island has an existing nine-hole gold course and small clubhouse facility located south of the Education/Office area. Expansion of the existing course to 18-holes is proposed as part of the Reuse Plan.

12. Regional Park

The southernmost portion of the Island is proposed in the Plan to be a regional park. The area is currently undeveloped and contains primarily grassland that is used for cattle grazing. As indicated by the Reuse Plan, the highest point on the site would be reserved for open space so that views of the City of Vallejo and San Pablo Bay would be retained. The Coast Guard would maintain its current station at the southeastern corner of the area.

13. Recreation/Open Space

This area is located on a landfill site between active dredge ponds and non-tidal wetlands. Following environmental clean-up operations, as indicated in the Plan, the area would be considered for passive and active recreational purposes.

Off-Site Reuse Areas

Two areas not contiguous to the island proper (the Main Entrance Area and Roosevelt Terrace) will also be part of the closure process. The reuse of Building 513 and its associated parking (the Main Entrance Area) would be as retail or professional office space under the Plan. Roosevelt Terrace is an older 600-unit multi-family housing area south of Highway 37 and east of the Napa River. The proposed reuse of the buildings would be for affordable housing or market rate apartment units under the Plan.

V. ALTERNATIVES TO BE EVALUATED IN THE EIS/EIR

The EIS/EIR will analyze the environmental impacts of the disposal and potential reuse of excess properties made available by the closure of Mare Island Naval Shipyard. For the purpose of evaluating environmental impacts resulting from the incident reuse of the property, the Proposed Action will be based on the Mare Island Final Reuse Plan, prepared by the City of Vallejo's Mare Island Futures Project, and accepted by the City of Vallejo on July 26, 1994.

The EIS/EIR will examine the potential impacts to the environment that may result from implementation of the Proposed Action and from three alternative reuse scenarios. The alternatives to the Proposed Action will include a less intensive development of the property, still based in large part on the Reuse Plan; a mitigated development scenario, reflecting public input and identified environmental constraints; and a No-Action Alternative, which would result in the federal government retaining the property in an "inactive" status.

VI. ENVIRONMENTAL ISSUES TO BE EVALUATED IN EIS/EIR

Though the issues of special concern may change as the scoping and EIS/EIR process continues, the following issues have been initially identified as particularly sensitive to future reuse activities on Mare Island.

- Socio-economic impacts on the local community
- Impacts on area wildlife and wetlands resource and habitat
- Identification and remediation of hazardous materials and hazardous waste
- Potential for increased noise, traffic and emissions of air pollutants over closure baseline conditions.
- Impacts on cultural resources resulting from conveyance of the property to non-federal entities.
- Geologic and hydrologic conditions affecting reuse.

Evaluation of the potential environmental effects to the following resources resulting from implementation of the Proposed Action and alternatives will be evaluated in the EIS/EIR

1. Land Use
2. Socioeconomics
3. Prehistoric and Historic Cultural Resources
4. Aesthetics and Scenic Resources
5. Geology and Soils
6. Biological Resources
7. Water Resources
8. Air Quality and Meteorology
9. Noise
10. Traffic and Transportation
11. Utilities
12. Hazardous Materials
13. Public Services
14. Public Health and Safety

Department of the Navy

Intent to Prepare an Environmental Impact Statement for the Proposed Disposal and Reuse of Mare Island Naval Shipyard, Vallejo, CA

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 in association with the City of Vallejo, California, announce their intent to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed disposal and reuse of Mare Island Naval Shipyard (MINSY). The Defense Base Closure Act (Public Law 101–510) directs the Navy to close MINSY. The Navy will be the lead agency for NEPA documentation, and the City of Vallejo will be the lead agency for documentation pursuant to the California Environmental Quality Act.

Mare Island, which is located about 30 miles northeast of San Francisco, is approximately 3.5 miles long by a mile wide, and covers approximately 5,460 acres. The Navy facility, which is scheduled for operational closure in April, 1996 is currently developed with industrial, office, residential, educational, commercial, cultural, recreational, institutional, and open space uses. The EIS/EIR will address the disposal of the property to public or private entities and the potential impacts of reuse alternatives. All available property will be disposed of in accordance with the provisions of Public Law 101–510 and applicable federal property disposal regulations.

The Mare Island Reuse Plan, developed by the City of Vallejo, constitutes the preferred alternative for the EIS/EIR. The Plan identifies 13 distinctive land use zones, plus broad wetland and dredge pond areas, and includes recommendations for reuse. The EIS/EIR will examine the potential impacts to the environment that may result from implementation of the preferred alternative and from three alternative reuse scenarios. The alternatives would include a less intensive development of the property, still based in large part on the Reuse Plan; a development scenario reflecting the Reuse Plan, public input and mitigation for identified environmental constraints; and a no-action Alternative, which would result in the federal government retaining the property in an "inactive" status.

Federal, state and local agencies, and interested individuals are encouraged to participate in the scoping process for the EIS/EIR to determine the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on September 22, 1994, at 7:00 p.m., in the Joseph Room of the John F. Kennedy Library, located at 505 Santa Clara Street, Vallejo, California. In addition, written comments may be submitted by October 7, 1994, to Mr. Jerry Hemstock, Code 09F2JH, Western Division, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066–2402, telephone (415) 244–3714, fax (415) 244–3737. For further information regarding the Mare Island Reuse Plan, contact Ms. Ann Merideth, City of Vallejo, Planning Division, 555 Santa Clara Street, Vallejo, California 94590–5934, telephone (707) 648–4326, fax (707) 552–0163.

Dated: August 29, 1994.

Saundra K. Melancon,

Alternate Federal Register Liaison Officer.

[FR Doc. 94–21647 Filed 8–31–94; 8:45 am]

BILLING CODE 3810–AE–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. QF94–116–000]

Cave Creek Unified School District #93; Amendment to Filing

August 26, 1994

On August 22, 1994, and August 23, 1994, Cave Creek Unified School District # (Applicant) tendered for filing amendments to its filing in this docket.

The amendments provide additional information pertaining to the ownership and technical aspects of its cogeneration facility. No determination has been made that the submittals constitute a complete filing.

Any person desiring to be heard or objecting to the granting of qualifying status should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with rules 211 and 214 of the Commission's Rules of Practice and Procedure. All such motions or protests must be filed by September 16, 1994, and must be served on the Applicant. Protests will be considered by the Commission in determining the appropriate action to be taken but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a petition to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 94–21558 Filed 8–31–94; 8:45 am]

BILLING CODE 6717–01–M

[Docket No. EL94–87–000, et al.]

Medina Power Company, et al.; Electric Rate and Corporate Regulation Filings

August 25, 1994.

Take notice that the following filings have been made with the Commission:

1. Medina Power Company

[Docket Nos. EL94–87–000 and QF91–10–005]

Take notice that on August 12, 1994, Medina Power Company, tendered for filing its FERC Electric Service Tariff No. 1.

Copies of the filing were served upon Medina's jurisdictional customers and Niagara Mohawk Power Company.

Comment date: September 9, 1994, in accordance with Standard Paragraph E at the end of this notice.

2. Torco Energy Marketing, Inc.

[Docket No. ER92–429–004]

Take notice that on July 28, 1994, Torco Energy Marketing, Inc. filed certain information as required by the Federal Energy Regulatory Commission's September 7, 1989, order in this proceeding, 48 FERC ¶ 61,294 (1989). Copies of the Torco Energy Marketing, Inc. filing are on file with the Commission and are available for public inspection.

3. Boston Edison Company

[Docket No. ER94–1222–000]

Take notice that on August 22, 1994, Boston Edison Company supplemented its filing in this docket by submitting a revised Exhibit III to its contract with the Town of Braintree, Massachusetts, as originally filed. The revised Exhibit III defines Base and Intermediate energy costs in response to a request by the rate filing staff. Boston Edison requests that the filing as supplemented be allowed to become effective on November 1, 1994, as requested in its original filing in this docket.

Comment date: September 9, 1994, in accordance with Standard Paragraph E at the end of this notice.

4. Energy Resource Marketing, Inc.

[Docket No. ER94–1580–000]

Take notice that on August 22, 1994, Energy Resource Marketing, Inc. (ERM) tendered for filing pursuant to Rule 205.

Typical letter

September 7, 1994

TO: Mr. Jim DeLuca
Caltrans, District 10
P.O. Box 2048
Stockton, CA 95201

Subject: Notice of Preparation of a Draft Environmental Impact Statement/Environmental Impact Report for the disposal and reuse of Mare Island Naval Shipyard

The City of Vallejo and the Navy's Western Division, Naval Facilities Engineering Command will be joint Lead Agencies for the preparation of a joint environmental impact report/environmental impact statement (EIS/EIR) evaluating the environmental consequences resulting from the disposal and proposed reuse of Mare Island Naval Shipyard. The Mare Island Reuse Plan, developed by the City of Vallejo, will constitute the proposed action evaluated in the EIS/EIR. The EIS/EIR will examine the potential impacts to the environment that may result from implementation of the Proposed Action and from three alternative reuse scenarios.

The purpose of this notice is to solicit the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed action. Your agency may need to use the EIS/EIR prepared for the disposal and reuse action when considering permitting or other approvals for projects on Mare Island. The project location, alternatives to be evaluated, and probable environmental effects of the proposed action are indicated in the attached materials. Due to the time limits mandated by State law, your response must be sent no later than 30 days after receipt of this notice. In your response, please provide the name for a contact person in your agency. Responses should be addressed to:

Mr. Jerry Hemstock, Code 9F2JH
Western Division, Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-2402
Phone (415) 244-3714
FAX (415) 244-3737

A public scoping meeting will be held Thursday, September 22, 1994 at 7:00 p.m. at the following address:

Joseph Room
John F. Kennedy Library
505 Santa Clara Street
Vallejo, California

Date: 9/8/94 Signature: [signature]

Title: Development Services Dir.

PUBLIC NOTICE

The United States Navy announces its intent to prepare an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental impacts of disposal and reuse of the Mare Island Naval Shipyard. The Navy's Western Division, Naval Facilities Engineering Command, and the City of Vallejo will be joint lead agencies for the preparation of the EIS/EIR. This action is being conducted in accordance with the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510) and the specific 1993 base closure decisions approved by the Congress in September 1993.

The Mare Island Reuse Plan, developed by the City of Vallejo, will be the proposed action evaluated in the EIS/EIR. The EIS/EIR will examine the potential impacts to the environment that may result from the proposed action, from two alternative reuse scenarios, as well as from a "no action" alternative. Major environmental issues that will be addressed in the EIS/EIR include, but are not limited to, socioeconomic impacts, air and water quality, noise, wetlands, endangered species, cultural resources, and local infrastructure impacts. The draft EIS/EIR is due to be published in the February - March 1995 timeline. A public hearing and a 45-day review period will follow the publication and distribution of the Draft EIS/EIR.

A PUBLIC SCOPING HEARING
will be held
Thursday, September 22, 1994 at 7:00 p.m.
at the following address:

JOSEPH ROOM
JOHN F. KENNEDY LIBRARY
505 SANTA CLARA STREET
VALLEJO, CALIFORNIA

The purpose of this hearing is to receive written and verbal comments regarding the potential environmental impacts of the disposal and reuse of Mare Island Naval Shipyard. A brief presentation will precede the request for public comment. Navy and City of Vallejo representatives will be available at this hearing to receive comments from the public regarding issues of concern to the public. It is important that federal, state, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during the preparation of the EIS/EIR.

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. To be most helpful, scoping comments should clearly describe specific issues or topics which the commentor believes the EIS/EIR should address. Written statements must be received at the address below no later than October 7, 1994:

WESTERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-2402
ATTN: MR. JERRY HEMSTOCK,
CODE 9F2JH
Phone (415) 244-3714
Fax (415) 244-3737

For further information regarding the Mare Island Reuse Plan, contact Ms. Ann Meredith, City of Vallejo, Planning Division, 555 Santa Clara Street, Vallejo, California 94590-5934, telephone (707) 648-4326.

News Release

Western Division Naval Facilities Engineering Command
900 Commodore Drive • San Bruno, CA 94066-2402

For Immediate Release

For further information:
Roger Gee
Base Realignment and Closure (BRAC)
Community Relations Manager
(415) 244-2599

VALLEJO, CALIFORNIA - The United States Navy announces its intent to prepare an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental impacts of disposal and reuse of the Mare Island Naval Shipyard. The Navy's Western Division, Naval Facilities Engineering Command, and the City of Vallejo will be joint lead agencies for the preparation of the EIS/EIR. This action is being conducted according to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510) and the specific 1993 base closure decision approved by the Congress in September 1993.

The Mare Island Final Reuse Plan, developed by the City of Vallejo, will be the proposed action evaluated in the EIS/EIR. The EIS/EIR will examine the potential affects on the environment that may result from the proposed action, from two alternative reuse scenarios and a "no action" alternative. Major environmental issues being addressed in the EIS/EIR will include socioeconomic impacts, air and water quality, noise, wetlands, endangered species, cultural resources, and local infrastructure impacts. The draft EIS/EIR should be completed February or March 1995. A public hearing and a 45 day review period will follow the publication and distribution of the Draft EIS/EIR.

A public hearing was held on September 22, 1994, at 7:00 p.m., in Vallejo at the Joseph Room of the John F. Kennedy Library to receive written and verbal comments regarding the potential environmental impacts of the disposal and reuse of Mare Island Naval Shipyard. Federal, state and local agencies, and concerned groups and interested individuals are encouraged to participate in the EIS/EIR process through the submission of written comments. This input will help to determine the range of issues and reuse alternatives to be addressed, and identify significant issues related to the proposed reuse of Mare Island.

The public is invited to submit written comments by October 7, 1994, to Mr. Jerry Hemstock, Code 09F2JH, Western Division, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-2402, (415) 244-3714, Fax (415) 244-3737. For further information regarding the Mare Island Final Reuse Plan, contact Ms. Ann Merideth, City of Vallejo, Planning Division, 555 Santa Clara Street, Vallejo, California 94590-5934, (707) 648-4326, Fax (707) 552-0163.

SUMMARY OF PUBLIC SCOPING MEETING
MARE ISLAND NAVAL SHIPYARD DISPOSAL AND REUSE EIS/EIR

SEPTEMBER 22, 1994

INTRODUCTION

Commander Westberg provided the welcoming introduction. He identified himself as the hearing officer for the public hearing, and noted that the meeting's purpose was to receive public comments and suggestions for the EIS/EIR. He also noted that an overview of the reuse actions and environmental review process would be provided. Commander Westberg indicated that the meeting would be organized into two parts: an overview of the EIS/EIR schedule to be provided by John Kennedy and a summary of the Mare Island Reuse Plan provided by John Petrovsky, the City of Vallejo's consultant for the Reuse Plan. He stated the verbal comments would be received following the summary of the Reuse Plan.

SUMMARY OF EIS/EIR PROCESS

John Kennedy, Head of the Environmental Planning Branch at the Navy Engineering Field Activity West was introduced to present the summary of the EIS/EIR process. He introduced Jerry Hemstock as the Navy's project manager for the EIS. He also identified Gil Hollingswoth and Ann Merideth of the City of Vallejo, John Petrovsky of EDAW and Karen Frye of Tetra Tech, who is the consultant project manager from Tetra Tech, Inc. of San Francisco. Tetra Tech will be preparing the EIS/EIR.

Mr. Kennedy then provided an overview of the regulations that may apply to the disposal and reuse of Mare Island and be discussed in the EIS/EIR. He introduced the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA). Other laws that will be incorporated into the environmental process will include, but not be limited to the Endangered Species Act, the National Historic Preservation Act, the Clean Air Act, Coastal Zone Management Act. Information from the hazardous waste cleanup program will also be integrated into the EIS/EIR.

It was explained that NEPA requires that a federal agency evaluate the effects of a proposed action and any proposed alternatives to that action prior to making a decision if the agency expects there might be an environmental impact. It is anticipated the disposal and closure of Mare Island Naval Shipyard will have an environmental impact. It was noted that the decision to prepare an EIS triggers the public review process beginning with this public meeting. It was further noted that the Base Realignment and Closure Act exempted NEPA from consideration of the base closure decision, but it did not exempt NEPA from looking at the effects of disposal and reuse of the base. The preferred alternative in the EIS/EIR will be the City's Reuse Plan.

The EIS/EIR schedule was summarized as follows: The EIS will be completed in twelve months from the time the Navy received the community's final reuse plan. During this time the California Environmental Quality Act (CEQA) will be integrated into the process. The Navy will also work with the City of Vallejo.

The CEQA process would add emphasis to growth-inducing and cumulative impacts, and specifying mitigations. It was noted that Navy already does these type of analyses in their documents.

The contractual arrangement for preparation of the EIS/EIR was explained and it was noted that the process began early in September with publication of the Notice of Intent in the Federal Register. A scoping letter was also sent out to a large mailing list including federal, state and local agencies, environmental groups, individuals etc. The scoping period was identified as officially 30 days long, but because of comments from some members of the public the Navy is prepared to extend the scoping period for another two weeks to ensure that people have adequate time to respond.

After the completion of the scoping process, the draft EIS/EIR will be prepared and circulated for a 45-day public review period. It is anticipated that the draft document will be circulated in about February of 1995. The document will be circulated to everyone on the mailing list and go to local libraries. Anyone not on the mailing list was invited to sign the sign-in sheet. A public meeting will be held during the 45-day public review period. Verbal and written comments received during the public meeting and the public review period will be responded to in the Final EIS/EIR which is anticipated to be available around June 1995.

It was stated that a final decision would be made following the EIS/EIR process. It was noted that mission cessation was anticipated to occur in April 1995 and operational closure of the base in April 1995. The Navy will go through a federally mandated land disposal screening process. Anticipated issues affecting the closure, disposal and reuse as identified by Mr. Kennedy would include socioeconomic impacts. Other issues will be hazardous materials and traffic, historic structures and archeology, biology (including wetlands), noise, air pollutants and seismicity. The primary alternative in the EIS will be the preferred alternative which is the City's Final Reuse Plan. The document will also look at a less intensive development plan and the no-action plan which will be continued caretaker status. In response to public concerns another alternative may be developed that will be somewhat different that the reuse plan.

SUMMARY OF THE REUSE PLAN

John Petrovsky was introduced to provide an overview of the City's Reuse Plan. He described the plan as being comprised of 13 major land use areas and existing wetlands and dredge disposal areas. Off-site areas include the main gate, Building 513 and the Roosevelt Terrace housing complex. It was noted that the land use plan reflects the historic land uses of the island. Mr. Petrovsky then provided an overview of the land use areas as follows:

North Light Industrial Area

This area was described as having the least in terms of developed facilities and the most in terms of open land which could support new development. The general character would be like a modern industrial park because of the open land, available parking circulation, new development and buildings.

Mixed Use: Office/Light Industry

The intention for this area would be to use it for light industry, for incubated space, for startup spades and for office uses. The existing medical dispensary is located in this area.

Heavy Industrial Area

This is currently the industrial area. The plan calls for heavy emphasis on industries that can reuse existing structures. It's unknown at this time whether the waterfront or Maritime industries can be drawn onto the island.

Education/Office Complex

Its envisioned to be an educational project, an adjunct state college etc. that will be combined with office-related types that relate to the educational functions as well as industrial uses across the way.

Residential use

The existing navy housing was identified as being in fairly good shape and would remain in its current use. The Air Force has expressed some interest in using the residential facilities over time. Another area of potential residential use is Reuse Area 10 which is called the Marina Residential Area, although it will take considerable time to complete the environmental cleanup process. It believed that there is a high potential for marina related uses associated with the existing finger piers. The existing Roosevelt Terrace housing development would be redeveloped at a lower density.

Retail Services

Area three was identified as a community center which would serve city functions, police, fire, and community center uses. Area four in the middle of the historic district would be intended to remain as a historic district with tourist usage.

Recreation/Open Space

Remaining uses of the island would be primarily recreational and open space. Existing parks would remain and the existing elementary school would remain. There are also a number of ballfields, parks and recreation centers that would remain. The existing golf course would be extended to 18-holes and the southern part of the island would become a regional park. The overall wetland and dredge pond complex would remain in open space. It is anticipated that the city would continue to operate the dredge system following transfer of the island which could be a positive economic impact. The city would expand the capacity of the ponds. It was noted that Fish and Wildlife services as part of the screening process has requested a number of parcels in this area.

The existing shooting range was identified as ultimately being relocated to the southern part of the island as part of the regional park. Play fields would be developed on the current rifle range site.

Circulation

It was indicated that the plan looks at redevelopment or reuse of the island in three phases. The first phase would be closure around 1996, the second phase would be in 2006 and the final phase would be full build-out in 2026. Certain circulation improvements would be made on the island in phase I (widening Railroad Avenue and improving the roads leading to the regional park). Transit is proposed for extension onto the

island. In phase II improvements would involve reducing three lanes of traffic on the bridge; two in with a reversible lane in the middle. The northern parts of the island would be developed first. Roads to the golf course would also be improved. A transit station would also be a part of phase II and would be located in the City's existing ferry terminal. Phase III could involve the southern crossing, but it's speculative at this time. The reason for the crossing is because Highway 37 would be at capacity and the Vallejo streets would be getting too much traffic from the island.

Buildout of the plan was summarized as including six million square feet of existing industrial, office, heavy and light industrial uses: about 1650 dwelling units including 800 existing units, with about 2,000 acres remaining in open space and 1,000 in development. Most of the historic mansions on the island would remain in residential use

PUBLIC COMMENTS

Following a 15 minute break several members of the audience spoke. Following is a summary of their comments.

John Osborne. Expressed concern about energy conservation and that the existing residential buildings were probably constructed before anybody paid much attention to energy conservation. And also that a lot of other buildings were built before anybody paid attention to energy conservation. He would like the report to look at energy-efficiency and adequacy of public easement parks and recreation at the school site. Additionally, he expressed concern about the potentiality for hazardous materials in the sewer system. He was interested in considering a prison as an alternative in the EIS/EIR. He was also concerned about unexploded ammo and emergency response, particularly fire response. He wanted the EIS/EIR to look at fire response in any alternative.

Ron Boyer. Mr. Boyer identified himself as a community representative on the Mare Island Restoration Advisory Board. He read a draft of the mission statement of the RAB. He stressed that the RAB was not a governing or an oversight policy-setting group, rather an advisory board to the Navy. He expressed a desire for the RAB to have an active role in the EIS/EIR process and review of the document. He applauded the extension of two weeks so that the RAB could provide scoping responses. He invited the scoping group to give a presentation to the RAB as a group.

William Johnson. Mr. Johnson identified himself as a member of the RAB. He expressed concern that the members of the RAB were not consulted regarding the environmental impacts of the Reuse Plan. He noted that light industrial would have a different standard of cleanup than residential or school would have. He was concerned that the community might not be fully informed about what they were getting with this reuse plan, particularly if they change the land uses after cleanup has been completed by the Navy. He noted that there wasn't adequate parking in the residential area. He also noted that the circulation summary did not address how to get from parking to where the job sites currently are and there is not an acceptable transit system.

Michael Lowe. Mr. Lowe identified himself as representing the U.S. Forest Service. He stated that he understood that Fish and Wildlife Services wanted the dredging beds because of their association with wetlands, but he couldn't tell from the earlier description of the reuse plan what areas were in conflict.

Alaux Ridtke. Ms. Ridtke, an employee of the Fish and Wildlife Service, explained that the USFWS was interested in expanding the current San Pablo Refuge to include the tidal wetlands to the south and the pickle weed wetland area. The USFWS would also be interested in Building 505.

Robin Leong. Mr. Leong, with the Napa-Solano Audubon Society, spoke as a private citizen living in Vallejo who would like to see that the Roosevelt Terrace housing meets Vallejo and California building codes. He was wondering if there would be an economic study for the plan that is being submitted. He also noted that the Audubon Society is concerned about dredging around Building 505. The society feels that the area should be given to the Fish and Wildlife Service. He also expressed a desire that something be done with the power lines so that so many birds would not be killed.

Following Mr. Leong's comments the meeting was concluded at 7:54 p.m.

Agencies, Organizations, and Individuals Who Responded to the Scoping Letter

Respondent	Concern or Issue Raised
Federal Agencies	
US Dept of the Interior, Nat'l Park Service	Take into account that Mare Island is a National Historic Landmark
US Dept of the Interior, Fish and Wildlife Service	Describe land uses surrounding Mare Island; evaluate an alternative that emphasizes natural resource conservation; outline specifically the real property transfer process
State Agencies	
CA Dept of Fish and Game (Yountville)	Address impacts to sensitive habitats and identify mitigation measures; perform complete biotic survey
CA Dept of Transportation	Analyze impacts to Highway 37; develop alternatives to Southern Crossing; perform traffic analysis
Governors Office of Planning and Research	Letter from Chief of State Clearinghouse Routing NOP to Responsible Agencies
State Land Commission	Identification of port areas/dredging needs; effects on environment and traffic in Zone 5; effects of southern crossing; active dredge spoils pond
Local Agencies	
Bay Conservation and Development District	Develop regional dredge material reuse facility alternative; evaluate potential water quality impacts; evaluate effects of improving freeway infrastructure on Bay resources
Metropolitan Transportation Commission	Evaluate seaport development and alternatives with various levels of dredging; provide traffic analysis assumptions
Napa County Conservation, Development and Planning Dept	Impacts on Napa River, socioeconomic impacts on Napa County Airpost Industrial Area, Traffic and air quality impacts on Napa County
Solano County Dept of Env Management, Env Health Division	Potential for landfill gas generation/accumulation in buildings constructed on or near landfills, Asbestos/ lead-based paint in housing, Lead contamination at rifle range
Solano County Mosquito Abatement District	Mosquito species found on Mare Island and necessary abatement measures
Vallejo City Unified School District	Consider educational reuses for MI Elementary School; evaluate socioeconomic impacts from closure; address land uses, traffic, public safety services, and any env. hazards around and en route to the school
Organizations	
Arms Control Research Center	Examine transportation issues, toxic contamination/cleanup, utility infrastructure and upgrades, wildlife habitat preservation; proposed industrial/residential development
Citizens for Responsible Growth	Develop sources of alternative power and alternatives to Southern Crossing; ability of Vallejo to fund/manage reuse; evaluate buildings for lead-based paint
Hillcrest Park Homeowners Association	Develop alternatives for reuse of Roosevelt Terrace; evaluate cost effectiveness of reuse of Roosevelt Terrace to Vallejo

Agencies, Organizations, and Individuals Who Responded to the Scoping Letter (cont'd)

Respondent	Concern or Issue Raised
Organizations (cont'd)	
Napa-Solano Audubon Society	Perform traffic survey; address Vallejo's ability to provide utility services and pay for reuse; evaluate effects from construction on fill material; use native vegetation; buildings should meet seismic codes; support for turning dredge ponds over to USFWS; need for alternative power
Restoring the Bay Campaign	Develop alternative source of power to Cullinan Ranch line; inventory plant and animal life; impacts of reuse on threatened and endangered species; effects on habitat
Save San Pablo Baylands	Develop alternatives to continued dredge disposal; provide alternative access to Mare Island; address need for alternative source of power; alternatives to marina residential area
Vallejo Heights Neighborhood Association	Reuse of Roosevelt Terrace to meet McKinney Act mandates
Vallejo Heights Neighborhood Association	Socioeconomic effects on Vallejo; public safety of Vallejo residents/workers; environmental effects of dredging
Individuals	
Mr. Robert Brekke	Address commuting options, socioeconomic impacts
Mr. Diji Christian	Support for transfer of dredge pond lands to Fish & Wildlife
Mr. Kirk Gohre, RAB member	Evaluate cost to and ability of Vallejo to fund reuse
Ms. Cathy Hewitt	Enhance wildlife; restore fishing industry; consider education, transportation, industry and recreation as core elements of reuse plan
Ms. Diana Krevsky	Evaluate Southern Crossing and develop alternatives; develop cultural plan; explain McKinney Act impacts
Ms. Arlee Monson	Analyze dredging based on projected need of reuses; address direct/indirect impacts to traffic, roadways, bike paths; evaluate utility and infrastructure needs; analyze marina residential area
Mr. Bill Morrison	Incorporate cultural arts into the reuse
Mr. William Nystrom	Retired Production Superintendent at the Mare Island Ammunition Depot
Mr. John Osborne	Consider reuse as a prison; include hazardous material survey of utility lines, mud around piers, sewer system, unexploded ordnance; evaluate faults, settling of fill areas, and flood zones
Ms. Patricia Patrick	Full development of how plan will affect public and the environment
Mr. Burle Southard, RAB member	Develop education, "information super highway", and environmental research/technology alternatives; analyze need for and alternatives to Southern Crossing; ability of Vallejo to fund reuse
Ms. Paula Tygielski, RAB member	Low income housing not needed in area; develop education alternatives; define heavy and light industry areas and impacts to air, water, and ground; measure past nuclear/rad sites for background radiation

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO :

5090.1B
18522/P5-829

01 September 1995

SUBJECT: NOTICE OF PUBLIC HEARING REGARDING AN ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT (EIS/EIR) FOR THE DISPOSAL AND REUSE OF MARE ISLAND NAVAL SHIPYARD, VALLEJO, CALIFORNIA

Mare Island Naval Shipyard is scheduled for operational closure in April, 1996 pursuant to the Defense Base Closure and Realignment Act, Public Law 101-510 Title XXIX and specific base closure decisions approved by Congress in September 1993.

As part of this process, the Department of the Navy and the City of Vallejo have prepared a joint Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the potential for significant environmental effects of the disposal and proposed reuse of the Shipyard. The Draft EIS/EIR has been prepared pursuant to Section 102 (2)(c) of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) implementing regulations (40 CFR 1500-1508), and California Environmental Quality Act (CEQA), as amended.

The proposed federal action discussed in the Draft EIS/EIR is the disposal of federal surplus land at the Shipyard. The document also considers the impacts of implementation of the Mare Island Reuse Plan, developed by the City of Vallejo, as well as two other redevelopment scenarios.

The Draft EIS/EIR is available for public review at the following public libraries:

John F. Kennedy Library	505 Santa Clara Street	Vallejo, CA
Springstowne Library	1003 Oakwood Avenue	Vallejo, CA
Vacaville Library	1020 Ulatis Drive	Vacaville, CA
Fairfield-Suisun Library	150 Kentucky	Fairfield, CA
Benicia Library	150 L	Benicia, CA
Suisun City Library	333 Sunset	Suisun, CA
Dixon Public Library	135 East B	Dixon, CA
Napa Library	1150 Division Street	Napa, CA
St. Helena Library	1492 Library Lane	St. Helena, CA
Calistoga Library	1108 Myrtle Street	Calistoga, CA
Yountville Library		Yountville, CA

A public hearing will be held on Wednesday, September 27, 1995, to receive oral and written comments on the Draft EIS/EIR. The meeting will be held at 7:00 p.m. in the Vallejo City Council Chambers, located at 555 Santa Clara Street in Vallejo, California.

Agencies, public groups and individuals are also invited to submit written comments on the Draft EIS/EIR. Written correspondence must be received no later than October 16, 1995, and should be addressed to:

Commanding Officer
Engineering Field Activity West
Naval Facilities Engineering Command
Attn: Mr. Jerry Hemstock (Code 18522)
900 Commodore Drive
San Bruno, CA 94066-5006

For further information, contact either Mr. Jerry Hemstock at the address shown above, telephone (415) 244-3023, FAX (415) 244-3737, or Ms. Ann Merideth, City of Vallejo, Planning Division, 555 Santa Clara Street, Vallejo, California 94590-5934, telephone (707) 648-4326, FAX (707) 552-0163. Thank you for your participation in this process.

John H. Kennedy

JOHN H. KENNEDY
Head, Environmental Planning Branch

[Federal Register: September 1, 1995 (Volume 60, Number 170)]
[Notices]
[Page 45717-45718]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]

ENVIRONMENTAL PROTECTION AGENCY
[ER-FRL-5228-3]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 260-5076 OR (202) 260-5075.

Weekly receipt of Environmental Impact Statements Filed August 21, 1995 Through August 25, 1995 Pursuant to 40 CFR 1506.9.

EIS No. 950388, Draft Supplement, SCS, TX, Attoyac Bayou Watershed, Flood Prevention and Watershed Protection, New Information concerning Installation of a Multiple-purpose Reservoir on the Naconiche Creek Watershed for Flood Prevention and Recreational Storage, Funding, Nacogdoches, Shelby, Rusk and San Augustine Counties, TX, Due: October 16, 1995, Contact: Harry W. Oneth (871) 774-1214.
EIS No. 950389, DRAFT EIS, SCS, HI, Lower Hamakua Ditch Watershed, Agricultural Water Management Plan, Funding and COE Section 404 Permit Issuance, Hawaii County, HI, Due: October 16, 1995, Contact: Kenneth Kaneshiro (808) 541-2600.
EIS No. 950390, DRAFT EIS, AFS, CA, Pilot Creek Watershed Land Management Plan, Implementation, Hayfork Adaptive Management Area, Six Rivers National Forest, Mad River Ranger District, Humboldt and Trinity Counties, CA, Due: October 16, 1995, Contact: Janice Stevenson (707) 574-6233.
EIS No. 950391, DRAFT EIS, UAF, OH, Gentile Air Force Station (AFS) Disposal and Reuse, Implementation, COE Section 404 Permit and EPA Permits, Issuance, Montgomery County, OH, Due: October 16, 1995, Contact: George H. Gauger (210) 536-3069.
EIS No. 950392, FINAL EIS, BLM, WY, Kenetech/PacifiCorp Windpower Development Project, Construction of a 500-MW Windplant and 230-kV Transmission Line between Arlington and Hanna, Right-of-Way Grant, COE Section 404 Permit and Special-Use-Permit Issuance, Carbon County, WY, Due: October 02, 1995, Contact: Walter E. George (307) 324-7171.
EIS No. 950393, DRAFT EIS, FHW, MO, US 61 Relocation, US 61/24 Interchange north of Hannibal to the vicinity of US 61/M Intersection south of Hannibal, Funding and Possible COE Section 404 Permit, Marion and Ralls Counties, MO, Due: October 16, 1995, Contact: Donald Newmann (314) 636-7104.
EIS No. 950394, FINAL EIS, COE, CA, Santa Paula Creek Flood Control Project, Improvements, Ventura County, CA, Due: October 02, 1995, Contact: Jim Hutchison (213) 894-3057.
EIS No. 950395, FINAL EIS, AFS, CA, Barkley Fire Salvage Sale, Implementation, Lower Deer Creek Management Area, Lassen National Forest, Almanor Ranger District, Tehama County, CA, Due: October 02, 1995, Contact: Philip Tuma (916) 258-2141.
EIS No. 950396, DRAFT EIS, USN, CA, Mare Island Naval Shipyard Disposal and Reuse, Implementation, City of Valley, Solano County, CA, Due: October 16, 1995, Contact: Jerry Hemstock (415) 244-3023.
EIS No. 950397, DRAFT EIS, AFS, OR, Hoodoo Master Plan, Plan of Operation Approval and Special-Use-Permit Issuance, Willamette National Forest, McKenzie Ranger District, Linn County, OR, Due: October 16,

1995, Contact: John P. Allen (503) 822-3381.
EIS No. 950398, DRAFT EIS, FHW, AL, Montgomery Outer Loop Construction, US 80 southwest of Montgomery to I-85 east of Montgomery, Funding and COE Section 404 Permit Issuance, Montgomery County, AL, Due: October 23, 1995, Contact: Joe D. Wilkerson (334) 223-7370.
EIS No. 950399, DRAFT EIS, AFS, OR, Trail System and Off-Highway Vehicle Management and Development, Implementation, Ochoco National Forest and Crooked River National Grassland, Crook, Grant, Jefferson, Harney and Wheeler Counties, OR, Due: October 23, 1995, Contact: Sue Kocis (503) 447-9530.
EIS No. 950400, DRAFT EIS, USA, UT, Tooele Army Depot Disposal and Reuse of BRAC Parcel, Implementation, Salt Lake, Tooele and Utah Counties, UT, Due: October 16, 1995, Contact: Glen Coffee (334) 690-2729.
EIS No. 950401, FINAL EIS, NCP, DC, Washington, D.C. New Sports and Entertainment Arena, Construction and Operation, Modern Multi-Purpose Arena, Eight potential Sites, Washington, D.C., Due: October 02, 1995, Contact: Maurice Foushee (202) 724-0174.
EIS No. 950402, FINAL EIS, EPA, FL, Miami Offshore Ocean Dredged Material Disposal Site (ODMDs), Designation, FL, Due: October 02, 1995, Contact: Wesley B. Crum (404) 347-1740.

Amended Notices

EIS No. 950318, DRAFT EIS, USN, PR, VA, Relocatable Over The Horizon Radar (ROTHR) System Construction and Operation, Commonwealth of Puerto Rico and Chesapeake, VA, Due: October 13, 1995, Contact: Linda Blount (804) 322-4892. Published FR 07-21-95--Review period extended.

[[Page 45718]]

Dated: August 28, 1995.
B. Katherine Biggs,
Associate Director, NEPA Compliance Division, Office of Federal Activities.
[FR Doc. 95-21804 Filed 8-31-95; 8:45 am]
BILLING CODE 6560-50-U

Notice of Completion

See NOTE below

SCH # 94093029

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 916/445-0613

Project Title: Mare Island Naval Shipyard Dispcsal and Reuse

Lead Agency: City of Vallejo — Contact Person: Finn Meridieth

Street Address: 555 Santa Clara Street — Phone: 707-648-4326

City: Vallejo — Zip: 94590 — County: Solano

Project Location

County: Solano — City/Nearest Community: Vallejo

Cross Streets: Tennessee Street/Mare Island Way — Zip Code: 94592 — Total Acres: 5,460

Assessor's Parcel No. None — Section: ____ — Twp. ____ — Range: ____ — Base: ____

Within 2 Miles: State Hwy #: 37, 29 — Waterways: Mare Island Strait; Carquinez Strait; San Pablo Bay

Airports: Napa — Railways: Military RR — Schools: Mare Island; Farragut; California Maritime Acad.

Document Type

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent ☐ EIR (Prior SCH No.)____ ☐ Other____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☒ Joint Document ☐ Final Document ☐ Other____

Local Action Type

☐ General Plan Update ☒ General Plan Amendment ☐ General Plan Element ☐ Community Plan

☒ Specific Plan ☒ Master Plan ☐ Planned Unit Development ☐ Site Plan

☒ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, Parcel Map, Tract Map, etc.)

☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other Reuse activities

Development Type — Reuse of existing facilities

☒ Residential: Units 6,836 Acres ± 280

☒ Office: Sq.ft. 862,000 Acres ± 140 Employees____

☒ Commercial: Sq.ft. 200,000 Acres ± 10 Employees____

☒ Industrial: Sq.ft. 4.3 mill Acres ± 350 Employees____

☒ Educational 470,000 sf

☒ Recreational 350 acres

☐ Water Facilities: Type____ MGD____

☐ Transportation: Type____

☐ Mining: Mineral____

☐ Power: Type____ Watts____

☐ Waste Treatment: Type____

☐ Hazardous Waste: Type____

☒ Other: Dredge ponds

Project Issues Discussed in Document

☒ Aesthetic/Visual ☐ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Coastal Zone ☒ Drainage/Absorption ☒ Economic/Jobs ☒ Fiscal

☒ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☒ Noise ☒ Population/Housing Balance ☒ Public Services/Facilities ☒ Recreation/Parks

☒ Schools/Universities ☐ Septic Systems ☒ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☒ Solid Waste ☒ Toxic/Hazardous ☒ Traffic/Circulation ☒ Vegetation

☒ Water Quality ☒ Water Supply/Groundwater ☒ Wetland/Riparian ☒ Wildlife ☒ Growth Inducing ☒ Landuse ☒ Cumulative Effects ☐ Other ____

Present Land Use/Zoning/General Plan Use

Naval shipyard and related uses / Not zoned / Designated "Employment"

Project Description

Disposal of naval facilities (due for closure in 1996) and reuse of existing development and infrastructure as described in Mare Island Final Reuse Plan.

NOTE: Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. from a Notice of Preparation or previous draft document) please fill it in.

Revised October 1989

Reviewing Agencies Checklist

KEY
S = Document sent by lead agency
X = Document sent by SCH
✓ = Suggested distribution

___ Resources Agency
✓ Boating & Waterways
___ Coastal Commission
S Coastal Conservancy
___ Colorado River Board
✓ Conservation
S Fish & Game
___ Forestry
S Office of Historic Preservation
✓ Parks & Recreation
___ Reclamation
S S.F. Bay Conservation & Development Commission
___ Water Resources (DWR)

Business, Transportation & Housing
___ Aeronautics
___ California Highway Patrol
SS CALTRANS District # 4, 10
___ Department of Transportation Planning (headquarters)
___ Housing & Community Development

___ **Food & Agriculture**

Health & Welfare
___ Health Services ___

State & Consumer Services
___ General Services
___ OLA (Schools)

Cal-EPA
✓ Air Resources Board
___ APCD/AQMD
___ California Waste Management Board
___ SWRCB: Clean Water Grants
___ SWRCB: Delta Unit
___ SWRCB: Water Quality
___ SWRCB: Water Rights
✓ Regional WQCB # ___ (___)

Youth & Adult Corrections
___ Corrections

Independent Commissions & Offices
___ Energy Commission
S Native American Heritage Commission
___ Public Utilities Commission
___ Santa Monica Mountains Conservancy
S State Lands Commission
___ Tahoe Regional Planning Agency

___ Other ___

Public Review Period (to be filled in by lead agency)

Starting Date September 1, 1995 Ending Date October 20, 1995

Signature [signature] Date August 29, 1995

Lead Agency (Complete if applicable):
Consulting Firm: Tetra Tech, Inc.
Address: 180 Howard St., Suite 250
City/State/Zip: San Francisco, CA 94105
Contact: Phyllis Retter
Phone: (415) 974-1221

Applicant: City of Vallejo
Address: 555 Santa Clara Street
City/State/Zip: Vallejo, CA 94590
Phone: (707) 645-4326

For SCH Use Only:
Date Received at SCH ___
Date Review Starts ___
Date to Agencies ___
Date to SCH ___
Clearance Date ___
Notes:

Revised October 1989

NEWSPAPER ADVERTISEMENT

The newspaper advertisement on the following page announced the preparation of the Mare Island Disposal and Reuse EIS/EIR, and the start of the public draft EIS/EIR review process was published in the following papers:

The Vallejo Times-Herald - Sunday, September 10, 1995 and Tuesday, September 12, 1995.

The Daily Republic - Sunday, September 10, 1995 and Tuesday, September 12, 1995.

The Contra Costa Times - Sunday, September 10, 1995 and Tuesday, September 12, 1995.

NOTICE OF PUBLIC HEARING

The Department of the Navy in association with the City of Vallejo announces the availability of the Mare Island Naval Shipyard Disposal and Reuse Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) and the scheduling of a public hearing to receive public comments on the report. The joint Draft EIS/EIR, prepared in accordance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA), analyzes the potential environmental impacts associated with the disposal of federal surplus land at Mare Island to public or private entities and of reuse alternatives. The Mare Island Reuse Plan, developed by the City of Vallejo, constitutes the preferred reuse alternative in the Draft EIS/EIR. Three alternative reuse scenarios are also considered, including a less intensive development of Mare Island, still based in large part on the Mare Island Reuse Plan, a redevelopment plan focusing on open space, and a no-action alternative which would result in the federal government retaining the property in an "inactive" status.

Pursuant to Section 102(2)(C) of NEPA, the Council on Environmental Quality Guidelines (40 CFR 1500-1508), and CEQA, the Navy and the City of Vallejo are soliciting public comment on the Draft EIS/EIR. Copies of the Draft EIS/EIR are available for review at the following libraries: John F. Kennedy Library, 505 Santa Clara St., Vallejo, CA; Springstowne Library, 1003 Oakwood Ave., Vallejo, CA; Vacaville Library, 1020 Ulatis Dr., Vacaville, CA; Fairfield-Suisun Library, 150 Kentucky, Fairfield, CA; Benicia Library, 150 L, Benicia, CA; Suisun City Library, 333 Sunset, Suisun, CA; Dixon Public Library, 135 East B, Dixon, CA; Napa Library, 1150 Division St., Napa, CA; St. Helena Library, 1492 Library Lane, St. Helena, CA; Calistoga Library, 1108 Myrtle St., Calistoga, CA; and Yountville Library, Yountville, CA.

A PUBLIC HEARING ON THE DRAFT EIS/EIR
will be held
Wednesday, September 27, 1995 at 7:00 p.m.
at the following address:

VALLEJO
CITY COUNCIL CHAMBERS
CITY HALL
555 SANTA CLARA STREET
VALLEJO, CALIFORNIA

The purpose of the public hearing is to receive written and verbal comments on the Mare Island Naval Shipyard Disposal and Reuse Draft EIS/EIR. A brief presentation will precede the request for public comment. Navy and City of Vallejo representatives will be available at this public hearing to receive comments from the public regarding the environmental documentation.

Agencies and the public are encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. Comments should clearly describe specific issues or topics of concern. Written statements must be received at the address below no later than October 16, 1995.

COMMANDING OFFICER
ENGINEERING FIELD ACTIVITY WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-5006
ATTN: MR. JERRY HEMSTOCK (Code 185)

For additional information, please contact Mr. Jerry Hemstock at telephone (415) 244-3023, fax (415) 244-3737 or Ms. Ann Merideth, Planning Division, City of Vallejo, 555 Santa Clara Street, Vallejo, California 94590-5934, telephone (707) 648-4326, fax (707) 552-0163.

OFFICIAL
NEWS RELEASE

Mare Island Naval Shipyard
Public Affairs Officer, David Afana
Code 1160
Vallejo, CA 94592-5100
(707) 646-3537 FAX (707) 646-6101

VALLEJO, CALIFORNIA - The United States Navy announces the availability of the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) on the disposal and reuse of Mare Island Naval Shipyard. The Navy's Engineering Field Activity West, and the City of Vallejo are joint lead agencies for preparation of the EIS/EIR which is being prepared to comply with the 1993 Base Realignment and Closure (BRAC) directive from congress to close the Shipyard. Mare Island Naval Shipyard, which has been in operation since 1854, is scheduled to close in April of 1996.

The EIS/EIR assesses the potential environmental impacts associated with the disposal of federal surplus land at the Shipyard and the potential reuse alternatives. The Mare Island Reuse Plan, developed by the City of Vallejo, constitutes the preferred alternative for the EIS/EIR. Three alternative reuse scenarios are also considered, including a less intensive development of the property, still based in large part on the Mare Island Reuse plan, a redevelopment plan focusing heavily on open space, and a no-action alternative which would result in the federal government retaining the property in an inactive status.

The Draft EIS/EIR is available for public review at eleven Napa and Solano County public libraries including those in Vallejo, Vacaville, Fairfield, Benicia, Dixon, Napa, St. Helena, Yountville, Calistoga, and Suisun City. A public hearing to inform the public of the Draft EIS/EIR findings and to solicit comments will be held on Wednesday, September 27, 1995, beginning at 7:00 p.m. in the Vallejo City Council Chambers located at 555 Santa Clara Street in Vallejo. Federal, state and local agencies and interested individuals are invited and urged to attend the public hearing and also to submit written comments on the Draft EIS/EIR. Written comments must be received by October 30, 1995. Written comments should be forwarded to Mr. Jerry Hemstock, Code 185, Engineering Field Activity West, 900 Commodore Drive, San Bruno, California 94066-5006. For additional information, please contact Mr. Hemstock at (415) 244-3023, fax (415) 244-3737. For further information regarding the Mare Island Reuse Plan, contact Ms. Ann Merideth, Planning Division, City of Vallejo, 555 Santa Clara Street, Vallejo, California 94590-5934, (707) 648-4326, fax (707) 552-0163.

SUMMARY - PUBLIC MEETING

Disposal and Reuse of Mare Island Naval Shipyard Draft EIS/EIR

September 27, 1995

Order of Speakers and organization represented:

Presentation:	
LCDR Tom Brovarone	Mare Island Naval Shipyard
Doug Pomeroy	US Navy, Engineering Field Activity West
Ann Merideth	City of Vallejo
Public Comments:	
Neil Havlik	Member of reuse committee
John Osborne	Resident of Vallejo
William Johnson	Representative of residents not on RAB

Summary of Meeting Notes

LCDR Brovarone

LCDR Brovarone provided introductions and overview. He noted that the meeting purpose is to give a public overview and elicit oral and written comments on the Draft EIS/EIR. He described the meeting as containing two parts: the first will be an overview of the environmental planning process and the EIS/EIR schedule presented by Doug Pomeroy, and the second will be a summary of the Mare Island Reuse presented by Ann Merideth. He then introduced Doug Pomeroy, head of the base closure section of the Environmental Planning Branch at Engineering Field Activity West in San Bruno, California.

Doug Pomeroy

Doug Pomeroy gave a brief description of NEPA, CEQA and the proposed action for which the EIS/EIR is being prepared. He described other concurrent actions taking place under disposal and reuse including Federal screening and disposal of Federal property, community reuse planning, and environmental cleanup and compliance. Mr. Pomeroy then detailed the NEPA/CEQA process including public involvement (scoping and public review of Draft EIS/EIR) and other laws covered during the NEPA/CEQA process (Endangered Species Act, National Historic Preservation Act, Clean Water Act, Coastal Zone Management Act, hazardous waste laws, and Clean Air Act). Mr. Pomeroy explained the relationship between NEPA and CEQA and how the decision to prepare a joint document was made. He discussed the schedule for completing the EIS/EIR including the deadline for submitting comments and the timeline for completing the final EIS/EIR. He then introduced Ms. Ann Merideth of the City of Vallejo.

Ann Merideth

Ms. Merideth described the range of alternatives evaluated in the EIS/EIR. The four alternatives included the Proposed Action (Mare Island Reuse Plan), the Medium Density Reuse Alternative, the Open Space Alternative, and the No Action Alternative. Ms. Merideth gave a brief overview of the reuse planning process and how different reuses were proposed for different planning areas on Mare Island. She described the alternatives that were ultimately rejected during the planning process. These included a hotel complex, theme park, sports arena, prison, naturalization-detention facility, and wind-energy development.

Ms. Merideth described the differences between the Medium Density and Open Space Alternatives as compared to the Reuse Plan Alternative. She then described the No Action Alternative, which does not evaluate not closing, but evaluates the base under a caretaker status. The meeting was then turned back over to Doug Pomeroy.

Doug Pomeroy

Mr. Pomeroy listed the resource areas covered in the EIS/EIR. He described types of land categories including federal surplus land, federal transfer land, and state reversionary land. Mr. Pomeroy detailed how impacts were divided into significance categories and then highlighted some of the impacts. He described the significant impacts that would result from building the southern crossing bridge, impacts to cultural resources, impacts to traffic, and impacts to hazardous materials and waste. The meeting was then turned over to LCDR Brovarone to receive public comments.

Public Comments

Neil Havlik, resident of Fairfield and member of the Reuse Committee

Concerns include:

- Recommended including an environmentally superior alternative that looked at turning the dredge ponds over to the US Fish and Wildlife Service to aid in the restoration of Cullinan Ranch to tidal action. Stated that this would have beneficial effects to the City, US Fish and Wildlife Service, and the federal government.

John Osborne, resident of Vallejo

Concerns include:

- Impacts from residential development near the landfill area and next to the railroad repair building
- Impact to public services should be reevaluated in that any increase in demand for services is significant
- More detail should be given to the condition of buildings, roads, and utilities.
- The no impact designation for socioeconomic effects under disposal should be reevaluated.

- Impact to cultural resources from vandalism and unauthorized collection should be reevaluated.
- Major issues related to historic properties have not been discussed.
- Water resources should include impact of storm water runoff polluted by sewer cross connections.
- Clarify that dredging may leave behind unexploded ordnance.
- The washing up of naval gun propellant and small arms munitions needs to be addressed in impacts section.
- Contamination of soils needs to be included under geology and soils impact discussion.
- Figure 4-1 and text contradict each other regarding capacities of local access roads.
- Existing bicycle routes are not accurately described.

William Johnson, resident of Vallejo

Concerns include:

- Evaluate impacts in terms of the consumption of energy and resources including building demolition and construction.
- Property should be rehabilitated for low- and moderate-income housing.
- Buildings should be rehabilitated to the standards of Title 24 for energy conservation.
- The IDC is not a qualified entity to provide environmental oversight once property is transferred and could result in large liability to the City of Vallejo.
- Significant social impact of the community would result from the capital expenditures and creation of debt to reuse Mare Island.
- The Vallejo Recreation District does not have sufficient funds to manage recreational facilities on Mare Island.
- Cleanup should be a key reuse priority to restore property values.
- Lead based paint may seriously constrain leasing opportunities.
- The cost of demolition versus the cost of rehabilitation should be provided.
- Discussion on the integration of the Vallejo and Mare Island transit systems should be added.
- Range of alternatives is not broad enough.

Burle Southard, member of the Mare Island Restoration Advisory Board

Concerns include:

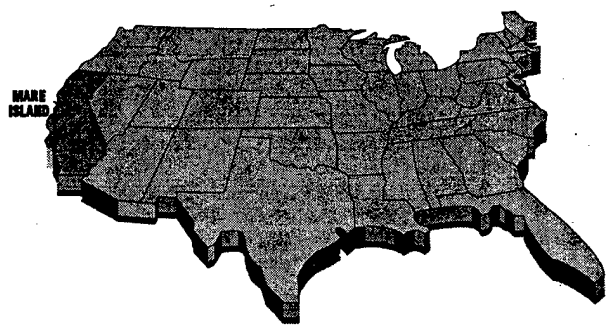
- EIS/EIR doesn't adequately address the Superfund and cleanup issue.
- The EIS/EIR should document whether or not the extent of environmental contamination has been addressed in the planning process.
- The EIS/EIR should address the economic viability of the reuse plan.

John Osborne (continuation of comments)

Concerns include:

- Landfill gases should be included in evaluation of air quality.
- Land use compatibility of residential areas and railroad maintenance yard should be evaluated with respect to noise.
- Presence of hazardous materials in utility manholes and tunnels should be addressed.
- The document should state who will pay to mitigate items not mitigated at disposal.
- Include records of spills prior to 1985.
- More details on the landfill should be included.
- There should be an assessment of earthquake ramifications if Roosevelt Terrace is built from unreinforced cinder block.

LCDR Brovarone thanked the audience for attending the public hearing and the hearing was adjourned at 8:35 p.m.



APPENDIX C

AGENCY LETTERS

APPENDIX C
AGENCY LETTERS

This page intentionally left blank.

COPY

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B
185LW/EP-1217

February 27, 1997

Cherilyn Widell
State Historic Preservation Officer
Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

Dear Ms. Widell:

Enclosed is the Memorandum of Agreement (MOA) for the layaway, caretaker maintenance, leasing and disposal of historic properties on the former Mare Island Naval Shipyard, Vallejo, California, which has evolved from our negotiations over the past three years with you, Lee Keatinge of the Advisory Council's Western Office, Ann Huston, National Park Service, and the City of Vallejo (City). It has been corrected and updated to include, as APPENDIX C, City Council Resolution NO. 97-51 which replaces its earlier resolution. This resolution adds to the list of historic properties to be protected by the City's historic preservation ordinance after title to the historic properties is conveyed by the Navy to non-federal entities. The list of historic properties to be afforded this protection has been expanded to include those additional properties submitted on January 17, 1997 by you and Ms. Huston. Resolution NO. 97-51 also acknowledges that the City will comply with the requirements of the California Environmental Quality Act regarding the protection of archeological resources, as was discussed in our meeting with representatives of the City on January 17.

On instruction from Ms. Keatinge the MOA has been prepared in final form and signed by the Navy and the City. Please sign the MOA and return it to me at your earliest convenience. Thereafter, it will be forwarded to the Advisory Council for signature and submitted to the National Park Service for concurrence.

If you have any questions with respect to the MOA, please call me at (415) 244-3015.

Your continued assistance and cooperation in this matter are gratefully appreciated.

Sincerely,

Louis S. Wall
Cultural Resources Program Coordinator
Environmental Planning Branch

Enclosure

Copy to: Lee Keatinge, ACHP, Lakewood, CO

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

November 25, 1996

Mr. Louis S. Wall
Cultural Resources Program Coordinator
Environmental Planning Branch
Naval Facilities Engineering Command
Department of the Navy
Engineering Field Activity, West
900 Commodore Drive
San Bruno CA 94066-2402

Re: 10/29/96 Draft Memorandum of Agreement for BRAC Action, Mare Island Naval Shipyard, Vallejo, CA

Dear Mr. Wall:

My staff has already shared with you several revisions we believe would enhance the draft MOA cited above. I hope the Navy and other parties to this consultation can accommodate these changes.

The draft you provided for review evidences that substantial progress has been made in providing for reasonable consideration of certain historic properties after these have left federal ownership. I want to acknowledge the City of Vallejo's major contribution toward such progress.

On the other hand, I am concerned that many contributors to the historic district do not appear on Attachment A-2 of the MOA and would therefore not receive the benefit of any consideration once they leave federal ownership. This includes some properties that are highly representative of important phases of Mare Island's history.

We should remember that at Mare Island, we are dealing with a National Historic Landmark that is one of the most important historic properties in the State of California. It therefore seems to me that we have a collective obligation as stewards of this valuable patrimony to consider adding to Attachment A-2 certain properties that are clearly worthy of consideration for preservation.

I propose that the consulting and concurring parties to this matter visit the site. I suggest that we then discuss the prospects for reasonably and manageably expanding Attachment A-2 and try to achieve a consensus on which specific properties might be included in a revised Attachment.

I look forward to our meeting on this important issue. If you have any questions or wish to suggest some dates and times for the meeting, please call me or Hans Kreutzberg of my staff at your earliest convenience.

Sincerely,

Cherilyn Widell
State Historic Preservation Officer

cc: Hon. Gloria Exline, Mayor, Vallejo
Ann Huston, NPS
Dawn Jacobson, Vallejo Heritage Commission
Courtney Damkroger, National Trust

CITY OF VALLEJO

DEVELOPMENT SERVICES DEPARTMENT

555 SANTA CLARA STREET • P.O. BOX 3068 • VALLEJO • CALIFORNIA • 94590-5934 • (707) 648-4326
FAX (707) 552-0183

April 17, 1997

Mr. Wayne S. White
Field Supervisor
Sacramento Field Office
U.S. Fish and Wildlife Service
2210 El Camino Avenue, Suite 130
Sacramento, CA 95821

SUBJECT: SECTION 7 CONSULTATION FOR MARE ISLAND NAVAL SHIPYARD

Dear Mr. White:

The City of Vallejo has reviewed the revised project description, dated April 11, 1997, for the Proposed Action and Alternatives for the disposal and reuse of Mare Island for the Endangered Species Act, Section 7, consultation. The City concurs with the revised project description and protection measures.

Sincerely,

ANN MERIDETH
Development Services Director

cc: Douglas Pomeroy, EFA-West
Kenneth Campo, City Manager
Alvaro da Silva, Community Development Director

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B
1852DP/P7-1259
11 April 1997

Mr. Wayne S. White
Field Supervisor
Sacramento Field Office
U.S. Fish and Wildlife Service
3310 El Camino Ave. Suite 130
Sacramento, CA 95821

Dear Mr. White:

Based on discussions between the Navy, the U.S. Fish and Wildlife Service (Service), and the City of Vallejo (City), the project description for the Proposed Action and Alternatives for the Navy disposal and subsequent community reuse of the former Mare Island Naval Shipyard is being resubmitted to you in this letter and will be revised in the Final EIS/EIR. The revised project description incorporates additional requirements for the protection of endangered, threatened, and proposed species, and includes recently revised acreage figures for federal surplus property, federal-to-federal property transfers, and property reverting to the State of California. These requirements have been previously discussed in detail between the Navy, the Service, and the City.

As previously agreed upon between representatives of the Navy, the Service, and the City, this Endangered Species Act, Section 7, consultation will only address the Navy property disposal of Mare Island and the subsequent community reuse of the property under the Mare Island Reuse Plan Alternative, which is the preferred alternative in the EIS/EIR. However, the Navy and the City are adding the additional endangered, threatened and proposed species management measures as part of all alternatives in the EIS/EIR.

Description of the Proposed Action
MINSY is located in the San Francisco Bay area on the western edge of the city of Vallejo. MINSY is situated on a flat peninsula approximately 3.5 miles long and one mile wide. The Navy currently owns a total of about 4600 acres at MINSY. Of the 4600 acres, approximately 1484 acres of MINSY have been determined to be federal surplus property, which the Navy is considering disposing from federal ownership. The Navy will transfer approximately 192 acres of property to other federal agencies to meet ongoing mission requirements of these agencies at MINSY. These federal-to-federal agency transfers include 161.8 acres to the Service, 18.16 acres to the Army, 11.17 acres to the Forest Service, and 0.67 acres to the Coast Guard. The Navy will place conservation easements on approximately 81 acres of endangered species habitat on federal surplus property prior to disposal. An additional 2924 acres of MINSY will automatically revert to the ownership of the State of California when the land is no longer needed for military purposes. These acreage figures are based on more accurate mapping information regarding MINSY, and are lower than those shown in the draft EIS/EIR, which were based on older information. The land ownership status at MINSY is shown in the attached figure.

MINSY is bounded by Mare Island Strait on the east, San Pablo Bay on the west, Carquinez Strait on the south, and Napa Marsh and other marshlands on the north. The MINSY facility includes Mare Island, a causeway connecting Mare Island and Vallejo, the Roosevelt Terrace housing complex located off the peninsula, the main entrance, and a railroad spur which extends from the peninsula through Vallejo. A bulkhead, which was identified in the Draft EIS/EIR as being under Navy ownership, has been determined by subsequent Navy real estate ownership studies to not be Navy property. MINSY currently contains about 960 buildings, totaling 10.5 million square feet, which were used for industrial, office, residential,

educational, commercial, recreational, cultural, and institutional uses.

Pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510) and specific base closure decisions approved by the U.S. Congress in September 1993, MINSY closed on March 30, 1996. The Navy proposes to dispose of the non-reversionary Navy property at MINSY in a manner that is consistent with the Mare Island Reuse Plan approved by the City of Vallejo in July 1994. The Navy actions considered in the EIS/EIR are the disposal of Mare Island from federal ownership, or retention of the property in federal ownership and caretaker status under the No Action alternative. The City action in the EIS/EIR is reuse of MINSY under the Mare Island Reuse Plan (Reuse Plan). The EIS/EIR also evaluates two additional reuse alternatives, the Medium Density Alternative and the Open Space Alternative. Disposal of federal surplus lands by the Navy will be a component of each of the proposed reuse alternatives. MINSY is now in caretaker status under the administrative responsibility of the Navy's Engineering Field Activity West office..

The proposed action of disposal of federal surplus land and implementation of the preferred alternative in the EIS/EIR, the Mare Island Reuse Plan, will result in substantial industrial, commercial, and community reuse of MINSY. About 5.7 million square feet of nonresidential building uses and 1836 residential units both on and off MINSY will exist at full buildout of the Reuse Plan. Approximately 18 miles of streets would be improved, and seven miles of new road would be built. Nine signalized traffic intersections would be constructed. Off-site improvements would include constructing the southern crossing and its approach, and redeveloping Roosevelt Terrace Housing. Under this alternative, the total number of residential units will increase from 1,083 units to 1,836 units at buildout, an approximately 59 percent increase. The projected population of MINSY at buildout will be 5175, including residents of Roosevelt Terrace, and the projected employment will be 9669 workers.

In order to preclude the potential for adverse impacts to endangered and threatened species, the Navy and the City propose to implement the following measures as part the Navy disposal and subsequent community reuse of MINSY under the Mare Island Reuse Plan.

Protection Measures

1. The following measures will be taken to protect the endangered California Clapper Rail and Salt Marsh Harvest Mouse:

(a) The Navy shall ensure that a detailed, active, annual, predator management plan of not to exceed 20 hours per week of field effort which effectively manages predators on all portions of MINSY is developed and implemented during caretaker status within 6 months after a Record of Decision on the EIS/EIR. The plan will continue indefinitely and be subject to the review and approval of the USFWS. The City advised the Navy by letter of January 15, 1997, that it intends to implement an active predator management program of not to exceed 20 hours per week which effectively manages predators upon transfer of MINSY from the Navy to the City. The City will be responsible for the annual predator management of each parcel as it is transferred from Navy ownership. The Navy will maintain responsibility for predator management on leased parcels. The Navy will provide its Predator Management Plan to the City prior to any property transfer to assist the City in meeting this requirement. The plan shall include, but not be limited to, the following elements:

(1) Provisions for continuous monitoring and management of predators on MINSY by qualified predator management personnel. Personnel shall be experienced and/or trained in performing predator management activities in or adjacent to clapper rail or harvest mouse habitat. The Navy and the City will submit the qualifications of personnel performing predator management activities to the Service for approval, which the Service will not unreasonably withhold. The Navy will ensure that during caretaker status, predator management personnel can operate on all Navy property necessary to complete

their mission. Upon property transfer, the City will ensure that the predator management program continues and that predator management personnel can operate on all non-federal property subject to the predator management requirement.

(2) The Navy and the City will fund predator management activities as part of their standard annual budgeting processes, consistent with all fiscal laws.

(3) Performance standards and associated contingency measures will be developed as part of the predator management plan.

(b) The Navy shall develop a detailed plan which effectively manages public access in and adjacent to rail or harvest mouse habitat on MINSY during caretaker status. The plan shall assure enforceability and maintenance of standards to manage public access to protect the rail and harvest mouse during caretaker status. The City will be responsible for enforceability and maintenance of the public access plan upon transfer of MINSY. This plan shall be subject to review and written approval by the Service within 6 months after the Record of Decision has been certified for the Final Environmental Impact Statement. The Navy will provide its Public Access Management Plan to the City prior to any property transfer to assist the City in meeting this requirement.

(c) Prior to implementation of any aspect of the Base Cleanup Plan, the Navy shall consult with the Service to ensure that the proposed cleanup work is not likely to adversely affect rails or harvest mice, or any other federally listed or proposed species, on MINSY. Should the Navy determine that harvest mice or other listed or proposed species are likely to be affected by the proposed cleanup work, the Navy shall initiate section 7 consultation with the Service.

(d) The Navy shall ensure that the local mosquito abatement district submits an annual work plan for their proposed mosquito abatement work on MINSY to the Service and the Navy within each given year. Prior to implementation of any aspect of an annual work plan, the Navy shall consult with the Service to ensure that the proposed mosquito abatement work is not likely to adversely affect rails or harvest mice, or any other federally listed or proposed species, on MINSY. Should the Navy determine that harvest mice or other listed or proposed species are likely to be affected by the proposed mosquito abatement work in the work plan, the Navy shall initiate section 7 consultation with the Service.

(e) Navy will prepare legally-binding conservation easements or similar real estate instrument to protect all nonreversionary Navy property on MINSY which is habitat for the California clapper rail or the salt marsh harvest mouse prior to Navy disposal of such property from federal ownership. The extent of these easements is shown in the attached figure and is approximately 81 acres. The language in the easements shall be subject to review and written approval by the Service prior to its recordation. The easements shall be recorded prior to disposal of these areas from federal ownership by the Navy. The easements shall ensure preservation and management of these lands for the protection of these endangered species and their habitat, regardless of any future changes in land ownership. A copy of the recorded easement documents shall be provided the Service within 30 days of actual recordation. The Mare Island Reuse Plan currently plans to maintain these areas as open space.

2. The following measures will be taken to protect salt marsh harvest mouse habitat.

(a) The Navy shall ensure that the purpose and objectives, as well as the standards and conditions established in the Memorandum of Understanding between the Service and Navy and dated July 28, 1988, continue to be implemented for the management of dredge disposal ponds at MINSY while the facility is in caretaker status. The Navy shall adhere to this requirement under any future operational scenarios including, but not limited to, leasing during caretaker status prior to

reversion of these properties to the State of California. The Navy shall consult with the Service if any changes in the scope and/or extent of dredge pond management beyond that identified in the MOU are proposed. The Navy also shall provide the Service with data on contaminant levels in dredged material proposed for placement in any dredge ponds to ensure that the material is not likely to affect harvest mice. The data shall be provided to the Service for review and written approval prior to placement of dredged material in any dredge pond at MINSY. The Navy shall advise the State of California regarding the presence of endangered and threatened species on reversionary property at the time of reversion.

3. The following measures shall be taken by the Navy and the City to protect the delta smelt and the proposed Sacramento splittail during caretaker status and reuse.

(a) Prior to transfer or lease of the dry docks or any other area where in-water activities may adversely affect delta smelt or Sacramento splittail, the Navy shall inform the future owner or user that federally endangered, threatened and proposed fish species occasionally occur in the vicinity of the Mare Island Naval Shipyard and that an Endangered Species incidental take permit must be obtained from the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game. The following avoidance and minimization measures are typically included in such permits:

(1) Minimize the impacts on delta smelt resulting from the permanent loss of spawning and refugial habitat due to destruction of emersed plants caused by placement of rip-rap, or construction of intake or outtake structures, dredging or placing of piles by avoiding areas having emersed plants. If destruction of emersed plants through avoidance is not possible, then habitat shall be acquired, enhanced, or created at a 3:1 ratio, and maintained in perpetuity by the California Department of Fish and Game or another appropriate management group. To determine the proper area to be acquired, the total surface area of affected emersed plants shall be measured by underwater survey. A plan that details the extent of affected areas, and describes proposed replacement areas, shall be submitted to the Service for approval at least 30 days prior to soil excavation, placement of rip-rap, and construction of recreation facilities, intake and outtake structures. Upon approval, the plan shall be implemented within one year of the completion of the repairs.

(2) Minimize the impacts on delta smelt resulting from the permanent loss of spawning and refugial habitat due to destruction of submersed aquatic plants, and habitat shall be acquired, enhanced, or created at a 3:1 ratio, and maintained in perpetuity by the California Department of Fish and Game or another appropriate management group. A plan that details the extent of affected areas, and describes proposed replacement areas, shall be submitted to the Service for approval at least 30 days prior to soil excavation, placement of rip-rap, and construction of recreation facilities, intake and outtake structures. Upon approval, the plan shall be implemented within one year of the completion of the repairs.

(3) Minimize the impacts on delta smelt resulting from the killing or harassment of delta smelt adults, juveniles, and larvae by screening all diversions associated with any future actions, using an approach velocity of 0.2 feet per second.

(4) Avoid impacts to delta smelt critical habitat resulting from disposal of dredge spoils by not disposing of any dredge spoils in the critical habitat area defined in the December 19, 1994 Federal Register.

Please issue your Biological Opinion based on our revised project description as quickly as possible so that we can complete the EIS/EIR and the National Environmental Policy Act process for the disposal and reuse of Mare Island. If you have questions or request a meeting on this subject please contact me at 415-244-3008.

Sincerely,

Douglas R. Pomeroy

Douglas R. Pomeroy
Group Leader
Base Conversion, Biology Section
Environmental Planning Branch

Encls

Copy to: City of Vallejo (Ann Merideth)

CITY OF VALLEJO

DEVELOPMENT SERVICES DEPARTMENT

555 SANTA CLARA STREET • P.O. BOX 3068 • VALLEJO • CALIFORNIA • 94590-5934 • (707) 648-4326
FAX (707) 552-0163

January 15, 1997

Mr. Doug Pomeroy
Head, Biological / BRAC Section
Department of the Navy
Engineering Field Activity, West
900 Commodore Drive
San Bruno, CA 94066-2402

SUBJECT: PREDATOR MANAGEMENT ON MARE ISLAND

Dear Mr. Pomeroy:

The City has received and reviewed the U.S. Fish and Wildlife Service's response to the City's original proposal to control domestic predators on Mare Island. The City understands the Service's response to include the following elements:

- The active predator management program will be initiated by the Navy during the caretaker status.
- The City will assume the program, presumably at a time when the property is transferred to the City.
- The program should not exceed 20 hours per week.
- The Department of Agriculture's Animal Damage Control program is the suggested provider of management services.

Based on our understanding of this response, the City finds its acceptable with one minor change. The City would like to reserve the option to use another service provider subject to the approval of the Service. The City wants to insure that the program is as cost-effective as possible.

If you have any questions, please let me know. We hope our acceptance of the Service's proposal resolves this issue and that it will no longer affect the completion of the EIS / EIR.

Sincerely,

ANN MERIDETH
Development Services Director

cc: Mayor Gloria Exline
Kenneth Campo, City Manager
Alvaro da Silva, Community Development Director
Gil Hollingsworth, Mare Island Conversion Manager
Kathy Hoffman, Office of Congressman George Miller

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-517

January 9, 1997

Mr. Doug Pomeroy
Head, Environmental Planning Branch
U.S. Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Subject: Proposed Predator Management by the City of Vallejo for the Proposed Mare Island Naval Shipyard Disposal and Reuse, Solano County, California

Dear Mr. Pomeroy:

This responds to your facsimile transmittal received by the U.S. Fish and Wildlife Service (Service) on December 10, 1996. This transmittal describes a proposal by the City of Vallejo (City) for conducting predator management for federally listed species at Mare Island as a component of the proposed Mare Island Naval Shipyard Disposal and Reuse. This proposal provides for: (1) the City to consult with the Service on potential impacts to federally listed species from domestic predators if reuse build-out exceeds the proposed project's anticipated level of 1,555 residential units (single family and multi-family), (2) inclusion of a restriction on the number of dogs and cats per residential unit into the Covenants, Conditions and Restrictions (CC&Rs), (3) inclusion of a prohibition on dogs and cats straying unleashed and/or out of control beyond the property boundaries of individual residential units, (4) enforcement of any violations to these CC&Rs through the CC&R enforcement process, and (5) placement and enforcement of the restriction and prohibition described above on the deeds for residential units if they are not imposed through the CC&Rs.

The Service finds the City's predator management proposal to be insufficient to ensure disposal and reuse of Mare Island Naval Shipyard complies with requirements of the Endangered Species Act. The imposition of CC&Rs does not provide any firm assurances that predation threats from domestic animals will be controlled and minimized. Also, the CC&Rs do not address potential threats from feral or introduced animals that likely would be attracted to food availability associated with residential and industrial areas on Mare Island. The City's proposal to prohibit dogs and cats straying unleashed and/or out of control does not provide any guaranteed assurances that disturbances to listed species would be effectively regulated or controlled. We also do not believe that monitoring of predators, in lieu of active predator management, is an effective tool for controlling and minimizing predation threats on Mare Island.

The Service maintains that an active predator management program, which also would provide a mechanism for monitoring predator threats, needs to be initiated to effectively manage predators on Mare Island as part of the base disposal and reuse. This program would provide funding for a maximum of 20 hours per week of predator management, preferably by an employee of the U.S. Department of Agriculture's Animal Damage Control. In our opinion, this program should be initiated now and overseen by the U.S. Navy during caretaker

status for the base. During this period, the funding and responsibility for the predator management could be transitioned to and ultimately assumed by the City, which would be responsible for maintaining the level of funding necessary to sustain a maximum of 20 hours per week of predator management at Mare Island in perpetuity. Periodic minor adjustments in the level of predator management may be appropriate contingent upon review and approval by the Service, but the maximum amount of predator management necessary would not exceed 20 hours per week for the proposed reuse alternative.

Please contact Jim Browning or Mike Thabault of my staff at (916) 979-2725 for further discussion.

Sincerely,

Joel A. Medlin
Field Supervisor

cc: RD (ARD-ES), Portland, OR
Congressional Office of George Miller, Pleasant Hill, CA (K. Hoffman)
City of Vallejo Development Services Department, Vallejo, CA (A. Merideth)
San Francisco Bay National Wildlife Refuge, Newark, CA

WASHINGTON, D.C. 20410-7000

OFFICE OF THE ASSISTANT SECRETARY FOR
COMMUNITY PLANNING AND DEVELOPMENT

July 15, 1996

Honorable Gloria Exline
City of Vallejo
555 Santa Clara Street
Vallejo, CA 94590-5934

Dear Mayor Exline:

The Department of Housing and Urban Development (HUD) has approved the City's base reuse plan for the surplus Naval Ship Yard Mare Island under the Base Closure Community Redevelopment and Homeless Assistance Act of 1994.

The Plan meets the minimal requirements under the Act regarding outreach to homeless assistance providers and balancing the economic redevelopment, other development, and homeless needs of the community. With this approval, the City may now move forward with implementing its Plan.

The agreement reached between the City and the Lord's Fellowship Center is reflected in the enclosed legally binding agreement. Given the significant needs of homeless persons in Vallejo as reported in your City's FY 1995 Consolidated Plan, it is surprising that your outreach effort did not attract more interest among the homeless provider community. We want to work with your community in identifying potential resources, such as properties on this base, that can be utilized to address the diverse needs of homeless individuals and families identified in your City's Continuum of Care Strategy outlined in your Consolidated Plan.

Within the vicinity of Vallejo, there are several other bases that have successfully completed a similar base reuse planning process. We suggest that the City meet with these groups and other homeless service providers, both within and outside of the community, to explore ways to effectively utilize the resources of the base to assist Vallejo's homeless population. We strongly urge the City to continue to look to the base buildings and other resources to provide emergency, transitional, and permanent housing and services to homeless individuals and families.

We support your efforts to pursue additional HUD resources and other sources of funds to address the gaps in the City's Continuum of Care. HUD programs, particularly the Community Development Block Grant and HOME Investment Partnerships programs which the City receives, can be used to augment local resources to provide assistance to homeless persons in Vallejo. HUD stands ready to assist you in these efforts.

Sincerely,

Andrew Cuomo
Assistant Secretary

Enclosure

cc: Toby Halliday, Office of Economic Adjustment
Maria Cremer, HUD's Office of Community Planning and Development (San Francisco)
Dennis Kelly, Base Transition Coordinator
Tom Sabbadini, Naval Facilities Engineering Command (San Bruno)
Rey Bernardes, The Lord's Fellowship Center

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
TEL (310) 980-4000; FAX (310) 980-4018

March 29, 1996

Mr. Jerry Hemstock
U.S. Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Hemstock:

Thank you for the opportunity to review the Draft Environmental Impact Statement/Environmental Impact Report for Mare Island Naval Shipyard Disposal and Reuse (EIS/EIR), and for requesting our concurrence with the Biological Assessment for purposes of completing federal Endangered Species Act, section 7 consultation.

The National Marine Fisheries Service (NMFS) is responsible for preserving and enhancing marine, estuarine, and anadromous fishery resources and the habitats which support these resources. The EIS/EIR's proposed reuse alternatives include continued operation of shipyard dry dock facilities and associated dredging activities that are of particular interest to NMFS. The EIS/EIR describes dry dock operations that can trap fish (not returned to Mare Island Strait during dewatering) and subsequently destroy them when the water is pumped out of the dry dock. With adequate safeguards, impacts to the endangered winter-run chinook salmon should be insignificant.

General Comments

The Navy has provided survey information regarding fish trapped during dry dock operations in 1990 and 1991 (EIS/EIR Volume 2 - Technical Appendices, Appendix D, Table D-2 and December 4, 1991, correspondence to the California Department of Fish and Game). Several species of particular concern to NMFS, including chinook salmon, steelhead trout, sturgeon, and striped bass were detected in this survey.

To preclude unforeseen future adverse impacts to all fish species subject to entrapment and entrainment during dry dock operations as presently conducted, NMFS concurs with mitigation proposed in Chapter 4: Environmental Consequences, Section 4.6.1: Biological Resources, Proposed Action - Mare Island Reuse Plan, Mitigation 4 for Impacts to Sensitive Fish and Wildlife, and makes the following recommendations:

- Dry dock operations should include measures for the salvage of trapped fish species.

- Dredging operations should be conducted in a manner which avoids entrainment of fish.

Endangered Species Act Issues

The Sacramento River endangered winter-run chinook salmon is listed as endangered under the federal Endangered Species Act. However, based on a review of all available information, NMFS concurs with the EIS/EIR finding that, based on the limited number of fish recorded in the dry dock survey of 1990 and 1991, fully mitigated dry dock operations (consistent with the above conditions) are not likely to jeopardize the continued survival of winter-run chinook salmon.

This letter concludes section 7 consultation for the endangered winter-run chinook salmon under the federal Endangered Species Act. If new information becomes available indicating that winter-run chinook may be adversely affected by the preferred alternative, further consultation will be necessary.

If you have questions concerning these comments, please contact Mr. Dante Maragni at 707-575-6053 or Mr. Gary Stern at 707-575-6060 at 777 Sonoma Avenue, Room 325, Santa Rosa, California 95404-6528; FAX 707-578-3435.

Sincerely,

Hilda Diaz-Soltero
Regional Director

STATE OF CALIFORNIA PETE WILSON, *Governor*

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
THIRTY VAN NESS AVENUE, SUITE 2011
SAN FRANCISCO, CALIFORNIA 94102-6080
PHONE: (415) 557-3686

August 1, 1997

Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-2402

Attention: Mr. Jerry Hemstock

Subject: Consistency Determination No. CN 10-97

Ladies and Gentlemen:

On July 18, 1997, the San Francisco Bay Conservation and Development Commission voted to concur with the U.S. Navy's consistency determination (CN No. 10-97) regarding the disposal of federal surplus property at the Mare Island Naval Shipyard (MINSY) that does not revert to the State of California to various non-federal and federal entities. The Commission's Letter of Agreement for the subject consistency determination is enclosed.

As you are aware, the Commission concurred with the Navy's consistency determination despite an on-going disagreement between the State Lands Commission and the Navy over the acreage of reversionary lands at MINSY. However, in concurring with the Navy's determination, the Commission recognizes: (1) the adequacy of federal land title remains unresolved; (2) the project which is the subject of its concurrence is necessarily limited to lands which do not revert to the State of California; (3) concurrence does not consent to the federal government's assertion of title over the 850-acre area that is the subject of the disagreement between the State Lands Commission and the Navy; (4) concurrence will not prejudice the state's rights to the correct amount of reversionary land or will not adversely affect the state's title to those lands to which it is legally entitled; and (5) implementation of any future activities within the Commission's jurisdiction at MINSY will require further Commission review and concurrence which will be contingent upon resolution of any land title issues at the site thus such matters should be resolved prior to the Navy's disposal of MINSY.

The Commission also recognized that resolution of the outstanding title issue with the State is a responsibility of the federal government, not a subsequent landowner. Therefore, the Commission strongly urged that this issue be dealt with now and not left to be dealt with on a piecemeal basis by non-federal entities and private parties.

If you should have any questions regarding the attached Letter of Agreement or need any further assistance, please contact Jaime Michaels of my staff.

Sincerely,

WILL TRAVIS
Executive Director

WT/JM/vm

STATE OF CALIFORNIA
PETE WILSON, *Governor*

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
THIRTY VAN NESS AVENUE, SUITE 2011
SAN FRANCISCO, CALIFORNIA 94102-6080
PHONE: (415) 557-3686

BCDC Original

LETTER OF AGREEMENT FOR CONSISTENCY DETERMINATION NO. CN 10-97

August 1, 1997

Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-2402

ATTENTION: Mr. Jerry Hemstock

Ladies and Gentlemen:

On July 18, 1997, the San Francisco Bay Conservation and Development Commission, by a vote of 19 affirmative, 0 negative, and 0 abstentions, adopted the following resolution:

I. Agreement

A. The San Francisco Bay Conservation and Development Commission agrees with the determination of the Department of the Navy, Engineering Field Activity, West, that the following project is consistent with the Commission's amended coastal zone management program for San Francisco Bay:

Location: In the Bay and the shoreline band at the Mare Island Naval Shipyard within the incorporated boundaries of the City of Vallejo, Solano County (see Exhibit A, and Exhibit B, which reflects the view of the Navy as to which lands will revert to the state and which lands are available for disposal as surplus lands).

Project: According to the Department of the Navy's consistency determination, the project will involve transferring title of approximately 1,670 acres of non-reversionary lands at the Mare Island Naval Shipyard, which totals 4,600 acres, to federal and non-federal entities. Pursuant to the Navy's consistency determination, the City of Vallejo will receive approximately 1,485 acres, the U.S. Coast Guard will receive one acre, the U.S. Fish and Wildlife Service will receive 162 acres, the U.S. Forest Service will receive 7.5 acres, and the U.S. Army will receive 14 acres. The project is necessarily limited to lands which do not revert to the State of California; such reversion is not subject to the consistency provisions of the federal Coastal Zone Management Act. Disposal of the federal surplus lands will be contingent upon the remediation of contaminated property, which is the responsibility of the U.S. Navy. Remediation of all contaminated sites on the island is not yet complete and will continue into the future.

B. This agreement is given on the basis of information submitted by the Department of the Navy, Engineering Field Activity, West Naval Facilities Engineering Command, in both the consistency determination dated May 19, 1997, and the joint draft Environmental Impact Statement/Environmental Impact Report for the disposal and reuse of Mare Island issued in August, 1995. This agreement only affects non-reversionary lands subject to federal disposal.

II. Findings and Declarations

A. **Project Description**. The Mare Island Naval Shipyard (MINSY) operated from the mid-1800s through Spring, 1995, when shipyard activities ceased. Pursuant to the Defense Base Closure and Realignment Act of 1990, MINSY officially closed in April, 1996. The Navy's transfer of title of non-reversionary federal surplus lands at MINSY to non-federal and federal entities is the subject of this federal consistency determination.

As a part of the federal disposal process, a reuse plan for MINSY was developed by the City of Vallejo, which was accepted by the City Council in 1994. The draft Environmental Impact Statement/Environmental Impact Report for the disposal and reuse of Mare Island (DEIS/R) issued in August, 1995 described programmatically a "Proposed Action" reuse alternative involving the development of various commercial, residential, and community projects within thirteen reuse areas at MINSY (see Exhibit C, which reflects the view of the Navy as to which lands will revert to the state and which lands are available for disposal as surplus lands). Although this consistency determination primarily concerns the disposal of federal surplus property at MINSY, the reuse activities likely to be implemented following disposal and remediation of the site (as discussed under the Proposed Action in the DEIS/R) are also analyzed.

According to the Navy's consistency determination, the federal surplus property to be disposed totals approximately 1,670 acres. The Navy's consistency determination also states that the remaining property at MINSY, approximately 2,900 acres of tide and submerged lands was granted to the United States by the State of California for development of the shipyard, will revert to state ownership upon remediation of contaminated property at MINSY and disposal of federal surplus land by the Navy and, thus, is not the subject of its consistency determination. The State Lands Commission, the state entity charged with administration of California's ownership of tide and submerged lands, disputes the Navy's figure regarding the lands reverting to the state, and states that there are approximately 3,750 acres of reversionary lands at MINSY leaving approximately 850 acres—rather than 1,670 acres as described in the Navy's consistency determination—of land available for disposal by the Navy.

The disposal of non-reversionary federal surplus lands at MINSY by the Navy is consistent with the Commission's law and policies regarding Bay fill, public access, dredging, and water quality, and with the water-related industrial priority use designation in the *San Francisco Bay Plan* (Bay Plan). The Commission finds the Navy's determination consistent with its law and policies despite the fact that the title issue remains unresolved. The Commission's concurrence does not prejudice the state's rights to the correct amount of reversionary land and will not adversely affect California's title to those lands of which it is legally entitled. Given that this consistency determination can only apply to lands which do not revert to the state, the findings and declarations below are to be read to apply only to lands which do not revert and which can be disposed by the federal government. Further, the implementation of any future activities within the Commission's jurisdiction at MINSY will require further Commission review and concurrence by way of a consistency determination and/or permit which, among other things, will first require resolution of any land title dispute over property at the site.

B. **Bay Fill.** Section 66605 of the McAteer-Petris Act, in part, provides that "further filling of San Francisco Bay...should be authorized only when public benefits from fill clearly exceed public detriment from the loss of the water areas and should be limited to water-oriented uses (such as...water-related industry...bridges...water-oriented recreation)...."

The transfer of title by the Navy will not involve fill in the Bay. However, the DEIS/R indicates that subsequent to the disposal of federal surplus land by the Navy, several potential reuse activities (as described in the Proposed Action in the DEIS/R) would possibly result in Bay fill including: (1) a bridge at the south end of MINSY over Mare Island Strait (Reuse Area No. 10); (2) a new recreational boat marina (Reuse Area No. 10); and (3) ancillary activities related to the dredged material disposal ponds located at the western side of the island, such as off-loading and pumping facilities. Although these activities are water-oriented uses allowed under the Commission's law and policies regarding fill in the Bay, the DEIS/R discusses them programmatically thereby precluding a complete analysis at this time of their specific consistency with the Commission's fill and other potentially relevant policies (such as safety of fills, transportation, recreation, fish and wildlife, and marshes and mudflats). The implementation of these activities, and others as addressed below, within the Commission's jurisdiction or the coastal zone by a federal or non-federal entity or by the state of its reversionary land title, however, would require further Commission review and concurrence by way of a consistency determination and/or permit allowing at that time a full analysis of their consistency with relevant law and policies. The disposal of non-reversionary federal surplus property by the Navy, which would facilitate implementation of potential fill activities allowable only after additional review and concurrence by the Commission has occurred, is generally consistent with the Commission's law and policies regarding fill in the Bay.

C. **Priority Use Designation.** Section 66602 of the McAteer-Petris Act, in part, states: "...certain water-oriented land uses along the Bay shoreline are essential to the public welfare of the Bay Area, and that these uses include ports, water-related industries...upland dredged material disposal sites...; that the San Francisco Bay Plan should make provision for adequate and suitable locations for all these uses, thereby minimizing the necessity for future Bay fill to create new sites for these uses...." Further, the McAteer-Petris Act and the Bay Plan provide that development within the Commission's 100-foot shoreline band jurisdiction must be consistent with priority use designations, as defined in the Bay Plan Maps. Bay Plan Map No. 15 designates the ten active dredged material disposal ponds along the west side of Mare Island for water-related industry, specifically for dredged material disposal and rehandling or drying, and further notes that the three northernmost ponds could be used for wetland habitat.

The western half of Mare Island consists of open space lands, including tidal and non-tidal wetlands, and ten active and six inactive dredged material disposal ponds (see Exhibit D, which reflects the view of the Navy as to which lands will revert to the state and which lands are available for disposal as surplus lands). Historically, the ponds have been used to store material dredged from the Navy's berths along Mare Island Strait. In addition, the ponds have historically been colonized by pickleweed vegetation and the endangered salt marsh harvest mouse. According to the Navy's consistency determination, almost all of the active ponds are located on land that will revert to the state without dispute by the Navy. However, the Navy asserts that the southeastern portion of Pond No. 3E is located on federal surplus property and, thus, is the only portion of the active dredged material ponds that is the subject of its consistency determination. It is the State Lands Commission's position that all of Pond No. 3E is located on reversionary land. As stated earlier, this consistency determination is necessarily limited to non-reversionary federal surplus lands.

Under the Proposed Action described in the DEIS/R, following remediation of contaminants in the pond area and disposal of the property by the Navy, "the levees of the [active] dredge ponds would be raised by four feet to ensure at least a 25-year capacity for dredged sediment storage space." In addition, as described in the Navy's consistency determination, Pond Nos. 1 and 3W, which are located on state reversionary land, and Pond No. 3E, whose southeastern portion the Navy believes is located on federal surplus property, would be used by the U.S. Fish and Wildlife Service for expansion of the San Pablo Bay National Wildlife Refuge. In the event that the ponds are used in this manner, the proposed activity would be consistent with the priority use designation as defined on the Bay Plan Map No. 15. However, similar to any future activities within the Commission's jurisdiction at MINSY, the use of the ponds would require further Commission review and concurrence by way of a consistency determination and/or permit which, among other things, would first require resolution of any land title dispute over property at the site. In addition, the future use of any of the ponds located on reversionary land would ultimately require a lease from the State Lands Commission, which will administer and consider lease of reversionary lands on the state's behalf.

Furthermore, although the above-described proposed use of the active dredged material disposal ponds would be consistent with the priority use designation as defined on the Bay Plan Map No. 15, the available information discusses this use in a programmatic manner, thereby precluding at this time a complete analysis of the consistency of the project with the priority use designation, as well as with other potentially relevant law and policies (such as fish and wildlife, and water-related industry). The future reuse of the ponds within the Commission's jurisdiction or coastal zone by a federal or non-federal entity or by the state of its reversionary land title, however, will require further Commission review and concurrence and, thus, allow at that time a thorough analysis of the consistency of the potential reuse of the ponds with relevant law and policies. The disposal of non-reversionary federal surplus property by the Navy, which would facilitate implementation of the proposed activities at the dredged material ponds only after additional review and concurrence by the Commission has occurred, is consistent with the water-related priority use designation in the Bay Plan Map No. 15, as well as with potentially relevant law and policies.

D. **Public Access.** Section 66602 of the McAteer-Petris Act, in part, states: "...that existing public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided." Section 66632.4 of the McAteer-Petris Act, in part, provides: "Within any portion or portions of the shoreline band which shall be located outside the boundaries of water-oriented priority land uses, as fixed and established pursuant to Section 66611, the Commission may deny an application for a permit for a proposed project only on the grounds that the project fails to provide maximum feasible public access, consistent with the proposed project, to the Bay and its shoreline."

The Bay Plan policies on public access in part, state: "In addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline." The Bay Plan policies on other uses of the Bay and shoreline, in part, state: "Shore areas not proposed to be reserved for a priority use should be used for any purpose...that uses the Bay as an asset and in no way affects the Bay adversely...." In April, 1996, the Bay Plan was amended to delete the port and water-related industry priority use designations from all areas of Mare Island except for the ten active dredged material disposal ponds which remain designated for water-related industry priority use.

Following the disposal of non-reversionary federal surplus land, certain reuse activities discussed under the Proposed Action in the DEIS/R would occur within the Commission's 100-foot shoreline band jurisdiction including the development of: (1) an industrial park (Reuse Area No. 1); (2) a small business complex, a waterfront promenade, and a U.S. Army reserve center (Reuse Area No. 3); (3) a district dedicated to historic and non-historic ship repair and interpretive facilities (Reuse Area No. 4); (4) a heavy industrial area for metal processing and fabrication (Reuse Area No. 5); (5) a new residential area and recreational boat marina, and the northern landing of the southern bridge crossing (Reuse Area No. 10); and (6) a regional park (Reuse Area No. 12). As proposed in the DEIS/R, these reuse activities would be developed in a manner so as to facilitate public access to the shoreline either through the incorporation of a waterfront promenade or, in the case of the regional park, through the incorporation of pedestrian, cycling, and equestrian trails. The exception to this is the proposed U.S. Army reserve center in Reuse Area No. 3, as discussed in the Navy's consistency determination, which, as proposed, would not include a public access component.

The proposed reuse activities within the Commission's 100-foot shoreline band jurisdiction would generally be consistent with its law and policies regarding public access to the shoreline with the possible exception of the proposed Army reserve center in Reuse Area No. 3. However, the Navy's consistency determination discusses the proposed shoreline band activity in general terms, thereby precluding a complete analysis at this time of its consistency with the Commission's public access—and other potentially relevant—policies, including whether public access will ultimately be consistent with the project proposed for the subject area. The implementation of the above-referenced reuse activity within the Commission's jurisdiction or coastal zone by a federal or non-federal entity or by the state of its reversionary land title will, however, require further Commission review and concurrence and, thus, allow at that time a full analysis of its consistency with relevant law and policies. The disposal of non-reversionary federal surplus property by the Navy, which would facilitate implementation of the proposed reuse activities affecting public access only after additional review and concurrence by the Commission has occurred, is generally consistent with the Commission's law and policies regarding public access.

E. **Dredging and Disposal of Dredged Material.** Section 66663 of the McAteer-Petris Act states, in part: "...dredging is essential to establish and maintain navigational channels for maritime commerce, which contributes substantially to the local, regional, and state economies...."

The Bay Plan dredging policies state, in part: "Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected; and (d) the materials would be disposed of in accordance with [Dredging] Policy 2 [which states, in part, that "disposal of dredged materials should be encouraged in non-tidal areas where the materials can be used beneficially, or in the ocean."]

Historically, maintenance dredging in the immediate vicinity of Mare Island has occurred at the federal channel and the berthfront along the Mare Island Strait. The material dredged along the channel has been disposed at the federal site in Carquinez Strait, while the material dredged at the

berthfront has been disposed at the dredged material ponds at MINSY. Although the DEIS/R discusses possible future dredging scenarios for the site to accommodate a break bulk cargo terminal or shipbuilding facility and/or modern container cargo, it also indicates that "[t]he type and amount of dredging...under the Proposed Action has not been determined at this time...."

The DEIS/R's programmatic discussion of the proposed dredging at MINSY does not make possible at this time a complete analysis of the consistency of the proposed dredging and disposal activities with the Commission's dredging—and other potentially relevant—policies. However, the proposed dredging and disposal activities would be consistent with the Commission's law and policies regarding dredging if: (1) future dredging activities continued to serve a water-oriented use; (2) dredging and disposal activities met water quality requirements of the San Francisco Bay Regional Water Quality Control Board (Regional Board) and did not adversely affect the Bay's natural resources; and (3) dredged materials would be disposed outside of the Commission's jurisdiction and used beneficially—perhaps at the ponds located on Mare Island—or in the ocean, if feasible. Dredging and disposal of material within the Commission's jurisdiction or coastal zone, however, will require further Commission review and concurrence by way of a consistency determination and/or permit by a federal or non-federal entity or by the state of its reversionary land title at which time a full analysis regarding the consistency of these activities with relevant law and policies will be possible. The disposal of federal surplus property by the Navy, which would facilitate proposed future dredging activities at Mare Island only after additional review and concurrence by the Commission has occurred, is generally consistent with the Commission's law and policies regarding dredging.

F. **Water Quality.** The Bay Plan water quality policies state, in part: "To the greatest extent feasible, the Bay marshes, mudflats, and water surface area and volume should be maintained and, whenever possible, increased....Bay water pollution should be avoided....Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the [Regional Board's] Basin Plan. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the [Regional Board] should be the basis for carrying out the Commission's water quality responsibilities."

According to the DEIS/R: "[MINSY] has been operated as a military installation since the mid-1800s. Ship building and ship maintenance activities have included operation of machine shops, fueling facilities, metal fabrication and plating shops, battery shops, and fuel storage tanks. Fuels, lubricants, paints, solvents and other industrial chemicals have been used throughout much of the history of the shipyard. Similarly, ordnance has been manufactured, used, and disposed of on Mare Island. More recent activities have included maintenance and refueling modern submarines and the handling and storage of radioactive materials. The age of most shipyard buildings also presents the potential for the presence of lead-based paints and asbestos containing material." Further, the DEIS/R states: "Although widely accepted at the time, procedures followed prior to the mid-1970s for managing and disposing of many wastes often resulted in contamination of the environment." The Navy, which is responsible for remediating contaminated areas on the island, has characterized all known and suspected areas of contamination and has completed remediation at several of these sites. However, remediation—which is required prior to disposal and transfer of any affected property at MINSY—of all contaminated sites on the island is not yet complete and will continue into the future.

As a part of the on-going remediation process, a panel of representatives from local, state, and federal government entities, including the Commission staff, has been put together to oversee the manner in which remediation activities are carried out at MINSY. The primary regulatory agencies participating in this process are the U.S. Environmental Protection Agency, the State Department of Toxic Substances Control, and the Regional Board. As a part of this process, the participating panel members review sampling and analysis plans, testing data, and remediation plans for each affected area prior to implementation of remediation activities.

The DEIS/R discusses proposed remediation activities at MINSY in a programmatic manner and, thus, the Commission cannot at this time analyze fully the potential impacts of these activities on Bay resources or their consistency with potentially relevant policies which include, but are not limited to, water quality. However, the Commission staff as well as the Regional Board—the Commission's primary advisory body regarding water quality issues—will remain involved with the remediation planning process for Mare Island and, thus, analyze on an on-going basis the potential impacts of proposed remediation activities on the Bay's resources as well as potential consistency or conflicts with the Commission's law and policies. Further, the implementation of certain future remediation activities occurring within the Commission's jurisdiction and/or affecting the coastal zone by a federal or non-federal entity or by the state of its reversionary land title will likely require further Commission review and concurrence by way of a consistency determination and/or permit at which time a full analysis of the consistency of such activities with relevant law and policies will be possible. Given that the Commission staff and the Regional Board will remain involved with the remediation planning process and that implementation of certain future remediation activities will likely be preceded by additional review and concurrence, the proposed disposal of federal property by the Navy that will facilitate implementation of these activities is consistent with the Commission's law and policies regarding water quality.

G. **Coastal Zone Management Act.** The Commission, pursuant to the CZMA of 1972, as amended (16 USC Section 1451), and the implementing Federal Regulations in 15 CFR Part 930, is required to review federal projects within the San Francisco Bay and agree or disagree with the federal agency's determination that the project is consistent with the Commission's amended coastal zone management program for San Francisco Bay. The Commission finds and certifies that the project proposed by the Navy, as described herein and in the information submitted, is within the coastal zone and is consistent with the Commission's amended coastal zone management program for the Bay, as approved by the Department of Commerce.

H. **Environmental Impact.** Pursuant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), the Navy and the City of Vallejo prepared the DEIS/R that evaluated the impacts associated with the proposed disposal and reuse of MINSY, dated August, 1995. The final EIS/R is scheduled to be released in July, 1997. The EIS/R will be used in the Navy's consideration of disposal options and implementation of the preferred reuse plan—or its alternative—in the ROD, which will consider significant impacts and mitigations that occur on federal surplus property as a result of disposal and reuse. The ROD is expected to be signed in August, 1997. The City of Vallejo is considering certification of the final EIS/R in August, 1997. Following certification, the final (preferred) reuse alternative will be selected through the land use approval process. The City will use the final EIS/R in considering any necessary amendments to its General Plan, adoption of a Specific Plan or Planned Development Master Plan, and zoning changes. According to the Draft EIS/R, "[t]he planning process for the reuse of Mare Island will occur over a period of 20-30 years. During this process, additional environmental and planning studies would be required....Subsequent project-level environmental

review will be required under CEQA for specific development plans and programs on the site. No additional NEPA review by the Navy would be required after disposal of the base is completed; however, further NEPA review may be required of future federal users of portions of the property if actions with potentially significant impacts not addressed in the EIS/EIR are proposed." The consistency determination also states that, "...subsequent reuse of Mare Island property by future Federal and non-Federal owners will be subject to the applicable requirements of the CAMA and/or the Commission's permitting requirements." Through the course of the disposal and reuse project environmental documentation will continue to be provided to the Commission staff. Pursuant to these materials and the consistency determination, the Navy sufficiently has resolved potential environmental impacts associated with disposal of federal surplus property. Therefore, the Commission finds that the project will not have a significant adverse impact on the environment.

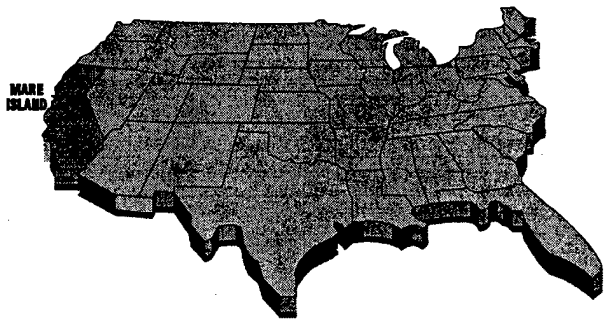
I. **Conclusion.** For all of the above reasons, the Commission finds that the disposal of non-reversionary federal surplus lands at MINSY by the Navy will not involve impermissible fill in the Bay, not adversely impact existing public access, be consistent with priority use designation in the Bay Plan, sufficiently protect fish and wildlife resources, and maintain water quality in the Bay. Therefore, the project is consistent, to the maximum extent practicable, with the Commission's amended coastal zone management program for the Bay. In finding that the project is consistent, to the maximum extent practicable, with the Commission's amended coastal zone management program for the Bay, the Commission recognizes that: (1) the adequacy of federal land title remains unresolved; (2) concurrence will not prejudice the state's rights to the correct amount of reversionary land, or will not adversely affect California's title to those lands to which it is legally entitled; and (3) implementation of any future activities within the Commission's jurisdiction at MINSY will require further Commission review and concurrence by way of a consistency determination and/or permit which, among other things, will be contingent upon resolution of any land title dispute over property at the site.

Executed at San Francisco, California, on behalf of the San Francisco Bay Conservation and Development Commission on the date first above written.

WILL TRAVIS
Executive Director

Enc.
WT/JM/vm

cc: U. S. Army Corps of Engineers, Attn: Regulatory Functions Branch
San Francisco Regional Water Quality Control Board, Attn: Certification Section
Environmental Protection Agency, Attn: Mike Monroe, W-3-3
State Lands Commission, Attn: Blake Stevenson
City of Vallejo, Attn: Ann Merideth



APPENDIX D

CULTURAL RESOURCES

Memorandum of Agreement
Among
The United States Navy, The Advisory Council on Historic Preservation and The California State Historic Preservation Officer Regarding the Layaway, Caretaker Maintenance, Leasing, and Disposal of Historic Properties on the Former Mare Island Naval Shipyard, Vallejo, California

WHEREAS, the Department of the Navy (Navy) has been directed to close and layaway, place in caretaker maintenance, and subsequently lease, sell, transfer, or otherwise dispose of properties at the former Mare Island Naval Shipyard (Shipyard) by the Base Realignment and Closure Act, as amended in 1993, and this undertaking will affect Shipyard buildings, structures and historic archeological properties included in or eligible for inclusion in the National Register of Historic Places (Register); and

WHEREAS, the Shipyard is a National Historic Landmark (NHL) included in the Register and located within the limits of the City of Vallejo (City), a Certified Local Government under Section 101(c) of the National Historic Preservation Act (Act), as amended; and

WHEREAS, the Navy has consulted with the Advisory Council on Historic Preservation (Council) and the California State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 (16 U.S.C. 470f); and Section 110f of the same Act (16 U.S.C. 470h-2(f)); and

WHEREAS, upon disposal of the historic properties from the Navy to a non-federal entity, any Federal jurisdiction ceases and the jurisdiction of the historic property reverts exclusively to the City, and therefore, the City was invited to participate in the development of this agreement and has been invited to concur; and

WHEREAS, the Secretary of the Interior, as represented by the Pacific-Great Basin System Support Office, formally Western Region, National Park Service (NPS), participated in the development of this agreement and has been invited to concur with its conditions because of the National Historic Landmark designation;

NOW, THEREFORE, the Navy, the Council and the California SHPO agree the layaway, caretaker maintenance, lease, sale, transfer, and disposal of the Shipyard historic properties shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The Navy will ensure that the following measures are carried out:

1. National Register Nomination.

a. In consultation with the California SHPO and the NPS the Navy has developed a comprehensive historic context statement that addresses the significance of the Shipyard's role from 1854, when it was the first naval facility constructed on the Pacific Coast of the United States, to the conclusion of the Cold War in 1989, and recommended changes to the Shipyard Historic District boundaries consistent with the expanded historic context statement.

b. In consultation with the California SHPO the Navy has evaluated the extant buildings, structures, landscapes, and historic archeological properties and identified those that contribute to the Mare Island Historic District.

c. The Navy has evaluated the potential for finding significant historic archeological properties on the Shipyard and developed an archeological predictive model which has been included in the National Register Nomination Form for the Mare Island Historic District.

d. The Navy has revised the existing National Register Nomination Form for the Mare Island Naval Shipyard Historic District and has submitted it to the Keeper of the National Register.

2. Prehistoric Archeology.

a. The Navy has developed a prehistoric archeological context statement and surveyed to relocate and evaluate, through testing, previously recorded prehistoric archeological sites on Mare Island and determined in consultation with the California SHPO that there is no evidence of prehistoric occupation that will qualify for inclusion in the National Register.

b. The Navy has updated the existing State Historic Inventory forms for the previously recorded prehistoric archeological sites and shall submit copies to the Northwest Information Center, Sonoma State University, Rohnert Park, California by March 1, 1997.

c. The Navy shall recover prehistoric artifacts and associated field notes collected during the 1985 archeological study prepared by Roop and Flynn, approximately one cubic foot of material, and arrange for their professional curation in accordance with Secretary of the Interior's standards (36 CFR Part 79) by October 1, 1997.

3. Historic Artifacts and Records.

a. The Navy has collected the items in the Naval Historical Center's May 1994 inventory of historic artifacts and historically significant materials and the historic furniture transferred from the Public Works Center San Francisco Bay's inventory on the Shipyard and has secured them in temporary storage in Building 215 at Mare Island Shipyard.

b. The items collected in 3.a. above are the responsibility of the Director of the Naval Historical Center, Washington Naval Yard, District of Columbia, who will arrange for the transport of those items to be permanently curated at other museums, and arrange for the remainder to be placed on permanent loan to a museum(s) in Vallejo or the greater San Francisco Bay area.

c. The Navy has coordinated the disposal of the Shipyard's records, drawings, plans and photographs with the National Archives Pacific-Sierra Region, San Bruno, and is in the process of forwarding the original records, historic maps, architectural drawings, negatives, slides and photographs which were transferred by the former Mare Island Naval Shipyard to the National Archives. This process will be completed by October 1, 1997.

4. Layaway and Caretaker Maintenance.

a. Prior to layaway and placement of historic properties into a caretaker maintenance status, the Navy shall follow the terms of the Programmatic Agreement executed among the Navy, Council, and California SHPO in August 1992 (1992 PA) regarding routine repair and maintenance of historic properties on the Shipyard (APPENDIX A) attached hereto and incorporated herein, and all actions taken in accordance with the 1992 PA may proceed without further consultation, except as specified in that agreement.

b. The application of the 1992 PA shall be extended to include all contributing historic buildings and structures identified in the revised National Register Nomination Form dated January 1996, as well as the historic archeology that may exist in the 28 archeological sensitive areas identified in the revised National Register Form.

c. Until disposal or transfer, as the contributing historic properties are vacated, the Navy shall layaway and provide caretaker maintenance of the historic properties at the minimum levels described in APPENDIX B.

d. Prior to initiating any action which would irreversibly alter, damage or demolish a contributing historic building or structure which has been classified for Layaway Level 6 the Navy shall contact the Pacific-Great Basin Service Center, NPS, San Francisco, California to determine what level and kind of recordation is required for the property. Unless otherwise agreed to by NPS, the Navy shall ensure that all documentation is complete and accepted by the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) prior to any irreversible alteration or demolition, and that copies of the documentation are provided to the California SHPO, the City and the Vallejo library and historical museum(s).

5. Recordation.

a. The Navy in consultation with NPS shall identify the most representative historic buildings on the Shipyard by April 1, 1997 and record them in accordance with HABS/HAER standards as specified by NPS, for submission to the Library of Congress, prior to any irreversible alteration,

transfer, or disposal of the selected historic properties.

b. The Navy shall provide an archival quality copy of the HABS/HAER documentation prepared pursuant to Stipulation 5.a. above to the California SHPO, the City and the Vallejo library and historical museum(s).

6. **Leasing of Historic Properties.**

a. Prior to the transfer, sale or conveyance by some other means from the control and jurisdiction of the Navy, the Navy may enter into interim leases which will permit tenants to adaptively reuse Shipyard contributing historic properties, provided that the lease agreements require tenants to follow the conditions of the 1992 PA (APPENDIX A) in maintaining or adapting these historic properties for use.

b. The Navy shall inspect the leased contributing historic properties semi-annually to ensure that the conditions of the 1992 PA are followed in maintaining or adapting the historic property for other uses and shall take appropriate remedial action to assure compliance with the 1992 PA where deviations are observed. Appropriate remedial action shall include notification of SHPO and Council.

7. **Long Term Preservation Planning.**

a. Within a calendar year from the execution of this agreement the City in consultation with and subject to the approval of the SHPO shall amend its Architectural Heritage and Historic Preservation Ordinance (Chapter 16.38 of the Vallejo Municipal Code) to include Area 4 of the *Mare Island Final Reuse Plan* dated July 1994 and additional historic buildings listed in APPENDIX C.

b. The City will ensure that the Vallejo Architectural Heritage and Landmarks Commission shall continue in its present role as described in the Vallejo Municipal Code increasing its area of responsibility to include Area 4 of the *Mare Island Final Reuse Plan* dated July 1994 and additional historic buildings listed in APPENDIX C.

c. When title to property located within the Mare Island Naval Shipyard Historic District is transferred from the Navy to a non-federal entitiy all undertakings affecting these properties will be administered exclusively in accordance with City codes and ordinances.

d. Within a calendar year from the execution of this agreement the City shall amend the *Vallejo General Plan* and the *Mare Island Specific Plan/Master Plan* to include the historic preservation policy establish by 7.a. and 7.b.

e. The City shall apprise prospective Mare Island tenants and property owners of the financial tools and economic incentives that are available,

including but not limited to the State Historic Building Code and the federal and State tax incentives, for the preservation and adaptive rehabilitation of historic properties.

f. Within 30 calendar days of execution of this agreement City shall seek the assistance of the National Trust for Historic Preservation for guidance on marketing the historic properties in Area 4 of the *Mare Island Final Reuse Plan* dated July 1994 and additional historic buildings listed in APPENDIX C.

8. Document Review and Comment.

a. The California SHPO shall be afforded thirty (30) days after receipt to comment on any documentation submitted by the Navy as a result of consultation efforts or otherwise the result of implementation of this agreement. Should the California SHPO decline to participate or fail to respond within thirty (30) days to a written request for comments, the Navy shall continue to consult with the Council to complete its responsibilities for the specific action.

9. Annual Report and Review.

a. On or before December 15 of each year, until the terms of this agreement have been fulfilled, or the agreement has been terminated, the Navy shall provide an annual report to the Council, California SHPO, NPS, and City addressing following topics:

(1) status of the curation of artifacts and records,

(2) status of the HABS/HAER recordation,

(3) identification of historic properties leased, transferred or conveyed to others,

(4) status of the City's efforts to market historic properties and preserve the historic properties, and

(5) list and explain any problems or unexpected issues encountered during the previous year.

10. Resolving Objections.

a. Should any party to this agreement object to any action carried out or proposed by the Navy with respect to the implementation of this agreement, the Navy shall consult with the objecting party to resolve the objection. If, after entering into such consultation, the Navy determines that the objection cannot be resolved through consultation directly with the objecting party, the Navy shall forward all relevant documentation to the Council, including the Navy's proposed response to the objection. The Council shall exercise one of the following options within 30 calendar days of receipt of all pertinent documentation:

(1) advise the Navy in writing that the Council concurs with the Navy's proposed response and final decision, if so indicated, whereupon the Navy shall respond to the objecting party in writing; or

(2) provide the Navy with written recommendations and/or comments, which the Navy shall take into account in reaching its final decision regarding its response to the objection in accordance with 36 CFR 800.6; or

(3) notify the Navy in writing that the Council will provide written comments within a specified time frame pursuant to 36 CFR 800.6. The resulting comments shall be taken into account by the Navy in accordance with 36 CFR 800.6(c).

Should the Council fail to exercise one of the above options within 30 calendar days after receipt of all pertinent documentation, the Navy may assume the Council concurrence in the Navy's proposed response. In considering any party's comments, the Navy shall take into account any recommendation or comment with reference only to the subject of the objection. The Navy's responsibility to carry out all actions under this agreement that are not the subject of the objection shall remain unchanged and shall be executed accordingly.

b. At any time during implementation of the stipulations of this agreement, should an objection(s) pertaining to this agreement be raised by a member of the public, the Navy shall notify in writing the signatory parties to this agreement and take the objection into account. The Navy shall consult with the objector and, if requested by the objector, consult with any or all of the signatory parties to this agreement with respect to the objection.

11. **Amendments**.

a. Any party to this agreement may propose, in writing, to the Navy that the terms and/or stipulations of this agreement be amended. The Navy shall consult with the other parties to this agreement to consider such an amendment. 36 CFR 800.5 shall govern the execution of any such amendment once agreed upon by all parties.

12. **Anti-Deficiency Act.**

a. All requirements set forth in this agreement requiring the expenditure of Navy funds are expressly subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. Section 1341). No obligation undertaken by the Navy under the terms of this Agreement shall require or be interpreted to require a commitment to expend funds not appropriated for a particular purpose.

b. If the Navy cannot perform any obligation set forth in this agreement because of the unavailability of funds, the Navy, California SHPO, and Council intend that the remainder of the agreement be executed. Any obligation under

the agreement which cannot be performed because of the unavailability of funds must be renegotiated between the Navy, California SHPO, and Council.

Execution of this agreement by the Navy, Council, and California SHPO, and subsequent implementation of its terms, shall be evidence that the Navy has afforded the Council an opportunity to comment on the Navy's undertakings and its effects on historic properties in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations contained in 36 CFR Part 800.

UNITED STATES NAVY, ENGINEERING FIELD ACTIVITY WEST, San Bruno, CA.

BY: _____ Date: 2/25/97
Print Name of Title of Signer: R. P. BUCHHOLZ
COMMANDER. CEC, USN
ACTING COMMANDING OFFICER

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: _____ Date: 9/1/97
Print Name & Title of Signer: John M Fowler Actg Exec Dir

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

BY: _____ Date: 3/6/97
Print Name & Title of Signer: Cherilyn Widell, State Historic Preservation Officer

CONCUR:
CITY OF VALLEJO

BY: _____ Date: 2/25/97
Print Name & Title of Signer: Kenneth R Campo, City Manager

NATIONAL PARK SERVICE

BY: _____ Date: 5/12/97
Print Name & Title of Signer: Holly Bundock, Acting Regional Director NPS

APPENDICES

APPENDIX A - 1992 Programmatic Agreement among Mare Island Naval Shipyard, California State Historic Preservation Officer and the Advisory Council on Historic Preservation Regarding Routine Maintenance of Historic Properties within the Mare Island National Historic Landmark

APPENDIX B - Layaway and Caretaker Maintenance Standards

APPENDIX C - City of Vallejo Resolution No. 96-383, Exhibit A with Attachments A-1 and A-2, as amended February 11, 1997

APPENDIX A

PROGRAMMATIC AGREEMENT AMONG THE UNITED STATES NAVY, MARE ISLAND NAVAL SHIPYARD, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER REGARDING ROUTINE MAINTENANCE OF HISTORIC PROPERTIES WITHIN THE MARE ISLAND NATIONAL HISTORIC LANDMARK

WHEREAS, the United States Navy, Mare Island Naval Shipyard (Navy), has determined that the routine maintenance of historic buildings, structures, and grounds within the Mare Island National Historic Landmark may have an effect upon properties included in or eligible for inclusion in the National Register of Historic Places and has consulted with the Advisory Council on Historic Preservation (Council) and the California State Historic Preservation Officer (SHPO) pursuant to Section 800.13 of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 USC 470f) and Section 110 of the same Act (16 USC 470h-2); and

WHEREAS, certain minor undertakings described in Appendix B of this Agreement, if executed in the appropriate manner, can be deemed exempt from further consultation with the SHPO or the Council; and

WHEREAS, the definitions given in Appendix A are applicable throughout this Programmatic Agreement;

NOW, THEREFORE, the Navy, the Council, and the SHPO agree that the routine maintenance of historic properties included in the Mare Island National Historic Landmark shall be administered in accordance with the following stipulations to satisfy the Navy's Section 106 responsibilities for all individual undertakings of the program covered by this Programmatic Agreement.

Stipulations

The Navy will ensure that the following measures are carried out.

1. Actions described in Appendix B, "Actions Not Requiring Further Consultation," may proceed with no further consultation with the SHPO or the Council.

2. The Navy shall consult the SHPO and the Council on all undertakings subject to review pursuant to 36 CFR Part 800, with the exception of activities listed in Appendix B as exemptions to further consultation.

3. The SHPO will be afforded thirty (30) days after receipt to comment on any documentation submitted by the Navy under the terms of this Agreement. Should the SHPO decline to participate or fail to respond within thirty (30) days to a written request for participation, the Navy shall consult with the Council to complete its responsibilities under Section 106.

4. The Council and the SHPO may monitor activities carried out pursuant to this Programmatic Agreement, and the Council will review such activities if so requested. The Navy will cooperate with the Council and the SHPO in carrying out their monitoring and review responsibilities.

5. If any party to this Agreement determines that its terms cannot be met or believes an amendment or addendum necessary, that party shall immediately request the consulting parties to consider an amendment or addendum to the Agreement. Such amendment or addendum shall be executed in the same manner as the original Agreement. No amendment or addendum to this Agreement will go into effect without written concurrence of all consulting parties.

6. Any party to this Programmatic Agreement may terminate it by providing thirty (30) days notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the Navy will comply with 36 CFR section 800.4 through 800.6 with regard to individual undertakings covered by this Programmatic Agreement.

7. Should the SHPO or the Council object within thirty (30) days to any actions pursuant to this Agreement, the Navy shall consult with the objecting party to resolve the objection. If the Navy determines that the objection cannot be resolved, the Navy shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

a. provide the Navy with recommendatins which the Navy will take into account in reaching its final decision regarding the dispute; or

b. notify the Navy that it will comment pursunat to 36 CFR 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the Navy in accordance with 36 CFR 800.6(c)(2) with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; the Navy's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

8. In the event the Navy does not carry out the terms of this Programmatic Agreement, the Navy will comply with 36 CFR sections 800.4 through 800.6 with regard to individual undertakings covered by this Programmatic Agreement.

Execution and implementation of this Programmatic Agreement evidences that the Navy has satisfied its Section 106 responsibilities for all individual undertakings of the program.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: Robert D. Bush Date: 8-13-91

Title: Executive Director.

UNITED STATES NAVY, MARE ISLAND NAVAL SHIPYARD

BY: M.T. Coyle Date: 7/2/91

M. T. COYLE, CAPT, USN
Title: COMMANDER, MARE ISLAND NAVAL SHIPYARD

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

BY: Stanley P. Craig Date: 12/6/91

1992 PA
Appendix A

DEFINITION OF TERMS USED IN THIS AGREEMENT

In addition to the terms defined here, and unless otherwise indicated, all definitions given in 36 CFR 800.2 will be accepted for the purpose of this Agreement.

1. Routine maintenance: Routine maintenance will include interior and exterior maintenance and repair.

2. Maintenance: Maintenance is the recurring day-to-day or periodic work required to continue current use of a facility. It includes work undertaken to prevent damage or deterioration.

3. Repair: Repair includes overhauling, refinishing, or reprocessing constituent parts or material of a facility in order to continue effective current use. It includes replacement in kind when new materials and design match existing materials and design.

1992 PA
Appendix B

ACTIONS NOT REQUIRING FURTHER CONSULTATION

The following activities do not require further consultation with the SHPO or the Council:

A. Structural Elements

1. Repair or replacement of siding, trim, or hardware when done in kind to match existing material and design.

2. Replacement of glass when done in kind to match existing material and design. Window panes may be double or triple glazed as long as the glazing is clear and replacement does not alter existing window material and form. This excludes the use of tinted glass, which will require consultation.

3. Maintenance of features such as frames, hoodmolds, panelled or decorated jambs and moldings through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

4. Repair or replacement of doors, when done in kind to match existing material and form.

5. Repair or replacement of roofs or parts of a roof that are deteriorated, when done in kind to match existing material and design. Adequate anchorage for roofing material to guard against wind damage and moisture penetration shall be provided.

6. Repair or replacement of porches and stairs when done in kind to match existing material and design.

7. Repair of window frames by patching, splicing, consolidating, or otherwise reinforcing or replacing in kind those parts that are either extensively deteriorated or are missing. The same configuration of panes will be retained.

B. Surfaces

1. Painting interior or exterior surfaces when the new paint matches the existing or original color. If the existing paint color is not desirable and the original color is not known, the color should be in keeping with approved historic color schemes. Damaged or deteriorated paint may be removed to the next sound layer by hand scraping or hand sanding. Abrasive methods, such as sandblasting and waterblasting, are not allowed.

2. Replacement or installation of caulking and weatherstripping around windows, doors, walls, and roofs.

C. Interior Elements

1. Replacement of contemporary appliances and fixtures (e.g., ranges, refrigerators, and bathroom fixtures). When associated historic cabinetry is intact and the interior, in general, retains its historic appearance, the cabinetry will be retained when possible.

2. Repair or replacement of floor coverings, when done in kind to match existing material and design.

3. Rendering inoperable, but not removing, gas lighting fixtures when another inconspicuous light source is used.

4. Floor refinishing.

D. Utility Systems

1. Installation of mechanical equipment that does not affect the exterior of the building or require installation of new duct work throughout the interior.

2. Replacement, removal, or upgrading of electrical wiring.

3. Replacement of floor furnaces and floor registers with surface-mounted wall heating systems or hot water electric appliances. Repairs to the floors will be done with in-kind materials and design.

4. Replacement, removal, or upgrading of water and plumbing systems when historic features, such as hand pumps, are left in place. Historic plumbing fixtures should be retained and used if possible.

5. Replacement of metal water tanks with ones of fiberglass, when the color and texture of the original tank is replicated or when landscaping camouflages the replacement tank. Wooden tanks with plastic inserts are also feasible. Construction of a structure around a tank to control temperature is allowed when landscaping camouflages the change.

6. Replacement and enlargement of liquid propane gas systems if tanks are screened with landscaping materials.

E. Surrounding Features

1. Replacement of signs in kind.

2. Ongoing maintenance of immediately surrounding landscaping, including such modifications as removing hazardous vegetation or adding rocks to define paths.

3. Use of interpretive signs or exhibit structures which are not attached to a historic building and do not visually intrude on the historic property. They should be constructed of materials and painted colors that harmonize with the historic property and its setting.

4. Repair or replacement of driveways and walkways done in kind to match existing materials and design.

5. Repair or replacement of fencing done in kind to match existing material and design.

F. New Materials

1. Installation of dry insulation.

2. Installation of security devices, including dead bolts, door locks, window latches, and door peep holes.

3. Installation of fire or smoke detectors.

4. Installation of security systems.

G. Ground Disturbing Activities

Except in the presence of an archeological site, the following exemptions apply:

1. Excavations for repair or replacement of building footings or foundation work within two (2) feet of existing footings and foundations.

2. Installation of utilities, such as sewer, water, storm, electrical, gas, leach lines, and septic tanks, where installation is restricted to areas previously disturbed by installation of these utilities.

3. Tree planting or removal in areas that have been previously disturbed by these activities, including nursery beds and arboreta.

APPENDIX B

LAYAWAY AND CARETAKER MAINTENANCE STANDARDS

Layaway Level 1 (property remains in continuous use): Operational facilities, systems and equipment shall be maintained at normal operational levels. All services, including, but not limited to, installed utilities, mechanical systems, grounds maintenance, snow removal, interior and exterior structural finishes and systems shall continue in operation. Maintenance of historic properties will be carried out in accordance with the terms of the 1992 Programmatic Agreement Regarding Routine Maintenance of Historic Properties within the Mare Island National Historic Landmark.

Layaway Level 2 (property expected to be reused within 6 months of operational closure): .. Maintenance shall be performed to maintain the structural integrity, weather tightness and utility systems of the facility to limit deterioration. Water shall be periodically turned on to faucets, toilets, urinals, etc., to keep drain traps "wet". Appliances shall be winterized and unnecessary electrical circuits shall be de-energized. Heating/air conditioning will be turned off except where heating/air conditioning is required to maintain the mechanical systems in working order, for humidity control and to prevent freezing. Historic properties previously heated/air conditioned will be inspected on a regular basis for mildew, mold and other evidence of deterioration. Where deterioration is observed appropriate measures will be taken to arrest the deterioration and prevent its reoccurrence. Maintenance of historic properties will be carried out in accordance with the terms of the 1992 Programmatic Agreement Regarding Routine Maintenance of Historic Properties within the Mare Island National Historic Landmark. Limited grounds maintenance shall be continued.

Layaway Level 3 (property expected to be reused within 6-24 months of operational closure): Same as Level 2 except that heating/air conditioning will be turned off . Historic properties previously heated/air conditioned will be inspected on a regular bases for mildew, mold and other evidence of deterioration. Where deterioration is observed appropriate measures will be taken to arrest the deterioration and prevent its reoccurrence. Maintenance of historic properties will be carried out in accordance with the terms of the 1992 Programmatic Agreement Regarding Routine Maintenance of Historic Properties within the Mare Island National Historic Landmark.

Layaway Level 4 (potential reuse of property is beyond 24 months of operational closure): Same as Level 2 except that no heat or air conditioning will be provided and all utilities will be turned off. Water lines and fire suppression systems will be drained. Sewer traps shall be routinely filled with a non-toxic antifreeze or other methane gas suppression system. Passive ventilation shall be used to control humidity. Scheduled inspections shall be made to detect any damage from mold or mildew. Where damage is observed appropriate measures

will be taken to arrest the deterioration and prevent its reoccurrence. Maintenance of historic properties will be carried out in accordance with the terms of the 1992 Programmatic Agreement Regarding Routine Maintenance of Historic Properties within the Mare Island National Historic Landmark.

Layaway Level 5 (leased facility): Utilities shall be provided to the lessee on a fee basis. Lessee will provide for and fund maintenance, repair or services to property(s). Maintenance of historic properties will be carried out in accordance with the terms of the 1992 Programmatic Agreement Regarding Routine Maintenance of Historic Properties within the Mare Island National Historic Landmark.

Layaway Level 6 (no reuse envisioned; abandoned in place): The property, related systems and equipment shall be closed and or secured. Windows and entrances shall be locked (or boarded up as necessary). Maintenance work shall be restricted to the prevention of unauthorized entry to the facility or grounds immediately adjacent. Basic entomology services shall be continued to the grounds surrounding the facility. Only conditions adversely affecting public health, the environment and public safety shall be corrected. All utilities shall be shut off or disconnected.

APPENDIX C

RESOLUTION NO. 97-51 N.C.

BE IT RESOLVED by the Council of the City of Vallejo as follows;

WHEREAS, the City of Vallejo has a long history of protecting its architectural heritage; and

WHEREAS, the City has always been proud of Mare Island Naval Shipyard, its influence on the community for over 140 years, and its role in United States military history; and

WHEREAS, since 1993 when the decision was made to close Mare Island Naval Shipyard, the City has been assisting the U.S. Navy in the completion of the Section 106 process to address the historic resources on Mare Island; and

WHEREAS, on October 1, 1996, the City Council gave its support to the "Program for Mare Island Historic Resources in an effort to facilitate the Section 106 process since the completion of this process is important to the completion of the Final Mare Island Environmental Impact Statement / Environmental Impact Report; and

WHEREAS, the City has continued to work with the Navy, the State Historic Preservation Officer, and National Park Service; and

WHEREAS, as a result of these efforts, a revised "Program for Mare Island Historic Resources" has been developed with the assistance of the State Historic Preservation Officer and the National Park Service, and this revised Program will be a component of the Navy's Memorandum of Agreement regarding historic resources; now, therefore

BE IT RESOLVED that the City Council does hereby approved the revised "Program for Mare Island Historic Resources" attached hereto as Exhibit "A" as a component of the Navy's Memorandum of Agreement regarding historic resources.

BE IT FURTHER RESOLVED that the City Council does hereby authorize the City Manager to sign the Navy's Memorandum of Agreement as a concurring party.

ADOPTED by the Council of the City of Vallejo at a regular meeting held on February 11, 1997, by the following vote:

AYES: Mayor Exline, Councilmembers Donahue, Hicks, Martin, Patchell, Stafford and Villanueva
NOES: None
ABSENT: None

/s/Gloria Exline
GLORIA EXLINE, MAYOR

ATTEST: /s/Allison Villarante
ALLISON VILLARANTE, CITY CLERK

mihistre.res

EXHIBIT A

CITY OF VALLEJO'S PROGRAM FOR MARE ISLAND HISTORIC RESOURCES

February 1997

1. The City's Architectural Heritage and Historic Preservation Ordinance (Chapter 16.38 of the Vallejo Municipal Code) will be amended to include those historic resources on Mare Island identified in #3, 4, and 5 below. This amendment will include procedures and time schedules for processing certificates of appropriateness specifically for projects on Mare Island to facilitate expeditious reuse. The City will seek federal and state funding, particularly grant funds from the State Office of Historic Preservation, to assist in the preparation of this amendment, and it will be consistent with the ordinance requirements for a Certified Local Government program.

2. The Architectural Heritage and Landmarks Commission will continue in its present role as described in the Vallejo Municipal Code except that its area of responsibility will be increased to include the historic resources on Mare Island described in #3, 4, and 5 below.

3. The City's Mare Island Historic District will be Reuse Area 4. All buildings, structures, and sites within Reuse Area 4 will be subject to the requirements of the amended Architectural Heritage and Historic Preservation Ordinance when the Navy transfers title(s) to these properties in the future. A list of the buildings, structures, and sites within Reuse Area 4 is included in Attachment A-1.

4. Certain other significant historic resources outside Reuse Area 4 will also be subject to the requirements of the amended Architectural Heritage and Historic Preservation Ordinance when the Navy transfers title(s) to these properties in the future. A list of these historic resources is included in Attachment A-2.

5. Certain other historic resources are within areas that will: 1) remain in federal ownership; 2) revert to the State of California; or 3) will be reserved for public benefit conveyance. Should, in the future, the Navy transfer title(s) to these properties to a non-federal or non-state party, they would be subject to the requirements of the amended Architectural Heritage and Historic Preservation Ordinance. A list of these historic resources is included in Attachment A-3.

6. The City will comply with the requirements of the California Environmental Quality Act (CEQA) regarding the protection of historic and prehistoric archaeological resources.

7. The City will include policies in the Vallejo General Plan and Mare Island Specific Plan / Master Plan related to the preservation of the historic resources identified above.

8. The City will continue to apprise prospective Mare Island tenants and property owners of the financial tools and incentives available, such as tax incentives and the State Historic Building Code, to preserve and rehabilitate historic resources.

9. The City will seek the assistance of the National Trust for Historic Preservation for guidance on marketing the historic resources in Reuse Area 4, the other resources identified in #4 above, and, if ever applicable, the other resources identified in #5 above.

ATTACHMENT A-1

BUILDINGS, STRUCTURES, AND SITES WITHIN MARE ISLAND REUSE AREA 4

February 1997

17	Officer's Quarters
17B	Garage
17C	Garage
19	Officer's Quarters
19A	Garage
21	Officer's Quarters
29	Officer's Quarters
29A	Garage
29G	Garage
45	Administrative Offices
46	Smithery
47	Administrative Offices
47A	Administrative Offices
50	Rubber Shop
52	Iron Plates
56	Alden Park Bandstand
58	Adminstrative Offices
65	Administrative Offices
99	Central Fire Station
99A	Fire Station Offices
104	St. Peter's Chapel
108	Storage
110	Pumphouse
116	Production Shop
130	Offices
132	Chemical Storage
140	Offices
142	Nuclear Work Facility
144	Work Facility
164	Production Shop
235	Printing Plan
255	Cable Vault
330	Rubber Press
332	Shop Area
334	Former Paint Shop
340	Nuclear Work Facility
516	Electric Substation
624	Latrine
632	Welding Material Issue
634	Tool Room
671	Electric Substation
828	Electric Substation K
830	Electric Substation 22
834	Electric Distribution Cent.
854	Pump House
1302	Paint Shed
1308	Paint Storage
1329	Shredder Building
1334	Offices
1346	Storage
A	Officer's Quarters
A-A	Servants' Quarters
A-I	Garage
A-J	Greenhouse
B	Officer's Quarters
B-G	Garage
C	Officer's Quarters
C-A	Servants' Quarters
C-J	Garage
D	Officer's Quarters
D-G	Garage
DD-1	Dry Dock #1
DD-2	Dry Dock #2
E	Officer's Quarters
E-C	Garage
E-D	Storage Shed
E-F	Servants' Quaters
FS2	Ferry Slip
G	Officer's Quarters
G-B	Garage
GS3	Guard Shack
H	Officer's Quarters
H-B	Garage
H-C	Storage Shed

H-D	Storage Shed
J	Officer's Quarters
J-E	Garage
K	Officer's Quarters
K-E	Servants' Quarters
K-L	Garage
L	Officer's Quarters
L-F	Garage
M	Officer's Quarters
M-O	Garage
N	Officer's Quarters
N-H	Garage
O	Officer's Quarters
O-B	Servants' Quarters
O-F	Garage
P	Officer's Quarters
P-D	Garage
S23-1	Bomb Shelter
S23-2	Bomb Shelter
S33-10	Bomb Shelter
S33-11	Bomb Shelter
S33-12	Bomb Shelter
S33-13	Bomb Shelter
S33-14	Bomb Shelter
S33-15	Bomb Shelter
S33-16	Bomb Shelter
S33-17	Bomb Shelter
S33-18	Bomb Shelter
S33-19	Bomb Shelter
S33-20	Bomb Shelter
S33-21	Bomb Shelter
S33-22	Bomb Shelter
S33-23	Bomb Shelter
S33-24	Bomb Shelter
S33-25	Bobm Shelter
S33-26	Bomb Shelter
S33-27	Bomb Shelter
S33-28	Bomb Shelter
S33-29	Bomb Shelter
S33-30	Bomb Shelter
WAY-1	Building Way #1
WAY-2	Building Way #2

Landscape Areas:

Alden Park
Chapel Park
Farragut Plaza
Officers' Row

ATTACHMENT A-2

OTHER HISTORIC RESOURCES ON MARE ISLAND

February 1997

6	Quarters
6-D	Garage
69	Equipment Storehouse
77	Ordnance Storehouse
85	Foundry
87	Machine Shop
88	Stables
89/91	Boiler Shop
101	Pipe Shop
106	Boat Shop
111	Storage
114	Sawmill
118	Joiner Shop
131	Officers Quarters
133	Quarters
141	Coal Shed
143	Coal Shed
145	Coal Shed
147	Coal Shed
149	Coal Shed
151	Coal Shed
153	Coal Shed
155	Coal Shed
163	Coal Shed
165	Pipe Shop
207	Storage
223	Storage
227/227A	Warehouse
382	Production Shop
386	Forge Shop
388	Structural Shop
390	Structural Shop
411	Quarters
420	Quarters
429	Quarters
431	Quarters
433	Radio Station
459	BEQ / Offices
485	Offices
491	Sentry House, w:ll
527	Warehouse
543	Barracks
545	Rodman Center
680	Machine Shop
726	South Fire Station
926	Nurses' Quarters
928	Garage
A-272	Gate Sentry House
A-279	Waiting Booth
BS-2	Bus Shelter
BS-3	Bus Shelter
F	Quarters
H-1	Hospital
H-4	Quarters
H-5	Quarters
H-70	Hospital Ward
H-71	Barracks
H-72	Hospital Ward
H-73	Sick Officers' Quarters
H-80	Hospital Ward
H-81	Hospital
I-T	Officer's Quarters
M-1	Marine Officer's Quarters
M-1A	Servants' Quarters
M-1C	Garages
M-2	Marine Quarters
M-3	Marine Quarters
M-4	Marine Quarters
M-5	Marine Quarters
M-7	Marine Quarters
M-37	Marine Barracks
Q01-Q020	Quarters

Q01A- Q020A	Quarters
R	Quarters
S	Quarters
U	Quarters

Landscape Areas:

Marine Parade Grounds
Around M-1
Around Hospital
Clubhouse Drive Park
Palm trees on Cedar

ATTACHMENT A-3

OTHER HISTORIC RESOURCES ON MARE ISLAND
ON FEDERAL, STATE, OR OTHER PUBLIC LAND

February 1997

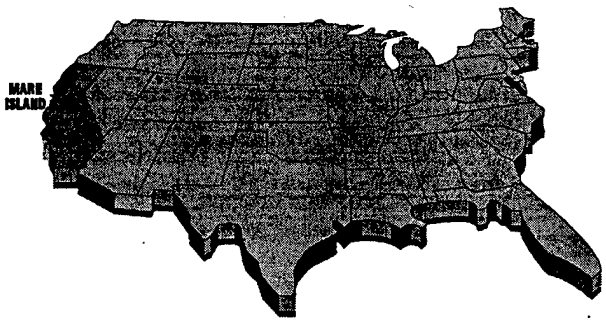
188-A/B	Water Tanks
505	Radio Station
A-1	Magazine #1*
A-2	Shell House
A-3	Shell House #1*
A-4	Shell House #2*
A-5	Shell House #3
A-6	Shell House #4
A-8	Magazine
A-11	Gun Cotton Magazine
A-15	Primer House
A-16	Filling House
A-17	Ammunition Storage
A-20	Magazine #2*
A-25	Quarters
A-25A	Garage
A-42	Watchman's House*
A-43	Quarters*
A-43A	Storage Shed
A-44	Watchman's House*
A-44A	Garage
A-45	Gunner's House*
A-49	Ordnance Warehouse
A-58	Quarters
A-58A	Garage
A-65	Ordnance Warehouse
A-69	Ordnance Warehouse
A-81	Magazine - Small Arms
A-82	Magazine - Small Arms
A-83	Magazine - Small Arms
A-84	Magazine - Small Arms
A-103	Storage
A-110	Garage
A-121	Magazine
A-139	Magazine
A-140	Magazine
A-141	Magazine
A-144	Electrical Center
A-145	Electrical Center
A-146	Storage
A-147	Magazine
A-148	Magazine
A-149	Magazine
A-150	Magazine
A-151	Magazine
A-152	Magazine
A-153	Pump House
A-154	Hazardous Storage
A-156	High Explosive Mag.
A-161	Magazine
A-162	Magazine
A-163	Magazine
A-164	Ordnance Warehouse
A-165	Magazine
A-166	Magazine
A-169	Magazine
A-170	Warehouse
A-171	High Explosive Mag.
A-172	Magazine
A-173	Magazine
A-174	Magazine
A-175	Magazine
A-176	High Explosive Mag.
A-178	Magazine
A-179	Magazine
A-180	Magazine
A-181	Magazine
A-182	Magazine
A-183	Magazine
A-184	Magazine
A-185	Magazine
A-186	Magazine

A-195	Hazardous Storage
A-199	Ordnance
Warehouse	
A-204	High Explosive
Mag.	
A-205	High Explosive
Mag.	
A-206	High Explosive
Mag.	
A-207	Magazine
A-210	Magazine
A-211	Magazine
A-212	Magazine
A-213	Magazine
A-214	Magazine
A-217	High Explosive
Mag.	
A-218	High Explosive
Mag.	
A-219	Magazine
A-227	Electrical Center
A-249	High Explosive
Mag.	
A-250	High Explosive
Mag.	
A-252	Booster Pump
House	
A-254/255	Underground Tanks
A-259	RR Car Blocking
Shop	
A-296	High Expl. Safe
Haven	
ARS-3	Air Raid Shelter
ARS-4	Air Raid Shelter
ARS-7	Air Raid Shelter
ARS-8	Air Raid Shelter
PIER 34	Naval Ammunition Pier

Landscape Areas:

Cemetery*
Landscape around quarters*

* From original Attachment A-2



APPENDIX E

SOCIOECONOMICS

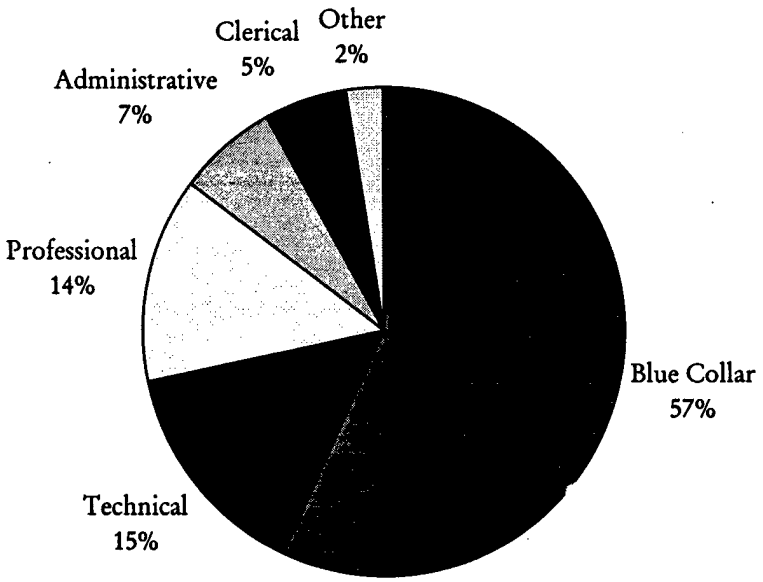
APPENDIX E
SOCIOECONOMICS

TABLE E-1
CIVILIAN WORKFORCE DISTRIBUTION
MARE ISLAND NAVAL SHIPYARD

Classification	As % of Total
Occupation:	
Blue Collar	57%
Technical	15%
Professional	14%
Administrative	7%
Clerical	5%
Other	2%
Total	100%
Age:	
20-24	1%
25-29	5%
30-34	10%
35-39	14%
40-44	22%
45-49	25%
50-54	15%
55-59	6%
60+	3%
Total	100%
Ethnicity:	
White	77%
Black	8%
Asian/Pacific Is.	8%
Hispanic	5%
American Indian	1%
Total	100%

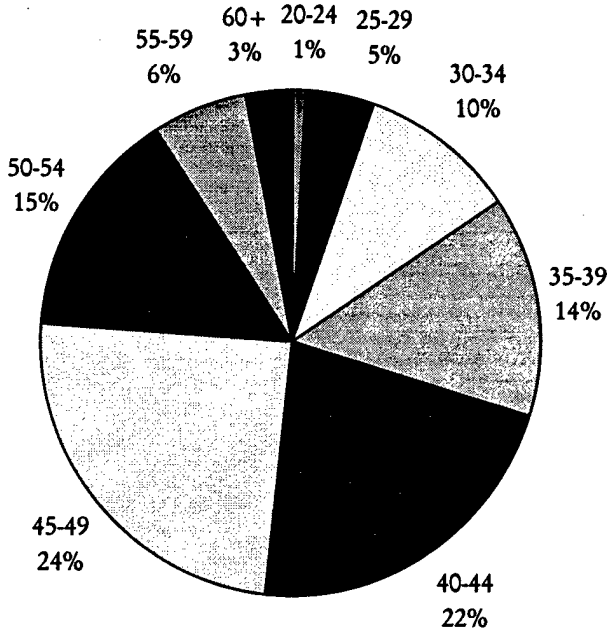
Source: Mare Island Naval Shipyard Workforce Profile, Mid-FY 1993, Workforce Diversity Programs Section, May 1993

FIGURE E-1
MARE ISLAND CIVILIAN WORKFORCE BY OCCUPATION



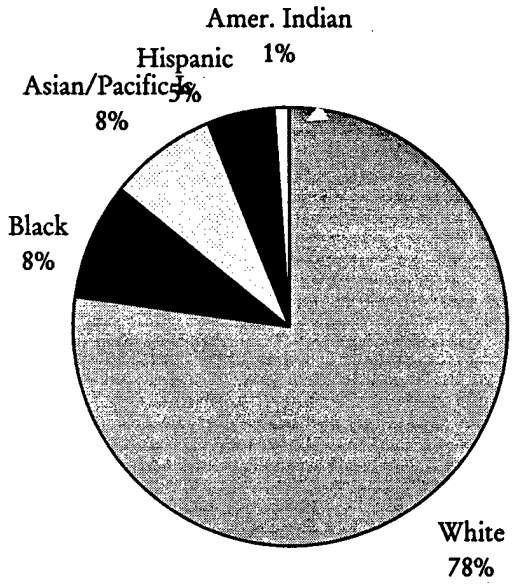
Source: Mare Island Naval Shipyard Workforce Profile, Mid-FY 1993, Workforce Diversity Programs Section, May 1993; Economics Research Associates

FIGURE E-2
MARE ISLAND CIVILIAN WORKFORCE BY AGE



Source: Mare Island Naval Shipyard Workforce Profile, Mid-FY 1993, Workforce Diversity Programs Section, May 1993; Economics Research Associates

FIGURE E-3
MARE ISLAND CIVILIAN WORKFORCE BY RACE



Source: Mare Island Naval Shipyard Workforce Profile, Mid-FY 1993, Workforce Diversity Programs Section, May 1993; Economics Research Associates

TABLE E-2
1980 AND 1989 EMPLOYMENT FOR THE REGION OF INFLUENCE[1]
(Amounts in Thousands)

Employment	Solano County			Napa County			Vallejo-Fairfield Napa PMSA		
	1980	1989	Change	1980	1989	Change	1980	1989	Change
Civilian Labor Force	90.9	142.3	36.1%	37.8	54	30.0%	128.7	196.3	34.4%
Number Employed	83.7	134.5	37.8%	35.3	51.5	31.5%	119.0	186.0	36.0%
Number Unemployed	7.2	7.8	7.7%	2.5	2.5	0.0%	9.7	10.3	5.8%
Unemployment Rate[2]	7.9%	5.5%	-44.5%	6.6%	4.6%	-42.9%	7.5%	5.2%	-43.6%
Agriculture Employment	1.7	1.9	10.5%	2.8	3.7	24.3%	4.5	5.6	19.6%
Non-agric. Employment	69.1	90.2	23.4%	31.3	40.6	22.9%	100.4	130.8	23.2%
Mining & Construction	4.3	6.7	35.8%	1.4	2.4	41.7%	5.7	9.1	37.4%
Manufacturing	5.9	6.9	14.5%	4.4	5.5	20.0%	10.3	12.4	16.9%
Transportation & Utilities	3.5	3.5	0.0%	1.3	1.3	0.0%	4.8	4.8	0.0%
Wholesale Trade	1.6	2.3	30.4%	0.7	0.9	22.2%	2.3	3.2	28.1%
Retail Trade	14.1	20.8	32.2%	5.7	8.2	30.5%	19.8	29	31.7%
F.I.R.E.	2.4	3	20.0%	1.1	1.8	38.9%	3.5	4.8	27.1%
Services	11.1	16.9	34.3%	7.9	12	34.2%	19	28.9	34.3%
Government	26.2	30.1	13.0%	8.8	8.5	-3.5%	35	38.6	9.3%
Total All Industries	70.8	92.1	23.1%	34.1	44.3	23.0%	104.9	136.4	23.1%

[1] Does not include proprietors, the self-employed, unpaid volunteers or family workers, domestic workers in households, and persons involved in labor management trade disputes. Employment reported by place of work.

[2] Unemployment rate is based on unrounded data.

[3] Finance, Insurance & Real Estate

Source: Ca. Employment Development Department, Annual Planning Information

TABLE E-3
ESTIMATED DISTRIBUTION OF 1989 VALLEJO UNIFIED SCHOOL DISTRICT ENROLLMENT
Students Associated with Mare Island Naval Shipyard

School	1989 Enrollment	Children with Mare Island Ties		
		Military (on- and off-base)	Civilian	As % of Total 1989 Enrollment
Beverly Hills	389	11	33	11%
Cave	855	21	60	9%
Cooper	801	35	76	14%
Davidson	338	20	19	12%
Farragut	376	9	26	9%
Federal Terrace	657	118	55	26%
Glen Cove	717	66	37	14%
Highland	782	14	70	11%
Lincoln	305	-	8	3%
Loma Vista	589	69	24	16%
Mare Island	558	388	40	77%
Mini	1,000	66	97	16%
Patterson	657	17	38	8%
Pennycook	1,336	112	207	24%
Steffan Manor	853	9	59	8%
Wardlaw	not yet built	-	-	-
Widenman	735	30	46	10%
Total Elementary	10,948	985	895	17%
Franklin	880	39	69	12%
Solano	1,094	122	129	23%
Springstowne	1,050	47	155	19%
Vallejo	898	26	154	20%
Total Junior High	3,922	234	507	19%
Hogan	1,304	54	207	20%
Vallejo	1,583	92	225	20%
Peoples	257	6	19	10%
Total High School	3,144	152	451	19%
Total K-12	18,014	1,371	1,853	18%

Source: Yeager, Vallejo Unified School District; ERA

Source: 1989 PL 874 Survey, Vallejo Unified School District; ERA

TABLE E-4
HISTORICAL UNEMPLOYMENT RATES 1990-1994
Vallejo-Fairfield-Napa Primary Market Statistical Area

Area	1990	1991	1992	1993	1994
Vallejo	5.5%	7.0%	8.3%	8.9%	8.5%
Solano County	4.9%	6.3%	7.5%	8.1%	7.7%
Napa County	4.3%	5.8%	7.3%	7.8%	6.9%
V-F-N PMSA	4.8%	6.2%	7.4%	8.0%	7.5%

Source: California Employment Dev. Dept. 1995

TABLE E-5
EMPLOYMENT PROJECTIONS FOR THE REGION OF INFLUENCE
(Amounts in Thousands)

	Solano County					
					Annual Growth Rate	
Employment	1995	2000	2010	2020[1]	1995-2000	2000-2020
Agriculture, Mining	3.4	3.6	3.5	3.5	0.9%	-0.1%
Construction	7.9	10.7	15.2	21.5	6.4%	3.5%
Manufacturing	10.2	13.9	20.7	30.9	6.5%	4.1%
Transp., Comm., Util.	5.6	6.4	9.2	13.1	3.0%	3.6%
Wholesale Trade	3.9	5.1	10.5	21.7	5.3%	7.5%
Retail Trade	23.6	28.0	46.5	77.3	3.4%	5.2%
F.I.R.E.	4.1	5.2	8.1	12.6	4.9%	4.5%
Services	29.4	36.3	48.3	64.2	4.3%	2.9%
Government	31.1	31.3	32.8	34.4	0.1%	0.5%
Total All Industries	119.1	140.5	194.8	270.0	3.4%	3.3%

	Napa County					
					Annual Growth Rate	
Employment	1995	2000	2010	2020[1]	1995-2000	2000-2020
Agriculture, Mining	4.3	4.2	4.2	4.1	-0.3%	-0.1%
Construction	2.7	3.4	4.3	5.5	4.8%	2.4%
Manufacturing	6.2	7.6	8.8	10.3	4.2%	1.6%
Transp., Comm., Util.	1.7	1.8	3.0	4.9	1.5%	5.1%
Wholesale Trade	1.0	1.4	4.1	11.9	6.5%	11.3%
Retail Trade	9.1	10.8	13.3	16.4	3.6%	2.1%
F.I.R.E.	1.7	2.2	2.9	3.9	5.1%	2.8%
Services	21.6	23.9	29.2	35.7	2.1%	2.0%
Government	2.0	2.3	2.5	2.7	2.2%	0.8%
Total All Industries	50.3	57.6	72.3	90.6	2.8%	2.3%

	Vallejo-Fairfield Napa PMSA					
					Annual Growth Rate	
Employment	1995	2000	2010	2020	1995 2000	2000-2020
Agriculture, Mining	7.7	7.8	7.7	7.6	0.1%	-0.1%
Construction	10.5	14.1	19.5	26.9	3.0%	3.3%
Manufacturing	16.3	21.5	29.6	41.2	2.8%	3.3%
Transp., Comm., Util.	7.2	8.2	12.2	18.0	1.3%	4.0%
Wholesale Trade	4.9	6.5	14.6	33.6	2.8%	8.6%
Retail Trade	32.7	38.8	59.8	93.6	1.7%	4.5%
F.I.R.E.	5.8	7.4	11.1	16.5	2.5%	4.1%
Services	51.0	60.2	77.5	99.9	1.7%	2.6%
Government	33.1	33.6	35.3	37.0	0.1%	0.5%
Total All Industries	168.1	198.1	267.0	360.6	1.7%	3.0%

[1] Year 2020 projections are based on the growth trends between 2000 and 2010.
Source: Projections 94, Association of Bay Area Governments; ERA

TABLE E-6
PERSONAL INCOME FOR THE REGION OF INFLUENCE
(In Constant 1990 Dollars)

Region of Influence	1980	1995	2000	2010	2020[1]
City of Vallejo (SOI)					
Number of Households	30,078	41,150	44,770	46,390	44,119
Mean Household Income	$ 36,416	$ 41,100	$ 44,300	$ 58,800	$ 78,046
Total Personal Income (in million $)	$ 1,095	$ 1,691	$ 1,983	$ 2,728	$ 3,443
Solano County					
Number of Households	80,426	126,600	144,860	179,590	214,320
Mean Household Income	$ 39,863	$ 45,400	$ 48,800	$ 60,500	$ 75,005
Total Personal Income (in million $)	$ 3,206	$ 5,748	$ 7,069	$ 10,865	$ 16,075
Napa County					
Number of Households	36,624	44,680	47,940	54,410	60,880
Mean Household Income	$ 41,979	$ 47,800	$ 53,600	$ 64,700	$ 78,099
Total Personal Income (in million $)	$ 1,537	$ 2,136	$ 2,570	$ 3,520	$ 4,755
Vallejo-Fairfield-Napa PMSA					
Number of Households	117,050	171,280	192,800	234,000	275,200
Mean Household Income	$ 40,525	$ 46,026	$ 49,994	$ 61,477	$ 75,597
Total Personal Income (in million $)	$ 4,743	$ 7,883	$ 9,639	$ 14,386	$ 20,830
Avg. Annual Rate of Increase		3.4%	2.0%	4.1%	3.8%

[1] Year 2020 projections are based on the previous decade's rate of growth for number of households and income.
Source: Projections 94, Association of Bay Area Governments, December 1993; ERA

TABLE E-7
AVERAGE PERSONAL INCOME PER WORKER
(In Constant 1990 Dollars)

Region of Influence	1980	1995	2000	2010	2020[1]
City of Vallejo (SOI)					
Total Personal Income (in million $)	$ 1,095	$ 1,691	$ 1,983	$ 2,728	$ 3,443
Total Employed Residents	36,068	47,300	53,700	63,100	74,145
Average Salary Per Worker	$ 30,368	$ 35,756	$ 36,933	$ 43,229	$ 46,440
Solano County					
Total Personal Income (in million $)	$ 3,206	$ 5,748	$ 7,069	$ 10,865	$ 16,075
Total Employed Residents	102,626	157,400	188,000	252,700	339,666
Average Salary Per Worker	$ 31,240	$ 36,516	$ 37,602	$ 42,996	$ 47,326
Napa County					
Total Personal Income (in million $)	$ 1,537	$ 2,136	$ 2,570	$ 3,520	$ 4,755
Total Employed Residents	43,197	53,600	59,400	68,400	78,764
Average Salary Per Worker	$ 35,591	$ 39,845	$ 43,259	$ 51,467	$ 60,366
Vallejo-Fairfield-Napa PMSA					
Total Personal Income (in million $)	$ 4,743	$ 7,883	$ 9,639	$ 14,386	$ 20,830
Total Employed Residents	145,823	211,000	247,400	321,100	418,430
Average Salary Per Worker	$ 32,529	$ 37,362	$ 38,960	$ 44,801	$ 49,781
Avg. Annual Rate of Increase		0.93%	0.42%	1.41%	1.06%

[1] Year 2020 projections are based on the previous decade's rate of growth of employed residents.
Source: Projections 94, Association of Bay Area Governments, December 1993; ERA

TABLE E-8
HISTORICAL AND PROJECTED POPULATION, 1980-2020
Vallejo-Fairfield-Napa PMSA

Location	Historical		Projected		
	1980	1995	2000	2010	2020[3]
Vallejo[1]	81,599	125,300	137,600	137,300	137,000
Solano County[5]	235,203	385,600	454,700	546,800	657,600
Napa County	99,199	121,000	129,200	143,300	158,900
V-F-N PMSA[4]	334,402	506,600	583,900	690,100	816,500

Location	For 1980-1995		Annual Growth Rate[2]		
	%Change 1980-1995	Annl. Growth Rate[2]	1995-2000	2000-2010	2010-2020
Vallejo (SOI)[1]	53.6%	2.9%	1.9%	0.0%	0.0%
Solano County	68.2%	3.5%	2.8%	1.9%	1.9%
Napa County	22.0%	1.3%	1.3%	1.0%	1.0%
V-F-N PMSA[4]	54.5%	2.9%	2.5%	1.7%	1.7%

[1] Vallejo data based on the 1980 and 1990 Censuses. For projections (1995-2020), population indicated is for the Vallejo and areas.

[2] compounded

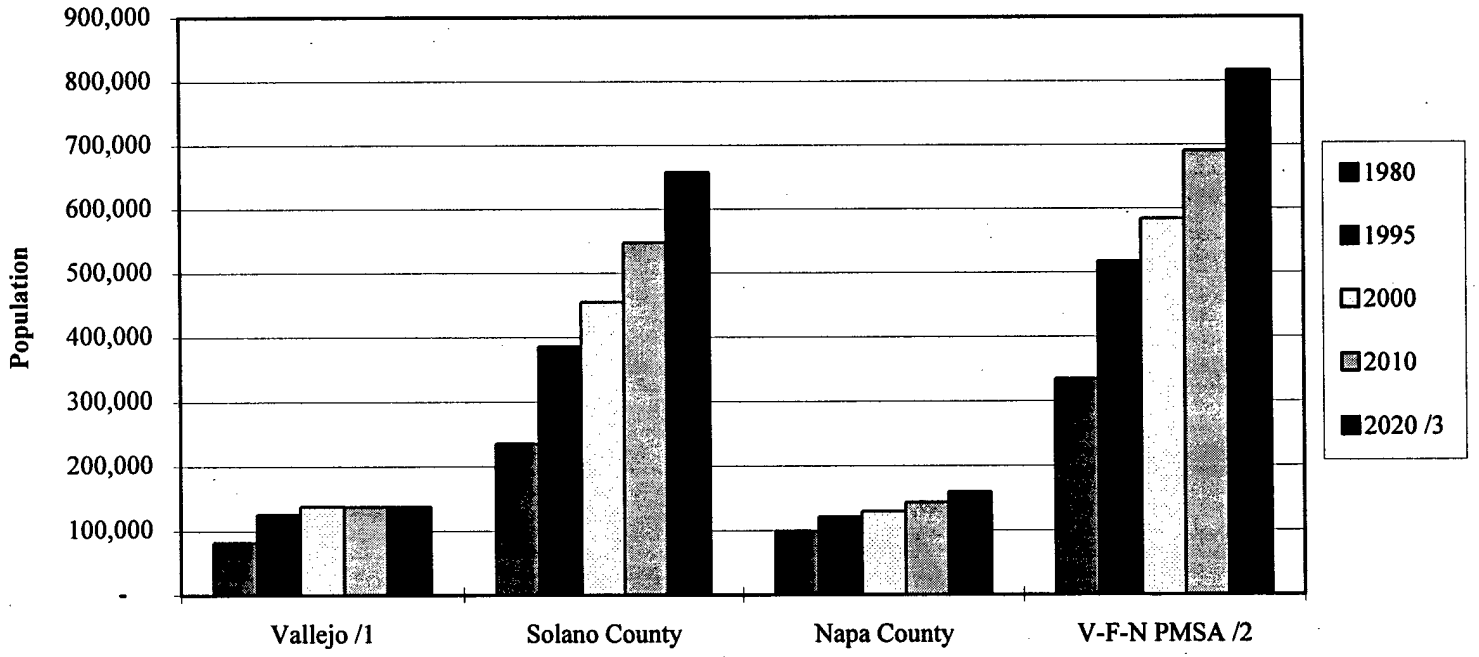
[3] ERA's 2020 projections based on previous decade's growth rate.

[4] V-F-N PMSA consists of Napa and Solano counties.

[5] On March 1995, the ABAG revised its 1995 population estimatse for Solano County downwards by 10,000 residents, from 395,600 to 385,600 people.

Source: U.S. Census 1980; Projections 94, Association of Bay Area Governments, December 1993; Economics Research Associates

FIGURE E-4
SUMMARY OF POPULATION TRENDS IN THE ROI, 1980 TO 2020



/1 Vallejo data based on the 1980 and 1990 censuses. For projections, population indicated is for Vallejo and areas under itse sphere of influence.
/2 V-F-N PMSA represents the Vallejo-Fairfield-Napa primary statistical area consisting of Napa and Solano counties.
/3 Year 2020 projections are based on the growth trend between 2000 and 2010.
Source: U.S. Census 1980; U.S. Census 1990; Assosciation of Bay Area Govts. 1994; Economic Research Associates

TABLE E-9
RESIDENTIAL VACANCY RATES IN THE ROI
1989 TO 1994

Year	Vacancy Rates		
	City of Vallejo	Solano County	Napa County
1989	5.4%	4.7%	7.6%
1990	6.3%	4.8%	6.9%
1991	6.0%	4.7%	6.4%
1992	5.8%	4.7%	6.4%
1993	5.3%	4.5%	6.6%
1994	5.3%	4.7%	6.1%

Source: California Dept. of Finance, Demographic Research Unit

TABLE E-10
1994 HOUSING COSTS, CITY OF VALLEJO AND THE ROI

Region	Price of New Homes		Price of New & Resale Homes	
	Average	Median	Average	Median
City of Vallejo	$ 160,000	not avail.	$ 139,100	$ 134,500
Solano County	$ 197,500	$ 187,700	$ 160,200	$ 152,000
Napa County	$ 263,800	$ 240,000	$ 232,000	$ 182,000

Source: Solano County Board of Realtors; Napa County Board of Realtors;
Northern Solano County Board of Realtors; Construction Industry Research Board

APPENDIX F

BIOLOGICAL RESOURCES

APPENDIX F
BIOLOGICAL RESOURCES

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
3310 El Camino Ave., Suite 130
Sacramento, California 95821-6340

IN REPLY REFER TO:

In Reply Refer To:
1-1-95-F-143

May 23, 1997

Mr. John H. Kennedy
Head, Environmental Planning Branch
U.S. Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Subject: Endangered Species Formal Consultation on the Proposed Mare Island Naval Shipyard Disposal and Reuse, Solano County, California

Dear Mr. Kennedy:

This is in response to your request for formal consultation and conference on a proposal by the U.S. Department of the Navy (Navy), for disposal of Navy property and community reuse by the City of Vallejo (City) on Mare Island Naval Shipyard (MINSY) in Solano County, California. Your request for initiation of formal consultation was received by the U.S. Fish and Wildlife Service (Service) on September 12, 1995. This document includes the Service's biological opinion on the effects of that action on the endangered California clapper rail (*Rallus longirostris obsoletus*), endangered salt marsh harvest mouse (*Reithrodontomys raviventris*), and threatened delta smelt (*Hypomesus transpacificus*), as well as a conference opinion on the project effects on the proposed threatened Sacramento splittail (*Pogonicthys macrolepidotus*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

No critical habitat has been designated for the California clapper rail, salt marsh harvest mouse, or Sacramento splittail. Delta smelt critical habitat is contained within the "legal Delta" for the Sacramento-San Joaquin estuary, upstream of the project area. Therefore, this project will not adversely modify or destroy critical habitat for any of these species.

The Service has determined that the proposed action is not likely to adversely affect the endangered California brown pelican (*Pelecanus occidentalis californicus*), American peregrine falcon (*Falco peregrinus anatum*), California freshwater shrimp (*Syncaris pacifica*), threatened coastal population of the western snowy plover (*Charadrius alexandrinus nivosus*), proposed endangered soft bird's beak (*Cordylanthus mollis mollis*), and Suisun thistle (*Cirsium hydrophilum*). Therefore, these species are not addressed in this biological opinion.

This biological and conference opinion is based on (1) the Mare Island Naval Shipyard Disposal and Reuse Draft Environmental Impact Statement/Environmental Impact Report, dated August 1995 (DEIS); (2) a letter from the Navy to the Service dated April 11, 1997, describing revisions to the project description in the DEIS; (3) the Biological Opinion for the Endangered Species Formal Consultation on the Dredge Spoil Program at Mare Island Naval Shipyard, dated July 28, 1988 (Service File Reference 1-1-88-F-26); (4) the Memorandum of Understanding Between U.S. Fish and Wildlife Service and Mare Island Naval Shipyard, dated July 28, 1988 (MOU); (5) the Base Realignment and Closure Cleanup Plan for Mare Island Naval Shipyard, dated March 1, 1995 (BCP); (6) a letter from the California State Lands Commission (SLC) to the Service dated April 21, 1997; (7) a letter from the City to the Service dated April 17, 1997; (8) other information in Service files; and (9) additional oral and written communications between the Navy, Service, City, and SLC. A complete administrative record of this consultation is on file in the Service's Sacramento Field Office for Ecological Services.

CONSULTATION HISTORY

On September 12, 1995, the Service received the Navy's September 11, 1995, request for initiation of section 7 formal consultation, under the Act, for the proposed project. On February 12, 1996, the Navy provided the Service with additional information on the potential adverse effects of the proposed project on the threatened delta smelt and proposed threatened Sacramento splittail. On March 13, 1996, the Service provided the Navy with a draft biological and conference opinion for the proposed project for review by the Navy and City. On November 6, 1996, the Navy responded in writing to this draft opinion. On April 11, 1997, the Navy provided the Service with a revised project description and requested that the Service issue a final biological opinion for the project as revised.

BIOLOGICAL OPINION

Description of the Proposed Action

MINSY is located in the San Francisco Bay area on the western edge of Vallejo, and is situated on a flat peninsula approximately 3.5 miles long and one mile wide. The Navy currently owns a total of about 4600 acres at MINSY. Of the 4600 acres, approximately 1484 acres of MINSY is Federal surplus property, which the Navy is proposing to dispose from Federal ownership. The Navy would transfer approximately 192 acres of property to other Federal agencies to meet ongoing mission requirements of these agencies at MINSY. These Federal-to-Federal agency transfers would include about 161.8 acres to the Service's National Wildlife Refuge System, 18.16 acres to the U.S. Department of Army, 11.17 acres to the U.S. Forest Service, and 0.67 acres to the U.S. Coast Guard. Also, about 2924 acres of MINSY would automatically revert to the ownership of the State of California when the land is no longer needed for military purposes.

MINSY is bounded by Mare Island Strait on the east, San Pablo Bay on the west, Carquinez Strait on the south, and Napa Marsh and other marshlands on the north. The MINSY facility includes Mare Island, a causeway connecting Mare Island and Vallejo, the Roosevelt Terrace housing complex located off the peninsula, the main entrance, and a railroad spur which extends from the peninsula through Vallejo. MINSY currently contains about 960 buildings, totaling 10.5 million square feet, which were used for industrial, office, residential, educational, commercial, recreational, cultural, and institutional uses.

Pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510) and specific base closure decisions approved by the U.S. Congress in September 1993, MINSY operationally closed on March 30, 1996. The Navy proposes to dispose of the non-reversionary Navy surplus property at MINSY in a manner that is consistent with the Mare Island Reuse Plan approved by the City in July 1994. The Navy action alternatives in the DEIS are the disposal of Federal surplus property at Mare Island from Federal ownership, or retention of the property in Federal ownership and caretaker status under the No Action Alternative. The City action in the DEIS is reuse of Federal surplus property at MINSY under the Mare Island Reuse Plan (Reuse Plan). The DEIS also evaluates two additional reuse alternatives, the Medium Density Alternative and the Open Space Alternative. Disposal of Federal surplus lands by the Navy will be a component of each of the proposed reuse alternatives by the City. MINSY is now in caretaker status under the administrative responsibility of the Navy's Engineering Field Activity West Office (EFA West).

The DEIS identifies 13 reuse areas on MINSY: (1) Reuse Area 1-North Light Industry (192 acres), (2) Reuse Area 2-Neighborhood Center (85 acres), (3) Reuse Area 3-Mixed Use: Office/Light Industry (111 acres), (4) Reuse Area 4-Historic Area (47 acres), (5) Reuse Area 5-Heavy Industry (119 acres), (6) Reuse Area 6-Farragut Village (107 acres), (7) Reuse Area 7-Developed Recreation (48 acres), (8) Reuse Area 8-Coral Sea Village (70 acres), (9) Reuse Area 9-Education/Office (101 acres), (10) Reuse Area 10-Marina/Residential (94 acres), (11) Reuse Area 11-Golf Course (172 acres), (12) Reuse Area 12-Regional Park (228 acres), and (13) Reuse Area 13-Recreation/Open Space (92 acres). Tidal and non-tidal wetlands and dredge disposal areas (1,594 acres) on MINSY are discussed and evaluated separately in the DEIS, and are not identified as reuse areas. In addition, the main entrance along State Route 37 and the Roosevelt Terrace residential complex along State Route 37 adjacent to White Slough are discussed and evaluated separately.

The proposed action of disposal of Federal surplus land and implementation of the preferred alternative for reuse under the Mare Island Reuse Plan would result in substantial industrial, commercial, and community reuse of MINSY. About 5.7 million square feet of nonresidential building space and 1836 residential units both on and off MINSY would exist at full buildout of the Reuse Plan. Approximately 18 miles of streets would be improved, and seven miles of new road would be built. Nine signalized traffic intersections would be constructed. Off-site improvements would include constructing a southern crossing and its approach, and redeveloping the Roosevelt Terrace Housing.

Under the preferred reuse alternative, the total number of residential units would increase from 1,083 units to 1,836 units at buildout, an approximately 59 percent increase. The projected population of MINSY at buildout would be 5175, including residents at Roosevelt Terrace, and the projected employment would be 9669 workers.

On July 28, 1988, the Service and Navy signed the MOU pursuant to the Biological Opinion prepared for the endangered species section 7 consultation (1-1-88-F-26) for the dredge spoil program at MINSY and also dated July 28, 1988. The MOU was signed to ensure compliance of the Navy's maintenance dredging program for Mare Island Strait with the Reasonable and Prudent Measures required in the Biological Opinion. Actions in the MOU included establishment of standards and conditions for maintenance dredging activities and management of dredge disposal ponds and establishment of a program for promoting the conservation of federally listed species, especially the salt marsh harvest mouse, on MINSY. The MOU included protection of endangered species habitat in perpetuity. The specific details of the Biological Opinion and the agreement identified in the MOU are hereby incorporated by reference. According to the DEIS, prior to actual disposal of State reversionary and Federal surplus lands and while they are under Navy caretaker status, the active and/or inactive dredge disposal ponds could be leased to the City or other entities for disposal of dredged material.

The western half of MINSY contains active and inactive dredge disposal ponds and other open space lands, including tidal and non-tidal wetlands. A significant portion of these lands were granted by the State of California (State) to the Federal government in 1854 when MINSY was originally established as a Federal military installation. This grant was conditioned on the continued use by the Federal government of the area for military purposes. Under the grant, the land reverts to the State when military operations of MINSY cease. According to the DEIS, the ownership of the western half of MINSY will revert to the State of California upon actual disposal of Federal surplus land by the Navy, as mandated in the State of California statute which granted the land to the Federal government. After reversion of the land to the State, the Navy asserts that the State will be required to consult with the Service under either section 7 or 10 of the Act on potential adverse effects to federally listed species and to facilitate the continued use of any of the active or inactive dredge disposal ponds. Similarly, the Navy proposes that any Federal or non-Federal entities which acquire lands with dredge ponds will be required to consult with the Service to operate the dredge ponds. The DEIS indicates that future compliance with requirements of the Act after actual land disposal will be the responsibility of the public or private entities proposing projects in disposed lands that may affect federally listed species and that the Navy will not be responsible for compliance with the Act by other public or private entities after the land has been turned over to them.

According to the BCP, there are 24 Installation Restoration Program (IRP) sites at MINSY which might represent a threat to human health or the environment as a result of past contamination from Navy activities. There are 143 Preliminary Assessment/Site Inspection sites which could become IRP sites after additional investigations are completed. Furthermore, portions of MINSY

contain unexploded ordnance and also could become IRP sites after further surveys. The BCP provides the status of ongoing environmental restoration programs and associated compliance and natural resources programs at MINSY. The BCP provides thorough evaluations and presentations of the status of various cleanup programs, but further evaluations and updates will be conducted based upon the dynamic circumstances of the environmental programs until full restoration at MINSY is accomplished. The specific details of the planning process, strategies, and master implementation schedules for the environmental restoration programs at MINSY identified in the BCP are hereby incorporated by reference into the project description for the proposed action. The DEIS and BCP do not evaluate potential adverse effects on listed or proposed species which could result from environmental cleanup programs such as the Navy's IRP. Prior to disposal of these areas to the City or other non-Federal entities and reversion to the State, the Navy will retain responsibility for remediation of contaminated areas within MINSY

The DEIS identifies the following impacts to endangered terrestrial species from potential activities in the reuse areas: (1) increased levels of disturbance and loss of endangered species habitat from human and pet use in wetland areas adjacent to Reuse Areas 6 and 8, (2) increased levels of predation from domestic and feral animals emanating from Reuse Areas 6 and 8 into adjacent endangered species habitat, (3) loss of salt marsh harvest mouse habitat resulting from development of Reuse Area 10, and (4) development of trails or access routes in adjacent endangered species habitat from increased recreational use of Reuse Areas 12 and 13. No other potential impacts to endangered terrestrial species or their habitat are identified in the DEIS for reuse areas. To avoid and minimize potential adverse impacts to federally listed or proposed species identified above and others identified during formal consultation with the Service, the Navy and City propose to implement a number of mitigation measures as part the Navy disposal and subsequent community reuse of MINSY by the City under the Mare Island Reuse Plan.

1. The following measures would be implemented to protect the endangered California clapper rail (clapper rail) and salt marsh harvest mouse (harvest mouse):

   (a) The Navy shall ensure that a detailed, active, annual, predator management plan of not to exceed 20 hours per week of field effort which effectively manages predators on all portions of MINSY is developed and implemented during caretaker status within 6 months after a Record of Decision has been certified on the Final Environmental Impact Statement/Environmental Impact Report (FEIS). The plan will continue indefinitely and be subject to review and approval by the Service. The City will implement an active predator management program of not to exceed 20 hours per week which effectively manages predators upon transfer of MINSY from the Navy to the City or other non-Federal entities. The City will be responsible for the annual predator management of each parcel as it is transferred from Navy ownership. The Navy will maintain responsibility for predator management on leased parcels, but may seek reimbursement from lessees for predator management actions on leased areas. The Navy will provide its Predator Management Plan to the City prior to any property transfer to assist the City in

meeting their requirement for providing predator management in the future. The plan shall include, but not be limited to, provisions for continuous monitoring and management of predators on MINSY by qualified predator management personnel. Personnel shall be experienced and/or trained in performing predator management activities in or adjacent to clapper rail or harvest mouse habitat. The Navy will ensure that during caretaker status, predator management personnel can operate on all Navy property necessary to complete their mission. Upon property transfer to the City or other non-Federal entities, the City will ensure that predator management personnel can operate on all City property. The City also will require subsequent property owners to allow access to predator management personnel as a condition of property transfer from the City to private entities. The Navy and City will fund predator management activities as part of their standard annual budgeting processes, consistent with all fiscal laws. Performance standards and associated contingency measures will be developed as part of the predator management plan.

(b) The Navy shall develop a detailed plan which effectively manages public access human use and activity during caretaker status in and adjacent to clapper rail or harvest mouse habitat on MINSY. The plan shall assure enforceability and maintenance of proposed public access to protect the clapper rail and harvest mouse during caretaker status. The City will be responsible for enforceability and maintenance of proposed human use management upon transfer of MINSY. This plan shall be subject to review and written approval by the Service within 6 months after the Record of Decision has been certified for the FEIS. The Navy will provide its Public Access Human Use Management Plan to the City prior to any property transfer to assist the City in meeting this requirement after the property is transferred to the City.

(c) Prior to implementation of any aspect of the Base Cleanup Plan, the Navy shall consult with the Service pursuant to section 7 of the Act to ensure that the proposed cleanup work is not likely to adversely affect clapper rails or harvest mice, or any other federally listed or proposed species. Should the Navy determine that any listed or proposed species are likely to be affected by the proposed cleanup work, the Navy shall initiate section 7 formal consultation with the Service.

(d) The Navy shall ensure that the local mosquito abatement district submits an annual work plan for their proposed mosquito abatement work on MINSY to the Service and the Navy each year. Prior to implementation of any aspect of an annual work plan, the Navy shall consult with the Service pursuant to section 7 of the Act to ensure that the proposed mosquito abatement work is not likely to adversely affect clapper rails or harvest mice, or any other federally listed or proposed species, on MINSY. Should the Navy determine that any listed or proposed species are likely to be affected by the proposed mosquito abatement work in the work plan, the Navy shall initiate section 7 formal consultation with the Service.

(e) The Navy will prepare legally-binding perpetual conservation easements or a similar real estate instrument to protect all nonreversionary Navy property on MINSY which is suitable habitat for the clapper rail or the harvest mouse prior to Navy disposal of such property from Federal ownership. The amount of these easements is anticipated to be about 81 acres. The language in the easements shall be subject to review and written approval by the Service. The easements shall be recorded prior to disposal of these areas from Federal ownership by the Navy. The easements shall ensure preservation and management of these lands for the protection of these endangered species and their habitat, regardless of any future changes in land ownership. A copy of the recorded easement documents shall be provided to the Service within 30 days of actual recordation.

2. To protect harvest mouse habitat, the Navy shall ensure that the purpose and objectives, as well as the standards and conditions established in the MOU between the Service and Navy and dated July 28, 1988, continue to be implemented for the management of dredge disposal ponds at MINSY while the facility is in caretaker status. The Navy shall adhere to this requirement under any future operational scenarios including, but not limited to, leasing during caretaker status prior to reversion of these properties to the State of California. The Navy shall consult with the Service if any changes in the scope and/or extent of dredge pond management beyond that identified in the MOU are proposed. The Navy also shall provide the Service with data on contaminant levels in dredged material proposed for placement in any dredge ponds to ensure that the material is not likely to affect harvest mice. The data shall be provided to the Service for review and written approval prior to placement of dredged material in any dredge pond at MINSY. The Navy shall advise the State of California regarding the presence of endangered and threatened species on reversionary property at the time of reversion.

3. The following measures shall be taken by the Navy and the City to protect the delta smelt and Sacramento splittail during caretaker status and subsequent community reuse:

(a) Prior to transfer or lease of the dry docks or any other area where in-water activities may adversely affect delta smelt or Sacramento splittail, the Navy shall inform the future owner or user that federally endangered or threatened fish species occasionally occur in the vicinity of the Mare Island Naval Shipyard and that an Endangered Species incidental take permit may be required from the Service, National Marine Fisheries Service, and California Department of Fish and Game. The following avoidance and minimization measures are typically included in such permits from the Service:

(1) Minimize the impacts on delta smelt resulting from the permanent loss of spawning and refugial habitat due to destruction of emersed plants caused by placement of rip-rap, or construction of intake or outtake structures, dredging or placing of piles by avoiding areas having emersed plants. If destruction of emersed plants through avoidance is not possible, then habitat shall be acquired, enhanced,

or created at a 3:1 ratio for the impacted areas, and maintained in perpetuity by DFG or another appropriate management group. To determine the proper area to be acquired, the total surface area of affected emersed plants shall be measured through underwater survey. A plan that details the extent of affected areas, and describes proposed replacement areas, shall be submitted to the Service for approval at least 30 days prior to soil excavation, placement of rip-rap, or construction of recreation facilities or intake and outtake structures. Upon approval, the plan shall be implemented within one year of the completion of any of these activities.

(2) All emergent and submergent vegetation shall be avoided to the maximum extent practicable. If there are unavoidable impacts on delta smelt resulting from the permanent loss of spawning and refugial habitat due to destruction of submersed aquatic plants, and habitat shall be acquired, enhanced, or created at a 3:1 ratio, based on total acres of habitat affected, for the impacted areas, and maintained in perpetuity by DFG or another appropriate management group. A plan that details the extent of affected areas, and describes proposed replacement areas, shall be submitted to the Service for approval at least 30 days prior to soil excavation, placement of rip-rap, or construction of recreation facilities or intake and outtake structures. Upon approval, the plan shall be implemented within one year of the completion of any of these activities.

(3) Minimize the impacts on delta smelt resulting from the killing or harassment of delta smelt adults, juveniles, and larvae by screening all diversions associated with any future actions, using a maximum approach velocity of 0.2 feet per second.

(4) Avoid impacts to delta smelt critical habitat resulting from disposal of dredge spoils by not disposing of any dredge spoils in the critical habitat area defined in the December 19, 1994, Federal Register (59 **FR**: 65256).

Species Account/Environmental Baseline

California Clapper Rail

The clapper rail was federally listed as endangered in 1970 (35 **FR**: 1604). A detailed account of the taxonomy, ecology, and biology of the California clapper rail is presented in the approved Recovery Plan for this species (Service 1984). Supplemental information is provided below.

Of the 193,800 acres of tidal marsh that bordered San Francisco Bay (Bay) in 1850, about 30,100 acres currently remain (Dedrick 1993). This represents an 84 percent reduction from historical conditions. Furthermore, a number of factors influencing remaining tidal marshes limit their habitat values for clapper rails. Much of the East Bay shoreline from San Leandro to Calaveras Point is rapidly eroding, and many marshes along this shoreline could lose their clapper rail populations in the future, if they have not already. In

addition, an estimated 600 acres of former salt marsh along Coyote Creek, Alviso Slough, and Guadalupe Slough, has been converted to fresh- and brackish-water vegetation due to freshwater discharge from south Bay wastewater facilities and is of lower quality for clapper rails. This conversion has at least temporarily stabilized as a result of the drought since the early 1990s.

The suitability of many marshes for clapper rails is further limited, and in some cases precluded, by their small size, fragmentation, and lack of tidal channel systems and other micro-habitat features. These limitations render much of the remaining tidal marsh acreage unsuitable or of low value for the species. In addition, tidal amplitudes are much greater in the south Bay than in San Pablo or Suisun bays (Atwater *et al.* 1979). Consequently, many tidal marshes are completely submerged during high tides and lack sufficient escape habitat, likely resulting in nesting failures and high rates of predation. The reductions in carrying capacity in existing marshes necessitate the restoration of larger tracts of habitat to maintain stable populations.

Throughout the Bay, the remaining clapper rail population is besieged by a suite of mammalian and avian predators. At least 12 native and 3 non-native predator species are known to prey on various life stages of the clapper rail (Albertson 1995). Artificially high local populations of native predators, especially raccoons, result as development occurs in the habitat of these predators around the Bay margins (J. Takekawa, pers. comm.). Encroaching development not only displaces lower order predators from their natural habitat, but also adversely affects higher order predators, such as coyotes, which would normally limit population levels of lower order native and non-native predators, especially red foxes (Albertson 1995). Hunting intensity and efficiency by raptors on clapper rails also is increased by electric power transmission lines, which criss-cross tidal marshes and provide otherwise-limited hunting perches (J. Takekawa, pers. comm.). Non-native Norway rats (*Rattus norvegicus*) long have been known to be effective predators of clapper rail nests (DeGroot 1927, Harvey 1988, Foerster *et al.* 1990). Placement of shoreline riprap favors rat populations, which results in greater predation pressure on clapper rails in certain marshes. These predation impacts are exacerbated by a reduction in high marsh and natural high tide cover in marshes.

The proliferation of non-native red foxes into tidal marshes of the South Bay since 1986 has had a profound effect on clapper rail populations. As a result of the rapid decline and almost complete elimination of rail populations in certain marshes, the San Francisco Bay National Wildlife Refuge (Refuge) implemented a predator management plan in 1991 (Foerster and Takekawa 1991) with an ultimate goal of increasing rail population levels and nesting success through management of red fox predation. This program has proven successful in increasing the overall south Bay populations from an all-time low (see below); however, it has been difficult to effectively conduct predator management over such a large area as the south Bay, especially with the many constraints associated with conducting the work in urban environments (J. Takekawa, pers. comm.).

Predator management for clapper rails is not being regularly practiced in the North Bay, and rail populations in this area remain susceptible to red fox predation. Red fox activity has been documented west of the Petaluma River and along Dutchman Slough at Cullinan Ranch (J. Collins, pers. comm.). Along Wildcat Creek near Richmond, where recent red fox activity has been observed, the rail population level in one tidal marsh area has declined considerably since 1987 (J. Evens, pers. comm.), even though limited red fox management was performed in 1992 and 1993 (J. Takekawa, pers. comm.).

Mercury accumulation in eggs is perhaps the most significant contaminant problem affecting clapper rails in San Francisco Bay, with the South Bay containing the highest mercury levels. Mercury is extremely toxic to embryos and has a long biological half-life. The Service collected data from 1991 and 1992 on mercury concentrations in rail eggs in the southern portion of the estuary and found that the current accumulation of mercury in rail eggs occurs at potentially harmful levels. The percentage of non-viable eggs ranged from 24 to 38 percent (mean = 29 percent).

The California clapper rail was listed as endangered primarily as a result of habitat loss. The factors described above have contributed to the more recent population reduction, which has occurred since the mid-1980s. Although Gill (1979) may have overestimated the total California clapper rail population in the mid-1970s at 4,200 to 6,000 birds, surveys conducted by the CDFG and the Service estimated that the clapper rail population was approximately 1,500 birds in the mid-1980s (Harvey 1988). In 1988, the total rail population was estimated to be 700 individuals, with 400-500 rails in the south Bay (Foerster 1989). The total rail population reached an estimated all-time historical low of about 500 birds in 1991, with about 300 rails in the south Bay (Service unpubl. data; E. Harding-Smith, pers. comm.). In response to predator management, the South Bay rail population has since rebounded from this lowest population estimate and is now estimated to be approximately 500 to 600 individuals (Service unpubl. data; J. Albertson, pers. comm.), while a conservative estimate of the north Bay population, including Suisun Bay, is 195-282 pairs (Evens *et al.* 1994). Although many factors are at work, predation by native and non-native predators, in conjunction with extensive habitat loss and fragmentation, are the current primary threats. With historic populations at Humboldt Bay, Elkhorn Slough, and Morro Bay now extinct, the Bay represents the last stronghold and breeding population of this subspecies.

Evens and Page (1983) concluded from research in a North Bay marsh that the clapper rail breeding season, including pair bonding and nest construction, may begin as early as February. Field observations in South Bay marshes suggest that pair formation also occurs in February in some areas (J. Takekawa, pers. comm.). The end of the breeding season is typically defined as the end of August, which corresponds with the time when eggs laid during renesting attempts have hatched and young are mobile.

Clapper rails have been observed breeding and foraging in tidal marshes in the western half of MINSY. Evens *et al.* (1994) detected clapper rails during the 1992 breeding season in the tidal marsh at the southwestern end of MINSY. Just north of MINSY, Evens *et al.* (1994) detected breeding clapper rails at

the mouth of Dutchman Slough on the western shore of the Napa River. Along the Napa River, breeding rails have been documented across from MINSY in the Wilson Avenue South/River Park tidal marshes along the eastern shore of the Napa River between the Napa River/State Highway 37 bridge and the Causeway Street bridge in Vallejo. Evens *et al.* (1994) also estimated a maximum of 15 pairs of rails in the White Slough tidal marshes north of the Roosevelt Terrace residential complex.

Salt Marsh Harvest Mouse

The harvest mouse was federally listed as endangered in 1970 (35 **FR**: 1604). A detailed account of the taxonomy, ecology, and biology of the salt marsh harvest mouse (harvest mouse) is presented in the approved Recovery Plan for this species (Service 1984). Supplemental information on the harvest mouse is provided below and in the Service's August 31, 1990, biological opinion on Corps permit application no. 15283E49, which is hereby incorporated by reference.

Harvest mice may be affected by mercury in the intertidal zone. Clark *et al.* (1992) found that harvest mice were captured only at sites where concentrations of mercury or PCBs were below specific levels in house mice (*Mus musculus*). Their results (Clark *et al.* 1992) seem to suggest a southern source of mercury contamination, with mercury an order of magnitude higher in livers of house mice at Calaveras Point than at any other point measured in the Bay.

High population numbers of harvest mice have been documented for the tidal marsh and non-tidal wetlands, including dredge disposal ponds, on the western half of MINSY. Harvest mice also are presumed to occur in three isolated tidal marshes on MINSY along the western shore of the Napa River and at the southeastern tip of the peninsula. Along the northwestern boundary of MINSY, harvest mice are known to occur in the extensive tidal marshes south of State Route 37. According to results from trapping surveys conducted since August 1994, a significant number of harvest mice are presumed to reside in this tidal marsh which is continuous with tidal marsh areas supporting harvest mice on MINSY. Harvest mice also are known to occur in the White Slough tidal marshes north of the Roosevelt Terrace residential complex.

Delta Smelt

Please refer to Service (1993, 1994a, 1994b) and DWR and Reclamation (1994) for additional information on the biology and ecology of the delta smelt. The delta smelt is a slender-bodied fish with a steely blue sheen on the sides and seems almost translucent (Moyle 1976). The delta smelt, which has a lifespan of one year, has an average length of 60 to 70 mm (about 2 to 3 inches) and is endemic to Suisun Bay upstream of San Francisco Bay through the Delta in Contra Costa, Sacramento, San Joaquin, and Solano counties, California. Historically, the delta smelt is thought to have occurred from Suisun Bay upstream to at least the city of Sacramento on the Sacramento River and Mossdale on the San Joaquin River (Moyle *et al.* 1992, Sweetnam and Stevens 1993). The delta smelt is an euryhaline species (tolerant of a wide salinity range) that spawns in fresh water and has been collected from estuarine waters

up to 14 ppt salinity (Moyle *et al.* 1992). For a large part of its annual life span, this species is associated with the freshwater edge of the mixing zone (saltwater-freshwater interface), where the salinity is approximately 2 ppt (Ganssle 1966, Moyle *et al.* 1992, Sweetnam and Stevens 1993).

The delta smelt is adapted to living in the highly productive Estuary where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Despite this tremendously variable environment, the historical Estuary probably offered relatively constant suitable habitat conditions for delta smelt, because they could move upstream or downstream with the mixing zone (Moyle, pers. comm., 1993). The final rule to list the delta smelt as threatened describes in detail the factors that have contributed to this species' decline (Service 1993a).

Shortly before spawning, adult delta smelt migrate upstream from the brackish-water habitat associated with the mixing zone to disperse widely into river channels and tidally-influenced backwater sloughs (Radtke 1966, Moyle 1976, Wang 1991). Migrating adults with nearly mature eggs were taken at the CVP's Tracy Pumping Plant from late December 1990 to April 1991 (Wang 1991).

Delta smelt spawn in shallow, fresh, or slightly brackish water upstream of the mixing zone (Wang 1991). Most spawning occurs in tidally-influenced backwater sloughs and channel edge waters (Moyle 1976; Wang 1986, 1991; Moyle *et al.* 1992). Although delta smelt spawning behavior has not been observed in the wild (Moyle *et al.* 1992), the adhesive, demersal eggs are thought to attach to substrates such as cattails, tules, tree roots, and submerged branches (Moyle 1976, Wang 1991).

Spawning locations appear to vary widely from year to year (DWR and Reclamation 1993). Sampling of larval delta smelt in the Delta suggests spawning has occurred in the Sacramento River, Barker, Lindsey, Cache, Georgiana, Prospect, Beaver, Hog, and Sycamore sloughs, in the San Joaquin River off Bradford Island including Fisherman's Cut, False River along the shore zone between Frank's and Webb tracts, and possibly other areas (Dale Sweetnam, DFG, pers. comm.; Wang 1991). Delta smelt also may spawn north of Suisun Bay in Montezuma and Suisun sloughs and their tributaries (Lesa Meng, Service, pers. comm.; Sweetnam, DFG, pers. comm.).

The spawning season varies from year to year and may occur from late winter (December) to early summer (July). Moyle (1976) collected gravid adults from December to April, although ripe delta smelt were most common in February and March. In 1989 and 1990, Wang (1991) estimated that spawning had taken place from mid-February to late June or early July, with peak spawning occurring in late April and early May. A recent study of delta smelt eggs and larvae (Wang and Brown 1994 as cited in DWR and Reclamation 1994) confirmed that spawning may occur from February through June, with a peak in April and May. Spawning has been reported to occur at about 7° to 15° C. Initial results from a University of California at Davis (UCD) study (Cech and Swanson 1993 as cited in DWR and Reclamation 1994) indicate that although delta smelt tolerate a wide range of temperatures (<8° C to >25° C), warmer water temperatures restrict their distribution more than colder water temperatures.

Laboratory observations indicate that delta smelt are broadcast spawners that spawn in a current, usually at night, distributing their eggs over a local area (Lindberg 1992 and Mager 1993 as cited in DWR and Reclamation 1994). The eggs form an adhesive foot that appears to stick to most surfaces. Eggs attach singly to the substrate, and few eggs were found on vertical plants or the sides of a culture tank (Lindberg 1993 as cited in DWR and Reclamation 1994).

Delta smelt eggs hatched in 9 to 14 days at temperatures from 13° to 16° C during laboratory observations in 1992 (Mager 1992 as cited in Sweetnam and Stevens 1993). In this study, larvae began feeding on phytoplankton on day four, rotifers on day six, and *Artemia* nauplii at day 14. In laboratory studies, yolk-sac fry were found to be positively phototaxic, swimming to the lightest corner of the incubator, and negatively buoyant, actively swimming to the surface. The post-yolk-sac fry were more evenly distributed throughout the water column (Lindberg 1992 as cited in DWR and Reclamation 1994). After hatching, larvae and juveniles move downstream toward the mixing zone where they are retained by the vertical circulation of fresh and salt waters (Stevens *et al.* 1990). The pelagic larvae and juveniles feed on zooplankton. When the mixing zone is located in Suisun Bay where there is extensive shallow-water habitat within the euphotic zone (depths less than four meters), high densities of phytoplankton and zooplankton may accumulate (Arthur and Ball 1978, 1979, 1980). In general, estuaries are among the most productive ecosystems in the world (Goldman and Horne 1993). Estuarine environments produce an abundance of fish as a result of plentiful food and shallow, productive habitat.

Delta smelt swimming behavior. Observations of delta smelt swimming in the swimming flume and in a large tank show that these fish are unsteady, intermittent, slow-speed swimmers. At low velocities in the swimming flume (<3 body lengths per second), and during spontaneous, unrestricted swimming in a 1-meter tank, delta smelt consistently swam with a "stroke and glide" behavior. This type of swimming is very efficient; Weihs (1974) predicted energy savings of about 50 percent for "stroke and glide" swimming compared to steady swimming. However, the maximum speed delta smelt are able to achieve using this preferred mode of swimming, or gait, was less than 3 body lengths per second, and the fish did not readily or spontaneously swim at this or higher speeds. Forced swimming at these speeds in a swimming flume was apparently stressful; the fish were prone to swimming failure and extremely vulnerable to impingement. Unlike fish for which this type of measurements have been made in the past, delta smelt swimming performance was limited by behavioral rather than physiological or metabolic constraints (e.g., metabolic scope for activity; Brett 1976).

Sacramento splittail

Please refer to Service (1994b) and DWR and Reclamation (1994) for additional information on the biology and ecology of the Sacramento splittail. The Sacramento splittail is a large cyprinid that can reach greater than 12 inches in length (Moyle 1976). Adults are characterized by an elongated body, distinct nuchal hump, and a small blunt head with barbels usually present at the corners of the slightly subterminal mouth. This species can be

distinguished from other minnows in the Central Valley of California by the enlarged dorsal lobe of the caudal fin. Sacramento splittail are a dull, silvery-gold on the sides and olive-grey dorsally. During the spawning season, the pectoral, pelvic and caudal fins are tinged with an orange-red color. Males develop small white nuptial tubercles on the head.

Sacramento splittail are endemic to California's Central Valley where they were once widely distributed in lakes and rivers (Moyle 1976). Historically, Sacramento splittail were found as far north as Redding on the Sacramento River and as far south as the site of Friant Dam on the San Joaquin River (Rutter 1908). Rutter (1908) also found Sacramento splittail as far upstream as the current Oroville Dam site on the Feather River and Folsom Dam site on the American River. Anglers in Sacramento reported catches of 50 or more Sacramento splittail per day prior to damming of these rivers (Caywood 1974). Sacramento splittail were common in San Pablo Bay and Carquinez Strait following high winter flows up until about 1985 (Messersmith 1966, Moyle 1976, and Wang 1986 as cited in DWR and Reclamation 1994).

In recent times, dams and diversions have increasingly prevented upstream access to large rivers and the species is restricted to a small portion of its former range (Moyle and Yoshiyama 1989). Sacramento splittail enter the lower reaches of the Feather (Jones and Stokes 1993) and American rivers (Charles Hanson, State Water Contractors, *in litt.*, 1993) on occasion, but the species is now largely confined to the Delta, Suisun Bay, and Suisun Marsh (Service 1994b). Stream surveys in the San Joaquin Valley reported observations of Sacramento splittail in the San Joaquin River below the mouth of the Merced River and upstream of the confluence of the Tuolumne River (Saiki 1984 as cited in DWR and Reclamation 1994).

Sacramento splittail are long-lived, frequently reaching five to seven years of age. Generally, females are highly fecund, producing over 100,000 eggs each year (Daniels and Moyle 1983. Populations fluctuate annually depending on spawning success. Spawning success is highly correlated with freshwater outflow and the availability of shallow-water habitat with submersed, aquatic vegetation (Daniels and Moyle 1983). Sacramento splittail usually reach sexual maturity by the end of their second year at a size of 180 to 200 mm. There is some variability in the reproductive period since older fish reproduce before younger individuals (Caywood 1974). The largest recorded Sacramento splittail have measured between 380 and 400 mm (Caywood 1974, Daniels and Moyle 1983. Adults migrate into fresh water in late fall and early winter prior to spawning. The onset of spawning is associated with rising temperature, lengthening photoperiod, seasonal runoff, and possibly endogenous factors from the months of March through May, although there are records of spawning from late January to early July (Wang 1986). Spawning occurs in water temperatures from 9° to 20° C over flooded vegetation in tidal freshwater and euryhaline habitats of estuarine marshes and sloughs and slow-moving reaches of large rivers. The eggs are adhesive or become adhesive soon after contacting water (Caywood 1974, and Bailey, University of California at Davis, pers. comm. 1994 as cited in DWR and Reclamation 1994). Larvae remain in shallow, weedy areas close to spawning sites and move into deeper water as they mature (Wang 1986).

Sacramento splittail are benthic foragers that feed on opossum shrimp, although detrital material makes up a large percentage of their stomach contents (Daniels and Moyle 1983). Earthworms, clams, insect larvae, and other invertebrates are also found in the diet. Predators include striped bass and other piscivores. Sacramento splittail are sometimes used as bait for striped bass.

Sacramento splittail can tolerate salinities as high as 10 to 18 ppt (Moyle 1976, Moyle and Yoshiyama 1992). Sacramento splittail are found throughout the Delta (Turner 1966), Suisun Bay, and Suisun and Napa marshes. They migrate upstream from brackish areas to spawn in freshwater. Because they require flooded vegetation for spawning and rearing, Sacramento splittail are frequently found in areas subject to flooding.

The 1985 to 1992 decline in Sacramento splittail abundance (Figure 3) is concurrent with hydrologic changes to the Estuary. These changes include increases in water diversions during the spawning period from January through July. Diversions, dams and reduced outflow, coupled with severe drought years, introduced aquatic species, and loss of wetlands and shallow-water habitat (DFG 1992) have reduced the species' capacity to reverse its decline.

Effects of the Proposed Action

The proposed action of disposal and reuse of MINSY could (1) directly eliminate and degrade harvest mouse habitat, (2) increase human disturbances to clapper rails, (3) increase predation pressure on rail and mouse populations in tidal and non-tidal wetlands, and (4) eliminate and degrade delta smelt and Sacramento splittail habitat.

Clapper Rail and Harvest Mouse Habitat Loss/Degradation and Mitigation

Future reuse activities such as construction work or creation of recreational trails could directly eliminate or degrade harvest mouse habitat. To avoid this potential adverse effect, the Navy proposes to prohibit construction in wetland areas and to develop and implement a detailed plan to effectively manages public access human use and activity during caretaker status in and adjacent to clapper rail or harvest mouse habitat on MINSY. The plan would assure enforceability and maintenance of proposed public access to protect the clapper rail and harvest mouse during caretaker status. The City would assume responsibility for enforcing and maintaining human use management under this plan upon transfer of MINSY. This plan would be subject to review and written approval by the Service within 6 months after the Record of Decision has been certified for the FEIS. The Navy would provide its Public Access Human Use Management Plan to the City prior to any property transfer to assist the City in meeting this requirement after the property is transferred to the City.

Future dredge pond use for disposal of dredged material would result in the continued loss and degradation of harvest mouse habitat. According to the biological opinion prepared for the Navy's dredge spoil program at MINSY and dated July 28, 1988, about 198.7 acres of harvest mouse habitat would be eliminated as a result of active use of dredge spoil ponds in Areas 1, 3, 4, 12, 13, and 25, and road construction in Area 5. To offset this habitat loss,

the Navy signed the MOU with the Service which provides for the permanent protection of 180 acres of harvest mouse habitat, creation of 44 acres of new harvest mouse habitat, and enhancement of 24 acres of harvest mouse habitat. In addition to preservation of this 248 acres of harvest mouse habitat, the Navy agreed to designate all tidal wetlands on the western half on MINSY and adjacent to Mare Island Strait north of the Mare Island Causeway as lands dedicated in perpetuity for the preservation of the harvest mouse. The MOU also provides for monitoring, research, and establishment of an overlay National Wildlife Refuge, which collectively would greatly improve the management potential and perpetuation of harvest mouse habitat on MINSY.

Active and/or inactive dredge disposal ponds could be leased to the City or other non-Federal entities for continued disposal of dredged material while the ponds are maintained under Navy caretaker status. According to the DEIS, operations of the active dredge ponds under any lease will be conducted in accordance with the requirements of the MOU. If any changes in the management program identified in the MOU are proposed (including, but not limited to, raising of levees to reactivate inactive dredge ponds), the Navy will consult with the Service under section 7 of the Act on any modifications in the incidental take authorization provided under the Biological Opinion prepared in 1988. In this regard, the DEIS does not identify who may use the dredge ponds for disposal in the future or where the material may come from. There are no available data on contaminant levels in this dredged material to determine if adverse effects to endangered species would occur. Therefore, the Navy proposes to consult with the Service if any changes in the scope and/or extent of dredge pond management beyond that identified in the MOU are proposed and to provide the Service with data on contaminant levels in dredged material proposed for placement in any dredge ponds to ensure that the material is not likely to affect harvest mice. The data shall be provided to the Service for review and written approval prior to placement of dredged material in any dredge pond at MINSY.

After the Navy actually disposes the dredge disposal ponds and reversion of the land to the State occurs, the Navy proposes that the State will be required to consult with the Service under either section 7 or 10 of the Act on potential adverse effects to federally listed species and to facilitate the continued use of any of the active or inactive dredge disposal ponds. Similarly, the Navy proposes that any Federal or non-Federal entities which acquire Federal surplus lands with dredge ponds will be required to consult with the Service to operate the dredge ponds. The DEIS indicates that future compliance with requirements of the Act after land disposal will be the responsibility of the public or private entities proposing projects in disposed lands that may affect federally listed species and that the Navy will not be responsible for compliance with the Act by other public or private entities after the land has been turned over to them.

In a letter dated April 9, 1997, SLC staff stated their intent to recommend to the SLC that a public agency lease for the management of State reversionary lands to the Service (i.e., San Pablo Bay National Wildlife Refuge) for a period of 49 years be approved. Lands covered under this lease would include tidal and nontidal wetlands which provide habitat for clapper rails and/or harvest mice. Under this lease, the Service would have right-of-first refusal

at the end of the 49-year lease term. The right-of-first refusal would not guarantee that a subsequent lease would be provided for endangered species habitat protection, but the new lease could provide for other public trust uses and a lease term as the SLC or another lease applicant might propose at that time. Furthermore, about 161.8 acres of nontidal wetlands which provide habitat for harvest mice would be transferred directly to the Service's National Wildlife Refuge System from the Navy for protection and management. Although not providing for protection and management in perpetuity of tidal and non-tidal lands as identified in the MOU, the 49-year lease and land transfer to the Service would provide a reasonable amount of habitat protection for impacts to endangered species habitat associated with the Navy's dredge disposal program from 1988 through the caretaker status period.

Under caretaker status by EFA West, the Navy will retain responsibility for remediation of contaminated areas within MINSY before disposal of these areas to the City or other non-Federal entities takes place. Future implementation of components of the BCP could result in adverse effects to clapper rail and/or harvest mouse habitat depending on the location and type of work required to remove contaminants and/or ordnance. The DEIS and BCP do not evaluate potential adverse effects on listed or proposed species which could result from environmental cleanup programs such as the Navy's IRP because future survey work is necessary to determine where clean-up is necessary and the level of cleanup work required. Therefore, prior to implementation of any aspect of the BCP, the Navy proposes to consult with the Service pursuant to section 7 of the Act to ensure that the proposed cleanup work is not likely to adversely affect clapper rails or harvest mice, or any other federally listed or proposed species, on MINSY. Should the Navy determine that any listed or proposed species are likely to be affected by the proposed cleanup work, the Navy shall initiate section 7 formal consultation with the Service.

Although not discussed or evaluated in the DEIS, future mosquito abatement work activities on MINSY could result in degradation and/or loss of clapper rail or harvest mice habitat. Use of all-terrain vehicles in tidal and non-tidal wetlands by mosquito abatement personnel could result in destruction of wetland vegetation within these areas, thus diminishing habitat quality for endangered species. To avoid or minimize adverse effects to federally listed species, the Navy proposes to ensure that the local mosquito abatement district submits an annual work plan for their proposed mosquito abatement work on MINSY to the Service and the Navy within each given year. Prior to implementation of any aspect of an annual work plan, the Navy proposes to consult with the Service pursuant to section 7 of the Act to ensure that the proposed mosquito abatement work is not likely to adversely affect clapper rails or harvest mice, or any other federally listed or proposed species, on MINSY. Should the Navy determine that any listed or proposed species are likely to be affected by the proposed mosquito abatement work in the work plan, the Navy proposes to initiate section 7 formal consultation with the Service.

Disturbance Effects on Clapper Rails from Reuse Activities

Development activities identified in the DEIS could result in disruption of clapper rail breeding activities in tidal marshes in the western half of

MINSY. The degree of disturbance likely would depend upon the proximity of individual rails and nests and the timing within the breeding season, and could result in increased competitive interactions, territory boundary shifts, or territory abandonment.

Suitable nesting habitat for rails exists in the tidal marsh on the western half, especially in the southwestern part, of MINSY. At Laumeister Marsh in April 1992, an individual rail abandoned an established territory during the breeding season coinciding with disturbance by a Pacific Gas and Electric work crew. This rail left a small, well-defined territory and subsequently moved throughout a large 37-acre area within the marsh and was unable to establish a new territory within the breeding period (USFWS, unpubl. data). As a result of this territorial abandonment, the opportunity for successful reproduction during the breeding season was eliminated (J. Takekawa, pers. comm.). Data from this telemetered rail suggest that increased human activity and associated noise within a rail's established territory can significantly alter the normal behavioral patterns of rails during the breeding season, possibly resulting in extensive movements, lack of reproductive success, or territorial abandonment.

Should rails shift or abandon their territories within the tidal marsh in the western half of MINSY, the ability of these rails to reestablish new breeding territories would be hampered by the fact that rails tenaciously defend established breeding territories from intrusions by other rails. As observed in the Laumeister Marsh example, rails could be forced to move considerable distances in search of unoccupied territorial habitat. Such movement by rails from established territories could significantly increase the risk of predation and mortality. Survival of displaced rails likely would be less than survival of rails that remain in established territories. Zembal and Massey (1988) noted that three of six telemetered light-footed clapper rails that moved extensively were preyed upon within a relatively short period of time. By comparison, seven other birds that remained sedentary within established territories were not preyed upon during the telemetry period. Loss of any female rails would be compounded by the loss of future progeny.

On numerous occasions at the Corte Madera Ecological Preserve in Marin County, rails have been observed seeking refuge from unrestrained dogs entering tidal marshes from adjacent levees with public access (J. Garcia, pers. comm. 1994). These disturbances have occurred despite the presence of signs notifying users that they are entering sensitive wildlife species areas and that pets must be under restraint while in the preserve area. The effects of disturbance would be greatly amplified during high tide series when available high tide refugial habitat becomes scarce along the levees.

To avoid or minimize adverse effects to clapper rails from human disturbances, the Navy proposes to develop and implement the Public Access Human Use Management Plan as described above. Implementation of this plan during caretaker status by the Navy and, after property transfer, by the City likely would provide a reasonable level of assurance that adverse effects to clapper rails from human disturbances will be adequately minimized or avoided.

Increased Predator Pressure

Proposed reuse development activities, especially a significant increase in the number of residential units, could result in an increase above current conditions in predator pressure on clapper rails and salt marsh harvest mice in the tidal marshes and non-tidal wetlands in and adjacent to MINSY, including the Roosevelt Terrace residential complex. Increased food availability associated with development in the reuse areas likely would attract and support larger small mammal populations, including rats, house mice, feral and domestic cats, and raccoons which could prey upon rails and mice. As on-site predator populations increase, predators forced out of developed areas by population density-dependent factors, or by behavioral dispersal mechanisms, could infiltrate adjacent habitats (M. Small and J. Loven, pers. comm. *in* USFWS 1990), including tidal marshes in San Pablo Bay National Wildlife Refuge.

Increases in the number of domestic and feral animals could cause territorial abandonment by rails in adjacent tidal marshes. Evens and Page (1983) documented 4 rail breeding territories along the Greenbrae boardwalk in the Corte Madera Ecological Preserve. In 1993, no rail breeding territories were discovered along the boardwalk even though rail habitat conditions remained unchanged (J. Garcia, pers. comm.). This territorial abandonment is attributed to an increase in domestic and feral dogs and cats along the boardwalk resulting from new residents moving into nearby residential areas since 1983 (*id.*). According to Foerster *et al.* (1990), predators, especially rats, accounted for nest losses of 24 to 29 percent in certain South Bay marshes. Rats and cats entering nearby tidal marshes and non-tidal wetlands could become prey for higher order predators such as red foxes and raccoons, as well as representing predators to endangered species. Therefore, the carrying capacities for higher and lower order predators could increase substantially above current levels. Not only could the existing rail population on MINSY be subjected to increased predator pressure, but rails dispersing from other locations into the tidal marshes on MINSY could be subjected to artificially high levels of predation resulting from proposed reuse activities.

The Navy's proposal to apply the City's animal control regulations to housing areas on MINSY, and to prepare and adopt a management plan for feral cats likely would not protect rails and mice from increased predator pressures. The level of enforcement of these regulations by the City and, thus, the overall effectiveness of these regulations to reduce predator pressure on endangered species is unknown. No protective measures are proposed for adjacent tidal marshes such as White Slough which could receive higher levels of predation from reuse of the Roosevelt Terrace residential complex. Furthermore, the level of management of feral cats in and adjacent to endangered species habitat has not been specified. If an adequate management program were initiated in the future, the presence of increased numbers of people and pets on levees and trails near endangered species habitat could severely hinder, if not completely eliminate, the effectiveness of predator management efforts. On several levee trails (i.e., Ideal Marsh and Palo Alto Baylands) open to daytime human use in the South Bay, the ability to manage predators has proven to be extremely difficult because of the hazards of

placing traps in areas frequented by people and their pets, vandalism to traplines, and the negative perception of predator management efforts by some people (J. Takekawa and J. Albertson, pers. comm.). To conduct predator management in these areas, predator management personnel must take additional measures to reduce possible contact between the public and the trapping program including the use of cover/uncover trapping techniques, setting traps after dark, checking traps before sunrise, and careful placement of traps to avoid heavily traveled paths. Unfortunately, these extra measures have greatly reduced the effective trapping time and area, while also requiring more personnel to maintain trapping efforts. In several locations where easy human access is provided (e.g., areas near parking lots and trailheads, and the Palo Alto Baylands duck pond), the ability to conduct any predator management has been eliminated by human presence in the area day and night.

To avoid or minimize adverse effects to clapper rails and harvest mice from increased predation pressure, the Navy shall ensure that a detailed, active, annual, predator management plan of not to exceed 20 hours per week of field effort which effectively manages predators on all portions of MINSY is developed and implemented during caretaker status within 6 months after a Record of Decision has been certified on the Final Environmental Impact Statement/Environmental Impact Report (FEIS). The plan will continue indefinitely and be subject to review and approval by the Service. The City will implement an active predator management program of not to exceed 20 hours per week which effectively manages predators upon transfer of MINSY from the Navy to the City. The City will be responsible for the annual predator management of each parcel as it is transferred from Navy ownership. The Navy will maintain responsibility for predator management on leased parcels, but may seek reimbursement from lessees for predator management actions on leased areas. The Navy will provide its Predator Management Plan to the City prior to any property transfer to assist the City in meeting their requirement for providing predator management in the future. The plan shall include, but not be limited to, provisions for continuous monitoring and management of predators on MINSY by qualified predator management personnel. Personnel shall be experienced and/or trained in performing predator management activities in or adjacent to clapper rail or harvest mouse habitat. The Navy will ensure that during caretaker status, predator management personnel can operate on all Navy property necessary to complete their mission. Upon property transfer to the City, the City will ensure that predator management personnel can operate on all City property. The City also will require subsequent property owners to allow access to predator management personnel as a condition of property transfer from the City to private entities. The Navy and City will fund predator management activities as part of their standard annual budgeting processes, consistent with all fiscal laws. Performance standards and associated contingency measures will be developed as part of the predator management plan. Development and implementation of this plan in conjunction with the public access management plan likely would provide a reasonable level of assurance that adverse effects to clapper rails and harvest mice from increased predation pressure will be adequately minimized or avoided during caretaker status by the Navy and subsequent reuse by the City.

Delta Smelt, Delta Smelt Critical Habitat, and Sacramento Splittail

Based on an analysis of occurrence of delta smelt and Sacramento splittail in the vicinity of Mare Island Naval Shipyard done by Ai-Ling Chai, these fish occur on an occasional basis when transported there by high freshwater flows. Delta smelt critical habitat encompasses the "legal Delta"; therefore, Mare Island is not included in delta smelt critical habitat.

Any future project having in-water activities in the vicinity of Mare Island Naval Shipyard, including the use of the dry docks, will have potential adverse effects to delta smelt and Sacramento splittail. These effects include: (1) increases in turbidity; (2) destruction of shallow water refugial habitat through dredging or pile driving; (3) wake induced erosion and oil spills due to boat traffic; and, (4) shading of submersed aquatic plants due to boat docks and other floating platforms.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative effects on the clapper rail include ongoing habitat conversion from salt to brackish conditions by fresh water effluent from the San Jose/Santa Clara Water Pollution Control Plant. The San Francisco Bay Regional Water Quality Control Board routinely renews discharge permits that allow marsh conversion to continue. Successful implementation of a proposed tidal marsh restoration project for the 835-acre Baumberg Tract would mitigate for this habitat loss, but the project has yet to be implemented. The City of San Jose currently is exploring potential reuse measures to reduce their discharges in the future. Other cumulative effects include chemical contamination from point and non-point discharges that may adversely affect survival rates and reproductive success.

One of the most serious cumulative effects on the harvest mouse has been the degradation of diked wetlands, typically by the elimination of wetland vegetation by grazing, discing, grubbing, and plowing, and/or the elimination of appropriate hydrologic conditions by installing drains, ditches, and pumps. The extensive conversion of south Bay salt marshes to brackish and freshwater habitat also has appreciably reduced available tidal habitat for this species. Approval of urban developments without maintaining adequate upland habitat adjacent to wetlands also represents a major cumulative effect by likely increasing mortality rates and lowering harvest mouse carrying capacities in affected areas.

Conclusion

After reviewing the current status of the California clapper rail, salt marsh harvest mouse, delta smelt, and Sacramento splittail, the environmental baseline, the effects of the proposed disposal and reuse of Mare Island Naval

Shipyard, and the cumulative effects, it is the Service's biological opinion that the Mare Island Naval Shipyard disposal and reuse, as proposed, is not likely to jeopardize the continued existence of the endangered California clapper rail, endangered salt marsh harvest mouse, and threatened delta smelt. Delta smelt critical habitat is contained within the "legal Delta" for the Sacramento-San Joaquin estuary. Therefore, this project will not adversely modify or destroy critical habitat for this species. No critical habitat has been designated for the other species.

After reviewing the current status of the Sacramento splittail, the environmental baseline, the effects of the proposed disposal and reuse of Mare Island Naval Shipyard, and the cumulative effects, it is the Service's conference opinion that the Mare Island Naval Shipyard disposal and reuse, as proposed, is not likely to jeopardize the continued existence of the proposed Sacramento splittail. No critical habitat for the Sacramento splittail has been proposed, therefore, none will be adversely modified or destroyed.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary and must be undertaken by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Navy has a continuing duty to regulate the activity covered by this incidental take statement. If the Navy (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2). may lapse.

Amount or Extent of Take

For the California clapper rail, we anticipate that the proposed action would have an effect on clapper rails in certain tidal marshes at MINSY known to support rail breeding territories. We anticipate that harassment and/or harm

to a small number (3 pairs or less) of breeding rails could result from proposed reuse activities. Proposed reuse activities could increase the probability of predation on rails by increasing predator populations at MINSY. Predator pressure on rails also could be exacerbated by increased human activity in areas requiring predator management efforts. Territorial abandonment by rails resulting from increased human disturbance in tidal marsh habitat areas could result in harassment and/or harm of individual rails and breeding failure. No direct loss of clapper rail habitat is anticipated for the proposed action. This amount of impact is anticipated to be offset with successful implementation of mitigation measures included in the proposed project by the Navy and City.

For the salt marsh harvest mouse, we anticipate that an unquantifiable number of mice would be killed or injured by the proposed action. Harvest mice lack the agility to evade heavy equipment. The level of take is unquantifiable because of the variable, unknown size of the resident population over time, and the difficulty in finding killed or injured small mammals. In such situations, the Service estimates the level of take in terms of acreage of habitat loss.

Based on the discussion above, the Service anticipates that an unquantifiable number of harvest mice may be killed, harmed, or harassed, during future operations of the dredge disposal ponds during caretaker status by the Navy. About 198 acres of harvest mouse habitat could continue to be lost as a result of future use of the dredge ponds during caretaker status by the Navy under guidelines established in the MOU in 1988. Mitigation identified in the MOU is anticipated to offset this habitat loss during caretaker status by the Navy. Harvest mice also may be killed, harmed, or harassed, as a result of increased predation and human activity in suitable habitat areas. This amount of impact is undeterminable at this time, but is estimated to be insignificant with successful implementation of mitigation measures included in the proposed project by the Navy and City. No incidental take is authorized for disposal of dredged material into any active or inactive dredge disposal pond on MINSY after cessation of caretaker status by the Navy.

For the California clapper rail and salt marsh harvest mouse, no incidental take is authorized for activities associated with implementation of the BCP or placement of contaminated dredge material in the dredge ponds. No incidental take is authorized for mosquito abatement work activities on MINSY.

For the delta smelt and Sacramento splittail, the Service anticipates an unquantifiable number of individuals will be killed or harassed by the proposed action. This is due to the difficulty in monitoring effects on fish and collecting dead individuals. However, since no specific activities are proposed at this time within delta smelt or Sacramento splittail habitat, no take is authorized.

Effect of the Take

In the accompanying biological and conference opinion, the Service has determined that the anticipated level of take associated with the proposed action is not likely to jeopardize the continued existence of the endangered

California clapper rail, endangered salt marsh harvest mouse, threatened delta smelt, and proposed threatened Sacramento splittail.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the California clapper rail, salt marsh harvest mouse, and delta smelt. While prohibitions against taking found in section 9 of the Act do not apply until the species is listed, the Service believes implementation of theses measures would also minimize incidental take of the proposed Sacramento splittail:

1. The potential for harassment, harm, or mortality to California clapper rails and salt marsh harvest mice shall be minimized.

2. Impacts to the salt marsh harvest mouse resulting from habitat modification shall be minimized.

3. The potential for harassment, harm, or mortality to the delta smelt shall be minimized.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, the Navy must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

The following terms and conditions implements the reasonable and prudent measures described above:

1. The U.S. Navy shall ensure that the disposal and reuse of Mare Island Naval Shipyard will be implemented, as proposed by the U.S. Navy and City of Vallejo, including measures designed to avoid, minimize, or mitigate for potential adverse effects to the endangered California clapper rail, endangered salt marsh harvest mouse, threatened delta smelt, and proposed threatened Sacramento splittail.

2. Six months prior to the complete cessation of caretaker status by the U.S. Navy, the City of Vallejo shall provide the predator management and public access management plans to be implemented by the City of Vallejo after cessation of caretaker status by the U.S. Navy to the U.S. Fish and Wildlife Service for review and written approval.

The Service shall be notified within twenty-four (24) hours of the finding of any injured or dead California clapper rail or their eggs, or salt marsh harvest mice, or any unanticipated damage to California clapper rail or salt marsh harvest mouse habitat associated with the proposed dredging work and disposal of dredged material. Additionally, the Service shall be notified within twenty-four (24) hours of the finding of any dead or injured delta

smelt or Sacramento splittail. Notification must include the date, time, and precise location of the specimen/incident, and any other pertinent information. The Service contact person is this office's Endangered Species Division is Jim Browning (telephone 916/979-2725). Any dead or injured specimens shall be reposited with the Service's Division of Law Enforcement, 3310 El Camino Avenue, Suite 140, Sacramento, California 95821-6340 (telephone 916/979-2987).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities intended to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommends that the Navy evaluate all of its base closures for effects on any federally listed or proposed species on a case by case basis. As part of this evaluation, a set of mitigation measures should be promulgated.

REINITIATION NOTICE

This concludes formal consultation and conference on the proposed action outlined in your September 11, 1995, request for formal consultation. As provided in 50 CFR section 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, as previously described; (2) new information reveals effects of the actions that may affect listed species or critical habitat in a manner that was not considered in this opinion; (3) the agency action is substantially modified in a manner that causes an effect to listed species that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

This concludes the conference for the disposal and reuse of the MINSY. You may ask the Service to confirm the conference opinion as a biological opinion issued through formal consultation if the species is listed. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during the conference, the Service will confirm the conference opinion as the biological opinion on the project and no further section 7 consultation will be necessary.

After listing the Sacramento splittail as threatened and any subsequent adoption of this conference opinion, the Federal agency shall request reinitiation of consultation if: (1) the amount or extent of incidental take

is exceeded, as previously described; (2) new information reveals effects of the actions that may affect listed species or critical habitat in a manner that was not considered in this opinion; (3) the agency action is substantially modified in a manner that causes an effect to listed species that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological and conference opinion, please contact Jim Browning or Michael Thabault in this office's Endangered Species Division at (916) 979-2725.

Sincerely,

for Wayne S. White
Field Supervisor

cc: RD (ARD-ES), Portland, OR
DHC, Washington, D.C.
SFBNWR, Newark, CA (M. Kolar and B. Radtke)
SFO-Environmental Contaminants Div. (J. Haas)
SFO-Wetlands (M. Littlefield)
DOI-Regional Solicitor's Office, Sacramento (D. Jacobsen)
Corps of Engineers (Regulatory Branch), San Francisco
EPA (Wetlands Section), San Francisco (M. Monroe)
CDFG, Region III, Yountville, CA (J. Swanson and C. Wilcox)
CDFG, Environmental Services, Sacramento, CA

LITERATURE CITED

Albertson, J.D. 1995. Ecology of the California clapper rail in south San Francisco Bay. M.A. Thesis, San Francisco State University.

Atwater, B., S. Conrad, J. Dowden, C. Hedel, R. MacDonald, and W. Savage. 1979. History, landforms, and vegetation of the estuary's tidal marshes. In: T.J. Conomos (ed.): San Francisco Bay, the urbanized estuary. Pacific Div., Am. Assoc. for the Adv. of Sci. 58th annual mtg., S.F. State Univ., June 12-16, 1977.

Arthur, J.F. and M.D. Ball 1978. Entrapment of suspended materials in the San Francisco Bay-Delta Estuary. U.S. Dept. Interior, Bureau of Reclamation, Sacramento, California.

Arthur, J.F. and M.D. Ball 1979. Factors influencing the entrapment of suspended material in the San Francisco Bay-Delta Estuary. Pages 143-174 in T.J. Conomos, editor. Pacific Division, Amer. Assoc. Advance. Sci., San Francisco, California.

Arthur, J.F. and M.D. Ball 1980. The significance of the entrapment zone location to the phytoplankton standing crop in the San Francisco Bay-Delta Estuary. U.S. Dept. Interior, Water and Power Resources Service.

Brett, J.R. 1976. Scope for metabolism and growth of sockeye salmon, *Oncorhynchus nerka*, and some related energetics. J. Fish. Res. Bd. Can. 33:307-313.

California Department of Fish and Game 1992. Draft five year status report. CDFG, Inland Fish. Div.

Caywood, M.L. 1974. Contributions to the Life History of the Splittail Pogonichthys macrolepidotus (Ayres). M.S. Thesis, California State U., Sacramento. 77 pp.

Clark, D.R., Jr., K.S. Foerster, C.M. Marn, and R.L. Hothem. 1992. Uptake of environmental contaminants by small mammals in pickleweed habitats at San Francisco Bay, California. Arch. Environ. Contam. Toxicol. 22:389-396.

Daniels, R.A. and P.B. Moyle 1983. Life history of splittail (Cyprinidae: *Pogonichthys macrolepidotus*) in the Sacramento-San Joaquin estuary. Fishery Bulletin 84-3:647-654.

Dedrick, K. 1993. San Francisco Bay tidal marshland acreages: recent and historic values. In O.T. Magoon (ed.): Proceedings of the Sixth Symposium on Coastal and Ocean Management (Coastal Zone '89). Charleston, South Carolina, July 11-14, 1989. Publ. by Am. Society of Civil Eng.

DeGroot, D.S. 1927. The California clapper rail: its nesting habits, enemies and habitat. Condor 29(6): 259-270.

Department of Water Resources and U.S. Bureau of Reclamation, Mid-Pacific Region 1994. Effects of the Central Valley Project and State Water Project on delta smelt and Sacramento splittail. 230 pp.

Evens, J., J. Collins, and B. Grewell. 1994. A synoptic survey of the distribution and abundance of the California clapper rail *Rallus longirostris obsoletus* in the northern reaches of the San Francisco estuary during the 1992 and 1993 breeding seasons. Draft Technical Report to California Department of Fish and Game. 22 pp.

Evens, J., and G. Page. 1983. The ecology of rail populations at Corte Madera Ecological Reserve: with recommendations for management. A report to Marin Audubon Society from Point Reyes Bird Observatory. 62 pp.

Foerster, K.S. 1989. Summary of California clapper rail winter populations in the San Francisco Bay National Wildlife Refuge, Nov. 1988 to Jan. 1989. Unpublished report. San Francisco Bay National Wildlife Refuge.

Foerster, K.S., J.E. Takekawa, and J.D. Albertson. 1990. Breeding density, nesting habitat, and predators of the California clapper rail. Final report SFBNWR-11640-90-1, prepared for San Francisco Bay National Wildlife Refuge. Newark, CA.

Foerster, K.S., and J.E. Takekawa. 1991. San Francisco Bay National Wildlife Refuge Predator Management Plan and Final Environmental Assessment. Unpublished report.

Ganssle, D. 1966. Fishes and decapods of San Pablo and Suisun bays. Pp.64-94 in D.W. Kelley, ed.: Ecological studies of the Sacramento-San Joaquin estuary, Part 1. Calif. Dept. Fish and Game, Fish Bulletin No. 133.

Gill, R., Jr. 1979. Status and distribution of the California clapper rail (*Rallus longirostris obsoletus*). Calif. Fish and Game, 65(1): 36-49.

Goldman, C.R. and A.J. Horne 1983. Limnology. McGraw-Hill Book Company, New York, New York.

Harvey, T.E. 1988. Breeding biology of the California clapper rail in south San Francisco Bay. 1988 Transactions of the Western Section of the Wildlife Society. 24:98-104.

Messersmith, J.D. 1966. Fishes collected in Carquinez Straight in 1961-1962. Pages 57-62 *in*: D.W. Kelly, editor. Ecological Studies of the Sacramento-San Joaquin Estuary, Part 1. Calif. Dept. Fish and Game, Fisheries Bulletin 133.

Moyle, P.B. 1976. Inland Fishes of California. University of California Press, Berkeley, California. 405 pp.

Moyle, P. B., B. Herbold, D. E. Stevens, and L. W. Miller 1992. Life history and status of delta smelt in the Sacramento-San Joaquin Estuary, California. Trans. Am. Fish. Soc. 121:67-77.

Moyle, P.B. and R. M. Yoshiyama 1992. Fishes, aquatic diversity management areas, and endangered species: A plan to protect California's native aquatic biota. Draft report prepared for California Policy Seminar, University of California, Berkeley, California. July 1992. 196 pp.

Radtke, L. D. 1966. Distribution of smelt, juvenile sturgeon, and starry flounder in the Sacramento-San Joaquin Delta. Pp. 115 - 119 in J. L. Turner and D. W. Kelley, eds.: Ecological studies of the Sacramento-San Joaquin estuary, Part 2. California Department of Fish and Game Fish Bulletin No. 136.

Rutter, C. 1908. The fishes of the Sacramento-San Joaquin basin, with a study of their distribution and variation. Bulletin of U.S. Bureau of Fisheries 27(637):103-152.

Stevens, D. E., S. W. Miller, and B. C. Bolster 1990. Report to the Fish and Game Commission: A status review of the delta smelt (*Hypomesus transpacificus*) in California. California Department of Fish and Game Candidate Species Status Rept. 90-2. 149 pages.

Sweetnam, D.A. and D.E. Stevens 1993. Report to the Fish and Game Commission: A status review of the delta smelt (*Hypomesus transpacificus*) in California. Candidate Species Status Report 93-DS. 98 pages plus appendices.

Turner, J.L. and D.W. Kelley 1966. Ecological studies of the Sacramento-San Joaquin Delta. Calif. Dept. Fish and Game Bull. 136.

U.S. Fish and Wildlife Service. 1984. Salt marsh harvest mouse and California clapper rail recovery plan. Portland, Oregon. 141 pp.

U.S. Fish and Wildlife Service. 1990. Early Consultation on the Prospective Shorelands Project, Alameda County, California. Corps File No. 15283E49(w). 33 pp.

U.S. Fish and Wildlife Service 1993. Endangered and threatened wildlife and plants; Determination of threatened status for the delta smelt. March 5, 1993. Fed. Reg. 58(42):12854-12864.

U.S. Fish and Wildlife Service 1994a. Endangered and threatened wildlife and plants; Proposed determination of threatened status for the Sacramento splittail. January 6, 1994. Fed. Reg. 862-869.

U.S. Fish and Wildlife Service 1994b. Technical/Agency Draft Sacramento-San Joaquin Delta Native Fishes Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon.

Wang, J.C.S. 1991. Early life stages and early life history of the delta smelt, *Hypomesus transpacificus*, in the Sacramento-San Joaquin estuary, with comparison of early life stages of the longfin smelt, *Spirinchus thaleichthys*. Interagency Ecological Studies Program for the Sacramento-San Joaquin Estuary. Tech. Rept. 28.

Weihs, D. 1974. Energetic advantages of burst swimming of fish. J. Theor. Bio. 48:215-229.

Zembal, R. and B.W. Massey. 1988. Light-footed clapper rail census and study, 1988. Contract Final Report (FG 7609) to Calif. Dep. Fish and Game under agreement with Calif. State Univ. Long Beach Foundation; Long Beach, CA. 29 pp.

PERSONAL COMMUNICATIONS

Ms. Joy Albertson, U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge, P.O. Box 524, Newark, California 94560

Dr. Joshua Collins, Aquatic Habitat Institute, 1301 South 46th Street, Richmond, California 94804

Mr. Jules Evens, Avocet Research Associates, P.O. Box 839, Point Reyes Station, California 94956

Ms. Jackie Garcia, 65 Francis Avenue, Larkspur, California 94939

Ms. Elaine Harding-Smith, University of California (Santa Cruz), Santa Cruz, California

Mr. Peter B. Moyle, University of California, Davis, Davis, California 95616.

Mr. D. Sweetnam, California Department of Fish and Game, Bay-Delta and Special Water Projects Division, 4001 N. Wilson Way, Stockton, CA 95205-2424.

Ms. Jean Takekawa, U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge, P.O. Box 524, Newark, California 94560

TABLE F-1
PLANT SPECIES DETECTED ON MARE ISLAND NAVAL SHIPYARD

Family	Scientific Name	Common Name
LYCOPODIAE - LYCOTS		
Selaginellaceae - Spike moss family	*Selaginella bigelovii*	Bigelow's mossfern
FILICINAE - FERNS		
Azollaceae - Mosquito fern family	*Azolla filiculoides*	mosquito fern
Pteridaceae - Fern family	*Pellaea andromedaefolia*	coffee fern
	Pentagramma triangularis	goldenback fern
DICOTYLEDONAE - DICOTS		
Aizoaceae - Carpetweed family	**Carpobrotus edulis*	hottentot fig
	**Mesembryanthemum nodiflorum*	little ice plant
	Sesuvium verrucosum	sea-purslane
	**Tetragonia tetragonioides*	New Zealand spinach
Amaranthaceae - Amaranth family	**Amaranthus albus*	tumbleweed
Anacardiaceae - Sumac family	**Schinus molle*	pepper tree
	**Pistacia chinensis*	Chinese pistache
	Toxicodendron diversilobum	poison oak
Apiaceae - Parsley family	**Foeniculum vulgare*	sweet fennel
	Lilaeopsis masonii	Mason's lilaeopsis
	Sanicula crassicualis	sanicle
	**Scandix pecten-veneris*	shepherd's needle
Apocynaceae - Dogbane family	**Nerium oleander*	common oleander
Araliaceae - Aralia family	**Hedera helix*	English ivy
Aristolochiaceae - Birthwort family	*Aristolochia californica*	Dutchman's pipe
Asteraceae - Sunflower family	*Achillea millefolium*	yarrow
	Achyrachaena mollis	blow-wives
	Artemesia californica	California sage
	Artemisia douglasiana	Douglas mugwort
	Baccharis douglasii	marsh baccharis
	Baccharis pilularis	coyote bush
	**Bellis perennis*	English daisy
	**Carduus pycnocephalus*	Italian thistle
	**Carduus tenuiflorus*	slender-flowered thistle
	**Centaurea calcitrapa*	purple star thistle
	**Centaurea solstitialis*	yellow star thistle
	**Cichorium intybus*	chicory
	**Cirsium vulgare*	bull thistle
	**Conyza canadensis*	horseweed
	**Conyza floribunda*	horseweed
	**Conyza australis*	Australian brass-buttons
	**Cotula coronopifolia*	African brass buttons
	**Cynara cardunculus*	artichoke thistle
	Erigeron sp.	fleabane daisy
	**Filago gallica*	narrow leaf filago
	Gnaphalium californicum	pearly everlasting
	Gnaphalium canescens ssp. *beneolens*	fragrant everlasting
	Grindelia camporum var. *camporum*	Great Valley grindelia

TABLE F-1
PLANT SPECIES DETECTED ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Grindelia hirsutula var. *hirsutula*	marsh gum-plant
	Grindelia stricta var. *angustifolia*	marsh gum-plant
	Hemizonia congesta ssp. *luzulifolia*	hayfield tarweed
	Hemizonia pungens ssp. *maritima*	common spikeweed
	Hesperevax sparsiflora var. *sparsiflora*	short-leaved evax
	**Hypochaeris glabra*	smooth cat's ear
	**Hypochaeris radicata*	hairy cat's ear
	Isocoma acradenia var. *bracteosa*	goldenbush
	Iva axillaris ssp. *robustior*	poverty weed
	Jaumea carnosa	jaumea
	**Lactuca serriola*	wild lettuce
	Micropus californicus var. *californicus*	slender cottonweed
	Micropus douglasii ssp. *douglasii*	Douglas' microseris
	**Picris echioides*	bristly ox tongue
	**Senecio vulgaris*	common groundsel
	**Silybum marianum*	milk thistle
	Solidago confinis	southern goldenrod
	**Soliva sessilis*	common soliva
	**Sonchus asper*	prickly sow-thistle
	**Sonchus oleraceus*	common sow-thistle
	**Tragopogon porrifolius*	salsify
	Wyethia angustifolia	narrow-leaved mule ears
	**Xanthium spinosum*	spiny clotbur
	**Xanthium strumarium*	eastern cocklebur
Boraginaceae - Borage family	*Amsinckia menziesii* var. *menziesii*	rigid fiddleneck
Brassicaceae - Mustard family	**Brassica nigra*	black mustard
	Cardamine californica var. *integrifolia*	milk-maids
	**Lepidium latifolium*	broad-leaf peppergrass
	Lepidium nitidum var. *nitidum*	peppergrass
	**Raphanus raphanistrum*	jointed charlock
	**Raphanus sativus*	wild radish
	**Rorippa nasturium-aquaticum*	watercress
Caprifoliaceae - Honeysuckle family	*Sambucus mexicana*	blue elderberry
Caryophyllaceae - Pink family	**Silene gallica*	common catchfly
	**Cerastium glomeratum*	mouse-ear chickweed
	**Spergula arvensis* ssp. *arvensis*	starwort
	Spergularia media	middle-sized sand-spurrey
	**Spergularia rubra*	ruby sand-spurrey
	**Stellaria media*	common chickweed
Chenopodiaceae - Goosefoot family	*Atriplex argentea* var. *mojavensis*	silverscale
	**Atriplex triangularis*	spearscale
	**Atriplex semibaccata*	Australian saltbush
	Atriplex subspicata	saltbush
	**Chenopodium album*	lamb's quarters
	Salicornia virginica	pickleweed
	**Salsola soda*	Russian thistle
Convolvulaceae - Morning glory family	**Convolvulus arvensis*	field bindweed
	Calystegia macrostegia	morning-glory
	Calystegia subacaulis ssp. *subacaulis*	hill morning-glory

TABLE F-1
PLANT SPECIES DETECTED ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
Crassulaceae - Stone crop family	*Crassula connata*	pigmy weed
	Dudleya farinosa	bluff lettuce
Cuscutaceae - Dodder family	*Cuscuta salina* var. *salina*	salty dodder
Euphorbiaceae - Spurge family	**Chamaesyce* sp.	spurge
	Eremocarpus setigerus	doveweed
Fabaceae - Pea family	**Cytisus scoparius*	Scotch broom
	**Genista monspessulana*	French broom
	**Lotus corniculatus*	bird's foot trefoil
	Lotus purshianus var. *purshianus*	Spanish clover
	Lotus scoparius	California broom
	**Lotus uliginosus*	trefoil
	Lupinus albifrons var. albifrons	silver bush lupine
	Lupinus bicolr	lupine
	Lupinus nanus	Douglas' lupine
	Lupinus succulentus	succulent annual lupine
	**Medicago polymorpha*	bur-clover
	**Medicago sativa*	alfalfa
	**Melilotus alba*	white sweet-clover
	**Melilotus indicus*	yellow sweet-clover
	Trifolium depauperatum var. *truncatum*	dwarf sack clover
	**Trifolium dubium*	little hop clover
	Trifolium fucatum	sour clover
	**Trifolium hirtum*	rose clover
	**Trifolium subterraneum*	subterranean clover
	Vicia benghalensis	vetch
	**Vivia disperma*	vetch
	**Vicia sativa* ssp. *sativa*	common vetch
Fagaceae - Oak family	*Quercus agrifolia*	coast live oak
	Quercus lobata	valley oak
Frankeniaceae - Frankenia family	*Frankenia salina*	alkali heath
Gentianaceae - Gentian family	*Cicendia quadrangularis*	timwort
Geraniaceae - Geranium family	**Erodium cicutarium*	red stemmed filaree
	**Geranium dissectum*	cranesbill
	**Erodium botrys*	long-beaked storkbill
	**Erodium moschatum*	white-stem filaree
Hippocastanaceae - Buckeye family	*Aesculus californica*	California buckeye
Lamiaceae - Mint family	**Marrubium vulgare*	horehound
	Monardella villosa ssp. *villosa*	coyote-mint
	Stachys ajugoides var. *rigida*	ridge hedge nettle
Linaceae - Flax family	**Linum bienne*	narrow-leaved flax
Lythraceae - Loosestrife family	*Lythrum hyssopifolia*	loosestrife
Malvaceae - Mallow family	*Malvella leprosa*	alkali-mallow
	**Malva nicaeensis*	bull mallow
	**Malva parviflora*	cheeseweed
	Sidalcea malvaflora ssp. *malvaflora*	checker mallow
Moraceae - Mulberry family	**Ficus carica*	common fig
Myoporaceae - Myorporum family	**Myoporum laetum*	myoporum

TABLE F-1
PLANT SPECIES DETECTED ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
Myrtaceae - Myrtle family	**Eucalyptus globulus*	Tasmanian blue gum
	**Acacia decurrens*	green wattle
	**Acacia longifolia*	golden wattle
Onagraceae - Evening primrose family	*Epilobium brachycarpum*	fireweed
	Camissonia ovata	sun cup
	Epilobium canum	California fuchsia
Papaveraceae - Poppy family	*Eschscholzia californica*	California poppy
	**Pittosporum tobira*	Japanese pittosporum
Plantaginaceae - Plantain family	**Plantago lanceolata*	English plantain
	**Plantago major*	broadleaf plantain
	Plantago erecta	plantain
Plumbaginaceae - Thrift family	*Limonium californicum*	marsh rosemary
Polygonaceae - Buckwheat family	*Eriogonum latifolium.*	coast buckwheat
	**Polygonum arenastrum*	common knotweed
	Polygonum lapathifolium	willow weed
	Pterostegia drymarioides	pterostegia
	**Rumex acetosella*	sheep sorrel
	**Rumex crispus*	curly dock
	**Rumex pulcher*	fiddle dock
Portulaceae - Purslane family	*Calandrinia ciliata*	red maids
	Claytonia perfoliata	miner's lettuce
Primulaceae - Primrose family	**Anagallis arvensis*	scarlet pimpernel
Resedaceae - Mignonette family	**Reseda alba*	white mignonette
Rosaceae - Rose family	*Acaena pinnatifida var. californica*	California acaena
	Cotoneaster pannosa	cotoneaster
	Heteromeles arbutifolia	toyon
	Potentilla anserina	apple
	Potentilla anserina ssp. pacifica	silverweed
	**Prunus* sp.	ornamental plum
	**Pyracantha* sp.	firethorn
	Rosa californica	California rose
	**Rubus discolor*	Himalayan blackberry
	Rubus ursinus	California blackberry
Rubiaceae Madder family	**Galium aparine*	goose grass
	**Galium murale*	tiny bedstraw
Rutaceae - Citrus family	*Ptelea crenulata*	hop tree
Salicaceae - Willow family	*Salix lasiolepis*	arroyo willow
	Salix gooddingii	black willow
Scrophulariaceae - Figwort family	**Bellardia trixago*	bellardia
	Castilleja exerta ssp. *exerta*	purple owl's-clover
	Castilleja foliolosa	woolly Indian paintbrush
	Castilleja rubicundula ssp. *rubicundula*	cream sacs
	Linaria canadensis	blue toadflax
	Mimulus aurantiacus	sticky monkey flower
	Scrophularia californica	coast figwort
	Triphysaria pusilla	dwarf orthocarpus
Simaroubaceae - Quassia family	**Ailanthus altissima*	tree of heaven

TABLE F-1
PLANT SPECIES DETECTED ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
Solanaceae - Nightshade family	**Solanum nigrum*	black nightshade
	**Solanum americanum*	white nightshade
Verbenaceae - Vervain family	*Phyla nodiflora*	lippia
Violaceae - Violet family	*Viola pedunculata*	California yellow violet
MONOCOTYLEDONAE - MONOCOTS		
Cyperaceae - Sedge family	**Cyperus eragrostis*	umbrella sage
	Carex barbarae	Barbara's sedge
	Eleocharis acicularis var. *acicularis*	needle spike-rush
	Scirpus acutus var. *occidentalis*	common tule
	Scirpus americanus	three-square
	Scirpus californicus	California bulrush
	Scripus cernuus	low bulrush
	Scirpus maritimus	saltmarsh bulrush
	Scirpus robustus	prairie bulrush
Iridaceae - Iris family	*Sisyrinchium bellum*	California blue-eyed grass
Juncaceae - Rush family	*Juncus balticus*	wire rush
	Juncus bufonius	toad rush
	Juncus phaeocephalus	brown-headed rush
	Juncus tenuis	rush
	Luzula comosa	wood rush
Juncaginaceae - Arrow-grass family	*Triglochin maritima*	seaside arrow-grass
	Triglochin striata	three-ribbed arrow-grass
Liliaceae - Lily family	**Asparagus officinalis* ssp. *officinalis*	cultivated asparagus
	Allium dichlamydeum	coastal onion
	Chlorogalum pomeridianum	wavy leaf soap plant
	Dichelostemma capitatum ssp. capitatum	blue dicks
	Muilla maritima	common muilla
	Triteleia laxa	Ithuriel's spear
Palmae - Palm family	**Phoenix canariensis*	Canary Island date palm
Poaceae - Grass family	**Agrostis avenacea*	hairy-flower bentgrass
	**Aira caryophyllea*	hairgrass
	**Arundo donax*	giant reed
	**Avena barbata*	slender wild oat
	**Avena fatua*	wild oat
	**Briza minor*	quaking grass
	Bromus carinatus	California brome
	**Bromus diandrus*	ripgut brome
	**Bromus hordeaceus*	soft chess
	**Cortaderia jubata*	pampas grass
	**Crypsis schoenoides*	swamp grass
	**Cynodon dactylon*	Bermuda grass
	**Cynosurus echinatus*	hedgehog dogtail
	Danthonia californica	California oatgrass
	Distichlis spicata	salt grass
	Elytrigia pontica ssp. *pontica*	tall wheat-grass
	**Ehrharta erecta*	veldt grass
	**Festuca arundinacea*	tall fescue

TABLE F-1
PLANT SPECIES DETECTED ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Gastridium ventricosum	nit grass
	Hordeum brachyantherum	meadow barley
	Hordeum jubatum	foxtail
	**Hordeum marinum* ssp. *gussoneanum*	Mediterranean barley
	**Hordeum marinum* ssp. *glaucum*	hare barley
	**Hordeum Marinum* ssp. *leporinum*	hare barley
	Leymus triticoides	alkali ryegrass
	**Lolium multiflorum*	Italian ryegrass
	**Lolium perenne*	perennial ryegrass
	Melica californica	California melic grass
	Melica torreyana	torrey melic
	Nassella pulchra	purple needlegrass
	**Paspalum dilatatum*	dallis grass
	**Phalaris aquatica*	Harding grass
	**Phalaris minor*	littleseed canary grass
	**Poa annua*	annual bluegrass
	**Polypogon monspeliensis*	rabbitfoot grass
	Spartina foliosa	California cord grass
	**Vulpia bromoides*	six-weeks fescue
	**Vulpia myuros*	foxtail fescue
Typhaceae - Cattail family	*Typha angustifolia*	narrow-leaf cattail
	Typha latifolia	cattail

Notes: * = nonnative species
Source: Wood 1994

TABLE F-2
ANIMAL SPECIES THAT POTENTIALLY OCCUR ON MARE ISLAND NAVAL SHIPYARD

Family	Scientific Name	Common Name
Icty - Fish		
Acipenseridae - sturgeons	*Acipenser transmontanus*	white sturgeon
	Acipenser medirostrus	green sturgeon
Clupeidae - herring	*Alosa sapidissima*	American shad
Osmeridae - smelts	*Hypomesus transpacificus*	delta smelt
Salmonidae - salmon and trout	*Oncorhynchus tshawytscha*	chinook salmon
Cyprinidae - minnows	*Mylopharadon conocephalus*	hardhead
	Pogonichtys macrolepidotus	Sacramento splittail
Batrachoididae - toadfishes	*Porichtys notatus*	plainfin midshipman
Atherinidae - silverside family	*Meidia beryllina*	inland silverside
	Atherinopsis californiensis	jacksmelt
Scorpaenidae - rockfishes	*Sebastes auriculatus*	brown rockfish
Sciaenidae - croakers	*Genyonemus lineatus*	white croaker
Embiotocidae - surfperches	*Cymatogaster aggregata*	shiner surfperch
Gobiidae - gobies	*Acanthogobius flavimanus*	yellow-finned goby
Cottidae - sculpins	*Leptocottus armatus*	Pacific staghorn sculpin
Percichtyidae - bass	*Morone saxitilis*	striped bass
Pleuronectidae - flounders	*Platichtys stellatus*	starry flounder
Herpetofauna - Amphibians and Reptiles		
Plethodontidae - lungless salamanders	*Aneides ligubris*	arboreal slamander
	Batrachoseps attenuatus	California slender salamander
Bufonidae - true toads	*Bufo boreas*	western toad
Ranidae - true frogs	*Rana catesbeiana*	bullfrog
Emydidae - box and water turtles	*Clemmys marmorata marmorata*	northwestern pond turtle
Iguanidae - iguanids	*Sceloperus occidentalis*	western fence lizard
	Phrynosom coronatum	coast horned lizard
Scinidae - skinks	*Eumeces skiltonianus*	western skink
Anguidae - alligator lizards	*Gerrhonotus multicarinatus*	southern alligator lizard
	Gerrhonotus coeruleus	northern alligator lizard
Colubridae - colubrids	*Contia tenues*	sharp-tailed snake
	Coluber constrictor	racer
	Pituophis melanoleucus	gopher snake
Viperidae - vipers	*Crotalus viridis*	western rattlesnake
Avia - Birds		
Gaviidae - loons	*Gavia sicliata*	red-throated loon
	Gavia immer	common loon
Podicipedidae - grebes	*Podiceps auritus*	horned grebe
	Podiceps grisegena	red-necked grebe
	Podiceps nigricollis	eared grebe
	Podilymbus podiceps	pied-billed grebe
	Aechmophous clarkii	Clark's grebe
	Aechmophorus occidentalis	western grebe
Pelicanidae - pelicans	*Pelecanus erythrorhynchos*	American white pelican
	Pelecanus occidentalis californicus	California brown pelican
Phalacrocoracidae - cormorants	*Phalacrocorax auritus*	double-crested cormorant

TABLE F-2
ANIMAL SPECIES THAT POTENTIALLY OCCUR ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Phalacrocorax pencillatus	Brandt's cormorant
	Phalacrocorax pelagicus	pelagic cormorant
Ardeidae - herons, bitterns	*Botarus lentiginosus*	American bittern
	Ardea brodias	great blue heron
	Casmerodius albus	great egret
	Egretta thula	snowy egret
	Bubulous ibis	cattle egret
	Butorides striatus	green-backed heron
	Nycticorax nycticorax	black-crowned night heron
Cygnini - swans	*Cygnus columbianus*	tundra swan
Anserini - geese	*Anser albifrons*	greater white-fronted goose
	Chen caerulescens	snow goose
	Branta canadensis	Canada goose
Anatinae - ducks	*Anas crecca*	green-winged teal
	Anas platyrhynchos	mallard
	Anas acuta	northern pintail
	Anas discors	blue-winged teal
	Anas cyanoptera	cinnamon teal
	Anas clypeata	northern shoveler
	Anas streptera	gadwall
	Anas penelope	Eurasian widgeon
	Anas americana	American widgeon
	Aythya valisineria	canvasback
	Aythya americana	redhead
	Aythya collaris	ring-necked duck
	Aythya fuligula	tufted duck
	Aythya marila	greater scaup
	Aythya affinis	lesser scaup
	Clanqula hyemalis	oldsquaw
	Melanitta nigra	black scoter
	Melanitta fusca	white-winged scoter
	Melanitta perspicillata	surf scoter
	Bucephala clanqula	common goldeneye
	Bucephala islandica	Barrow's goldeneye
	Bucephala albeola	bufflehead
	Merqus merganser	common merganser
	Merqus serrator	red-breasted merganser
	Oxyura jamaicensis	ruddy duck
Cathartidae - American vultures	*Cathartes aura*	turkey vulture
Accioitridae - hawks, etc.	*Pandion haliaetus*	osprey
	Elanus caeruleus	white-tailed kite
	Aquila chrysaetos	golden eagle
	Haliaeetus leucocephalus	bald eagle
	Circus cyaneus	northern harrier
	Accipiter striatus	sharp-shinned hawk
	Accipiter cooperii	Cooper's hawk

TABLE F-2
ANIMAL SPECIES THAT POTENTIALLY OCCUR ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Buteo lineatus	red-shouldered hawk
	Buteo regalis	ferruginous hawk
	Buteo jamaicensis	red-tailed hawk
	Buteo swainsoni	Swainson's hawk
	Buteo lagopus	rough-legged hawk
Falconidae - caracaras, falcons	*Falco sparverius*	American kestrel
	Falco columbarius	merlin
	Faloco peregrinus anatum	American peregrine falcon
	Falco mexicanus	prairie falcon
Phasianidae - fowl-like birds	*Phasianus clochicus*	ring-necked pheasant
	Callipepla californica	California quail
Rallidae - rails, etc.	*Lareallus jamaicensis coturniculus*	California black rail
	Rallus longitrostris obsoletus	California clapper rail
	Rallus limicola	Virginia rail
	Porzana carolina	sora
	Gallinula chloropus	common moorhen
	Fulica americana	American coot
Charadridae - plovers	*Pluvialis squatarola*	black-bellied plover
	Charadrius alexandrinus nivosus	western snowy plover
	Charadrius semipalmatus	semi-palmated plover
	Charadrius vociferus	killdeer
	Pluvialis squatarola	black-bellied plover
	Pluvialis dominica	lesser golden plover
Haematopodidae - oystercatchers	*Haematopus bachmani*	American black oystercatcher
Recurvirostridae - stilts, avocets	*Himantopus mexicanus*	black-necked stlit
	Recurvirostra americana	American avocet
Scolopacidae - sandpipers, phalaropes	*Tringa melanoleuca*	greater yellowlegs
	Tringa flavipes	lesser yellowlegs
	Catoptrophorus semipalmatus	willet
	Heteroscelus incanus	wandering tattler
	Actitis macularia	spotted sandpiper
	Numenius phaeopus	whimbrel
	Numenius americanus	long-billed curlew
	Limosa fedoa	marbled godwit
	Arenaria interpres	ruddy turnstone
	Arenaria melaoncephala	black turnstone
	Calidris mauri	western sandpiper
	Calidris minutilla	least sandpiper
	Calidris canutus	red knot
	Calidris alba	sanderling
	Calidris alpina	dunlin
	Calidris bairdii	Baird's sandpiper
	Calidris melanotos	pectoral sandpiper
	Limnodromus griseus	short-billed dowitcher
	Limnodromus scolopaceus	long-billed dowitcher
	Gallinago gallinago	common snipe
	Philomachus pugnax	ruff

TABLE F-2
ANIMAL SPECIES THAT POTENTIALLY OCCUR ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Phalaropus tricolor	Wilson's phalarope
	Phalaropus lobatus	red-necked phalarope
	Phalaropus fulicaria	red phalarope
Laridae - jaegers, skuas, gulls, terns, skimmers	*Larus canus*	mew gull
	Larus philadelphia	Bonaparte's gull
	Larus delewarensis	ring-billed gull
	Larus californicus	California gull
	Larus argentatus	herring gull
	Larus thayeri	Thayer's gull
	Larus occidentalis	western gull
	Larus glaucescens	glaucous-winged gull
	Sterna caspia	Caspian tern
	Sterna hirundo	common tern
	Sterna forsteri	Forster's tern
	Sterna elegans	elegant tern
	Sterna antillarum	least tern
	Childonias niger	black tern
Columbidae - pigeons, doves	*Columba livia*	rock dove
	Columba fasciata	band-tailed pigeon
	Zenaida macroura	mourning dove
Tytonidae - barn owls	*Tyto alba*	common barn owl
Strigidae - typical owls	*Otus kennicottii*	western screech owl
	Athene cunicularia	burrowing owl
	Bubo virginianus	great-horned owl
	Asio flammeus	short-eared owl
	Asio otus	long-eared owl
Apodidae - swifts	*Aeronautes saxatalis*	white-throated swift
Trochilidae - hummingbirds	*Calypte anna*	Anna's hummingbird
	Selasphorous rufus	rufous hummingbird
Alcedinidae - kingfishers	*Colaptes auratus*	belted kingfisher
Picidae - woodpeckers	*Melanerpes formicivorus*	acorn woodpecker
	Sphyrapicus ruber	red-breasted sapsucker
	Picoides nuttallii	Nuttall's woodpecker
	Picoides pubescens	downey woodpecker
	Coloptes auratus	northern flicker
	Contopus borealis	olive-sided flycatcher
Tyrannidae - flycatchers	*Contopus sordidulus*	western wood pewee
	Empidonax difficilis	Pacific-slope flycatcher
	Sayornis nigricans	black phoebe
	Sayornis saya	Say's phoebe
	Myiarchus cinerascens	ash-throated flycatcher
	Tyrannus verticalis	western kingbird
Hirundinidae - swallows	*Tachycineta bicolor*	tree swallow
	Tachycineta thalassina	violet-green swallow
	Hirundo pyrrhonota	cliff swallow
	Hirundo rustica	barn swallow
Corvidae - jays, magpies, crows	*Aphelocoma coerulescens*	scrub jay

TABLE F-2
ANIMAL SPECIES THAT POTENTIALLY OCCUR ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Corvus brachyrhynchos	American crow
	Corvus corax	common raven
	Parus rufescens	chestnut-backed chickadee
Paridae - chickidees, titmice	*Parus inornatus*	plain titmouse
Aegithalidae - bushtit	*Psaltriparus minimus*	bushtit
Sittidae - nuthatches	*Sitta carolinensis*	white-breasted nuthatch
Certhiidae - creepers	*Certhia americana*	brown creeper
Troglodytidae - wrens	*Thryomanes bewickii*	Bewick's wren
	Troglodytes aedon	house wren
	Cistothorus palustris	marsh wren
	Salpinctes obsoletus	rock wren
Muscicapidae - kinglets, gnatcatches, thrushes, etc.	*Regulus satrapa*	golden-crowned kinglet
	Regulus calendula	ruby-crowned kinglet
	Sialia mexicana	western bluebird
	Catharus guttatus	hermit thrush
	Turdus migratorius	American robin
	Ixoreus naevius	varied thrush
Mimidae - mimic thrushes	*Mimus polyglottus*	northern mockingbird
Montacillidae - wagtails, pipits	*Anthus spinoletta*	American water pipit
Bombycillidae - waxwings	*Bombycilla cedrorum*	cedar waxwing
Laniidae - shrikes	*Lanius ludovicianus*	loggerhead shrike
Sturnidae - starlings	*Sturnus vulgaris*	European starling
Vireonidae - vireos	*Vireo solitarius*	solitary vireo
	Vireo huttoni	Hutton's vireo
	Vireo gilvus	warbling vireo
Emberizidae - emberizids	*Vermivora celat*	orange-crowned warbler
	Dendroica petechis	yellow warbler
	Dendroica coronata	yellow-rumped warbler
	Dendroica nigrescens	black-throated gray warbler
	Dendroica townsendi	Townsend's warbler
	Dendroica occidentalis	hermit warbler
	Geothlypis trichas sinuosa	salt marsh common yellowthroat
	Wilsonia pusilla	Wilson's warbler
	Pheucticus melanocephalus	black-headed grosbeak
	Passerina amoena	Lazuli's bunting
	Passerina cyanea	indigo bunting
	Pipilo erythrophthalmus	rufous-sided towhee
	Pipilo crissalis	California towhee
	Chondestes grammacus	lark sparrow
	Passerculus sandwichensis	savannah sparrow
	Melospiza melodia maxillarus	Suisun song sparrow
	Melospiza melodia samuelis	San Pablo song sparrow
	Aimophila ruficeps	rufous-crowned sparrow
	Spizella passerina	chipping sparrow
	Melospiza lincolnii	Lincoln's sparrow
	Zonotrichia atricapilla	golden-crowned sparrow
	Zonotrichia leucophrys	white-crowned sparrow

TABLE F-2
ANIMAL SPECIES THAT POTENTIALLY OCCUR ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Junco hyemalis	dark-eyed junco
	Passerella iliaca	fox sparrow
	Sturnella neglecta	western meadowlark
	Xanthocephalus xanthocephalus	yellow-headed blackbird
	Agelaius tricolor	tricolored balckbird
	Agelaius phoeniceus	red-winged blackbird
	Euphages cyanocephalus	Brewer's blackbird
	Molothrus ater	brown-headed cowbird
	Icterus galbula	northern oriole
Fringillidae - finches	*Carpodacus purpureus*	purple finch
	Carpodacus mexicanus	house finch
	Carduelis pinus	pine siskin
	Carduelis tristus	American goldfinch
	Carduelis psaltria	lesser goldfinch
Passeridae - weaver finches	*Passer domesticus*	house sparrow
<u>Mammalia - -Mammals</u>		
Didelphidae - opossums	*Didelphis virginianus*	Virginia opossum
Soricidae - shrews	*Sorex ornatus sinuosus*	Suisun shrew
	Sorex vagrans haliceotes	salt marsh wandering shrew
Talpidae - moles and shrew-moles	*Scapanus latimanus*	broad-footed mole
Vespertilionidae - evening bats	*Myotis yumanensis*	Yuma myotis
	Myotis evotis	long-eared myotis
	Myotis thysanodes	frimged myotis
	Myotis californicus	California myotis
	Eptesicus fuscus	big brown bat
	Lasiuris borealis	red bat
	Lasiuris cinereus	hoary bat
	Antroxous pallidus	pallid bat
	Plectus townsendii townsendii	Townsend's big-eared bat
Molossedae - free-tailed bats	*Tadarida brasiliensis*	Mexican free-tailed bat
	Eumops perotis californicus	California mastiff bat
Leporidae - hares and rabbits	*Lepus californicus*	black-tailed jack rabbit
Sciuridae - squirrels	*Spermophilis beechyi*	California ground squirrel
	Sciurus griseus	western gray squirrel
Geomyidae - pocket gophers	*Thomomys bottae*	Botta's pocket gopher
Cricetidae - new world mice and rats	*Reithrodontomys megalotis*	western harvest mouse
	Reithrodontomys raviventris	salt marsh harvest mouse
	Peromyscus maniculatus	deer mouse
	Microtus californicus	California vole
	Microtus californicus sanpabloensis	San Pablo vole
	Neotoma fuscipes annectans	San Francisco dusky-footed woodrat
Muridae - old world mice and rats	*Rattus rattus*	black rat
	Rattus norvegicus	norway rat
	Mus musculus	house mouse
Candidae - foxes, wolves, and coyotes	*Urocyon cinereoargenteus*	gray fox
	Vulpes fulva	red fox

TABLE F-2
ANIMAL SPECIES THAT POTENTIALLY OCCUR ON MARE ISLAND NAVAL SHIPYARD (cont'd)

Family	Scientific Name	Common Name
	Canis latrans	coyote
Procyonidae - racoons	*Procyon lotor*	racoon
Mustelidae - weasels, minks, martens,	*Mustela frenata*	long-tailed weasel
fishers, wolverines, badgers,	*Mustela vison*	mink
otters, and skunks	*Mephitis mephitis*	striped skunk
	Lutra canadensis	river otter
Felidae - cats	*Felis cattus*	domestic cat

Sources: California Department of Fish and Game 1994a; MPA Design 1993, Napa-Solano Audubon Society 1994, PG&E 1992, USFWS & Navy 1988, US Navy 1988, 1989, 1994a; Vallejo 1991, 1994c.

TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS

Building #	Pellet Abundance	Notes
8	0	
37	0	
41	0	
46	0	
47	3	acces via ceiling hole into office, center of north side of building
50	0	
52	0	
58	0	
65	0	
69	2	south end of east side of building
71	0	
73	0	
77	3	northeast part of building
84	3	north side, second floor bathroom
85	3	south side where eaves are pulled away
87	0	
88	2	west end of building
89	0	
91	0	
98	0	
99	0	
99A	0	
100	0	
101	0	
102	0	
103	0	
104	0	
106	3	north side of building, live bats observed
106A	3	south side of building
108	0	
111	0	
112	0	
113	0	
114	0	
115	0	
116	2	south side of building under dented gutter
117	0	
118	3	north side and under sign on east side, live bats observed
120	0	
121	0	
124	0	
126	3	south side of building
127	0	
141	0	
142	0	
143	0	

TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS (cont'd)

Building #	Pellet Abundance	Notes
145	0	
147	0	
149	0	
151	0	
153	0	
155	0	
163	0	
164	0	
165	0	
201	0	
204	0	
206	0	
207	0	
208	0	
210	0	
213	0	
215	0	
221	0	
223	0	
225	0	
227	0	
229	0	
235	0	
237	0	
239	0	
253	2	under five windows on southeast side of building
257	0	
259	0	
271	2	under gutter on north side of building
273	0	
275	0	
275A	0	
289	0	
330	0	
382	0	
386	0	under ceiling pockets, top floor on west side
387	0	
388	0	
390	0	
396	0	
409	0	
417	0	
433	0	
455	0	
459	1	periphery of building
461	0	
469	0	
479	0	
483	0	
485	0	

TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS (cont'd)

Building #	Pellet Abundance	Notes
487	0	
489	0	
497	0	
499	0	
505	0	
507	0	
509	0	
513	0	
515	2	under eaves in the northwest corner of the building
521	0	
523	0	
527	0	
529	0	
531	0	
533	0	
534	0	
535	0	
541	0	
545	0	
559	0	
565	0	
569	0	
571	3	under gutter on east side and southeast end of building
577	0	
589	0	
593	0	
597	0	
599	3	northeast end and north side under sign
601	0	
605	0	
607	1	east side of building
617	0	
627	0	
629	0	
631	0	
637	0	
639	0	
643	0	
655	0	
657	0	
658	0	
661	0	
670	0	
672	0	
673	0	
674	0	
676	0	
678	0	
679	0	
680	0	

TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS (cont'd)

Building #	Pellet Abundance	Notes
686	0	
686A	0	
688	0	
689	0	
691	2	west side of building
692	0	
702	0	
718	0	
722	0	
724	0	
726	0	
738	0	
739	0	
742	1	periphery of building
744	0	
746	0	
749	2	under hole in southwest corner near eaves
750	0	
751	2	left-of-center on the south side of the building
755	0	
757	0	
759	0	
761	0	
762	2	five entry site under the eaves on the south side of building
775	0	
776	0	
789	0	
791	0	
793	0	
804	0	
810	0	
811	0	
816	0	
849	0	
851	0	
855	0	
858	0	
866	0	
897	0	
900	0	
902	0	
906	0	
930	0	
931	0	
934	0	
938	0	
953	0	
954	0	
960	0	
961	0	

TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS (cont'd)

Building #	Pellet Abundance	Notes
965	0	
993	0	
995	0	
997	0	
999	0	
1001	0	
1003	0	
1013	0	
1015	0	
1032	0	
1034	0	
1036	0	
1038	0	
1040	0	
1042	0	
1045	0	
1046	0	
1048	0	
1052	0	
1056	0	
1062	0	
1064	0	
1065	0	
1066	0	
1078	0	
1084	0	
1296	0	
1310	0	
1316	0	
1322	0	
1338	0	
A	0	
A1	0	
A2	0	
A3	0	
A4	0	
A5	0	
A6	0	
A8	0	
A15	0	
A16	0	
A17	0	
A19	0	
A20	0	
A31	0	
A49	0	
A54	0	
A65	0	
A69	0	
A71	0	

TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS (cont'd)

Building #	Pellet Abundance	Notes
A72	0	
A75	0	
A76	0	
A80	0	
A82	0	
A83	0	
A84	0	
A121	0	
A130	0	
A131	0	
A139	0	
A140	0	
A141	0	
A142	0	
A147	0	
A148	0	
A149	0	
A150	0	
A151	0	
A152	0	
A155	0	
A156	0	
A159	0	
A161	0	
A162	0	
A163	0	
A164	0	
A165	0	
A166	0	
A169	0	
A170	0	
A171	0	
A172	0	
A173	0	
A174	0	
A175	0	
A176	0	
A178	0	
A179	0	
A181	0	
A182	0	
A183	0	
A184	0	
A185	0	
A186	0	
A187	0	
A195	0	
A199	0	
A205	0	
A206	0	

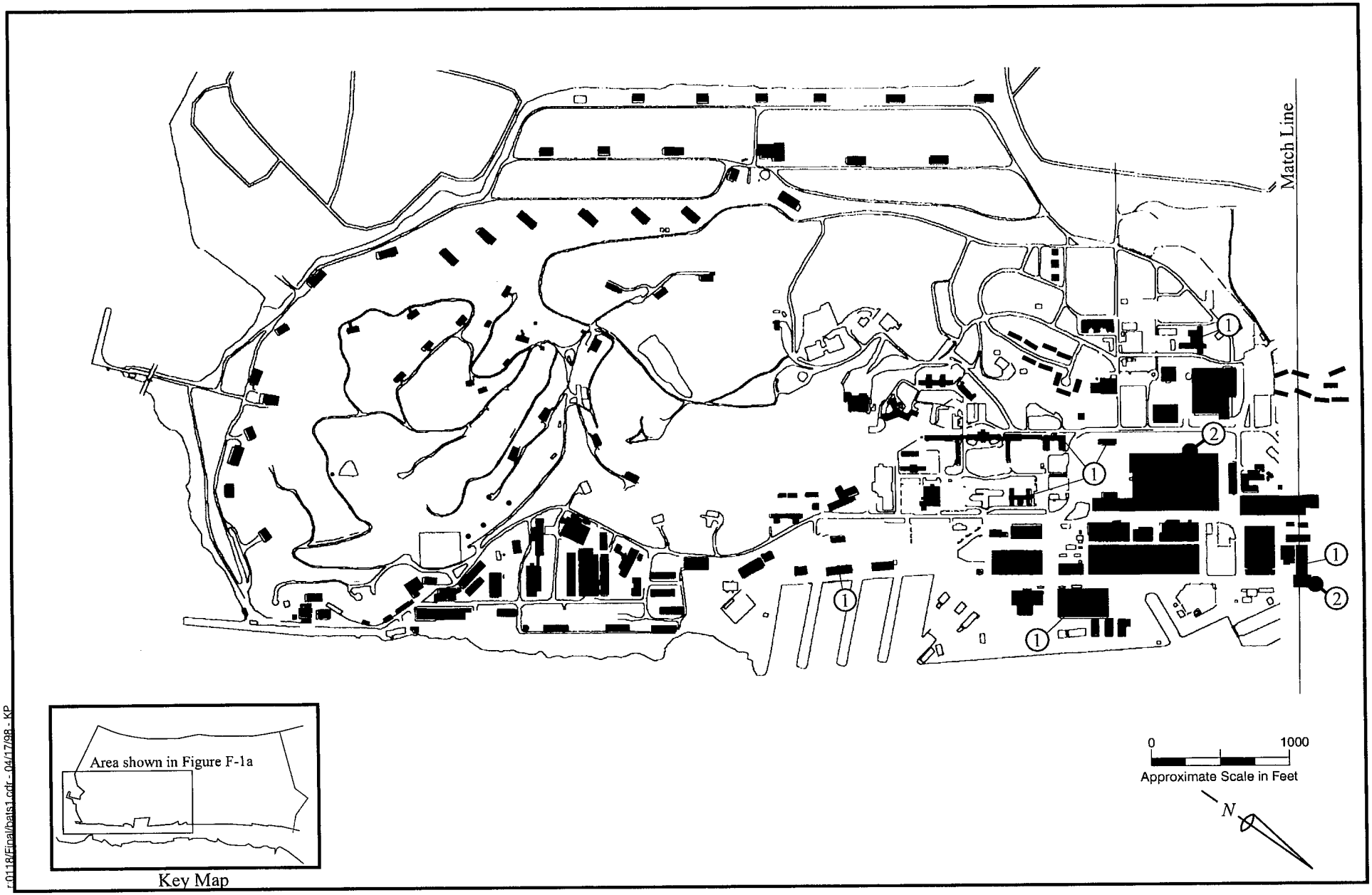
TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS (cont'd)

Building #	Pellet Abundance	Notes
A207	0	
A208	0	
A209	0	
A210	0	
A212	0	
A213	0	
A215	0	
A216	0	
A217	0	
A218	0	
A219	0	
A220	0	
A221	0	
A222	0	
A223	0	
A224	0	
A225	0	
A248	0	
A249	0	
A250	0	
A251	0	
A253	0	
A258	0	
A259	0	
A260	0	
A265	0	
A266	0	
A266	0	
A267	0	
A271	0	
A280	0	
A288	0	
B	0	
C	0	
D	0	
D	0	
E	0	
G	0	
H	0	
H1	0	
H4	0	
H5	0	
H70	0	
H71	0	
H72	2	south side of building, west of underpass
H73	0	
H79	0	
H80	0	
H81	0	
H82	0	

TABLE F-3
BAT SURVEY
BUILDINGS EXHIBITING EVIDENCE OF BATS (cont'd)

Building #	Pellet Abundance	Notes
H84	0	
J	0	
K	0	
M	0	
M1	0	
M2	0	
M3	0	
M4	0	
M5	0	
N	0	
palm	0	10 palm trees surveyed near buildling M1
school	3	5 buildings of ten surveyed, live bats observed
unmarked	0	unmarked building
Notes:	Pellets Found 0 = none 1 = occaisonal 2 = few 3 = many	

Source: Constantine 1994



The Mexican free-tailed bat *(Tararida brasiliensis)* was detected at 30 of over 360 buildings surveyed.

LEGEND:

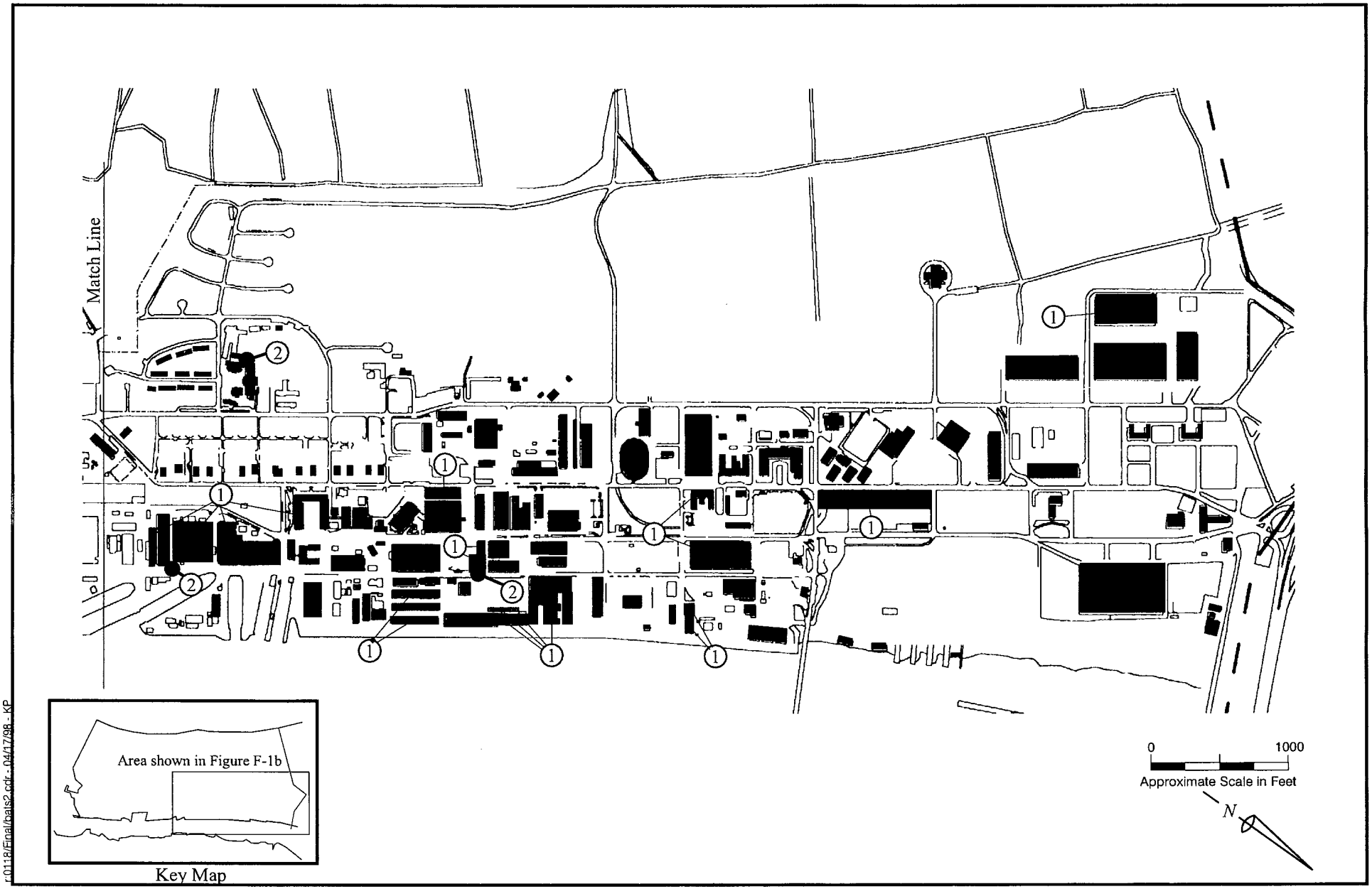
- Buildings surveyed with no evidence of bats
- 1 Buildings surveyed with evidence of bats
- 2 Areas where bats were sighted

Source: Constantine, D., 1994

1994 Bat Surveys

Mare Island, California

Figure F-1a



The Mexican free-tailed bat *(Tararida brasiliensis)* was detected at 30 of over 360 buildings surveyed.

LEGEND:

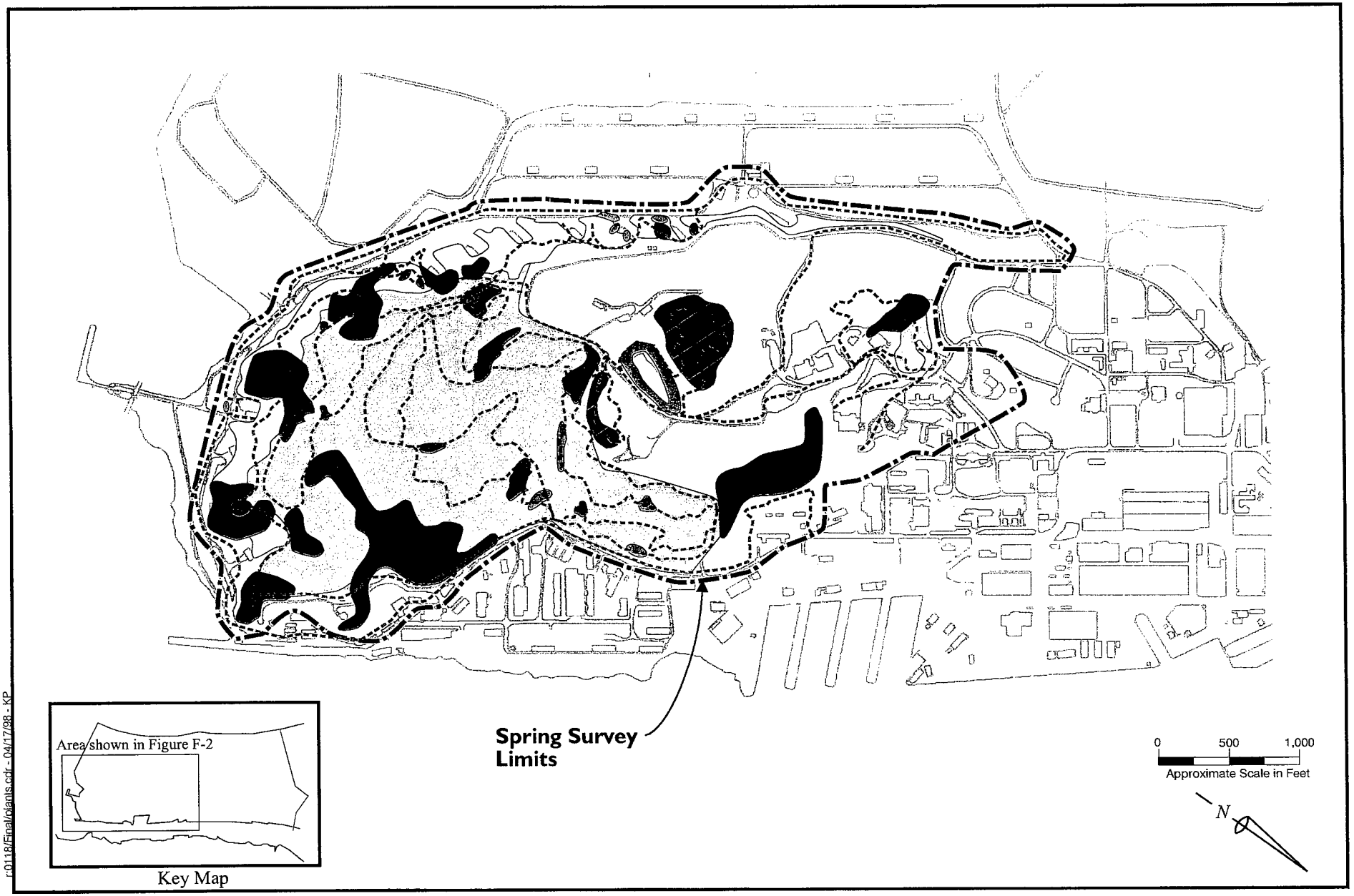
- Buildings surveyed with no evidence of bats
- (1) Buildings surveyed with evidence of bats
- (2) Areas where bats were sighted

Source: Constantine, D. 1994

1994 Bat Surveys

Mare Island, California

Figure F-1b



Several sensitive plant species can be found along the perimeter of Mare Island.

LEGEND:

- Survey Route
- Non-native Grassland
- Needlegrass grassland
- Coast Live Oak Woodland
- Northern Coastal Scruboak
- Seep
- Viola pedunculata
- Wyethia angustifolia
- Disturbed/Landscaped

Source: Michael Wood, Botanical Consulting Services, 1995

Sensitive Plant Survey

Mare Island, California

Figure F-2

r:\0118\Final\plants.cdr - 04/17/98 - KP

Summary of Delta Smelt and Sacramento Splittail Distribution and Life History as Related to the Disposal and Reuse of Mare Island Naval Shipyard

Prepared by Ai-Ling Chai, Fisheries Biologist, Tetra Tech, Lafayette, CA, and Douglas Pomeroy, Wildlife Biologist, Engineering Field Activity, West Naval Facilities Engineering Command, San Bruno, CA

Prepared 9 February 1996

The delta smelt (*Hypomesus transpacificus* McAllister), listed as a federally threatened species in 1993, is native to the Sacramento-San Joaquin estuary (Wang 1986). This species occurs from the lower portions of the Sacramento and San Joaquin rivers, through the Delta, and into Suisun Bay. The delta smelt is occasionally found in the Carquinez Strait, San Pablo Bay, and south San Francisco Bay (Moyle 1976; Wang 1986; Moyle et al. 1992).

The delta smelt spends most of its adult life in the area where the freshwater from the Sacramento and San Joaquin rivers meets the more saline waters of the San Francisco Bay Estuary. The delta smelt changes its location in the San Francisco Bay Estuary from year to year to follow the change in location of the fresh and salt water mixing zone, and seasonal changes in temperature (Moyle et al. 1992; Swanson and Cech 1995).

The delta smelt usually completes its life cycle in a single year—just long enough for breeding. The spawning period generally ranges from February to June or July. During this period, the adult swims upstream into river channels and sloughs in the western Delta and Suisun Marsh to deposit its eggs. After hatching, the emerging larvae ride downstream currents until they reach the freshwater/salt water mixing zone in the Suisun Bay and the Delta. The delta smelt then resides in the mixing zone for most of its adulthood before returning to freshwater for spawning (Wang 1986). Some of the juvenile smelts may migrate further downstream to the Carquinez Strait and San Pablo Bay before turning back for spawning. The distribution pattern of delta smelt is mainly affected by the freshwater flows from the rivers into the San Francisco Bay Estuary. During the recent dry years, about 20 percent of the fish were distributed from the confluence of the Delta to Suisun Bay, and the rest of the fish were distributed in the lower San Joaquin and Sacramento rivers (Winternitz 1994). In 1995 (one of the wet years), the delta smelt was found further west, centered in Suisun Bay, with some fish being found in San Pablo Bay (Winternitz 1995). This is because the additional freshwater flowing into the San Francisco Bay Estuary moves the freshwater/salt water mixing zone further west into the San Francisco Bay Estuary during wet years.

The Sacramento splittail (*Pogonichthys macrolepidotus* Ayres) is also a native California freshwater fish. It was proposed as a federally threatened species in 1994. This species occurs upstream in the San Joaquin River and extends to the lower reaches of the Sacramento River, the Delta, Suisun Bay, and San Pablo Bay (Wang 1986).

The splittail spawns from late January or early February to July. Juvenile splittail occurs in Suisun Bay and most of the Delta sloughs in late winter and spring. As the summer progresses, splittail larvae move to the deeper waters of Suisun and San Pablo bays (Wang 1986). During the summer, most large juvenile and adult fish reside in the central and western Delta, Suisun Bay, and Suisun Marsh (Baxter 1994).

Both the delta smelt and the Sacramento splittail may occasionally occur in the vicinity of Mare Island, especially during wet years when river flow is higher than normal and the dispersal of those fish tends to extend further west into the San Francisco Bay Estuary.

The distribution of these two fish in the vicinity of Mare Island Naval Shipyard was evaluated using two sets of data. One data set comprises the California Department of Fish and Game (CDFG) fall midwater trawl surveys. The delta smelt and the Sacramento splittail abundance was estimated at CDFG Trawl Stations 338, 339, 340, and 341 located near Mare Island (Figure 1) from 1967 to 1994 (except 1974 and 1979, when no samples were taken; no 1995 data was available from CDFG). Station 341 was added to the survey in 1991 to include the possible spawning areas for the delta smelt in the Napa River. Prior to 1980, the survey was conducted every year on a monthly basis from August to the following March; after 1980, the survey was only conducted from August to December.

The other data set comprises the number of fish incidentally captured during the dry dock flooding and pumping operations at Mare Island Naval Shipyard in 1990 and 1991. Those fish counts were conducted by the Navy. The fish were counted from late April to mid October in 1990 and from late January to mid May, July, and October in 1991; 10 samples were taken each year.

Table 1 summarizes the historical abundance estimates of delta smelt and Sacramento splittail while figure 1 shows the location of the California Department of Fish and Game CDFG sampling stations. Table 2 provides detailed CDFG data and Table 3 provided detailed Navy data from fish found after dry dock flooding and dewatering. For most of the surveys, no delta smelt or Sacramento splittail were caught. For those years where some of these two species were caught, the occurrences were very low (for example, in 9 out of 12 cases for the smelt, only one fish was caught, and in 2 out of 4 cases for the splittail, also only one fish was caught). There were 58 delta smelt found in the December 1978 survey at CDFG Station 340. This is considered an anomaly as no other surveys in the vicinity of Mare Island through 1994 recorded more than three delta smelt or Sacramento splittail per year. The Delta smelt and the Sacramento splittail do not occur in large numbers in the vicinity of the Mare Island Naval Shipyard dry docks regardless of whether it is a wet or dry year.

Because no CDFG trawl surveys were conducted in the summer months, the two-year Navy counts were particularly important to determine whether these two species reside in the vicinity of Mare Island during the summer. The results show that no delta smelt or Sacramento splittail were observed during the summer of 1990 or 1991. This is consistent with what has been found from the CDFG's trawl survey data in the fall (i.e., no fish was caught from any of the four stations in 1990 and 1991).

Although both the delta smelt and the Sacramento splittail could occur west of the Carquinez Bridge, the results of this study show that very few fish would occur in the vicinity of Mare Island. Based on the occasional occurrence of these species in the vicinity of Mare Island Naval Shipyard, the periodic use of the dry docks at Mare Island Naval Shipyard would not jeopardize the continued existence of the delta smelt or the Sacramento splittail.

References

Baxter, R. 1994. Preliminary results of a summer gill-net survey for Sacramento splittail. Interagency Ecological Program for the Sacramento-San Joaquin Estuary Newsletter. Autumn 1994:14-15.

Moyle, P.B. 1976. Inland Fishes of California. University of California Press, Berkeley.

Moyle, P.B., B. Herbold, D.E. Stevens, and L.W. Miller. 1992. Life history and status of the delta smelt in the Sacramento-San Joaquin Estuary, California. Trans. Am. Fish. Soc. 121:67-77.

Swanson, C. and J.J. Cech, Jr. 1995. Temperature and salinity tolerances of delta smelt. Interagency Ecological Program for the Sacramento-San Joaquin Estuary Newsletter. Autumn 1995:27-28.

Wang, J.C.S. 1986. Fishes of the Sacramento-San Joaquin Estuary and Adjacent Waters, California: A Guide to the Early Life Histories. Interagency Ecological Study Program for the Sacramento-San Joaquin Estuary Technical Report 9.

Winternitz, L. 1994. Delta smelt update. Interagency Ecological Program for the Sacramento-San Joaquin Estuary Newsletter. Autumn 1994:10-11.

Winternitz, L. 1995. Delta smelt October midwater trawl survey results. Interagency Ecological Program for the Sacramento-San Joaquin Estuary Newsletter. Autumn 1995:11.

Table 1 Summary results for the historical estimates of delta smelt and Sacramento splittail abundance at the stations in the vicinity. of Mare Island.

Year		Delta Smelt Survey Station				Sacramento Splittail Survey Station			
Fall/Winter	Winter/Spring	338	339	340	341	338	339	340	341
1967	1968	0	NA	0		0		1	
1968	1969	1	NA	0		0		0	
1969	1970	0	0	3		0	0	0	
1970	1971	0	NA	2		0	NA	0	
1971	1972	0	0	0		0	0	0	
1972	1973	1	1	1		0	0	0	
1973	1974*	0	1	0		0	0	0	
1974*	1975	na	NA	NA		NA	NA	NA	
1975	1976	0	0	1		0	0	0	
1976	1977	0	0	0		0	0	0	
1977	1978	1	0	0		0	0	0	
1978	1979*	0	0	58		1	0	0	
1979*	1980	na	NA	NA		NA	NA	NA	
1980		0	NA	0		0	NA	0	
1981		0	0	0		0	0	0	
1982		0	1	0		0	0	8	
1983		0	0	1		0	2	0	
1984		0	0	0		0	0	0	
1985		0	0	0		0	0	0	
1986		0	0	0		0	0	0	
1987		0	0	0		0	0	0	
1988		0	0	0		0	0	0	
1989		0	0	0		0	0	0	
1990		0	0	0		0	0	0	
1991		0	0	0	0	0	0	0	0
1992		0	0	0	0	0	0	0	0
1993		0	0	0	0	0	0	0	0
1994		0	0	0	0	0	0	0	0

NA- Not Available

*- No survey was conducted

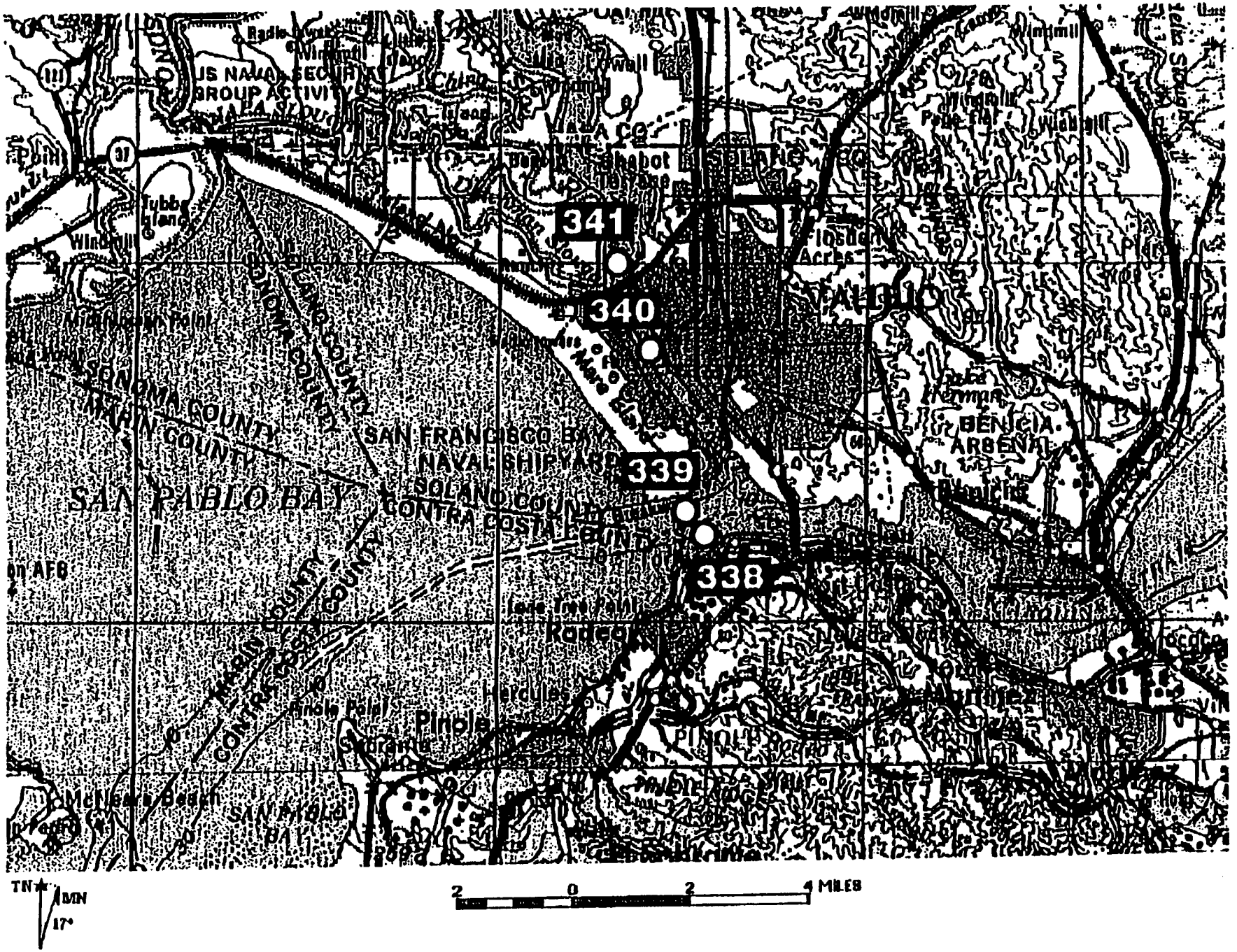


Figure 1. Four stations of CDFG's midwater trawl surveys in the vicinity of Mare Island.

Table 2

Table Historical data of CDFG's midwater trawl surveys at stations 338, 339, 340, and 341[1].

Station	Bottom Depth (feet)	Tide	Electrical Conductivity (microsiemens/cm)	Year	Month	Day	Temperature (°F)	Secchi Depth (meters)	Number of Caught in Tow: Longfin Smelt	Splittail	Delta Smelt
338			19500	1967	9	12	68.60	0.75	77	0	0
338			22950	1967	10	18	66.50	0.78	780	0	0
338			21600	1967	11	14	60.20	0.68	3	0	0
338			24500	1967	12	15	46.80	0.64	51	0	0
338			20900	1968	1	16	46.70	0.55	137	0	0
338			21147	1968	2	13	50.60	0.60	38	0	0
338			22100	1968	3	12	56.00	0.56	42	0	0
338			31332	1968	8	14	67.30	0.99	0	0	0
338			29100	1968	9	12	68.80	0.99	6	0	0
338			31120	1968	10	9	64.10	0.99	0	0	0
338			31598	1968	11	6	59.60	0.99	0	0	0
338			31700	1968	12	6	52.00	0.80	0	0	0
338			780	1969	2	2	47.00	0.15	31	0	0
338			480	1969	3	16	49.20	0.17	65	0	1
338			19930	1969	8	16	46.60	0.60	186	0	0
338			21890	1969	9	13	67.00	0.55	0	0	0
338			23430	1969	10	17	61.00	0.77	0	0	0
338			26010	1969	12	12	54.00	0.97	4	0	0
338			6090	1970	1	11	48.00	0.26	71	0	0
338			3520	1970	3	14	55.00	0.20	131	0	0
338			35520	1970	8	21	65.50	0.97	0	0	0
338			28520	1970	9	16	66.20	1.35	3	0	0
338			32970	1970	10	15	62.10	0.55	0	0	0
338			22211	1970	11	11	59.20	0.77	0	0	0
338			7380	1970	12	12	50.80	0.23	59	0	0
338			17392	1971	1	13	47.00	0.45	28	0	0
338			12424	1971	2	10	50.10	0.32	20	0	0
338			24274	1971	3	7	49.30	0.64	23	0	0
338			20600	1971	8	11	69.20	0.85	0	0	0
338			15529	1971	9	9	70.30	0.70	1	0	0
338			22550	1971	10	6	64.40	0.55	0	0	0
338			26400	1971	11	4	55.00	0.42	34	0	0
338			27500	1971	12	3	52.00	0.42	62	0	0
338			11988	1972	1	3	45.80	0.36	84	0	0
338			19800	1972	1	27	47.00	0.40	47	0	0
338			15984	1972	3	2	54.60	0.61	71	0	0
338			23744	1972	7	13	68.90	0.95	7	0	0
338			26400	1972	8	11	68.00	0.80	0	0	0
338			21730	1972	9	14	66.70	1.50	0	0	0
338			20088	1972	10	13	63.40	1.00	0	0	0
338			23460	1972	11	10	58.30	1.10	0	0	0
338			20832	1972	12	7	49.80	0.80	0	0	0
338			15776	1973	1	10	46.20	0.48	3	0	0
338			968	1973	3	6	52.40	0.13	11	0	1
338			21730	1973	8	16	67.60	0.80	0	0	0
338			26352	1973	9	13	66.00	0.60	0	0	0
338			26500	1973	10	11	62.20	0.85	0	0	0
338			21576	1973	11	12	58.30	0.40	4	0	0
338			1147	1973	12	10	49.20	0.27	54	0	0
338			12120	1975	9	16	64.80	0.38	0	0	0
338			8888	1975	10	14	61.80	0.46	2	0	0
338			12669	1975	11	12	56.20	0.42	1	0	0
338			14080	1975	12	11	50.40	0.76	1	0	0
338			23956	1976	10	11	65.80	1.60	0	0	0
338			24200	1976	11	16	60.80	1.10	0	0	0
338			24295	1977	1	11	49.40	0.61	48	0	0
338			36778	1977	9	14	66.20	0.95	0	0	0
338			41303	1977	10	11	66.70	1.70	0	0	0
338			34694	1977	11	9	59.00	1.20	0	0	0
338			39812	1977	12	7	55.40	1.40	0	0	0
338			21879	1978	1	11	52.20	0.60	4	0	0
338			410	1978	3	9	55.90	0.12	0	0	1
338	40		18842	1978	9	13	68.00	0.35	11	0	0
338	40		15584	1978	10	11	66.20	0.40	5	1	0

Table Historical data of CDFG's midwater trawl surveys at stations 338, 339, 340, and 341[1].

Station	Bottom Depth (feet)	Tide	Electrical Conductivity (microsiemens/cm)	Year	Month	Day	Temperature (°F)	Secchi Depth (meters)	Number of Caught in Tow: Longfin Smelt	Splittail	Delta Smelt
338	40		21886	1978	11	15	53.60	0.50	3	0	0
338	35		27930	1978	12	12	49.00	0.20	22	0	0
338	45		28017	1980	9	12	64.00	0.60	300	0	0
338	40		27066	1980	10	9	68.00	1.00	0	0	0
338	40		27342	1980	11	6	60.00	1.20	0	0	0
338	45		27312	1980	12	5	53.30	0.80	300	0	0
338	40		33197	1981	9	26	68.00	0.74	0	0	0
338	40		37312	1981	10	13	61.50	0.82	0	0	0
338	35		34831	1981	11	9	60.00	0.68	0	0	0
338	30		17570	1981	12	7	53.50	0.45	0	0	0
338	40		16743	1982	9	15	67.00	0.20	77	0	0
338	40		19746	1982	10	18	62.50	0.52	56	0	0
338	40		17525	1982	11	8	58.00	0.47	0	0	0
338	45		5710	1982	12	14	49.00	0.30	800	0	0
338	35		18180	1983	9	13	70.00	0.78	1	0	0
338	35		15210	1983	10	12	65.50	0.82	2	0	0
338	45		15387	1983	11	8	60.50	0.54	1	0	0
338	40		1064	1983	12	6	50.50	0.22	17	0	0
338	35		28275	1984	9	11	68.00	0.78	0	0	0
338	45		22911	1984	10	10	65.00	0.57	41	0	0
338	42		25606	1984	11	6	59.00	0.72	9	0	0
338	40		20939	1984	12	4	51.00	0.58	3	0	0
338	60	4	32576	1985	9	10	65.00	1.15	0	0	0
338	40	4	30305	1985	10	8	64.00	1.40	0	0	0
338	40	4	36420	1985	11	5	59.00	1.30	0	0	0
338	50	4	26473	1985	12	5	53.00	1.05	3	0	0
338	43	4	17120	1986	9	9	66.50	0.72	0	0	0
338	47	4	31900	1986	10	6	65.00	0.64	0	0	0
338	50	4	33602	1986	11	3	62.00	0.56	5	0	0
338	44	2	30969	1986	12	1	55.00	0.68	78	0	0
338	43	4	34551	1987	9	8	68.00	0.43	0	0	0
338	43	2	32791	1987	10	5	67.00	0.40	0	0	0
338	44	4	31240	1987	11	10	61.00	1.06	0	0	0
338	49	4	21795	1987	12	7	55.00	0.68	24	0	0
338	44	2	40482	1988	9	12	66.50	0.26	0	0	0
338	70	2	31080	1988	10	3	66.00	0.85	0	0	0
338	67	4	40861	1988	11	7		0.49	0	0	0
338	48	2	38578	1988	12	6	55.00	0.49	7	0	0
338	51	1	32227	1989	9	12	66.00	0.69	0	0	0
338	50	4	29848	1989	10	2	67.00	1.10	0	0	0
338	51	4	28600	1989	11	6	59.00		0	0	0
338	40	2	30672	1989	12	4	52.00	0.73	5	0	0
338	40	4	32373	1990	9	10	70.00	0.89	0	0	0
338	50	2	34613	1990	10	1	68.00	0.93	0	0	0
338	60	4	36818	1990	11	5	63.00	1.01	0	0	0
338	55	4	39335	1990	12	3	52.00	0.32	1	0	0
338	70	4	38246	1991	9	9	67.00	0.54	0	0	0
338	60	4	35972	1991	10	9	67.50	0.94	0	0	0
338	75	4	38006	1991	11	4	61.00	0.92	0	0	0
338	50	2	36741	1991	12	2	53.00	0.46	0	0	0
338	55	2	32818	1992	10	5	67.10	0.91	0	0	0
338	45	2	31105	1992	11	2	65.00	0.89	0	0	0
338	35	3	32197	1992	12	8	53.00	0.51	2	0	0
338	43	2	20169	1993	9	7	70.50	0.72	0	0	0
338	50	4	29920	1993	10	4	65.50	0.81	0	0	0
338	53	2	29626	1993	11	8	66.00	1.08	0	0	0
338	50	2	28150	1993	12	6	52.00	0.36	4	0	0
338	60	4		1994	9	6	69.50	0.43	0	0	0
338	50	2	47200	1994	10	4	65.00		0	0	0
338	51	4	35045	1994	11	7	57.50	0.92	5	0	0
338	55	4	36624	1994	12	5	51.50	0.42	7	0	0
339			10560	1970	1	11	48.00	0.19	133	0	0
339			1290	1970	3	13	54.00	0.17	2	0	0

Table Historical data of CDFG's midwater trawl surveys at stations 338, 339, 340, and 341[1].

Station	Bottom Depth (feet)	Tide	Electrical Conductivity (microsiemens/cm)	Year	Month	Day	Temperature (°F)	Secchi Depth (meters)	Number of Caught in Tow: Longfin Smelt	Splittail	Delta Smelt
339			12508	1971	9	10	69.80	0.55	1	0	0
339			17600	1971	10	7	64.50	0.80	0	0	0
339			23100	1971	11	5	55.00	0.43	62	0	0
339			19800	1971	12	3	51.40	0.44	8	0	0
339			11772	1972	1	3	45.80	0.36	18	0	0
339			13310	1972	1	27	46.00	0.48	76	0	0
339			15768	1972	3	3	54.40	0.34	47	0	0
339			14560	1972	12	8	47.80	0.64	0	0	0
339			11948	1973	1	10	45.60	0.35	1	0	0
339			495	1973	3	7	52.40	0.19	0	0	1
339			24300	1973	9	14	65.40	0.48	0	0	1
339			23320	1973	10	12	62.80	0.67	2	0	0
339			23200	1973	11	9	58.80	0.55	0	0	0
339			13130	1973	9	16	64.50	0.60	3	0	0
339			11211	1975	10	14	61.60	0.61	0	0	0
339			14820	1975	11	12	55.20	0.39	4	0	0
339			14410	1975	12	11	50.20	0.71	16	0	0
339			23850	1976	10	8	66.40	1.30	0	0	0
339			25300	1976	11	15	59.90	1.00	3	0	0
339			27120	1977	1	10	48.70	0.61	1	0	0
339			36778	1977	9	14	67.10	0.90	0	0	0
339			39710	1977	10	11	65.70	1.50	0	0	0
339			40002	1977	11	8	59.90	1.15	0	0	0
339			37380	1977	12	7	56.30	0.95	0	0	0
339			18513	1978	1	11	53.20	0.71	1	0	0
339			3234	1978	3	9	56.30	0.20	3	0	0
339	25		27066	1978	9	13	68.00	0.35	43	0	0
339	15		22472	1978	10	11	66.70	0.70	0	0	0
339	25		33433	1981	9	21	68.00	0.73	0	0	0
339	30		37310	1981	10	13	61.50	0.82	0	0	0
339	35		16971	1982	10	19	61.00	0.62	4	0	0
339	15		17722	1982	11	9	56.00	0.48	3	0	0
339	20		8136	1982	12	14	48.50	0.30	2	0	1
339	20		13507	1983	9	13	70.00	0.66	1	0	0
339	20		10123	1983	10	12	65.50	0.63	0	0	0
339	20		14414	1983	11	8	60.50	0.44	246	1	0
339	20		1779	1983	12	6	50.50	0.20	2	1	0
339	20		26023	1984	9	11	68.00	0.62	0	0	0
339	20		23371	1984	10	10	66.00	0.54	14	0	0
339	20		31317	1984	11	6	59.00	0.65	1	0	0
339	15		17753	1984	12	3	52.00	0.61	0	0	0
339	30	4	31558	1985	9	10	66.00	0.95	0	0	0
339	20	4	38958	1985	10	8	64.00	1.20	0	0	0
339	20	4	30388	1985	11	5	59.00	1.00	0	0	0
339	15	2	28200	1985	12	5	53.00	1.10	0	0	0
339	26	4	15407	1986	9	9	67.00	0.83	3	0	0
339	25	4	31320	1986	10	6	66.00	0.50	10	0	0
339	24	4	33702	1986	11	3	62.00	0.54	33	0	0
339	33	2	28102	1986	12	2	53.00	0.68	1	0	0
339	27	4	35007	1987	9	8	68.00	0.30	1	0	0
339	24	1	34706	1987	10	5	68.00	0.49	4	0	0
339	37	4	29885	1987	11	10	61.00	0.90	1	0	0
339	31	4	20906	1987	12	7	56.00	0.55	2	0	0
339	30	2	36434	1988	9	12	66.00	0.25	0	0	0
339	20	2	35394	1988	10	3	66.00	0.57	0	0	0
339	20	4	40390	1988	11	7		0.45	0	0	0
339	20	1	35760	1988	12	6	55.00	0.48	10	0	0
339	20	4	33915	1989	9	12	68.00	0.54	0	0	0
339	20	4	30267	1989	10	2	67.00	0.87	0	0	0
339	20	4	32045	1989	11	6	59.00		0	0	0
339	10	2	30726	1989	12	4	52.00	0.72	0	0	0
339	20	4	31878	1990	9	10	70.00	0.98	0	0	0
339	15	2	34710	1990	10	2	67.00	0.93	0	0	0
339	20	4	36745	1990	11	5	62.00	0.51	0	0	0

Table Historical data of CDFG's midwater trawl surveys at stations 338, 339, 340, and 341[1].

Station	Bottom Depth (feet)	Tide	Electrical Conductivity (microsiemens/cm)	Year	Month	Day	Temperature (°F)	Secchi Depth (meters)	Number of Caught in Tow		
									Longfin Smelt	Splittail	Delta Smelt
339	17	4	39794	1990	12	3	51.50	0.31	1	0	0
339	30	4	38943	1991	9	9	67.00	0.66	0	0	0
339	12	4	34970	1991	10	9	67.50	0.69	0	0	0
339	15	4	33212	1991	11	4	61.00	0.72	0	0	0
339	10	2	33985	1991	12	2	53.00	0.45	0	0	0
339	10	4		1992	9	8	69.50	0.84	0	0	0
339	10	4	34873	1992	10	5	68.00	1.21	0	0	0
339	10	2	30880	1992	11	2	65.00	0.78	0	0	0
339	25	3	36890	1992	12	8	53.00	0.51	1	0	0
339	12	2	22425	1993	9	7	69.50	0.71	0	0	0
339	10	4	29019	1993	10	4	65.00	0.78	0	0	0
339	12	2	31212	1993	11	8	66.00	1.16	0	0	0
339	12	2	30899	1993	12	6	52.00	0.38	0	0	0
339	10	4		1994	9	6	69.80	0.63	0	0	0
339	18	2	47200	1994	10	4	65.00		0	0	0
339	15	4	32542	1994	11	7	59.00	0.71	0	0	0
339	10	4	35346	1994	12	5	50.50	0.52	2	0	0
340			20860	1967	10	18	66.40	0.52	36	0	0
340			23500	1967	11	14	61.80	0.54	39	0	0
340			20900	1968	1	15	46.70	0.42	50	0	0
340			15795	1968	2	13	50.40	0.32	148	0	0
340			15500	1968	3	12	56.20	0.35	164	1	0
340			33487	1968	8	18	67.00	0.55	0	0	0
340			21750	1969	8	16	69.00	0.30	6	0	0
340			26010	1969	12	11	54.00	0.43	1	0	0
340			5210	1970	1	11	48.00	0.21	114	0	0
340			3120	1970	3	15	58.00	0.26	2	0	3
340			30800	1970	8	22	65.50	0.97	0	0	0
340			22600	1970	9	17	66.10	0.97	0	0	0
340			23940	1970	10	16	61.60	0.25	1	0	0
340			19418	1970	11	12	59.50	0.77	5	0	0
340			2160	1970	12	12	50.70	0.05	421	0	1
340			5671	1971	1	14	45.70		19	0	0
340			9240	1971	2	11	49.70	0.27	15	0	0
340			16605	1971	3	8	52.00	0.46	12	0	1
340			16324	1971	9	10	70.10	0.40	0	0	0
340			17160	1971	10	7	64.20	0.32	18	0	0
340			22000	1971	11	5	55.80	0.31	34	0	0
340			20240	1971	12	3	51.40	0.27	41	0	0
340			12744	1972	1	3	45.80	0.22	37	0	0
340			14300	1972	1	28	46.80	0.47	20	0	0
340			13932	1972	3	3	55.20	0.33	5	0	0
340			26950	1972	8	10	68.20	0.37	0	0	0
340			22260	1972	9	13	67.30	1.10	0	0	0
340			19980	1972	10	12	64.20	1.00	0	0	0
340			19205	1972	11	9	58.80	1.00	0	0	0
340			16240	1972	12	7	49.20	0.60	3	0	0
340			8700	1973	1	10	44.50	0.34	1	0	0
340			1658	1973	3	6	53.80	0.17	2	0	1
340			21200	1973	8	16	67.60	0.35	1	0	0
340			22464	1973	9	13	66.00	0.50	0	0	0
340			22790	1973	10	11	63.20	0.60	0	0	0
340			14384	1973	11	12	57.80	0.38	0	0	0
340			5850	1973	12	10	49.00	0.27	58	0	0
340			13130	1975	9	16	65.00	0.39	1	0	0
340			14039	1975	10	14	61.70	0.50	0	0	1
340			14508	1975	11	12	56.40	0.52	6	0	0
340			14520	1975	12	11	50.50	0.66	6	0	0
340			23320	1976	10	11	68.00	1.10	0	0	0
340			23100	1976	11	15	60.80	0.93	0	0	0
340			23165	1977	1	11	47.20	0.89	7	0	0
340			38332	1977	9	15	65.30	0.63	0	0	0
340			37740	1977	10	13	66.70	0.95	0	0	0

Table Historical data of CDFG's midwater trawl surveys at stations 338, 339, 340, and 341[1].

Station	Bottom Depth (feet)	Tide	Electrical Conductivity (microsiemens/cm)	Year	Month	Day	Temperature (°F)	Secchi Depth (meters)	Number of Caught in Tow		
									Longfin Smelt	Splittail	Delta Smelt
340			36320	1977	11	9	59.00	1.05	0	0	0
340			34112	1977	12	8	55.90	0.70	0	0	0
340			16739	1978	1	11	53.20	0.30	6	0	0
340			454	1978	3	9	55.90	0.17	0	0	0
340	20		21236	1978	9	13	68.40	0.50	12	0	0
340	20		26117	1978	10	11	68.00	0.70	1	0	0
340	20		21923	1978	11	15	54.50	0.30	6	0	0
340	20		24054	1978	12	13	48.00	0.36	22	0	58
340	15		28224	1980	9	12	66.00	0.45	0	0	0
340	15		25950	1980	10	10	62.50	0.35	1	0	0
340	20		21049	1980	11	7	60.80	0.47	5	0	0
340	20		26174	1980	12	5	52.80	0.47	10	0	0
340	20		29792	1981	9	22	66.20	0.62	0	0	0
340	15		34005	1981	10	14	61.50	0.78	0	0	0
340	15		33060	1981	11	9	59.50	0.44	1	0	0
340	15		12232	1981	12	7	52.30	0.39	1	0	0
340	10		19902	1982	9	14	68.00	0.43	0	4	0
340	10		16894	1982	10	18	62.00	0.38	2	3	0
340	15		10435	1982	11	8	58.00	0.40	22	1	0
340	10		9481	1982	12	13	48.00	0.32	1	0	0
340	25		12802	1983	9	13	70.50	0.52	7	0	0
340	30		7194	1983	10	12	66.00	0.53	287	0	1
340	30		9446	1983	11	8	61.00	0.47	156	0	0
340	30		2089	1983	12	6	51.00	0.23	4	0	0
340	25		24372	1984	9	11	70.00	0.42	3	0	0
340	30		23328	1984	10	10	66.00	0.48	6	0	0
340	30		27280	1984	11	6	59.00	0.52	5	0	0
340	35		18696	1984	12	4	52.00	0.45	93	0	0
340	10	4	32448	1985	9	10	64.00	1.10	0	0	0
340	10	4	30537	1985	10	8	64.00	0.90	0	0	0
340	10	4	30085	1985	11	5	60.00	1.40	0	0	0
340	12	3	25853	1985	12	5	53.50	1.10	0	0	0
340	13	4	12516	1986	9	10	65.00	0.84	0	0	0
340	12	2	21294	1986	10	7	63.50	0.59	1	0	0
340	15	2	24629	1986	11	4	60.00	0.42	5	0	0
340	17	4	26649	1986	12	2	53.00	0.55	0	0	0
340	12	2	31933	1987	9	9	66.00	0.36	0	0	0
340	17	2	31800	1987	10	6	67.00	0.57	0	0	0
340	33	2	27216	1987	11	10	61.00	0.94	0	0	0
340	16	2	17283	1987	12	8	53.00	0.35	7	0	0
340	12	2	30310	1988	9	13	65.50	0.25	0	0	0
340	10	4	32705	1988	10	4	64.00	0.44	0	0	0
340	18	2	33466	1988	11	8			0	0	0
340	1..	2	30940	1988	12	8	53.00		3	0	0
340	12	3	43470	1989	9	13	65.00	0.57	0	0	0
340	15	2	28132	1989	10	3	65.00	0.76	0	0	0
340	30	4	24244	1989	11	7	58.50	0.69	0	0	0
340	12	2	28450	1989	12	5	52.00	0.71	0	0	0
340	12	2	29502	1990	9	11	67.00	0.98	0	0	0
340	12	2	33402	1990	10	2	66.50		0	0	0
340	15	2	32558	1990	11	6	59.00	0.69	0	0	0
340	20	4	37240	1990	12	3	53.00	0.52	0	0	0
340	15	2	33932	1991	9	10	66.50	0.41	0	0	0
340	13	4	31500	1991	10	9	68.50	0.94	0	0	0
340	14	2	32624	1991	11	4	61.50	0.80	0	0	0
340	50	2	32045	1991	12	2	52.50	0.54	0	0	0
340	10	2	31824	1992	9	8	70.00	0.87	0	0	0
340	12	2	31742	1992	10	5	64.40	1.12	0	0	0
340	10	2	30375	1992	11	2	65.50	0.96	0	0	0
340	15	2	35566	1992	12	7	54.00	0.59	0	0	0
340	14	1	23567	1993	8	9	68.00	0.55	0	0	0
340	13	4	24851	1993	9	7	70.50	0.51	0	0	0
340	12	4	29868	1993	10	4	65.00	0.69	0	0	0
340	40	2	29509	1993	11	8	66.00	1.01	0	0	0

able 3. Navy counts of fish and crustaceans found in Mare Island Dry Docks in 1990 and 1991 by Navy Engineering Field Activity, West, and Mare Island Natural Resources staff.

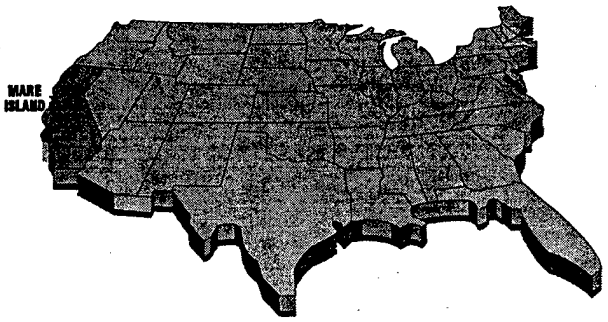
H AND CRUSTACEANS STRANDED DURING DRYDOCK OPERATIONS AT MARE ISLAND NAVAL SHIPYARD, APRIL 1990-OCTOBER 1991

STRANDED	DATE CAISSON OUT	TIME CAISSON OUT	DATE CAISSON IN	TIME CAISSON IN	CHINOOK SALMON (ALL LIVE)	SALMON COMMENTS	RAINBOW TROUT	STRIPED BASS	UNID FLOUNDER	STARRY FLOUNDER	JACK SMELT	UNID SMELT	BARBED SAND BASS
4/25/90	4/24/90	22:00	4/25/90	00:30				1					
5/1/90	5/1/90	04:24	5/1/90	07:00				12					
6/11/90	6/8/90	23:42	6/9/90	01:35				3					1
6/25/90	6/25/90	10:58	6/25/90	13:00	1			11					
8/7/90	8/7/90	12:35	8/7/90	15:59				2					
8/29/90	8/29/90	12:31	8/29/90	15:40	1			26			1		
9/5/90	?	?	?	?									
9/6/90	8/28/90	16:59	8/28/90	20:40				16			2		
10/5/90	10/5/90	11:00	10/5/90	17:00	4	3" LONG		119				1	
10/12/90	10/12/90	19:05	10/12/90	20:40	1			23		1	2		
1/30/91	1/30/91	08:40	1/30/91	12:30				6					
[illegible]1	2/13/91	10:40	2/13/91	13:00				6					
3/19/91	3/19/91	09:33	3/19/91	10:38				1					
3/20/91	3/20/91	00:34	3/20/91	02:28				2					
3/21/91	3/21/91	02:14	3/21/91	04:31				1					
4/17/91	4/17/91	15:30	4/17/91	17:45				1					
4/18/91	3/18/91		4/17/91					37		1			
5/14/91	5/13/91	23:15	5/14/91	02:00	1	FINGER		13					
7/18/91	7/18/91	17:13	7/18/91	20:00				8					
10/2/91	10/1/91	18:16	10/1/91	21:30	3		1	26		1			
TOTALS					11	0	1	314	0	3	5	1	1

Filename: e:\docs\linsey\drydock1

WHITE FISH	YELLOW FIN GOBY	AMER SHAD	STAGHORN SCULPIN	UNID SCULPIN	WHITE STURGEON	UNID STURGEON	PLAINFIN MOSHPMAN	NORTHERN MOSHPMAN	UNID MOSHPMAN	SHINER SURF PERCH	STRIPED SURF PERCH	WALLEYE SURF PERCH	TULE PERCH	BLACK PERCH
1														
21		4		1										
2							1							
2	1					1								
		1												
30	5							1		1				1
	11			1						1				
	2	1	1			1								
1														
	1													
	66			1									1	
	1													
		1												
		1												
9					10						1	1		
27	2	1	2						2	4				
5				1					1					
6					1									
104	99	9	3	4	11	2	1	1	3	6	1	1	1	1

MONTH	BROWN ROCKFISH	INLAND SILVERSIDS	BROWN SMOOTHHOUND SHARK	PACIFIC HERRING	UNID HERRING	PACIFIC SARDINE	PACIFIC LAMPREY	ANCHOVY	ELECTRIC RAY	UNID CRAB	DUNG CRAB	LARGE SHRIMP	GRASS SHRIMP	ISOPODS
											1			
										6				
											5		50	
	1							1			4		100	100
											1			
											1			
								215	1					
1		2									2		100	150
											2			
					1						2	1		
											2			
							1				49			
					1						8			
			2	2		1				2				
1	1	2	2	2	2	1	1	216	1	8	77	1	250	250



APPENDIX G

TRAFFIC

APPENDIX G
TRAFFIC

MARE ISLAND STREET SYSTEM

Streets on Mare Island have been classified as major arterial, major collector, residential, alley, and service roads. The classification approximates existing city of Vallejo standards in function only; few Mare Island streets meet current city design standards. Mare Island streets are described in Table G-2. Figure G-1 depicts the Mare Island roadway system. Figures G-2 through G-4 illustrate improvements to "G" Street, the Causeway, and the North Access that will occur as part of reuse of the island. These improvements were identified in the Mare Island Final Reuse Plan

Mare Island streets and roads evolved over the 140-year history of the base, and, as such, there are no "as-built" drawings that show the structural cross section of the streets, accruing in to the Mare Island Naval Shipyard Public Works staff. Generally the pavement surfaces appear in fair condition, indicating that the sections have been constructed substantially enough to accommodate heavy trucks. There are some areas where the pavement needs immediate replacement, but this is confined to a few specific areas.

There are 8.8 miles of arterial streets on the Island, which function as conduits for through traffic and generally carry average daily trips (ADTs) over 5,000 vehicles. The arterial range from two to four lanes, with a three lane configuration being most common. Lane widths range from 8.5 feet to 19.5 feet, with most being in the 10 to 11 feet range.

The collector system is 5.8 miles long and consists of shorter sections of two-lane roadway with land widths between 8 and 15 feet. The residential streets total 3.5 miles and generally conform to consistent geometries; i.e., two unstriped lanes, total curb-to-curb width of 30 feet with on-street parking. Alleys are limited to the older residential areas between Walnut and Cedar Avenues and are used as connectors between the one-way streets and residential access. They generally measure 20 feet in width.

In the unclassified or "other" category are many roads on Mare Island that serve little function are substandard, or should be closed to he public once the island is opened to civilians. These roads are typically 20 to 25 feet wide, unstriped, and vary from fair to poor pavement condition.

Most secondary or collector streets on Mare Island have two 12-foot wide lanes and no parking lane, curb, or sidewalk. These 24-foot wide streets do not meet the city's standard of 50 feet, (including sidewalks, curbs and gutters, and two travel and parking lanes on either side of a 40-foot wide pavement section).

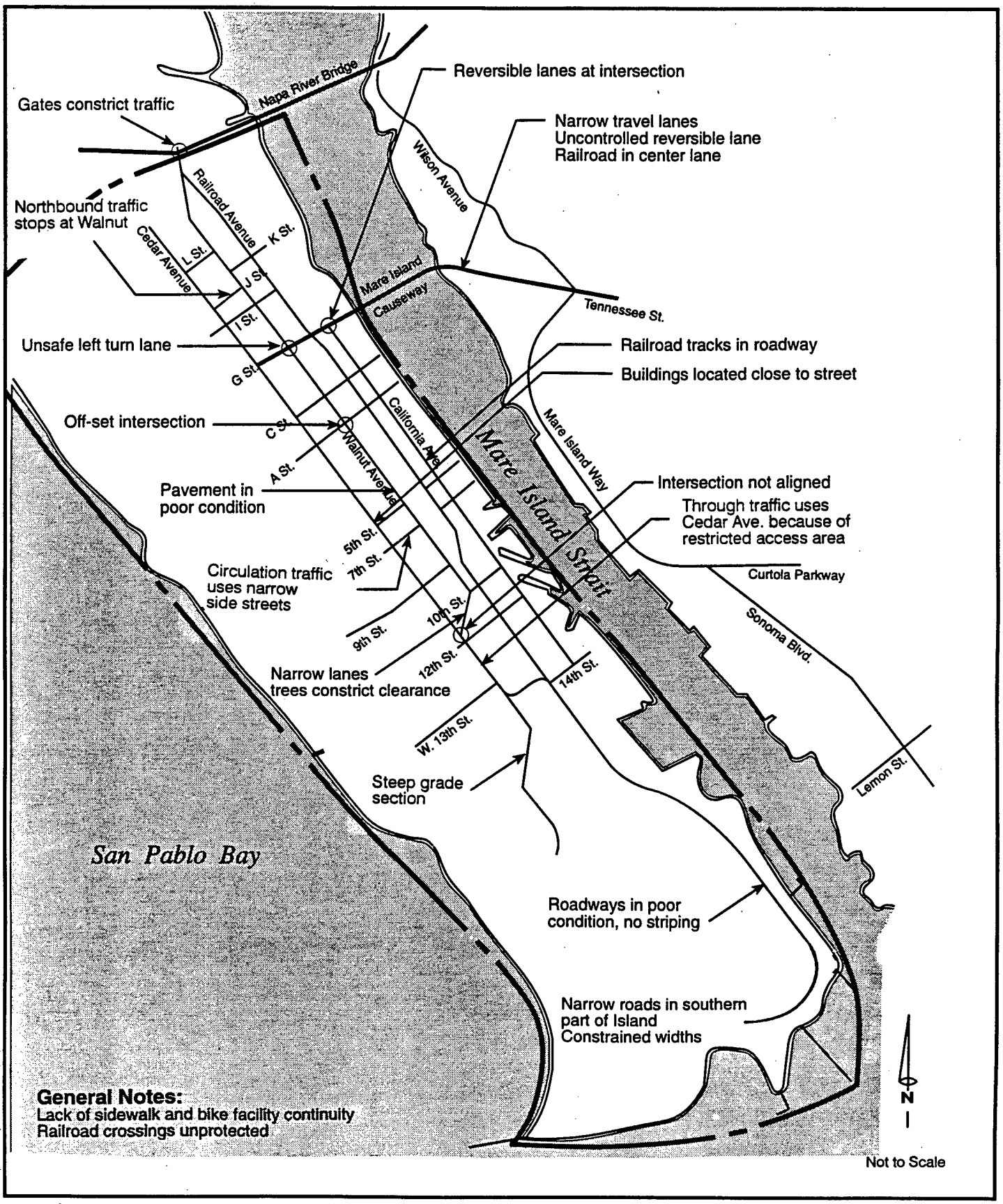
Residential streets on Mare Island have 30 feet of pavement, with permitted on-street parking, curbs, gutters, and sidewalks often on one side only.

None of the numerous at -grade railroad crossings on the island are protected by gates or flashing lights.

TABLE G-1
INVENTORY OF EXISTING MARE ISLAND STREETS

Street Name	Length (ft.)	Lanes	Lane Width	
			Min.	Max.
Arterial System				
G Street/Causeway	6,100	3-4	10	11
Cedar Avenue	11,850	2-3	9	19.5
Railroad Avenue	15,200	2-3	10.5	15.5
Walnut Avenue	10,000	2	8.5	15.5
California Avenue	3,600	2	10	12.5
Subtotal	46,750			
Collector System				
3rd Street	800	2	12	12
4th Street	400	2	12	12
5th Street	1,250	2	12	12
10th Street	550	2	12	12
13th Street	1,600	2	10.5	15
A Street	5,500	2	12	12
C Street	1,850	2	12	12
D Street	650	2	12	12
E Street	1,300	2	12	12
J Street	650	2	12	12
K Street	400	2	12	12
L Street	650	2	12	12
M Street	650	2	12	12
P Street	400	2	12	12
Combat Systems TSC	3,000	2	12	12
Friedell Street	600	2	12	12
Golf Club Drive	2,450	2	10	10
Mesa Road	4,550	1-2	8	12
San Pablo	1,200	2	12	12
Suisun Avenue	1,000	2	12	12
Young Drive	1,300	2	10	10
Subtotal	30,750			
Residential				
9th Street	1,800	2	8	8
Crisp Avenue	450	2	8	8
Kirkland Avenue	1,400	2	8	8
Klein Avenue	1,300	2	8	8
Laws Avenue	550	2	8	8
Madrone Avenue	950	2	8	8
Navfak Road	1,900	2	11	11
Petaluma Avenue	500	2	8	8
Pompano Street	500	2	8	8
Poplar Avenue	800	2	8	8
Preston	700	2	8	8
Reeves Avenue	450	2	8	8
Saginaw	400	2	8	8
Sargo Avenue	1,700	2	8	8
Tisdale Avenue	2,300	2	8	8
Wahoo Avenue	1,900	2	8	8
Wasmuth Street	800	2	8	8
Subtotal	18,400			
Alley				
7th Street	550	2	10	10
Nameless	1,100	2	10	10
Oak Avenue	1,500	2	10	10
Subtotal	3,150			
Grand Total	99,050			

Source: Vallejo 1994c



0118\COLOR\TRAFFIC - 06/26/95 - XQ

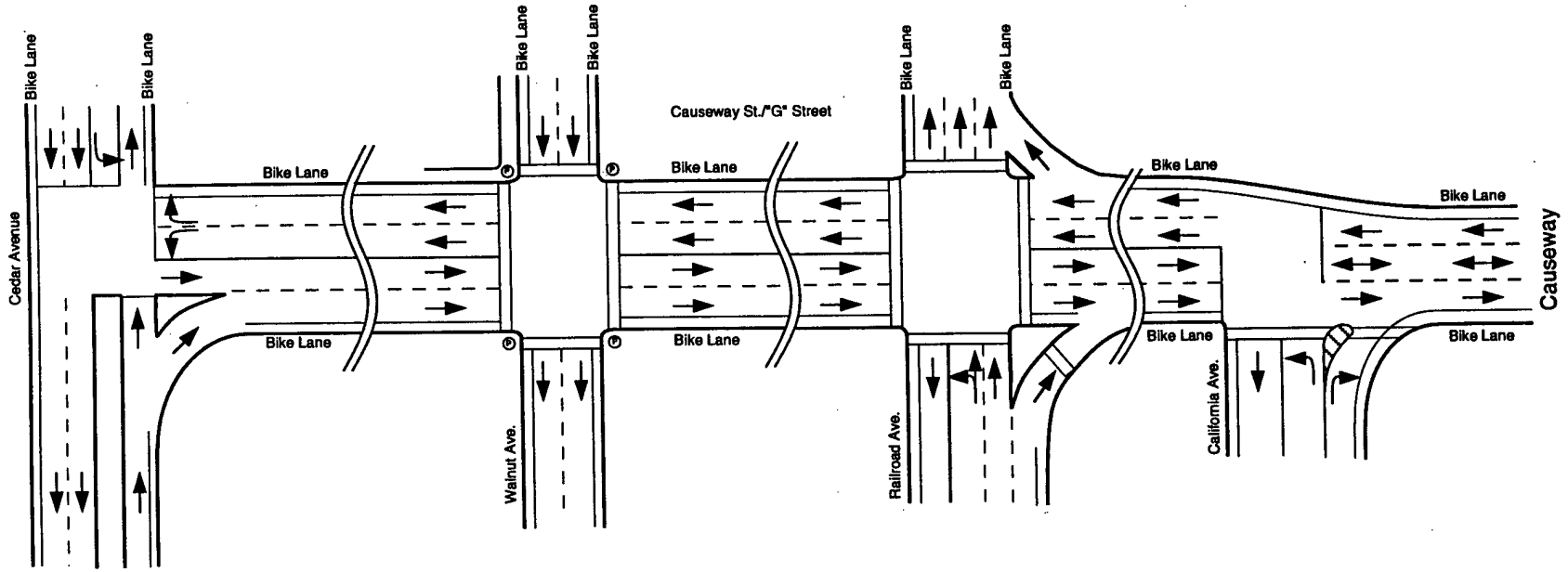
Final Reuse Plan: Roadway System

Mare Island Naval Shipyard
Property Boundaries

Mare Island, California

Source: Vallejo, 1994c

Figure G-1



(P) = Pedestrian Activated Signal

◄► = Reversible lane. Can be used as a second directional lane to accommodate peak direction traffic volumes. Using movable barriers and signs, the lane can accommodate AM peak hour westbound and PM peak hour eastbound traffic volumes.

NOT TO SCALE

N

Reuse would necessitate improvements to "G" Street.

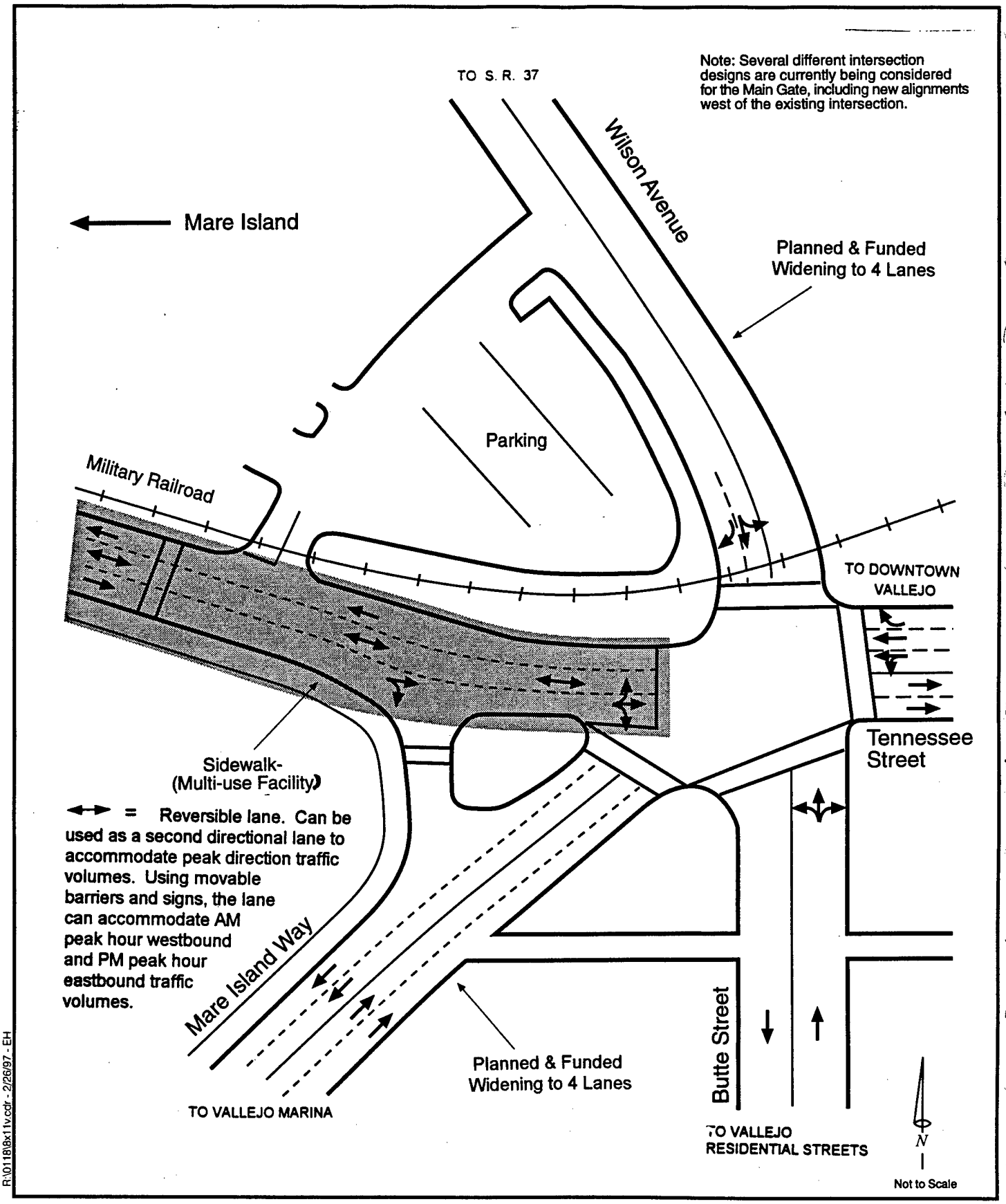
Reuse Plan, Medium Density and Open Space Alternatives: "G" Street Improvements

Mare Island, California

Figure G-2

Source: City of Vallejo, 1994c

R:\0118\8x11h.cdr - 2/27/97 - EH



R:\0118\8x11v.cdr - 2/26/97 - EH

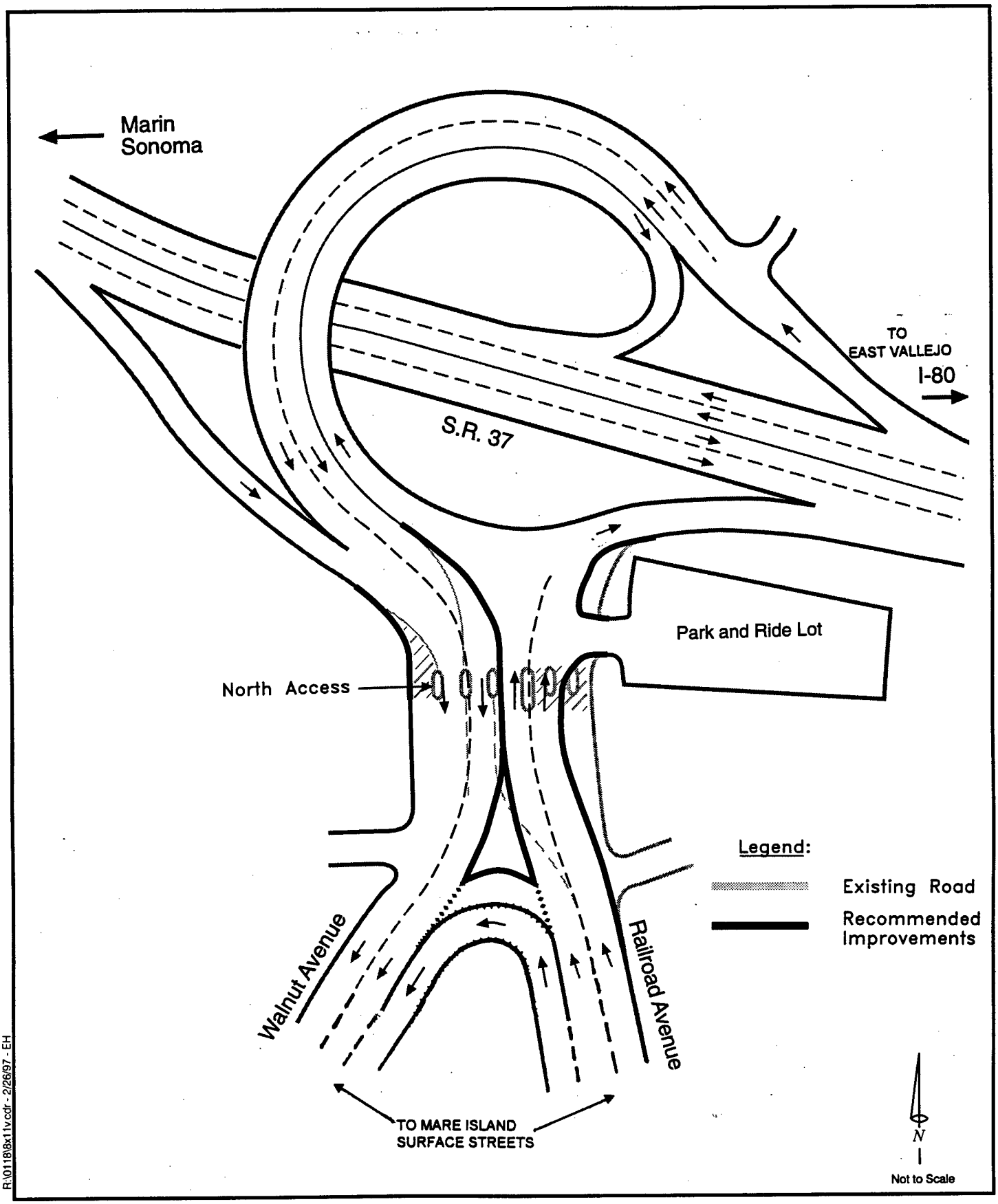
Reuse would necessitate improvements to Mare Island Causeway.

Proposed Reuse Plan, Medium Density and Open Space Alternatives: Mare Island Causeway Improvements

Mare Island, California

Source: Vallejo, 1994c

Figure G-3



R:\10118\8x11v.cdr - 2/26/97 - EH

The City of Vallejo transit routes do not serve Mare Island.

Reuse Plan, Medium Density and Open Space Alternatives: North Access Improvements

Mare Island, California

Source: Vallejo, 1994c

Figure G-4

TRANSIT SYSTEM

Vallejo's transit system includes regional bus service, local bus service, paratransit service, and ferry service. Table G-2 briefly describes each service, while Figure G-2 identifies the Vallejo Transit routes. As Table G-2 shows, bus service is the primary public transit mode in Vallejo. Table G-3 describes improvements to the Mare Island transit system that will occur as part of reuse of the island and Figure G-6 illustrates these improvements.

Bus Service

Currently only two local bus routes serve Mare Island Vallejo Transit routes 5 and 7 stop near the main entrance. Since these buses also stop at the downtown York and Marin and Sereno Transit Centers, transfers are available from other local and regional routes. In March of 1994, Route 5 buses carried about 15,530 passengers, and Route 7 buses carried about 13,920 passengers. According to a 1993 survey of Mare Island commuters, about one percent used transit.

A past attempt to serve Mare Island with transit service from Vallejo was not successful. In 1990, transit service on Mare Island that was designed and funded by the Navy was discontinued due to low ridership and farebox return, resulting from the sporadic schedules and circuitous routes.

Ferry Service

Ferry service has historically been provided by the private sector between Mare Island and Vallejo across the Mare Island Strait. However, due to diminished ridership this service was discontinued in the early 1980s.

Vallejo provides ferry services to San Francisco from a new ferry terminal opposite Mare Island. The service provides five round-trips per day and in 1992 carried 221,000 patrons. The 25-mile route takes about one hour, which is comparable to driving time. Vallejo contracts with the private sector for the operation and maintenance of the ferry service. The recent purchase of a used ferry and the planned purchase of two new ferries for this service will be funded by Federal Transit Administration Improvement Act money, earmarked for Vallejo.

TABLE G-2
VALLEJO TRANSIT SERVICE DESCRIPTION

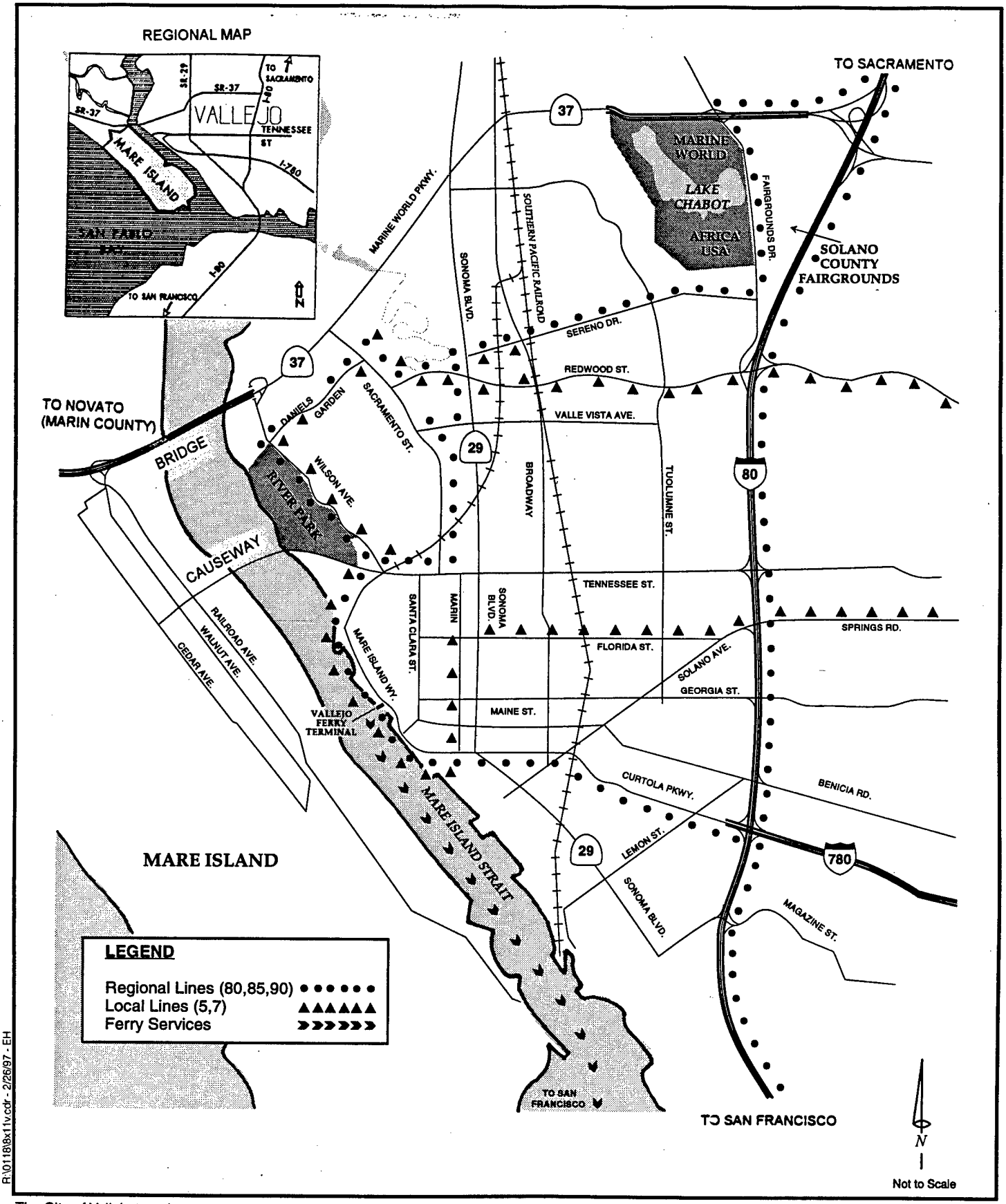
Route	Description	Headway	Avg. Ridership (March 1994)
Regional Bus Service			
80	Operates from Vallejo to the El Cerrito del Norte BART station	10-15 min. peak, 30 min. off-peak/Sat.	38,086
85	Operates between Vallejo and El Cerrito del Norte BART station	30 min. peak, 60 min. off-peak/Sat.	16,923
90	Operates between the Fairfield/Suisun City area and the El Cerrito del Norte BART station	30 min. peak, 120 min. off-peak	8,128
Local Bus Service Providing Access to Mare Island Main Entrance			
5/7	Serves Mare Island Way, Wilson Avenue, Florida Street, Springs Road, Ascot Parkway, and Redwood Parkway	30 min. M-F, 60 min. Sat.	5 - 15,533 7 - 13,923
Ferry Service			
I-80 Corridor	Vallejo to San Francisco	Five daily round trips	Annual FY 92/93 221,222

Source: Vallejo Transit 1994.
Note: Hours of operation are as early as 5:30 AM and as late as about 8:30 PM (Vallejo Transit York/ Marin bus stop).

TABLE G-3
MARE ISLAND TRANSIT SYSTEM IMPROVEMENTS

Improvement Description
1. Construct multi-model transit center
2. Establish new local route between the island transit center and the York & Marin and Sereno transit centers
3. Establish new island shuttle route
4. Reconstruct Mare Island ferry landing
5. Establish ferry service between Vallejo and Mare Island with
6. Reduce on-island shuttle headway to 15 minutes
7. Provide additional capacity for off-island local transit routes

Source: Vallejo 1994c



R:\0118\8x11v.cdr - 2/26/97 - EH

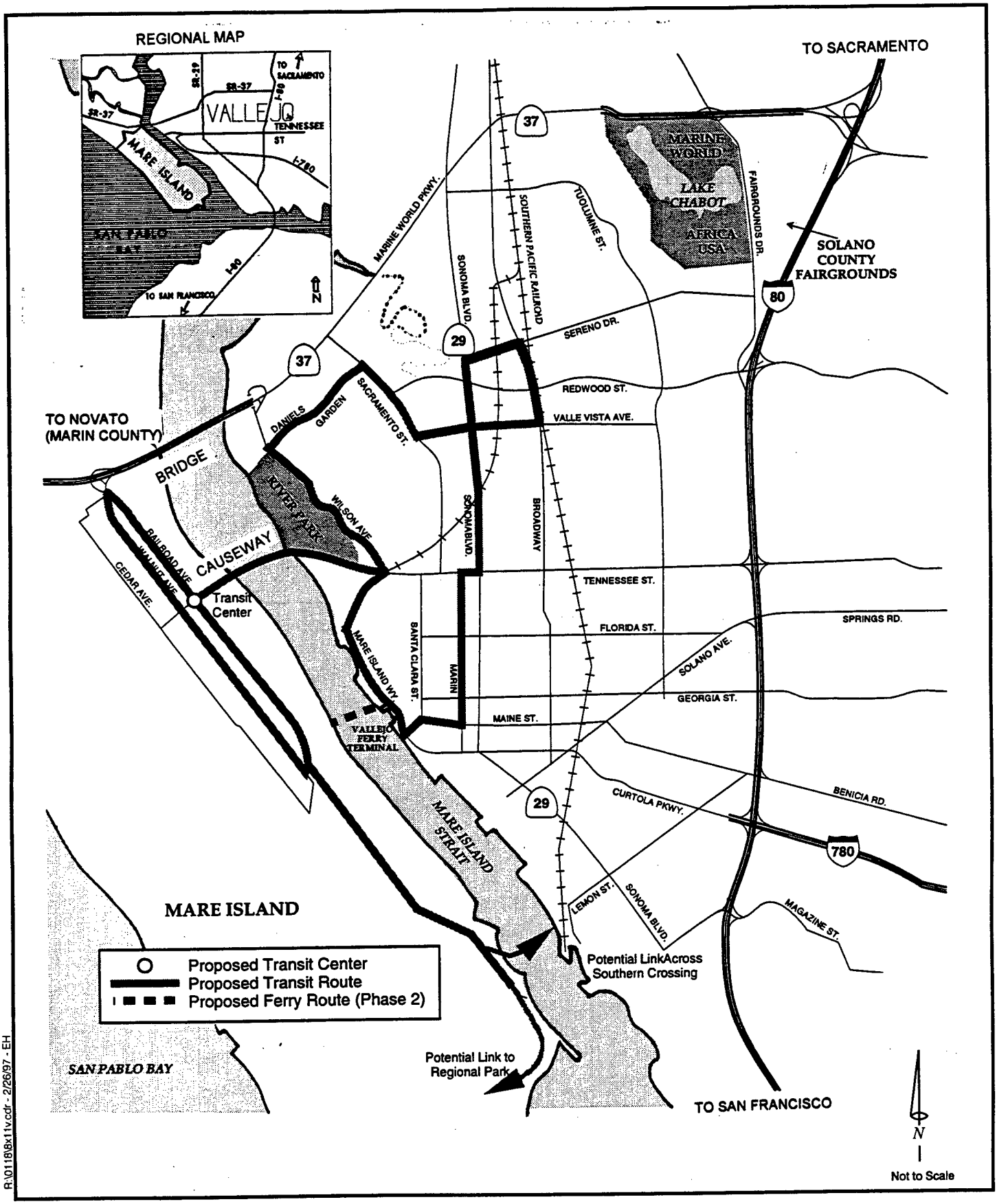
The City of Vallejo transit routes do not serve Mare Island.

City of Vallejo Transit Routes

Mare Island, California

Source: Vallejo, 1994c

Figure G-5



R:\01186x11v.cdr - 2/26/97 - EH

Reuse would result in provision of bus service and ferry transit to Mare Island.

Potential Bus and Ferry Routes

Mare Island, California

Figure G-6

Source: Vallejo, 1994c

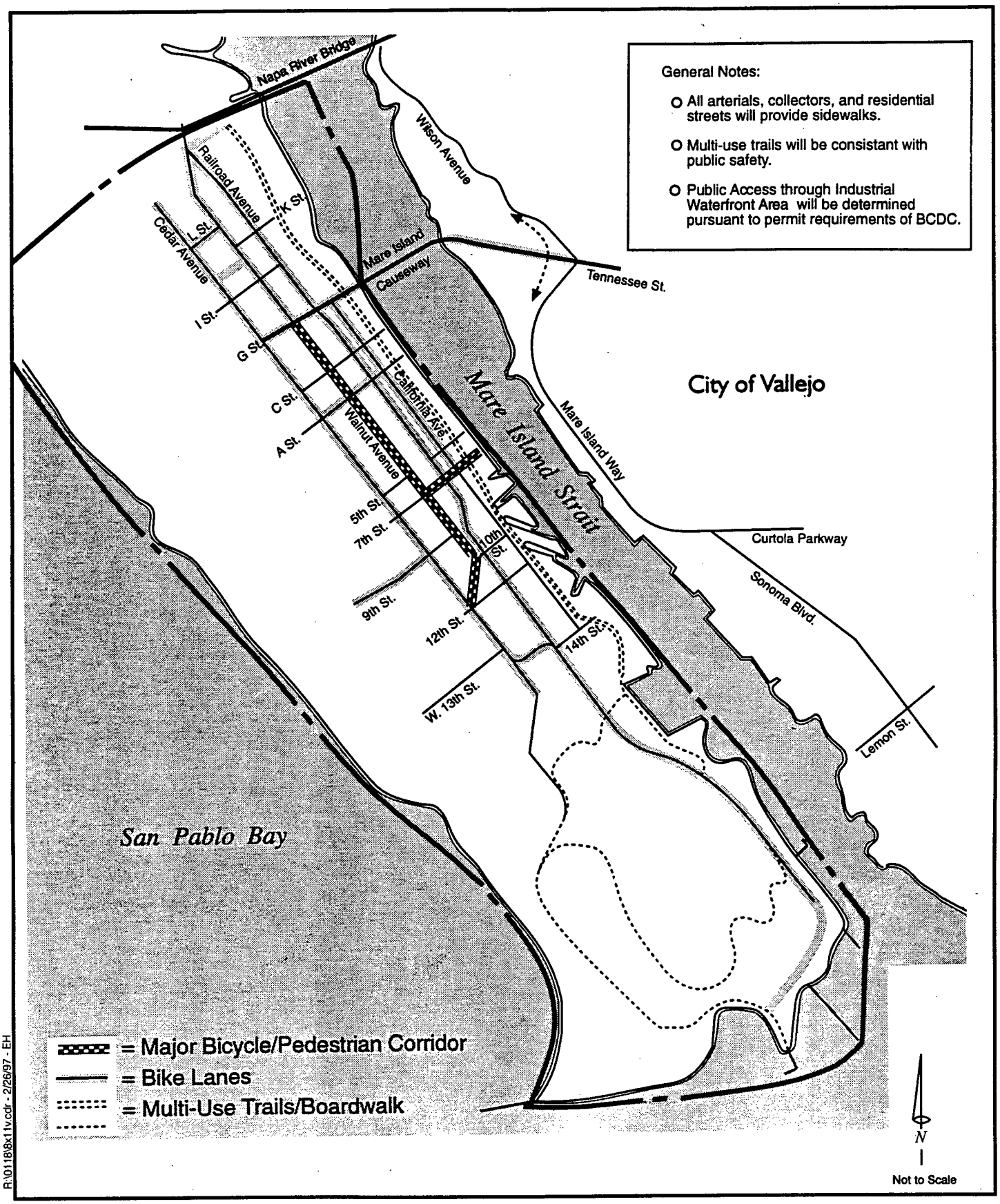
Bicycle and Pedestrian Trails

The Mare Island Final Reuse Plan identifies several improvements to the bicycle and pedestrian system on Mare Island that will occur as part of reuse. These improvements are identified in Table G-4 and illustrated on Figure G-7.

TABLE G-4
MARE ISLAND BICYCLE AND PEDESTRIAN IMPROVEMENTS

Area	Improvement Description
Regional Park	Construct trailheads, trails and safety improvements at the fishing pier
Waterfront	Conduct a feasibility study of a waterfront promenade
Mare Island Causeway	Upgrade bicycle and pedestrian access
Island-wide	Upgrade existing bicycle lanes and sidewalks
Waterfront	Implement recommendations of waterfront feasibility study
Regional Park	Continue construction of trail and path system
Island-wide	Complete upgrade of existing bicycle lanes and sidewalks
Island-wide	Construct new sidewalks/paths for pedestrian use as development occurs

Source: Vallejo 1994c, as amended by Crane Transportation Group



R:\01181\8x11v.cdr - 2/26/97 - EH

Reuse would result in improvements to the bicycle and pedestrian system on Mare Island.

Potential Bicycle and Pedestrian System

LEGEND:

Mare Island Naval Shipyard Property Boundaries

Mare Island, California

Source: Vallejo, 1994c

Figure G-7

LEVEL OF SERVICE DESCRIPTION

The following table defines the Level of Service descriptions used in Section 3.9 and 4.9 to evaluate the Mare Island street system.

TABLE G-5
LEVEL OF SERVICE DESCRIPTION

LOS	Description
A	Represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
B	Stable flow, but the presence of other users in the traffic stream begins to be noticeable.
C	Stable flow but marks the beginning of the range of flow in which operation of individual users becomes significantly affected by interactions with others in the traffic stream.
D	Represents high-density but stable flow.
E	Represent operating conditions at or near the capacity level.
F	Represents forced or breakdown flow.

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, 1985.

Note: Various methods are used to determine service levels for intersections depending on the type of traffic control device present and the amount of data that is available regarding traffic and geometric characteristics. The specific LOS criteria may also differ for each method. Nevertheless, the general descriptions of service levels presented in the table apply to the Mare Island streets.

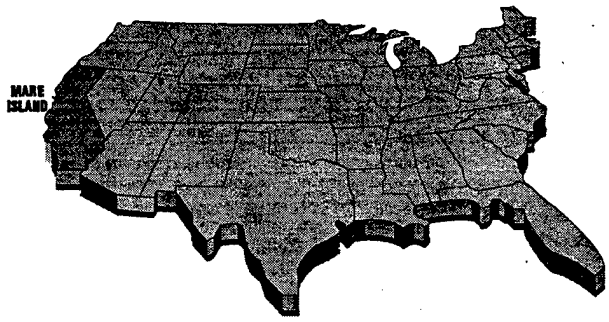
RESERVE CAPACITY

The reserve capacity shown on the Section 3.9 and 4.9 figures is a measure of the roadway volume remaining to accommodate additional traffic.

Typically, Caltrans uses 1900-2000 vehicles per hour per lane capacity for freeways. In the EIS/EIR, a capacity of 1950 vehicles per hour per lane was used for the I-80 freeway, resulting in a one-way (3 lane) capacity of 5,850 vehicles per hour (i.e., 5,850/3=1,950). This is the directional capacity shown, for example, for the I-80 freeway, and is generally acceptable for planning purposes for freeways.

As shown on Figure 4.9.1 in Section 4.9, for the baseline condition the PM peak hour northbound traffic volume is 5,785, leaving a reserve (remaining) capacity of 65 (i.e., 5,850-5,785=65).

Capacities are generally less for arterial streets, as shown in Figure 4.9.1, as well as the other similar (peak hour reserve capacity) figures provided in sections 3.9 and 4.9 of the EIS/EIR.



APPENDIX H

AIR QUALITY AND NOISE

APPENDIX H
AIR QUALITY AND NOISE

BACKGROUND INFORMATION ON NOISE

Introduction

Sound travels through the air as waves of minute air pressure fluctuations caused by some type of vibration. In general, sound waves travel away from the noise source as an expanding spherical surface. The energy contained in a sound wave is consequently spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the noise source.

Measurements and descriptions of sounds are usually based on various combinations of the following factors:

- Vibrational frequency characteristics of the sound, measured as sound wave cycles per second (Hertz); this determines the "pitch" of a sound.
- The total sound energy being radiated by a source, usually reported as a sound power level.
- Actual air pressure changes experienced at a particular location, usually measured as a sound pressure level; the frequency characteristics and sound pressure level combine to determine the "loudness" of a sound at a particular location.
- The duration of a sound.
- Changes in frequency characteristics or pressure levels through time.

Sound level meters measure the actual air pressure fluctuations caused by sound waves, with separate measurements made for different sound frequency ranges. These measurements are reported using a decibel (dB) scale. Decibel scales are a logarithmic index based on a ratio of the actual pressure fluctuations generated by sound waves compared to a standard reference pressure value.

Noise Description Methods

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to all frequencies, a large number of frequency weighting schemes have been used to develop composite decibel scales that approximate the way the human ear responds to noise levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. The A-weighted scale significantly reduces the measured pressure level for low frequency sounds while slightly increasing the measured pressure level for some high frequency sounds.

Other frequency weighting schemes are used for specialized purposes. The "C-weighted" decibel scale (dBC) is often used to characterize low frequency sounds capable of inducing vibrations in buildings or other structures. The C-weighted scale does not significantly reduce the measured pressure level for low frequency components of a sound. The B-weighted and D-weighted decibel scales are seldom used.

Unweighted decibel measurements are frequently used for refined analyses that require data on the frequency spectrum of a sound (e.g., sound absorption or sound transmission properties of materials). Unweighted decibel measurements are sometimes termed flat or linear measurements.

Varying noise levels are often described in terms of the equivalent constant decibel level. Equivalent noise levels (L_{eq}) are used to develop single-value descriptions of average noise exposure over various periods of time. Such average noise exposure ratings often include additional weighting factors for potential annoyance due to time of day or other considerations. The L_{eq} data used for these average noise exposure descriptors are generally based on A-weighted sound level measurements.

Statistical descriptions (L_x, where x represents the percent of the time when noise levels exceed the specified decibel level) are also used to characterize noise conditions over specified periods of time. L_1, L_5, and L_{10} descriptors are commonly used to characterize peak noise levels, while L_{90}, L_{95}, and L_{99} descriptors are commonly used to characterize "background" noise levels. The L_{50} value (the sound level exceeded 50 percent of the time) will seldom be the same as the L_{eq} value for the period being analyzed. The L_{eq} value is often close to the L_{30} value for the measurement period.

Average noise exposure over a 24-hour period is often presented as a day-night average sound level (L_{dn}). L_{dn} values are calculated from hourly L_{eq} values, with the L_{eq} values for the nighttime period (10 p.m. - 7 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime noises.

The community noise equivalent level (CNEL) is also used to characterize average noise levels over a 24-hour period, with weighting factors for evening and nighttime noise levels. L_{eq} values for the evening period (7 p.m. - 10 p.m.) are increased by 5 dB while L_{eq} values for the nighttime period (10 p.m. - 7 a.m.) are increased by 10 dB. The CNEL value will be slightly higher than (but generally within 1 dB of) the L_{dn} value for the same set of noise measurements. Only in situations with high evening period noise levels will CNEL values be significantly different from L_{dn} values.

Single-value average noise descriptors (such as L_{dn} or CNEL values) are most appropriately applied to variable but relatively continuous sources of noise. Typical urban noise conditions, highway traffic, and major commercial airports are examples where CNEL and L_{dn} descriptors are most appropriate.

Decibel Addition and Loudness Changes

The nature of decibel scales is such that individual dB ratings for different noise sources cannot be added directly to give the dB rating of the combination of these sources. Two noise sources producing equal dB ratings at a given location will produce a composite noise level 3 dB greater than either sound alone. When two noise sources differ by 10 dB, the composite noise level will be only 0.4 dB greater than the louder source alone. Most people have difficulty distinguishing the louder of two noise sources that differ by less than 1.5-2 dB. In general, a 10 dB increase in noise level is perceived as a doubling in loudness. A 2 dB increase represents a 15 percent increase in loudness.

Distance Attenuation

When distance is the only factor considered, sound levels from an isolated noise source will typically decrease by about 6 dB for every doubling of distance away from the noise source. When the noise source is essentially a continuous line (e.g., vehicle traffic on a highway), noise levels decrease by about 3 dB for every doubling of distance, due to the additive effects of a linear array of noise sources.

Sound levels at various locations away from a noise source are influenced by factors other than just distance from the noise source. Topographic features and structural barriers can absorb, reflect, or scatter sound waves, resulting in lower noise levels (increased sound attenuation rates). Atmospheric conditions (wind speed and direction, humidity levels, temperature, and air pressure) and the frequency characteristics of the sound itself also affect sound attenuation rates. The vertical variation in wind, temperature, pressure, and humidity conditions also affects sound attenuation rates.

The atmosphere absorbs some of the energy content of sound waves, thus increasing sound attenuation rates over long distances. Such atmospheric absorption is greatest for high frequency components of a sound, resulting in a lower pitch to the sound at greater distances. Atmospheric absorption is most strongly dependent on temperature and humidity conditions, with a somewhat complex relationship among temperature, humidity, and the frequency components of the sound.

Overall, atmospheric absorption is greatest for high frequency sounds under conditions of low relative humidities and moderately cool temperatures. Atmospheric absorption is least for low frequency sounds at high relative humidities and moderate temperatures.

Land Use Compatibility Criteria

Various federal, state, and local agencies have developed guidelines for evaluating land use compatibility under different noise level ranges.

Federal Agency Guidelines

The federal Noise Control Act of 1972 (Public Law 92-574) established a requirement that all federal agencies must administer their programs in a manner that promotes an environment free from noise that jeopardized public health or welfare. The U.S. Environmental Protection Agency was given the responsibility for: providing information to the public regarding identifiable effects of noise on public health or welfare, publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety, coordinating federal research and activities related to noise control, and establishing federal noise emission standards for selected products distributed in interstate commerce. The federal Noise Control Act also directed that all federal agencies comply with applicable federal, state, interstate, and local noise control regulations.

Although the Environmental Protection Agency was given major public information and federal agency coordination roles, each federal agency retains authority to adopt noise regulations pertaining to agency programs. The Occupational Safety and Health Administration retains primary authority for setting

workplace noise exposure standards. Due to aviation safety considerations, the Federal Aviation Administration retains primary jurisdiction over aircraft noise standards.

In response to the requirements of the federal Noise Control Act, the U.S. Environmental Protection Agency (1974) has identified indoor and outdoor noise limits to protect public health and welfare (hearing damage, sleep disturbance, and communication disruption). Outdoor L_{dn} values of 55 dB and indoor L_{dn} values of 45 dB are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and health care areas. Noise level criteria to protect against hearing damage in commercial and industrial areas are identified as 24-hour L_{eq} values of 70 dB (both outdoors and indoors).

The U.S. Federal Highway Administration has adopted criteria for evaluating noise impacts associated with federally funded highway projects and for determining whether these impacts are sufficient to justify federal funding of noise mitigation actions (47 FR 131:29653-29656). The Federal Highway Administration noise abatement criteria are based on peak hour L_{eq} noise levels. The peak 1-hour L_{eq} criteria for residential, educational, and health care facilities are 67 dB outdoors and 52 dB indoors. The peak 1-hour L_{eq} criterion for commercial and industrial areas is 72 dB (outdoors).

The relationship between peak hour L_{eq} values and associated L_{dn} values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hour L_{eq} value to an L_{dn} value. In urban areas with heavy traffic, the peak hour L_{eq} value is typically 2-4 dB lower than the daily L_{dn} value. In less heavily developed areas, the peak hour L_{eq} is often equal to the daily L_{dn} value. For rural areas with little nighttime traffic, the peak hour L_{eq} value will often be 3-4 dB greater than the daily L_{dn} value.

The U.S. Department of Housing and Urban Development has established guidelines for evaluating noise impacts on residential projects seeking financial support under various grant programs (44 FR 135:40860-40866). Sites are generally considered acceptable for residential use if they are exposed to outdoor L_{dn} values of 65 dB or less. Sites are considered "normally unacceptable" if they are exposed to outdoor L_{dn} values of 65-75 dB. Sites are considered unacceptable if they are exposed to outdoor L_{dn} values above 75 dB.

State Agency Guidelines

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes various outdoor L_{dn} and CNEL ranges into as many as four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use. For many land uses, the chart shows overlapping CNEL ranges for two or more compatibility categories.

The noise element guidelines chart identifies the normally acceptable CNEL range for low density residential uses as less than 60 dB, while the conditionally acceptable range is 55-70 dB. The normally acceptable range for high density residential uses is identified as CNEL values below 65 dB, while the conditionally acceptable range is identified as 60-70 dB. For educational and medical facilities, CNEL

values below 70 dB are considered normally acceptable, while values of 60-70 dB are considered conditionally acceptable. For office and commercial land uses, CNEL values below 70 dB are considered normally acceptable, while values of 67.5-77.5 are categorized as conditionally acceptable. These overlapping CNEL ranges are intended to indicate that local conditions (existing noise levels and community attitudes toward dominant noise sources) should be considered in evaluating land use compatibility at specific locations.

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single family structures (24 Cal. Admin. Code T25-28). These standards require that "interior community noise equivalent levels (CNEL) with windows closed, attributable to exterior sources, shall not exceed an annual CNEL of 45 dB in any habitable room."

IMPACT METHODOLOGY

Noise

Noise sources that can be reasonably quantified include construction equipment and highway traffic associated with alternative reuse plans. Construction equipment noise has been evaluated at a somewhat generalized level because the amount and location of construction activities will vary from year to year throughout the buildout period. Typical equipment noise levels have been used to estimate the potential for construction site noise impacts.

Noise from on-site vehicle traffic associated with alternative reuse plans has been estimated using the Federal Highway Administration traffic noise prediction model (Barry and Reagan 1978) and noise levels typical of California vehicles (Hendriks 1984). Major roadways on Mare Island were modeled, recognizing proposed roadway widenings and resulting traffic flow improvements. Modeled receptor locations were generally 50 feet from roadway centerlines, except at the complex intersection of Wilson Avenue and Tennessee Street (75 feet). Additional receptors 450 feet from Cedar Street were used to evaluate housing locations in Farragut Village and Coral Sea Village.

Traffic-related CNEL estimates were generated by directly modeling the estimated 24-hour pattern of vehicle traffic. Daily traffic volumes for major roadways on Mare Island were estimated by extrapolating peak hour trip generation and peak hour traffic volumes, recognizing the extent of internal trips. The noise model automatically derived hourly traffic volumes by applying selected hourly distribution patterns for auto and truck traffic.

Traffic noise increases for off-site locations were evaluated by extrapolating the predicted change in peak hour traffic to an equivalent decibel change. A doubling of traffic volumes will generally increase noise levels by 3 dB, as long as roadway geometrics, vehicle speeds, and truck percentages remain the same.

Air Quality

Air quality impact assessments address a mix of physical impacts, regulatory requirements, and policy or program consistency issues. Quantitative analyses are used to assess physical impacts and some regulatory requirements.

Traffic-related emissions have been estimated by applying standard trip generation rates (Institute of Transportation Engineers 1991) to land use patterns associated with baseline conditions and the reuse plan alternatives. Gross daily trip generation was then adjusted to remove double-counting of trips internal to Mare Island and to adjust for trip reduction program effects. Trips associated with each land use category were split into appropriate trip purposes. Travel time distribution patterns were estimated for each trip purpose, allowing calculation of mean travel times and cumulative vehicle operating mode fractions.

The EMFAC7F vehicle emission rate program (California Air Resources Board 1991, 1992, 1993a, 1993b, 1993c) was used to estimate vehicle emission rates for each trip purpose at buildout year conditions. Separate vehicle type mixes were used for residential and nonresidential trips. An appropriate mix of emission rates at different travel speeds was applied to the mean travel time for each trip purpose to estimate total daily vehicle miles traveled (VMT) and daily vehicle emissions for the cumulative travel pattern. Ozone precursor emissions (reactive organic compounds and nitrogen oxides) were evaluated for summer temperature patterns. Carbon monoxide emissions were evaluated for both summer and winter temperature patterns. PM_{10} emissions from vehicle exhaust and tire wear do not have seasonal variation in the EMFAC7F model.

The potential for localized violations of state and federal carbon monoxide standards has been evaluated with the CALINE4 dispersion model (Benson 1989, Nokes and Benson 1985). Vehicle emission rates for afternoon peak hour traffic conditions were estimated using the EMFAC7F vehicle emission rate program. Modeling analyses assumed poor dispersion conditions and a persistence factor typical of carbon monoxide concentration patterns in Vallejo (see Table 3-20).

Modeling Assumptions

The following assumptions were made when modeling carbon monoxide emissions:

- Meteorological conditions assumed for the analysis included a 1 meter per second wind speed, class E vertical stability, sigma theta of 10 degrees, a 50 meter mixing height limit, and wind directions varied in 10 degree increments

- Modeled receptor locations were generally 50 feet from roadway centerlines, except at the complex intersection of Wilson Avenue and Tennessee Street (75 feet); additional receptors 450 feet from Cedar Street were used to evaluate housing locations in Faaragut Village and Coral Sea Village.

- Carbon monoxide concentrations presented in this table represent the maximum modeled 1-hour increment at each location plus a 1-hour background increment of 2-4 ppm, depending on

location. The background component accounts for parking facilities and roadways that were not directly modeled.

- Peak 8-hour concentrations were estimated from total 1-hour concentrations, assuming a 75% persistence factor.

Mare Island Naval Shipyard Stationary Source Emission Inventory

Table H-1 contains an inventory of stationary emission sources that were at Mare Island Naval Shipyard prior to closure. The table indicates which sources had BAAQMD permits and which were exempt from BAAQMD permits requirements. In addition, the table lists the dates when sources were shut down, the disposition of equipment permits, and the estimated emissions for the last active year of the equipment. As indicated by the "Allocation Status" column of the table, some permits were cancelled, some were transferred to other parties, and some were retained by the Navy. The permits for source #479 (booster pump engine for dredging system) and source #505 (D-4 portal crane) remain active and under Navy ownership. Emission reduction credits associated with some of the cancelled permits have been formally registered and banked with the BAAQMD. Island.

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
1	Boiler #1 Bldg 121	121	2414	11/94	1993	444762	therms	Permit Cancelled	2	1	1.3	0	1
2	Boiler #2 Bldg 121	121	2414	6/95	1991	464720	therms	Erc 11/96	3.1	1.7	46.2	0.74	49.3
3	Downdraft Table (Insulation Padding)	118	EXEMPT	2/95				Transfer	0	0	0	0	0
4	Downdraft Table (Insulation Padding)	118	EXEMPT	2/95				Transfer	0	0	0	0	0
5	Downdraft Table (Insulation Padding)	118	EXEMPT	2/95				Transfer	0	0	0	0	0
6	Band Saw for Pipe Insulation	118	EXEMPT	2/95				Transfer	0	0	0	0	0
7	Router for Pipe Insulation	118	EXEMPT	2/95				Transfer	0	0	0	0	0
8	Paint Spray Booth, Potic Floor (Bldg. 680)	680	84	4/95				Transfer	0	0	0	0	0
9	Abrasive Blast Room #1	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
10	Abrasive Blast Room #2	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
17	Spray Painting, Dry Dock No. 1	DD1	84	10/94	1991	2065	gal. paint/solv	Erc 12/96	0	5.7	0	0	0
18	Spray Painting, Dry Dock No. 2	DD2	84	2/94	1990	1200	gal. paint/solv	Erc 12/96	0	5.5	0	0	0
19	Spray Painting, Dry Dock No. 3	DD3	84	2/94	1990	2225	gal. paint/solv	Erc 12/96	0	8.8	0	0	0
20	Spray Painting, Dry Dock No. 4	DD4	84	7/93	1992	6774	gal. paint/solv	Erc 12/96	0	27.6	0	0	0
22	Degreaser (RDB)	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
25	Curing Oven, Electric (CTP)	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
26	Curing Oven, Electric	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
31	Curing oven, Electric (NLT)	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
33	Paint Spray Booth, Dry Type (JXM) (Stencil	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
34	BATCH OVEN, ELECTRIC (JVD)	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
35	Cold Clearner, Bldg. 750	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
36	Open Air Spray Painting Area 900	900	84	11/94				Permit Cancelled	0	0	0	0	0
41	Sawdust Evacuation System, Packing and Cra	98	EXEMPT	11/94				Transfer	0	0	0	0	0
43	Paint Spray Booth, Building Maintenance	475	84	10/93	1991	252	gal. paint/solv	Erc 12/96	0	1.5	0	0	0
45	Drying and Curing Oven (GYN), Steam and El	866	84	10/95				Transfer	0	0	0	0	0
46	Drying and Curing Oven, Steam and Gas Heat	866	84	10/95				Transfer	0	0	0	0	0
49	Solvent Storage Room	866	EXEMPT	10/95				Transfer	0	0	0	0	0
50	Coating Spray Booth with Water Wash (HWZ)	866	84	10/95				Transfer	0	0	0	0	0
51	Coating Spray Booth with Water Wash (JAN)	866	84	10/95				Transfer	0	0	0	0	0
54	Curing Oven (AFL)	866	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
55	Cold Cleaner, Bldg 866-2	866	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
56	Coating Spraybooth	866	84	8/95	1992	156	gal. paint/solv	Eq Rmvd, Cancel After Transfer	0	1	0	0	0
57	Coating Spray Booth (JYA)	866	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
58	Coating Oven (ESJ)	866	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
59	Abrasive Blast Cabinet (WGJ), Small	866	EXEMPT	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
60	Abrasive Blast Cabinet (KSQ)	866	EXEMPT	10/95				Transfer	0	0	0	0	0
61	Glove Box, Urethane Heating, Filtered	866	EXEMPT	10/95				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_x	SO_2	CO
62	Glove Box, urethane Mixing, Filtered	866	EXEMPT	10/95				Transfer	0	0	0	0	0
63	Two Vacuum Vats, Urethane	866	EXEMPT	10/95				Transfer	0	0	0	0	0
64	Epoxy Mixing Area, Exhausted	866	EXEMPT	10/95				Transfer	0	0	0	0	0
65	Coating Spray Booth with Water Wash	866	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
66	Coating Oven (HLE)	866	84	10/95				Eq Rmvd, Cancel	0	0	0	0	0
67	Abrasive Blast Cabinet (HLT)	900	EXEMPT	11/94				Transfer	0	0	0	0	0
68	Abrasive Blast Cabinet (HLS)	900	EXEMPT	11/94				Transfer	0	0	0	0	0
69	Abrasive Blast Cabinet (HJLQ)	900	EXEMPT	11/94				Transfer	0	0	0	0	0
70	Abrasive Blast Cabinet with Abrasive Colle	900	EXEMPT	11/94				Transfer	0	0	0	0	0
71	Abrasive Blasting Tumbling Blast Machine	900	EXEMPT	11/94				Transfer	0	0	0	0	0
72	Abrasive Blast Cabinet, Airless (MFR)	900	EXEMPT	11/94				Transfer	0	0	0	0	0
73	Coating Spray Booth with Water Wash (FKB)	900	84	11/94				Permit Cancelled	0	0	0	0	0
74	Abrasive Blast Shelter	1286	EXEMPT	4/94				Transfer	0	0	0	0	0
75	Abrasive Blast Shelter	1286	EXEMPT	4/94				Transfer	0	0	0	0	0
77	Oven No. 1 for Rubber (LCV)	58	84	5/95				Eq Rmvd, Cancel	0	0	0	0	0
78	Glove Box for Abrasive Blasting, Recircula	58	EXEMPT	5/95				Transfer	0	0	0	0	0
80	Rubber Finish Machine (WXC)	58	EXEMPT	5/95				Transfer	0	0	0	0	0
81	Paint and Fiberglass Formulation Booth (KY	118	EXEMPT	2/95				Transfer	0	0	0	0	0
82	Fiberglass Layup and Paint Spray Booth (LN	118	92	10/94	1994	249	gal. paint/solv	Erc 12/96	0	0.63	0	0	0
83	Curing Oven (AFB) for Fiberglass	118	84	2/95				Transfer	0	0	0	0	0
84	Machine Shop-1	680	EXEMPT	4/95				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_x	SO_2	CO
85	Machine Shop-2	680	EXEMPT	4/95				Transfer	0	0	0	0	0
86	Machine Shop-3	680	EXEMPT	4/95				Transfer	0	0	0	0	0
87	Storage Tank No. 1 Sulfuric Acid SP Grav 1	463	EXEMPT	2/94				Transfer	0	0	0	0	0
88	MEK Mixing Area, Exhausted	866	84	10/94				Eq Rmvd, Cancel	0	0	0	0	0
89	Woodworking Shop (DHJ)	114	EXEMPT	6/95				Transfer	0	0	0	0	0
90	Woodworking Shop (DFE)	118	EXEMPT	2/95				Transfer	0	0	0	0	0
91	Woodworking Shop (DEV)	118	EXEMPT	2/95				Transfer	0	0	0	0	0
92	Woodworking Shop (DCER)	106	EXEMPT	12/94				Transfer	0	0	0	0	0
93	Woodworking Shop/Exhaust System	535	EXEMPT	11/95				Transfer	0	0	0	0	0
94	Asbestos Rip-Out Fac	120	92	1/95				Permit Cancelled	0	0	0	0	0
95	Down Draft Bench #1	120	92	1/95				Permit Cancelled	0	0	0	0	0
96	Down Draft Bench #2	120	92	1/95				Permit Cancelled	0	0	0	0	0
97	Lead Casting Pot	165	84	1/95				Permit Cancelled	0	0	0	0	0
98	Tinning Lead Pot	165	84	1/95				Permit Cancelled	0	0	0	0	0
99	Lead Casting Pot	165	84	1/95				Permit Cancelled	0	0	0	0	0
121	Paint Spray Booth - Sidedraft, Water W	750	84	8/96	1992	482	gal. paint/solv	Transfer (Jeffco)	0	4	0	0	0
122	Infrared Oven for Drying Paint	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
123	Paint Spray Booth- Sidedraft, Dry Filter	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
124	Paint Spray Booth - Sidedraft, Water W	750	84	3/95	1992	108	gal. paint/solv	Transfer (Jeffco)	0	1	0	0	0
125	Paint Drying RM 120 with Heat Recovery Uni	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
126	Paint Spray Booth - Downdraft, Water W	750	84	9/96	1992	165	gal. paint/solv	Transfer (Jeffco)	0	2	0	0	0
127	Paint Spray Booth - Downdraft, Water W	750	84	3/95	1992	160	gal. paint/solv	Transfer (Jeffco)	0	1	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
128	Paint Spray Booth - Downdraft, Water W	750	84	3/95	1992	160	gal. paint/solv	Transfer (Jeffco)	0	1	0	0	0
129	Paint Spray Booth - Downdraft, Dry Fil	750	84	3/95	1992	160	gal. paint/solv	Transfer (Jeffco)	0	1	0	0	0
130	Paint Spray Booth - Downdraft, Dry Fil	750	84	9/96	1992	182	gal. paint/solv	Transfer (Jeffco)	0	2	0	0	0
131	Paint Spray Booth - Downdraft, Water Wash	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
132	Paint Drying Room 124 (with Heat Recovery	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
133	Paint Spray Booth, Dry Filter	750	84	9/96	1992	122	gal. paint/solv	Transfer (Jeffco)	0	2	0	0	0
134	Paint Drying Room 206 (with Heat Recovery	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
135	Exhause for Silk Screen Table	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
138	Dry Honer	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
139	Exhaust for Plastisol Priming	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
140	Heating Plant, Hot Water	M-1	EXEMPT	4/96				Transfer	0	0	0	0	0
141	Qtrs 2,3,4,5, heating Plant, Hot Water	Qtr 2-5	EXEMPT	4/96				Transfer	0	0	0	0	0
142	Heating Plant, Hot Water	Qtr 29	EXEMPT	4/96				Transfer	0	0	0	0	0
143	Heating Plant, Hot Water	M-37	EXEMPT	8/98				Transfer	0	0	0	0	0
144	Heating Plant, Hot Water	M-37	EXEMPT	8/98				Transfer	0	0	0	0	0
145	Heating Plant, Stream	M-37	EXEMPT	8/98				Transfer	0	0	0	0	0
146	Bldg. 41, Heating Plant, Hot Water	41	EXEMPT	9/94				Transfer	0	0	0	0	0
147	Heating Plant, Hot Water	Qtr 133	EXEMPT	4/96				Transfer	0	0	0	0	0
149	Heating Plant, Hot Water	376	EXEMPT	4/96				Transfer	0	0	0	0	0
150	Heating Plant, Hot Water	485	EXEMPT	4/95				Transfer	0	0	0	0	0
151	Heating Plant, Hot Water	487	EXEMPT	8/95				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
152	Heating Plant, Steam, 1,004,000 BTU/HR Out	503	EXEMPT	2/95				Transfer	0	0	0	0	0
153	Heating Plant, Hot Water	505	EXEMPT	3/95				Transfer (Fish & Wildlife)	0	0	0	0	0
154	Heating Plant, Hot Water	505	EXEMPT	3/95				Transfer (Fish & Wildlife)	0	0	0	0	0
155	Heating Plant, Steam	513	EXEMPT	1/96				Transfer	0	0	0	0	0
156	Heating Plant, Hot Water	563	EXEMPT	2/95				Transfer	0	0	0	0	0
161	heating Plant, Hot Water	621	EXEMPT	2/94				Transfer	0	0	0	0	0
162	Heating Plant, Hot Water	627	EXEMPT	10/95				Transfer	0	0	0	0	0
163	Heating Plant, Steam, Natural Gas	627	EXEMPT	10/95				Transfer	0	0	0	0	0
165	Heating Plant, Hot Water	720	EXEMPT	4/96				Transfer	0	0	0	0	0
166	Heating Plant, Hot Water	726	EXEMPT	4/96				Transfer	0	0	0	0	0
167	Heating Plant, Hot Water	737	EXEMPT	4/95				Transfer	0	0	0	0	0
168	Heating Plant, Hot Water	739	EXEMPT	5/95				Transfer	0	0	0	0	0
169	Heating Plant, Hot Water	739	EXEMPT	5/95				Transfer	0	0	0	0	0
170	Heating Plant, Hot Water	755	EXEMPT	4/96				Transfer	0	0	0	0	0
171	Heating Plant, Hot Water	755	EXEMPT	4/96				Transfer	0	0	0	0	0
173	Bldg. 764, Heating Plant, Hot Water	764	EXEMPT	5/95				Transfer	0	0	0	0	0
176	Heating Plant, Hot Water	991	EXEMPT	6/95				Transfer	0	0	0	0	0
177	Heating Plant, Hot Water	1324	EXEMPT	10/95				Transfer (Forest Service)	0	0	0	0	0
178	heating Plant, Hot Water	Qtr F	EXEMPT	4/96				Transfer	0	0	0	0	0
179	Heating Plant, Hot Water	Qtr S	EXEMPT	4/96				Transfer	0	0	0	0	0
180	Garbage Cooker, Wet Garbage from Ships, LP	IWTP	84	6/95				Permit Cancelled	0	0	0	0	0
182	Heating Plant, Hot Water, Oil-Fired	A-25	EXEMPT	4/95				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_x	SO_2	CO
183	Heating Plant, Hot Water, Oil Fired	A-58	EXEMPT	3/95				Transfer	0	0	0	0	0
184	Heating Plant, HGT Water, Oil-Fired	A-191	EXEMPT	5/95				Transfer	0	0	1	0	0
185	Heating Plant, Hot Water, Oil-Fired	A-191	EXEMPT	5/95				Transfer	0	0	1	0	0
186	Bldg A-246, Heating Plant, Hot Water, Oil	A-246	EXEMPT	11/95				Transfer	0	0	0	0	0
187	Heating Plant, Steam Oil-Fired	A-266	84	6/95				Transfer (Nws Concord)	0	0	0	0	0
188	Heating Plant, Hot Water, Oil-Fired	658	EXEMPT	7/95				Transfer (Golf Course)	0	0	0	0	0
189	Heating Plant, Steam, Oil-Fired (Standby)	1322	84	4/95				Transfer	0	0	0	0	0
196	Diesel Fuel Storage Tank, Steel	473	EXEMPT	4/95				Transfer	0	0	0	0	0
197	Diesel Fuel Storage Tank, Steel	471	EXEMPT	4/95				Transfer	0	0	0	0	0
198	Diesel Fuel Storage Tank, Steel	473	EXEMPT	4/95				Transfer	0	0	0	0	0
199	Diesel Fuel Storage Tank, Steel	473	EXEMPT	4/95				Transfer	0	0	0	0	0
200	Diesel Fuel Storage Tank, Steel	473	EXEMPT	4/95				Transfer	0	0	0	0	0
201	Diesel Fuel Storage Tank, Steel	473	EXEMPT	4/95				Transfer	0	0	0	0	0
202	Diesel Fuel Storage Tank, Concrete	693	EXEMPT	4/95				Transfer	0	0	0	0	0
203	Diesel Fuel Storage Tank, Concrete	693	EXEMPT	4/95				Transfer	0	0	0	0	0
204	Diesel Fuel Storage Tank, Concrete	693	EXEMPT	4/95				Transfer	0	0	0	0	0
205	Diesel Fuel Storage Tank, Concrete	693	EXEMPT	4/95				Transfer	0	0	0	0	0
206	No. 2 Fuel Oil Storage Tank	772	EXEMPT	9/96	1994	142760	gal oil	Transfer	0	5	0	0	0
207	Three Hydraulic Oil Treatment (Cleaning) T	795	EXEMPT	5/95				Transfer	0	0	0	0	0
208	No. 2 Fuel Oil Storage Tank, Steel	829	EXEMPT	5/95				Transfer	0	0	0	0	0
211	Ten Lubricating Oil Tanks	845	EXEMPT	4/95				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
212	Downdraft Bench for Buffing of Metal Casti	386	EXEMPT	12/94				Transfer	0	0	0	0	0
213	Cleaning Tanks, Lye and Soap, Locomotive S	811	EXEMPT	3/95				Transfer	0	0	0	0	0
214	Electrostatic Precipitator Test Booth	866	EXEMPT	10/95				Transfer	0	0	0	0	0
215	Drying Oven (PEQ), Instruments	866	EXEMPT	10/95				Transfer	0	0	0	0	0
216	Cleaning Booth W/Water Wash	866	EXEMPT	10/95				Transfer	0	0	0	0	0
217	Table Mounted Mixing Cabinet	866	EXEMPT	10/95				Transfer	0	0	0	0	0
218	Abrasive Blast Cabinet, Recirculating, GLA	866	EXEMPT	10/95				Transfer	0	0	0	0	0
219	Downdraft Table, Hand Sanding	866	EXEMPT	10/95				Transfer	0	0	0	0	0
220	Brulin Formulation Booth	866	EXEMPT	10/95				Transfer	0	0	0	0	0
221	Brulin Cleaning Area	866	EXEMPT	10/95				Transfer	0	0	0	0	0
222	Drying Oven (CERS) Electronic Components	866	EXEMPT	10/95				Transfer	0	0	0	0	0
223	Deoxidizing Tank for Aluminum	1310	EXEMPT	12/94				Transfer	0	0	0	0	0
224	Alkaline Cleaning Tank	1310	EXEMPT	12/94				Transfer	0	0	0	0	0
225	Hot Water Tank	1310	EXEMPT	12/94				Transfer	0	0	0	0	0
226	Alodine Coating Tank	1310	EXEMPT	12/94				Transfer	0	0	0	0	0
227	Hot Water Rinse Tank	1310	EXEMPT	12/94				Transfer	0	0	0	0	0
241	Abrasive Blast Cabinet with Dust Collector	50	EXEMPT	5/95				Transfer	0	0	0	0	0
242	Grinding Wheels (EVM)	50	EXEMPT	5/95				Transfer	0	0	0	0	0
244	Calendar Roller For Rubber (CYV)	58	EXEMPT	5/95				Transfer	0	0	0	0	0
245	Roll Mill for Bubber (CYT)	58	EXEMPT	5/95				Transfer	0	0	0	0	0
247	Exhaust Canopy for Silver Brazing (ARW)	680	EXEMPT	5/95				Transfer	0	0	0	0	0
251	Electrolyte Mixing Area, Exhausted	463	EXEMPT	2/94				Transfer	0	0	0	0	0
252	Cleaning Room, Detergent	866	EXEMPT	10/95				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
263	Service Station G4798	231	38	2/95	1994	no update		Eq Rmvd, Cancel	0	3	0	0	0
267	Gasoline Nozzles	993	305	1/96	1994	no update		Permit Cancelled	0	0	0	0	0
268	Lead Casting Bonding Table No 2	165	84	4/95				Transfer	0	0	0	0	0
269	Lead Casting Bonding Table No 3	165	84	4/95				Permit Cancelled	0	0	0	0	0
271	Lead Casting Bonding Table No 5	165	84	4/95				Permit Cancelled	0	0	0	0	0
273	Lead Casting Hand Beveling Table	165	84	4/95				Permit Cancelled	0	0	0	0	0
274	Lead Caasting Band Saw	165	84	4/95				Permit Cancelled	0	0	0	0	0
275	Lead Casting Grinder	165	84	4/95				Permit Cancelled	0	0	0	0	0
276	Lead Casting Table No 1	165	84	4/95				Permit Cancelled	0	0	0	0	0
277	Lead Casting Table No 2	165	84	4/95				Permit Cancelled	0	0	0	0	0
278	Lead Casting Circular Saw	165	84	4/95				Permit Cancelled	0	0	0	0	0
280	Lead Casting Tinning Table	165	84	4/95				Permit Cancelled	0	0	0	0	0
400	Plastisol Coating Vats 7A & B	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
401	Plastisol Coating Vats 7C & D	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
402	Plastisol Coating Vats 7E, F, & G	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
403	Plastisol Coating Vat 8	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
404	Plastisol Coating Vats 11 & 12	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
405	Dry Honer	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
406	Dry Honer (BCH, GCG)	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
407	Teflon Cleaning Bench	750	92	3/95				Transfer (Jeffco)	0	0	0	0	0
408	Paint Spray Booth - Pumpless, Water Wash	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
409	Curing Oven, Electric	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
410	Photo Plate Tank Exhaust	700	EXEMPT	3/95				Transfer	0	0	0	0	0
411	Plastick Cuttings Exhaust	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
413	Plastisol Quenching Steam Tank	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
414	Peel Material Dip Tank	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
415	Teflon Rinse Tank	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_x	SO_2	CO
416	Teflon Quench Tank	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
417	Acid Wash Sink (Etching)	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
418	Film Developing Sink	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
419	Pipe & Boiler Shop; Clean Tank	126	84	4/96				Transfer	0	0	0	0	0
420	Pipe & Boiler Shop; Strip Tank	126	92	1/95				Transfer	0	0	0	0	0
421	Pipe & Boiler Shop; Chemical Cleaning Tank	126	EXEMPT	4/96				Transfer	0	0	0	0	0
422	Predry Oen Equip #PDO-1	1338	EXEMPT	4/96				Transfer (Xkt)	0	0	0	0	0
423	Paint Spray Booth - Downdraft, Waterwash	1338	84	4/96				Transfer (Xkt)	0	0	0	0	0
424	Paint Drying Oven #DO-2	1338	84	4/94				Transfer (Xkt)	0	0	0	0	0
425	Abrasive Blast Machine	1338	84	4/96				Transfer (Xkt)	0	0	0	0	0
426	Air Blast Room No #3	750	84	3/95				Transfer (Jeffco)	0	0	0	0	0
431	Paint Spray Booth - Water Wash	112	84	10/95				Transfer	0	0	0	0	0
432	Paint Spray Booth (JNR)	117	83	3/95				Transfer	0	0	0	0	0
435	Service Station G6464	680	38	4/95	1994	no update		Permit Cancelled	0	1	0	0	0
438	Vapor Degreaser	225	84	4/96				Permit Cancelled	0	0	0	0	0
442	Na2Cr04 Conversion Tank, (5K)	225	EXEMPT	4/96				Transfer	0	0	0	0	0
443	Cold Cleaner	225	92	2/94				Permit Cancelled	0	0	0	0	0
444	Vapor Degreaser	225	84	4/96				Permit Cancelled	0	0	0	0	0
445	Cold Cleaner	225	92	4/96				Permit Cancelled	0	0	0	0	0
446	Various Cadmium Plating Tanks	225	EXEMPT	4/96				Transfer	0	0	0	0	0
447	Various Silver Plating Tanks	225	EXEMPT	2/94				Transfer	0	0	0	0	0
448	Various Chem Cleaning Tanks	225	EXEMPT	4/96				Transfer	0	0	0	0	0
449	Miscellanous Metal Plating Tanks	225	EXEMPT	4/96				Transfer	0	0	0	0	0
450	Vapor Degreaser	225	84	4/96				Permit Cancelled	0	0	0	0	0
451	Electric Oven	680	84	4/95				Transfer	0	0	0	0	0
452	Steel Grit Blaster (TEH) 221-059997	117	84	2/95				Transfer	0	0	0	0	0
453	Insulating and Varnishing Dip Tank	866	84	4/96				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_x	SO_2	CO
454	Insulating and Varnish Dip Tank	866	84	4/96				Transfer	0	0	0	0	0
455	Electric Drying Oven (ELB)	866	84	10/95				Transfer	0	0	0	0	0
456	Vapor Degreaser	866	84	4/96				Transfer	0	0	0	0	0
457	Parts Blaster w/Dust Collector	750	EXEMPT	3/95				Transfer (Jeffco)	0	0	0	0	0
459	Paint Sptray Booth	680	84	4/96				Transfer	0	0	0	0	0
460	Electric Paint Drying Oven	680	84	4/95				Transfer	0	0	0	0	0
461	Paint Spray Booth	A-266	84	4/95				Transfer (Nws Concord)	0	0	0	0	0
462	Paint Spray Booth	A-266	84	4/95				Transfer (Nws Concord)	0	0	0	0	0
463	Insulating Varnish Dip Tank-Tank #3	866	84	4/96				Permit Cancelled	0	0	0	0	0
464	Burnout Oven, QEU	866	84	10/95				Transfer	0	0	0	0	0
465	Paint Spray Booth	680	84	4/96				Transfer	0	0	0	0	0
466	Curing Oven	680	84	4/95				Transfer	0	0	0	0	0
467	Burnout Oven with Afterburner	680	84	4/96				Transfer	0	0	0	0	0
468	Wipe Cleaning Operation	680	92	4/96				Transfer	0	0	0	0	0
470	Dry Filter Paint Spray Booth	678	EXEMPT	3/95				Transfer	0	0	0	0	0
474	A-E Ship Maintenance Painting	Pier 19	84	2/94				Permit Cancelled	0	0	0	0	0
475	Tug Boat Maintenance	Berth 4	84	7/95				Permit Cancelled	0	0	0	0	0
476	Dredge Maintenance Painting	UNK	84	4/94				Permit Cancelled	0	0	0	0	0
477	Painting of Patrol Boats, River (PBR)	Berth 18	84	3/94				Permit Cancelled	0	0	0	0	0
478	Beryllium Machining (2% BA)	680	EXEMPT	4/95				Transfer	0	0	0	0	0
479	Booster Pump Engine for Dredging System	piers	84	2/97	1994	3063	therms		0	1	3	0	0
482	Fabric Joining - Adhesive	112.2	84	10/95				Permit Cancelled	0	0	0	0	0
483	Fabric Joining - Adhesive	112.2	84	10/95				Permit Cancelled	0	0	0	0	0
484	Primary Sedimentation Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
485	Blending Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
486	Chrome Reduction Mix Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
487	Chrome Reduction Reaction Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
488	Neutralization Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
489	Flocculation Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
490	Final Sedimentation Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
491	Sludge Cone Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
492	Sludge Press	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
493	Sludge Storage Bin	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
494	Surge Tank	IWTP	84	4/96				Permit Cancelled	0	0	0	0	0
495	Freon 113 Recycling Unit	112	84	10/95				Permit Cancelled	0	0	0	0	0
496	Contaminated Freon Tank D-1	112	84	4/96				Permit Cancelled	0	0	0	0	0
497	Recycled Freon Tank C-1 300 Galons	112	84	4/96				Permit Cancelled	0	0	0	0	0
498	Oil Water Separator	477	84	10/95				Transfer	0	0	0	0	0
500	Boiler	886	EXEMPT	9/95				Transfer	0	0	0	0	0
501	B-1 Portal Crane	Shop 0-2	96	9/93	1993		gal diesel	Transfer	1	1	18	3	4
502	B-2 Portal Crane	UNK	96	1/92	1992	no update		Transfer	0	0	4	0	0
503	D-2 Portal Crane	UNK	96	3/94				Cancel	0	0	0	0	0
504	D-3 Portal Crane	Shop 0-2	96	4/96	1993	20300	gal diesel	Transfer	2	2	26	4	6
505	D-4 Portal Crane	Shop 0-2	96	7/96	1994	22500	gal diesel		2	2	29	4	6
506	D-5 Portal Crane	UNK	96	6/89	1992	no update		> 18; Cancel	1	1	13	0	3
507	D-6 Portal Crane	UNK	96	6/89	1992	no update		Transfer	1	1	13	0	3
508	D-7 Portal Crane	Shop 0-2	96	5/97	1994	40200	gal diesel	Transfer (Pegasus)	4	4	52	8	11
509	D-8 Portal Crane	UNK	84	7/96	1992	65700	gl diesel/yr	Transfer (Pegasus)	6	7	84	12	18
510	P-3 Portal Crane	UNK	96	6/93	1993	7300	gal diesel	Transfer (Alco)	1	1	9	1	2
511	P-4 Portal Crane	UNK	96	7/94	1992	no update		Transfer (Alco)	0	0	4	0	1

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
512	Foam Spray Booth	124	92	10/94	1992	1140	gal resin/solv	Erc 12/96	0	1.6	0	0	0
513	Floating Crane YD-172	UNK	96	7/93				Transfer (Pegasus)	0	0	0	0	0
514	Engine #1 Floating Crane YD-228*	Berth 8	96	7/96	1992	72000	gal diesel	Erc 11/96	0.83	0.96	11.8	0.94	2.5
515	Engine #2 Floating Crane YD-228*	Berth 8	96	7/96	1992	74000	gal diesel	Erc 11/96	0.84	0.98	12	0.96	2.6
516	Engine #3 Floating Crane YD-228*	Berth 8	EXEMPT	1/95				Transfer	0	0	0	0	0
517	Engine #4 Floating Crane YD-228*	Berth 8	EXEMPT	1/95				Transfer	0	0	0	0	0
518	Locomotive Crane LOCO-68	Plate Rack	96	7/93				Transfer (Xkt)	0	0	0	0	0
519	Locomotive Crane LOCO #74/71	Dump Road	96	8/89				Transfer	0	0	0	0	0
520	Boiler	543.1	84	6/94				Transfer	0	0	0	0	0
521	Boiler	543.2	84	6/94				Transfer	0	0	0	0	0
522	Boiler	621.1	EXEMPT	4/96				Transfer	0	0	0	0	0
523	Boiler	621.2	EXEMPT	2/94				Transfer	0	0	0	0	0
524	Boiler	621.3	EXEMPT	2/94				Transfer	0	0	0	0	0
525	Boiler	999.1	EXEMPT	4/96				Transfer	0	0	0	0	0
526	Boiler	999.2	EXEMPT	6/95				Transfer	0	0	0	0	0
527	Boiler	1003	EXEMPT	7/95				Transfer	0	0	0	0	0
528	Solvent Reclaimer #1	750.c	EXEMPT	3/94				Transfer (Jeffco)	0	0	0	0	0
529	Solvent Reclaimer #2	750.c	EXEMPT	3/94				Transfer (Jeffco)	0	0	0	0	0
530	Forge Furnace	386	EXEMPT	4/96				Transfer	0	0	0	0	0
531	Annealing Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
532	Heat Treating Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
533	Forge Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
534	Forge Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
535	Forge Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
536	Forge Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
537	Annealing Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
538	Forge Furnace	386	EXEMPT	1/96				Transfer	0	0	0	0	0
539	Heat Treat Furnace, CAr Type	386	EXEMPT	1/96				Transfer	0	0	0	0	0
540	Heat Treat Furnace, Billet, #1	386	EXEMPT	1/96				Transfer	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_x	SO_2	CO
541	Heat Treat Billet Furnace #2	386	EXEMPT	1/96				Transfer	0	0	0	0	0
542	Forging Furnace #6	386	EXEMPT	1/96				Transfer	0	0	0	0	0
543	Abrasive Blast Facility	A-71	84	4/95				Transfer (Nws Concord)	0	0	0	0	0
544	Welding Exhaust #6	390	EXEMPT	12/94				Transfer	0	0	0	0	0
545	Welding Exhaust #5	390	EXEMPT	12/94				Transfer	0	0	0	0	0
546	Welding Exhaust	390	EXEMPT	12/94				Transfer	0	0	0	0	0
547	Welding Exhaust #4	390	EXEMPT	12/94				Transfer	0	0	0	0	0
548	Welding Exhaust #2	390	EXEMPT	12/94				Transfer	0	0	0	0	0
549	Welding Exhaust #3	390	EXEMPT	12/94				Transfer	0	0	0	0	0
550	Working Shop Planer2-Saws Joiner Molder2-F	515	EXEMPT	5/95				Transfer	0	0	0	0	0
551	Welding Exhaust Numerous Booths	686	EXEMPT	12/94				Transfer	0	0	0	0	0
552	Laminator	750.2	84	4/96				Transfer (Jeffco)	0	0	0	0	0
553	Electric Oven	750.2	84	1/95				Transfer (Jeffco)	0	0	0	0	0
554	Coating Dip Tank	866.1	84	10/95				Transfer	0	0	0	0	0
555	Coating Dip Tank	866.1	84	10/95				Transfer	0	0	0	0	0
556	Copper & Nickel Plating Area	866.1	84	10/95				Transfer	0	0	0	0	0
557	Cold Cleaner	114	EXEMPT	10/95				Transfer	0	0	0	0	0
558	Cold Cleaner	117.1	84	3/95				Permit Cancelled	0	0	0	0	0
559	Cold Cleaner	117.1	EXEMPT	3/95				Transfer	0	0	0	0	0
560	Cold Cleaner	121.1	EXEMPT	3/94				Transfer	0	0	0	0	0
561	Cold Cleaner	126	EXEMPT	1/95				Transfer	0	0	0	0	0
562	Cold Cleaner	126	EXEMPT	1/95				Transfer	0	0	0	0	0
563	Cold Cleaner	126	EXEMPT	1/95				Transfer	0	0	0	0	0
564	Cold Cleaner	134	84	12/94				Permit Cancelled	0	0	0	0	0
565	Cold Cleaner	386	EXEMPT	11/94				Transfer	0	0	0	0	0
566	Cold Cleaner	390	84	12/94				Permit Cancelled	0	0	0	0	0
567	Cold Cleaner	516	EXEMPT	10/95				Transfer	0	0	0	0	0
568	Cold Cleaner	535	84	12/95				Permit Cancelled	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
569	Cold Cleaner	670	EXEMPT	9/94				Transfer	0	0	0	0	0
570	Cold Cleaner	674A	EXEMPT	4/94				Transfer	0	0	0	0	0
571	Cold Cleaner	676.1	EXEMPT	4/96				Transfer	0	0	0	0	0
572	Cold Cleaner	678.1	EXEMPT	5/95				Transfer	0	0	0	0	0
573	Cold Cleaner	678.1	84	4/96				Permit Cancelled	0	0	0	0	0
574	Cold Cleaner	678.1	84	4/96				Permit Cancelled	0	0	0	0	0
575	Cold Cleaner	678	84	4/96				Permit Cancelled	0	0	0	0	0
576	Cold Cleaner	678	84	4/96				Permit Cancelled	0	0	0	0	0
577	Cold Cleaner	678	84	4/96				Permit Cancelled	0	0	0	0	0
578	Cold Cleaner	678	84	4/96				Permit Cancelled	0	0	0	0	0
579	Cold Cleaner	678	84	4/96				Permit Cancelled	0	0	0	0	0
580	Cold Cleaner	678	EXEMPT	4/96				Transfer	0	0	0	0	0
581	Cold Cleaner	678	EXEMPT	4/96				Transfer	0	0	0	0	0
582	Cold Cleaner	678	EXEMPT	4/96				Transfer	0	0	0	0	0
583	Cold Cleaner	678	EXEMPT	4/96				Transfer	0	0	0	0	0
584	Cold Cleaner	680	EXEMPT	3/95				Transfer	0	0	0	0	0
585	Cold Cleaner	680	EXEMPT	3/95				Transfer	0	0	0	0	0
586	Cold Cleaner	680	84	3/95				Permit Cancelled	0	0	0	0	0
587	Cold Cleaner	680	84	3/95				Permit Cancelled	0	0	0	0	0
588	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
589	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
590	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
591	Cold Cleaner	680	84	3/95				Permit Cancelled	0	0	0	0	0
592	Cold Cleaner	680	84	3/95				Permit Cancelled	0	0	0	0	0
593	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
594	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
595	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
596	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
597	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
598	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

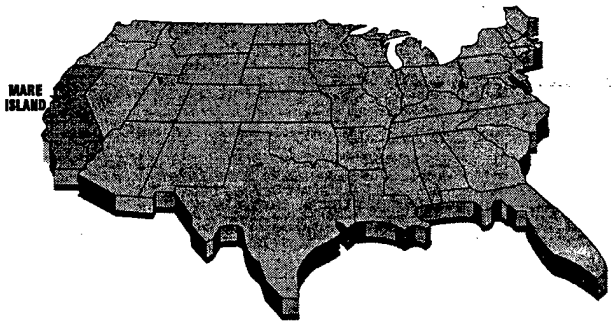
Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
599	Cold Cleaner	680	84	3/95				Permit Cancelled	0	0	0	0	0
600	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
601	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
602	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
603	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
604	Cold Cleaner	680	EXEMPT	3/95				Transfer	0	1	0	0	0
605	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
606	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
607	Cold Cleaner	680.1	84	3/95				Permit Cancelled	0	0	0	0	0
608	Cold Cleaner	722	EXEMPT	10/95				Transfer	0	0	0	0	0
609	Cold Cleaner	746.1	EXEMPT	3/94				Transfer	0	0	0	0	0
610	Cold Cleaner	866.5	EXEMPT	10/95				Transfer	0	0	0	0	0
611	Cold Cleaner	676.3	EXEMPT	5/95				Transfer	0	0	0	0	0
612	Cold Cleaner	866.1	EXEMPT	4/96				Transfer	0	0	0	0	0
613	Cold Cleaner	866.4	EXEMPT	10/95				Transfer	0	0	0	0	0
614	Cold Cleaner	866.4	EXEMPT	10/95				Transfer	0	0	0	0	0
615	Cold Cleaner	866.1	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
616	Cold Cleaner	866.1	EXEMPT	10/95				Transfer	0	0	0	0	0
617	Cold Cleaner	866.1	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
618	Cold Cleaner	866.3	84	10/95				Eq Rmvd, Cancel After Transfer	0	0	0	0	0
619	Cold Cleaner	866.1	EXEMPT	10/95				Transfer	0	0	0	0	0
620	Cold Cleaner	866.1	EXEMPT	10/95				Transfer	0	0	0	0	0
621	Cold Cleaner	866.1	EXEMPT	10/95				Transfer	0	0	0	0	0
622	Cold Cleaner	866.1	EXEMPT	10/95				Transfer	0	0	0	0	0
623	Cold Cleaner	993	EXEMPT	10/95				Transfer	0	0	0	0	0
624	Cold Cleaner	A-266	84	4/95				Transfer (Nws Concord)	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
625	Cold Cleaner	A-266	84	4/95				Transfer (Nws Concord)	0	0	0	0	0
626	Cold Cleaner	A-266	84	4/95				Transfer (Nws Concord)	0	0	0	0	0
627	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
628	Cold Cleaner	680	84	4/95	1994	80	gal solv	Permit Cancelled	0	1	0	0	0
631	100-Long Ton Portal Crane P-9	Dry docks	96	6/96	1992	no update		Transfer (Xkt)	2	2	22	1	5
632	135 Long Ton Portal Crane D-9	Dry docks	96	5/95	1992	no update		Erc 12/96	2.2	0.95	31.6	2.5	6.8
636	Magna-One AC Generator	DD3	EXEMPT	4/96	1992	no update		Permit Cancelled	1	1	18	1	4
637	Roll Mill Mixing for Rubber (SGM)	58	EXEMPT	2/95				Transfer	0	0	0	0	0
638	Cold Cleaner	A-266	EXEMPT	4/95				Permit Cancelled	0	0	0	0	0
640	Vacuum Pump/Holding Tank (Wheeler) -Berth	Berth 4	EXEMPT	10/95	1994	no update		Transfer	0	5	0	0	0
641	Vacuum Pump/Holding Tank (Wheeler) -Berth	Berth 4	EXEMPT	10/95	1994	no update		Permit Cancelled	0	5	0	0	0
642	Storage Holding Tank Oil and Water	Berth 4	EXEMPT	10/94				Transfer	0	0	0	0	0
643	Baker Storage Tank (oil only) - Berth 4	Berth 4	EXEMPT	10/95	1994	no update		Transfer	0	7	0	0	0
652	Aerosol Can Puncturing Device	Berth 4	45	10/94				Permit Cancelled	0	0	0	0	0
653	Aerosol Can Puncturing Device	Berth 4	45	10/94				Permit Cancelled	0	0	0	0	0
654	Aerosol Can Puncturing Device	Berth 4	45	10/94				Permit Cancelled	0	0	0	0	0
655	Cold Cleaner	B/571	EXEMPT	10/94				Transfer	0	0	0	0	0
656	Cold Solvent Cleaner	B/751	EXEMPT	10/95				Transfer	0	0	0	0	0
666	Abrasive Blast Facility	A-71	230	4/95				Transfer (Nws Concord)	0	0	0	0	0

TABLE H-1. MARE ISLAND NAVAL SHIPYARD STATIONARY EMISSION SOURCES

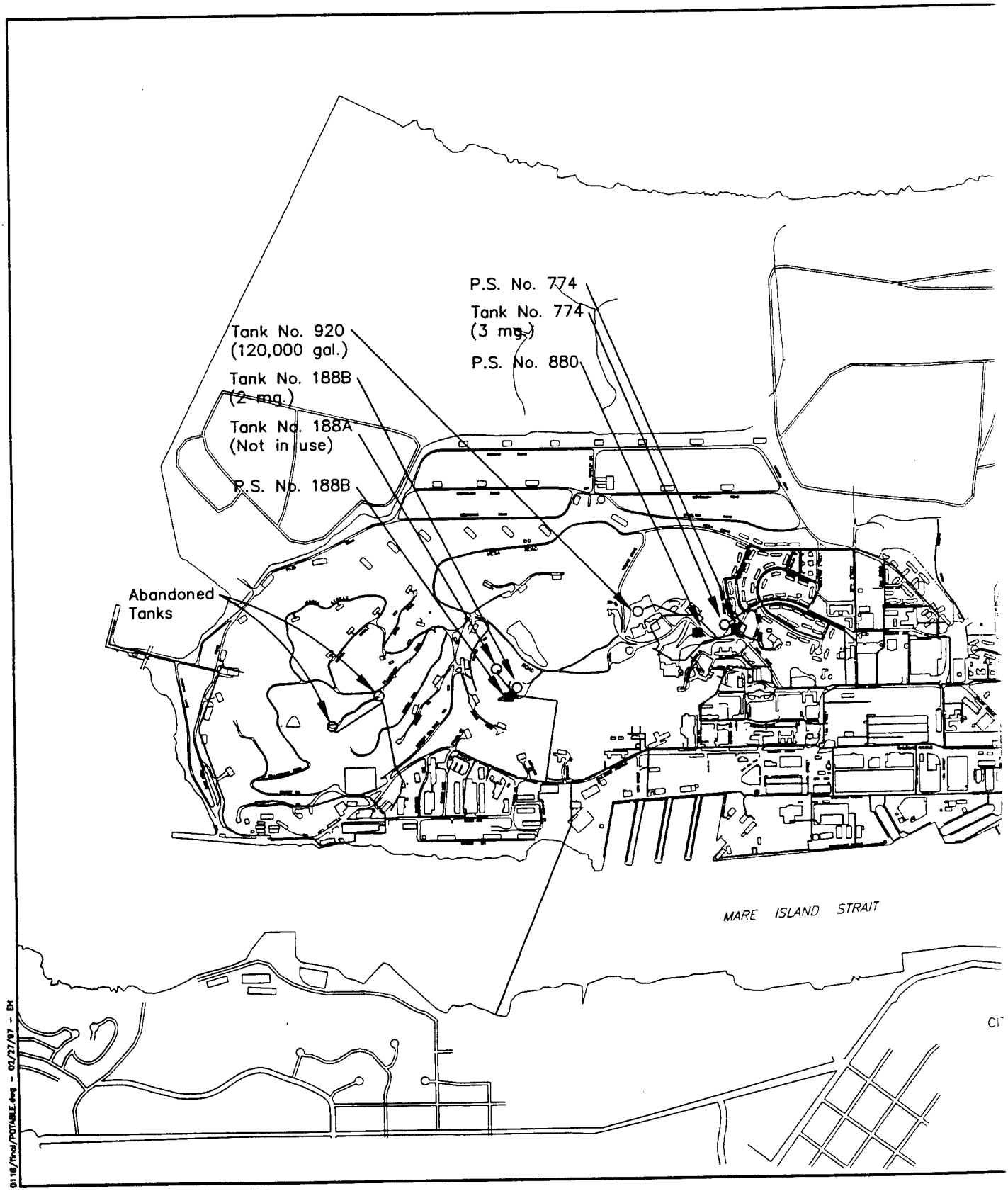
Source Number	Source Description	Bldg No	Fee ($)	Shutdown Date	High Year	Usage	Units	Allocation Status	PART	ROG	NO_X	SO_2	CO
667	Boiler	121	343	4/96	N/A	Not to exceed 2,600,000	therms	Transfer (Nas Alameda)	0	0	11.5	0	14
1701	Abrasive Blasting, Dry Dock No. 1	DD1	84	6/92	1992	no update		Transfer	110	0	0	0	0
1801	Abrasive Blasting, Dry Dock No. 2	DD2	84	1/94	1992	no update		>18, No Records; TRANSFER	110	0	0	0	0
1901	Abrasive Blasting, Dry Dock No. 3	DD3	84	10/94	1992	no update		No Records; TRANSFER	27	0	0	0	0
2001	Abrasive Blasting, Dry Dock No. 4	DD4	84	9/94	1992	no update		No Records; TRANSFER	27	0	0	0	0
3601	Open Air Abrasive Blasting, 900 Area	900	84	9/93	1992	no update		Transfer	55	0	0	0	0
3603	Baking Oven SER# CB 89175	866	84	12/94				Transfer	0	0	0	0	0



APPENDIX I

UTILITIES

APPENDIX I
UTILITIES



The potable water system consists of a series of distribution piping, water tanks, and pump stations.

LEGEND:

——— Pipe

○ Tank

■ Pump Station (P.S.)

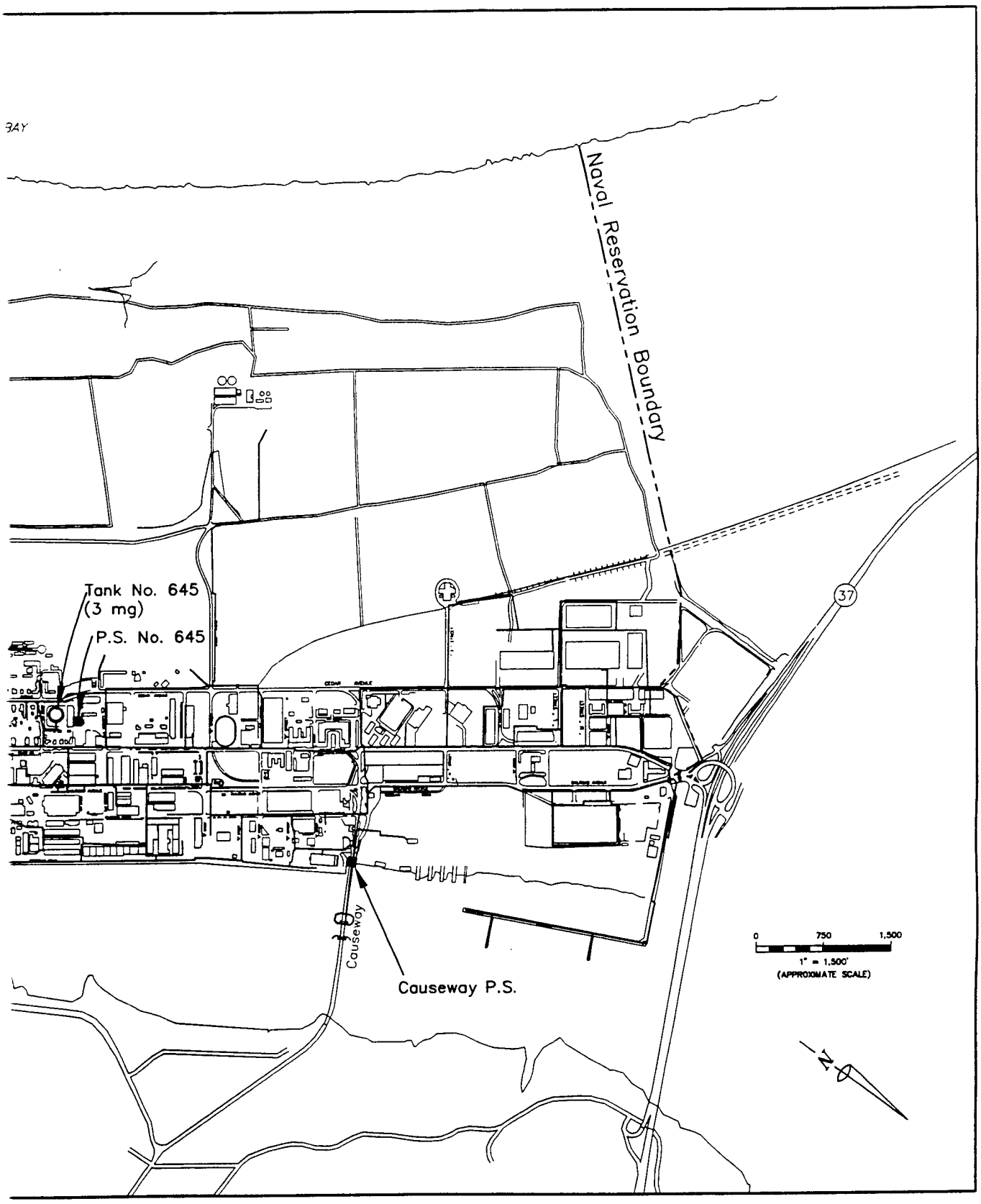
Source: Vallejo, 1994c

LEGEND:

——— Pipe

○ Tank

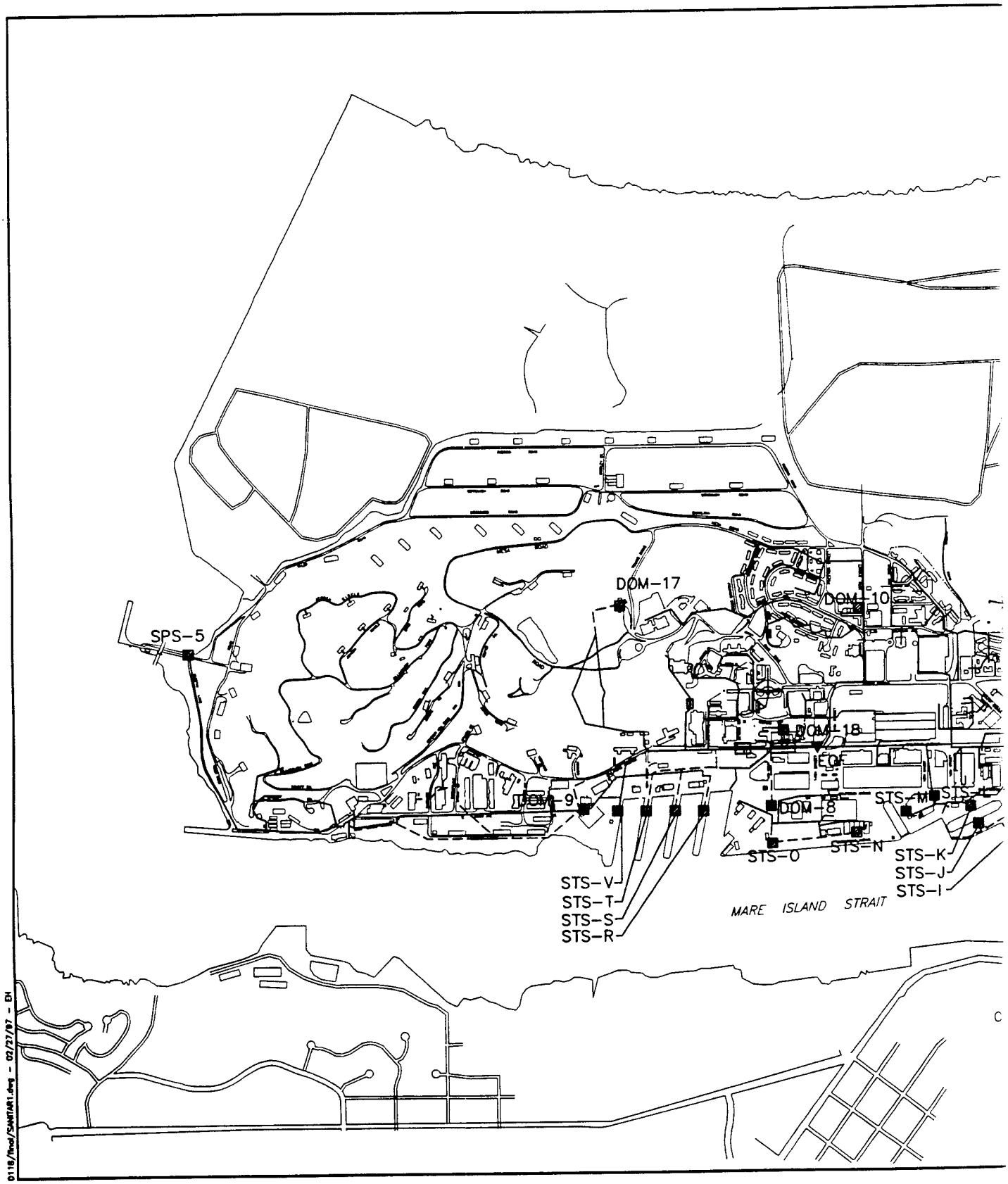
■ Pump Station (P.S.)



Potable Water System

Mare Island, California

Figure I-1



The sanitary wastewater system consists of gravity and forced main lines, pump stations, and an overflow pond.

LEGEND:

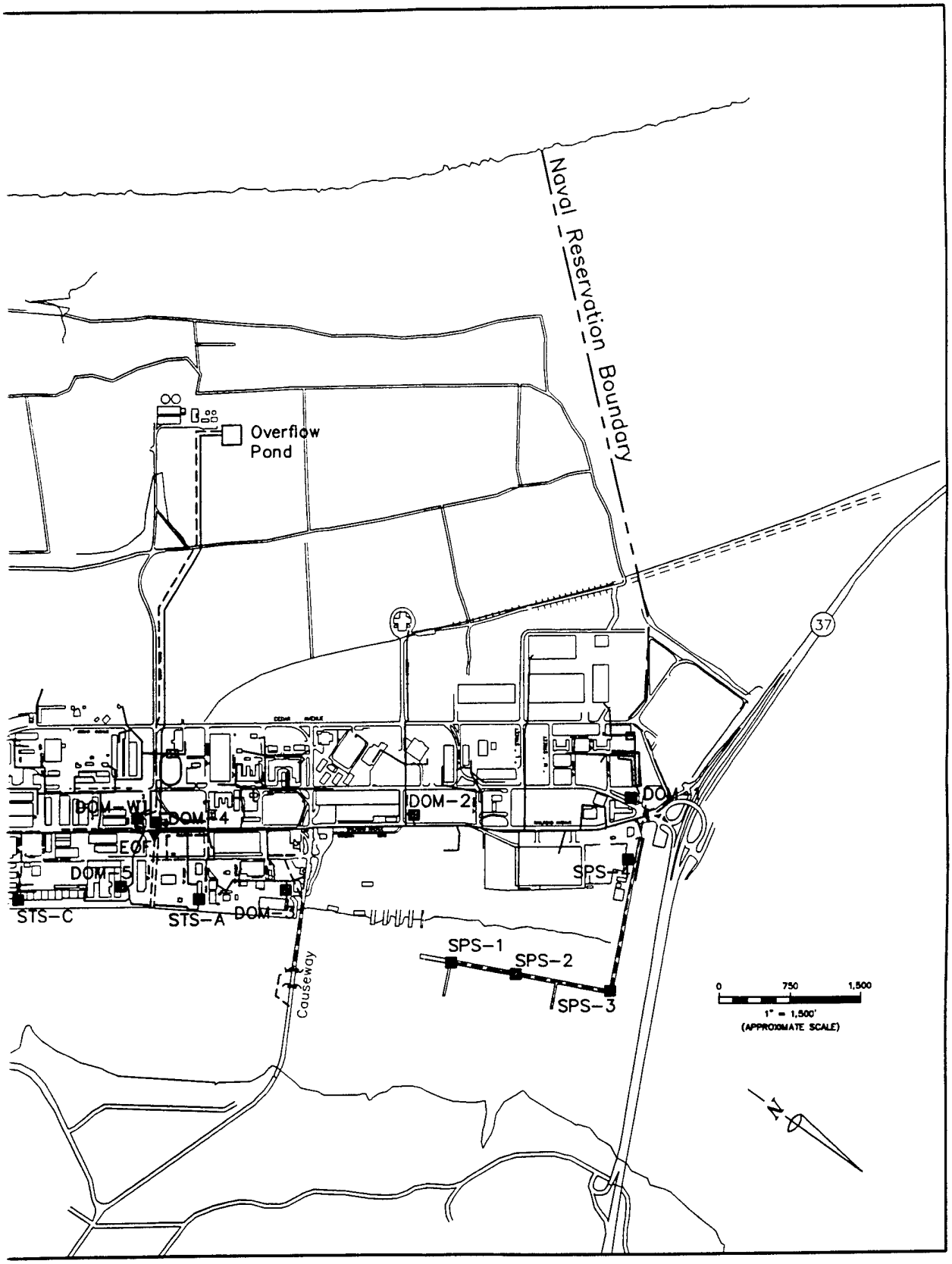
——— Existing Gravity Line

– – – – – Existing Force Main

Source: Vallejo, 1994c

LEGEND:

——— Existing Gravity Line	DOM ▨	Domestic Pump Station
– – – – – Existing Force Main	STS ▨	Ship–to–Shore Pump Station
	SPS ▨	Sewage Pump Station
	EOF ▼	Emergency Overflow



np Station

re Pump Station

) Station

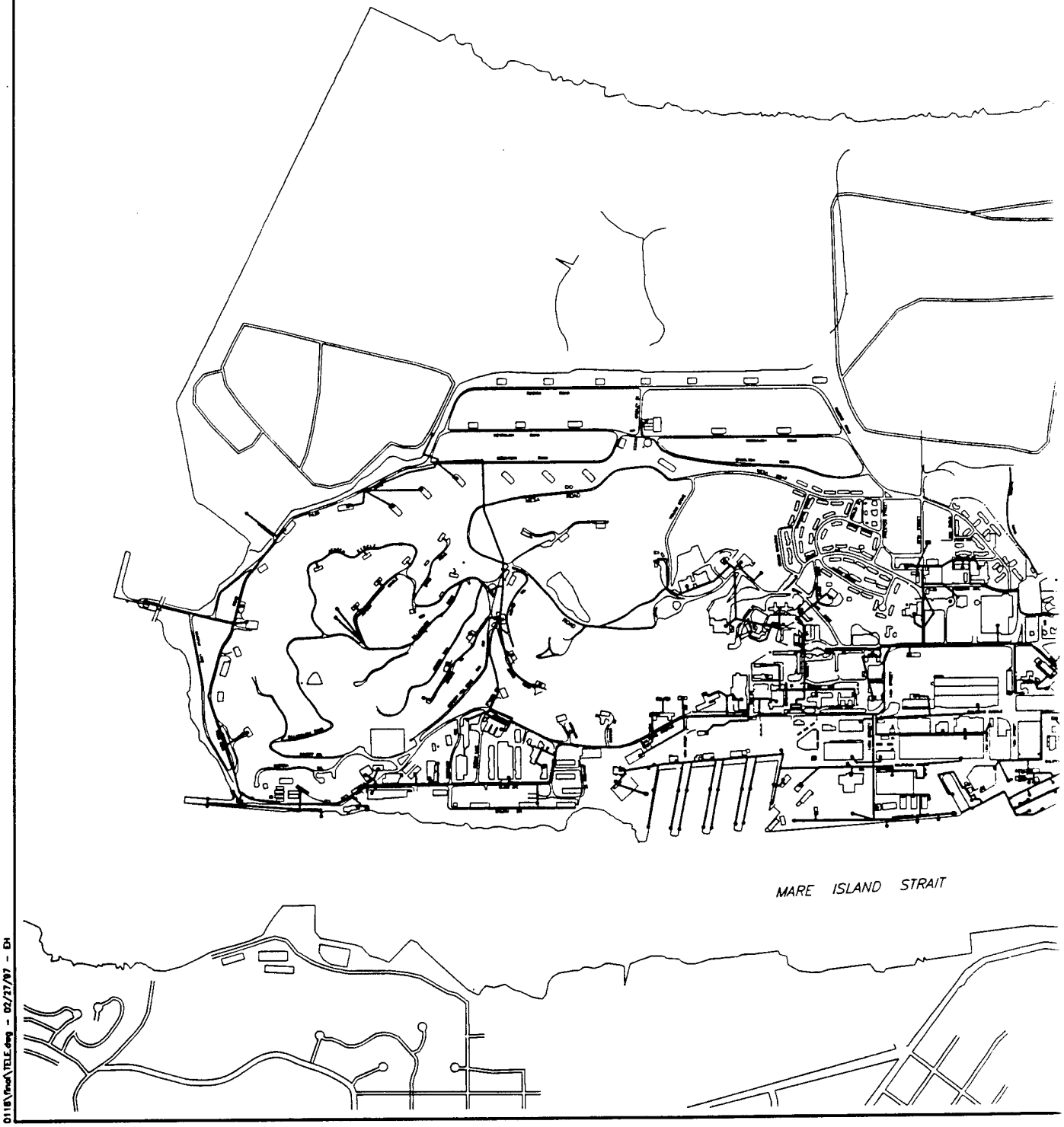
verflow

Sanitary Wastewater System

Mare Island, California

(3)

Figure I-2

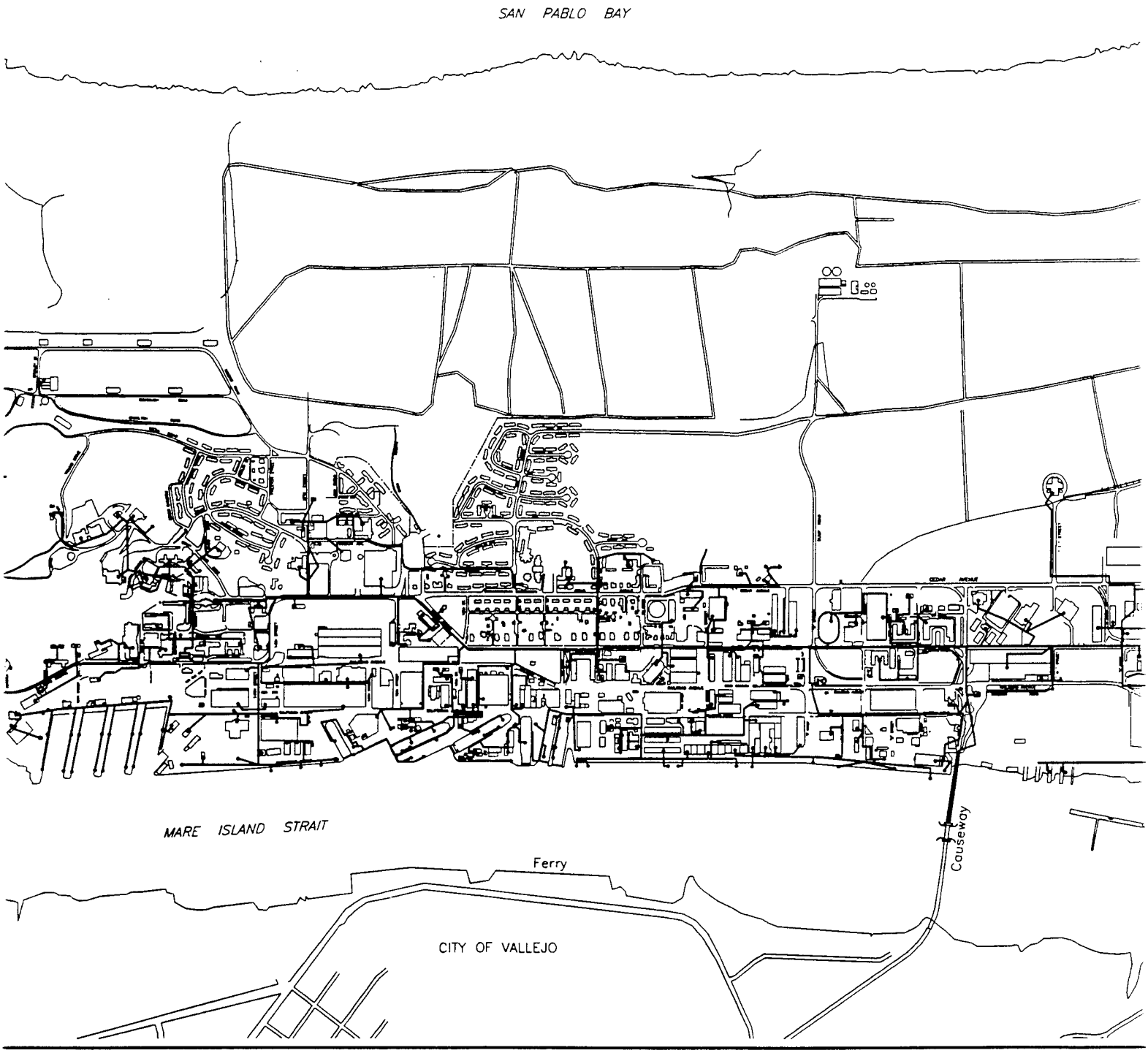


The communication cable system pictured was installed by AT&T in 1992. Record drawings for the Pacific Bell cable lines that service the housing areas are not available at this time.

LEGEND:

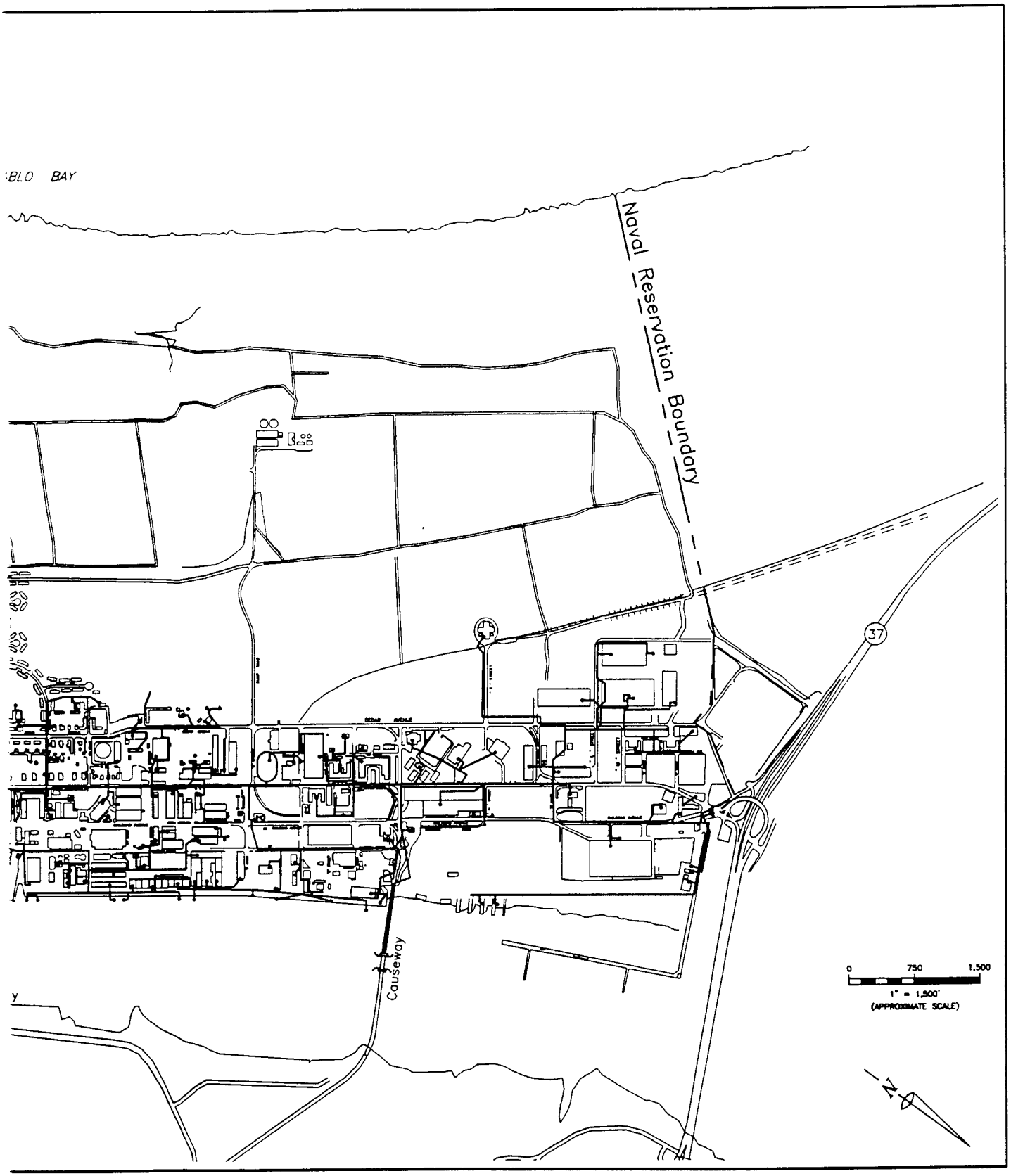
——— CATS Telephone Line

Source: Vallejo 1994c



LEGEND:

——— CATS Telephone Line

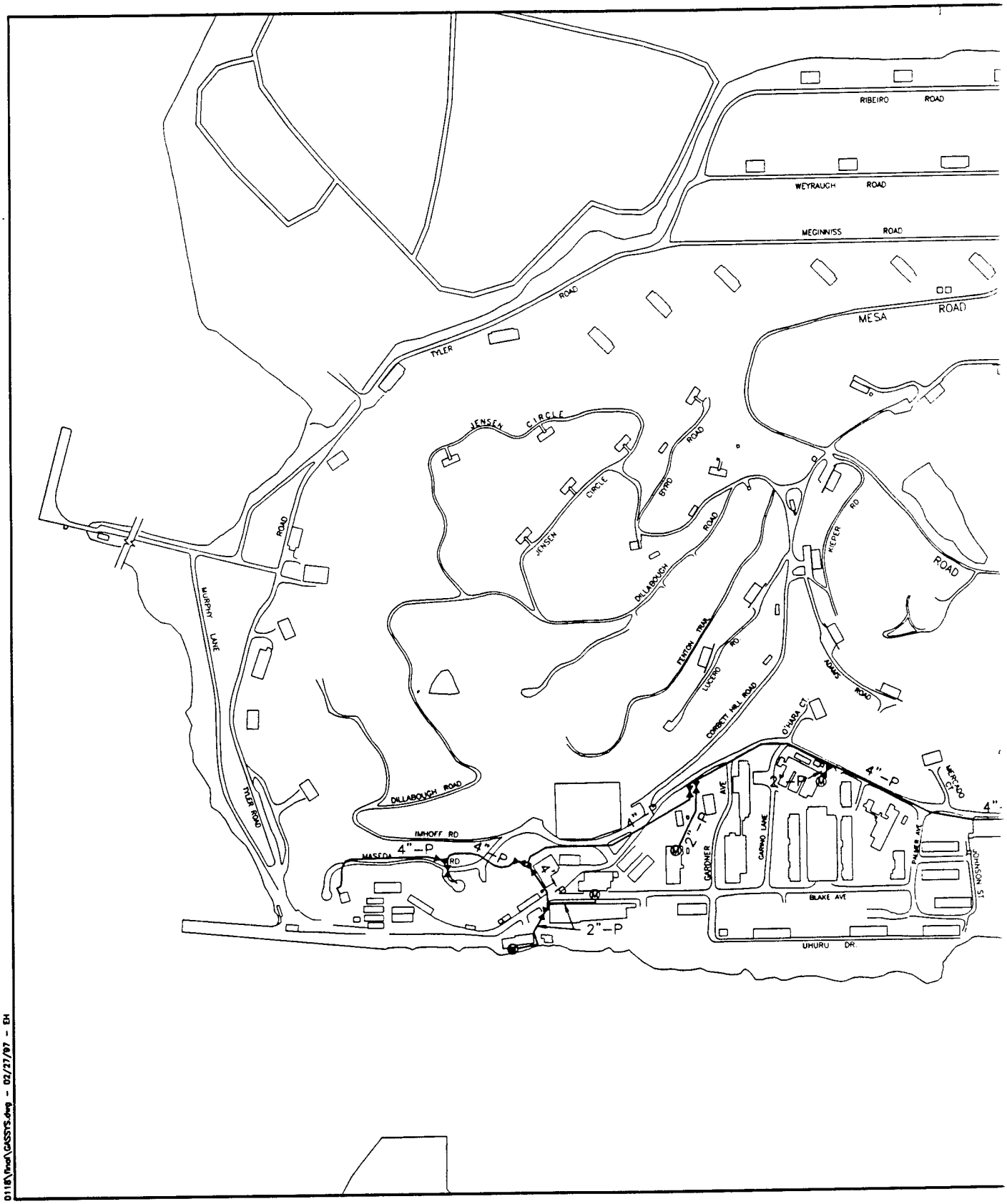


Telephone System

Mare Island, California

3

Figure I-3

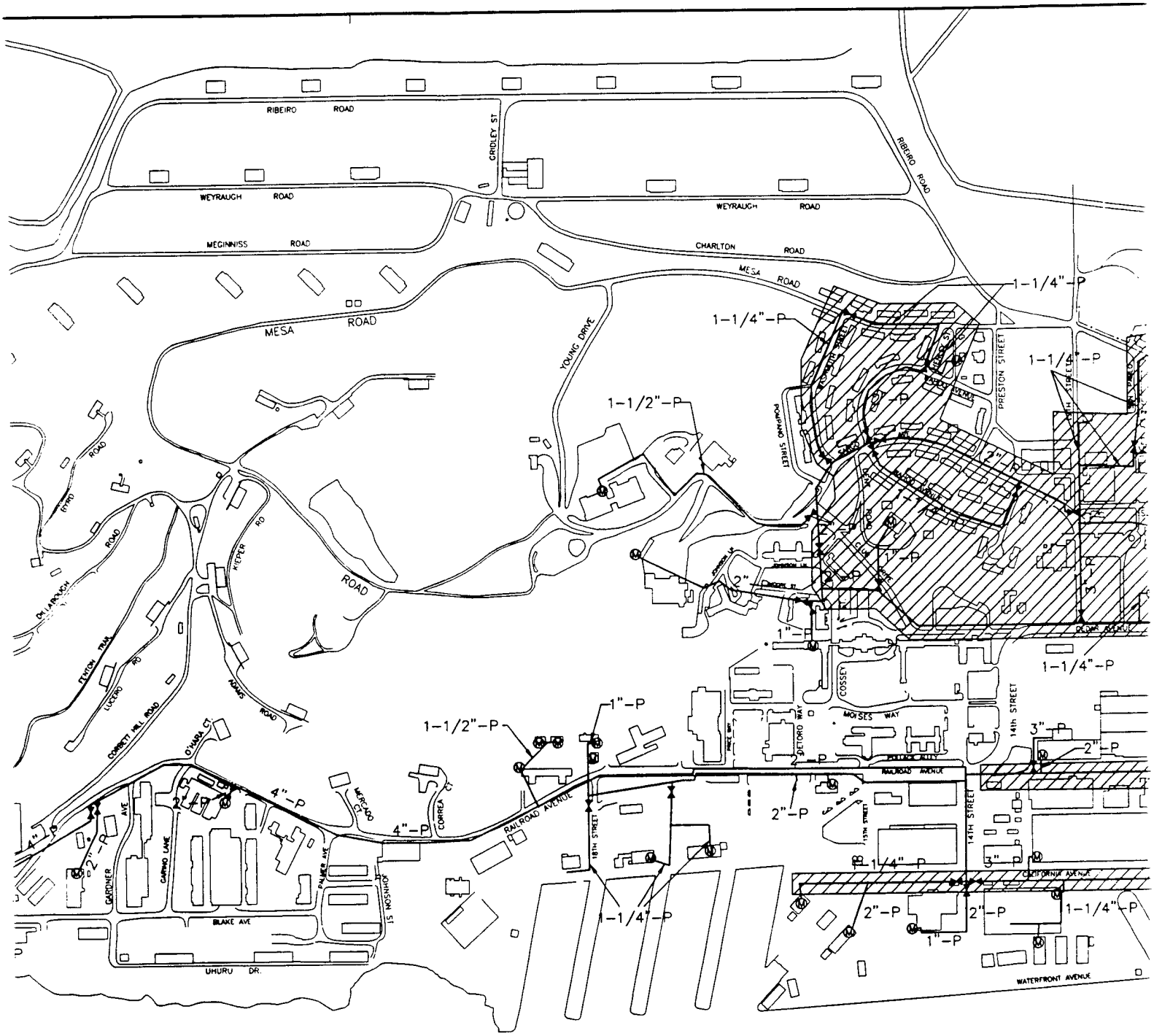


Natural gas enters Mare Island through a 10-inch main which crosses the Mare Island Causeway and is then distributed throughout the island.

LEGEND:

- Gas Pipe (installed in 1979)
- Gate Valve
- Ⓜ Gas Meter
- Ⓢ Gas Station (installed in 1981)

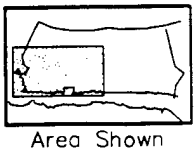
Source: Vallejo, 1994c



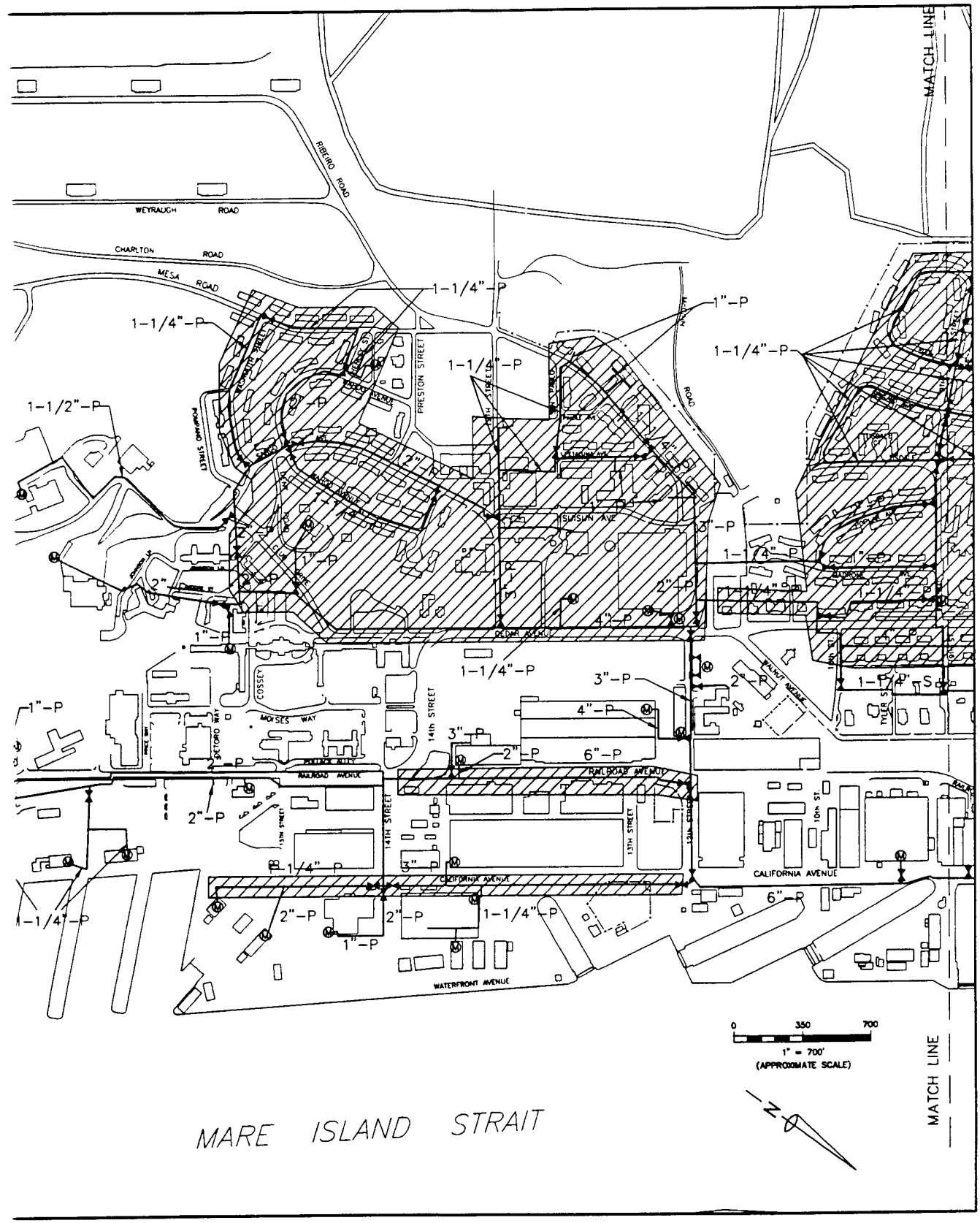
LEGEND:

- Gas Pipe (installed in 1979)
- Gate Valve
- Ⓜ Gas Meter
- Ⓢ Gas Station (installed in 1981)
- Installed in 1985
- Installed in 1977
- 2"–P Diameter and pipe composition (P=polyethylene, S=steel)

NOTE: Pipes under 1" diameter are not shown.



Area Shown

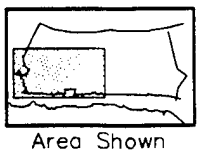


n 1985

n 1977

and pipe composition
hylene, S=steel)

er 1" diameter are not shown.

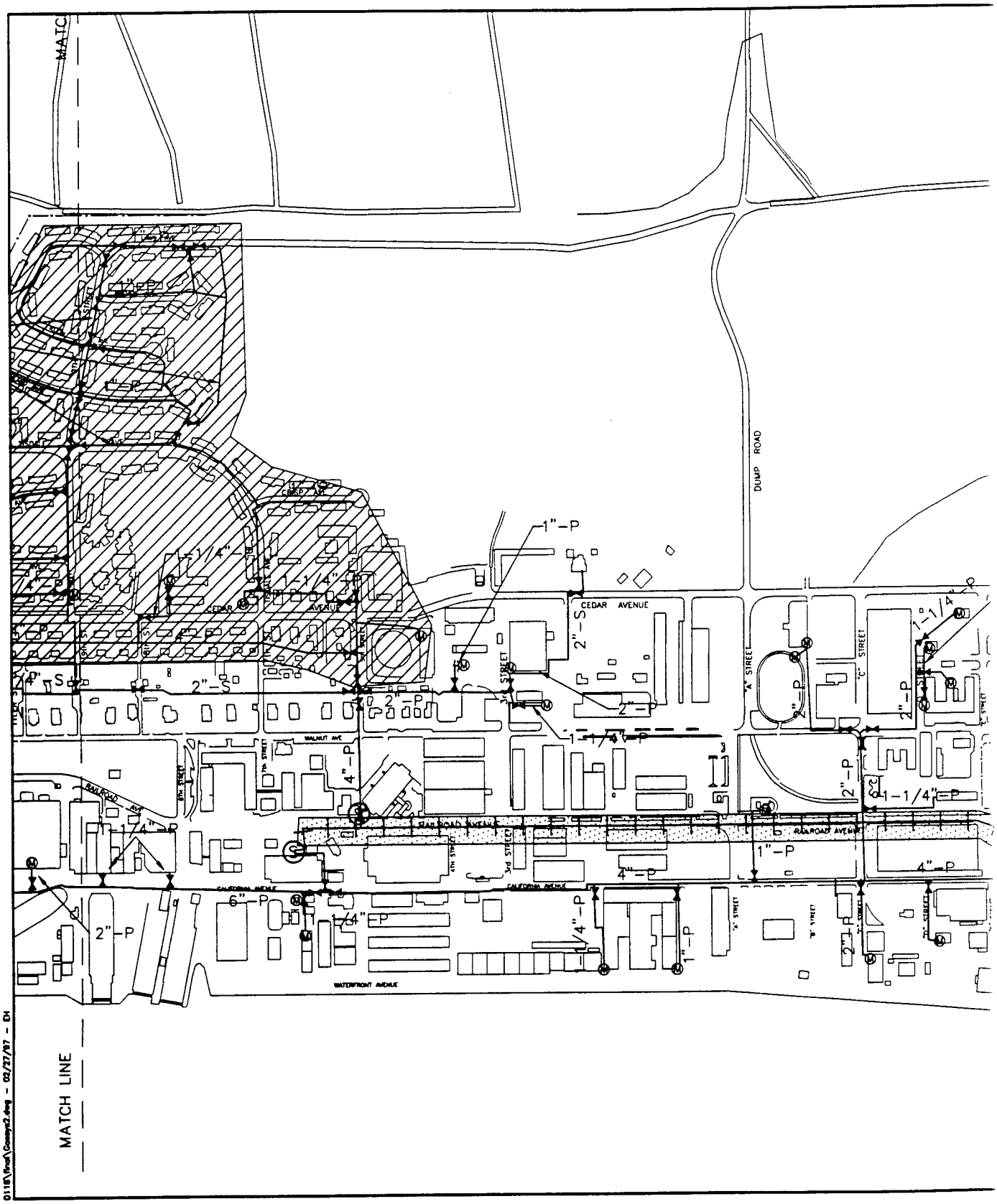

Area Shown

Natural Gas System

Mare Island, California

3

Figure I-4a

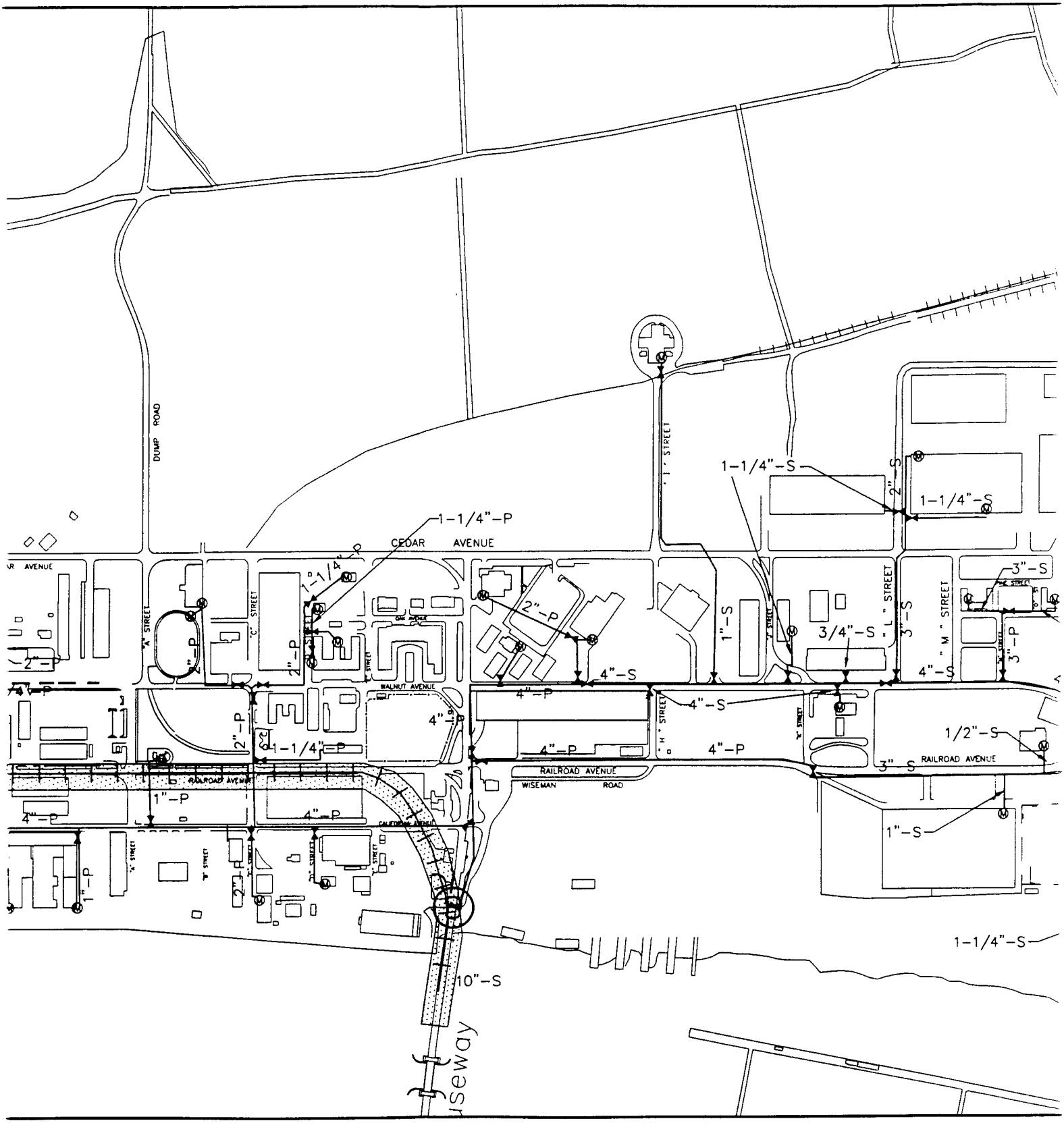


Natural gas enters Mare Island through a 10-inch main which crosses the Mare Island Causeway and is then distributed throughout the island.

LEGEND:

- Gas Pipe (installed in 1979)
- Gate Valve
- Ⓜ Gas Meter
- Ⓢ Gas Station (installed in 1981)

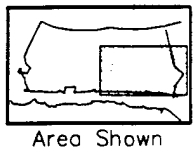
Source: Vallejo, 1994c



LEGEND:

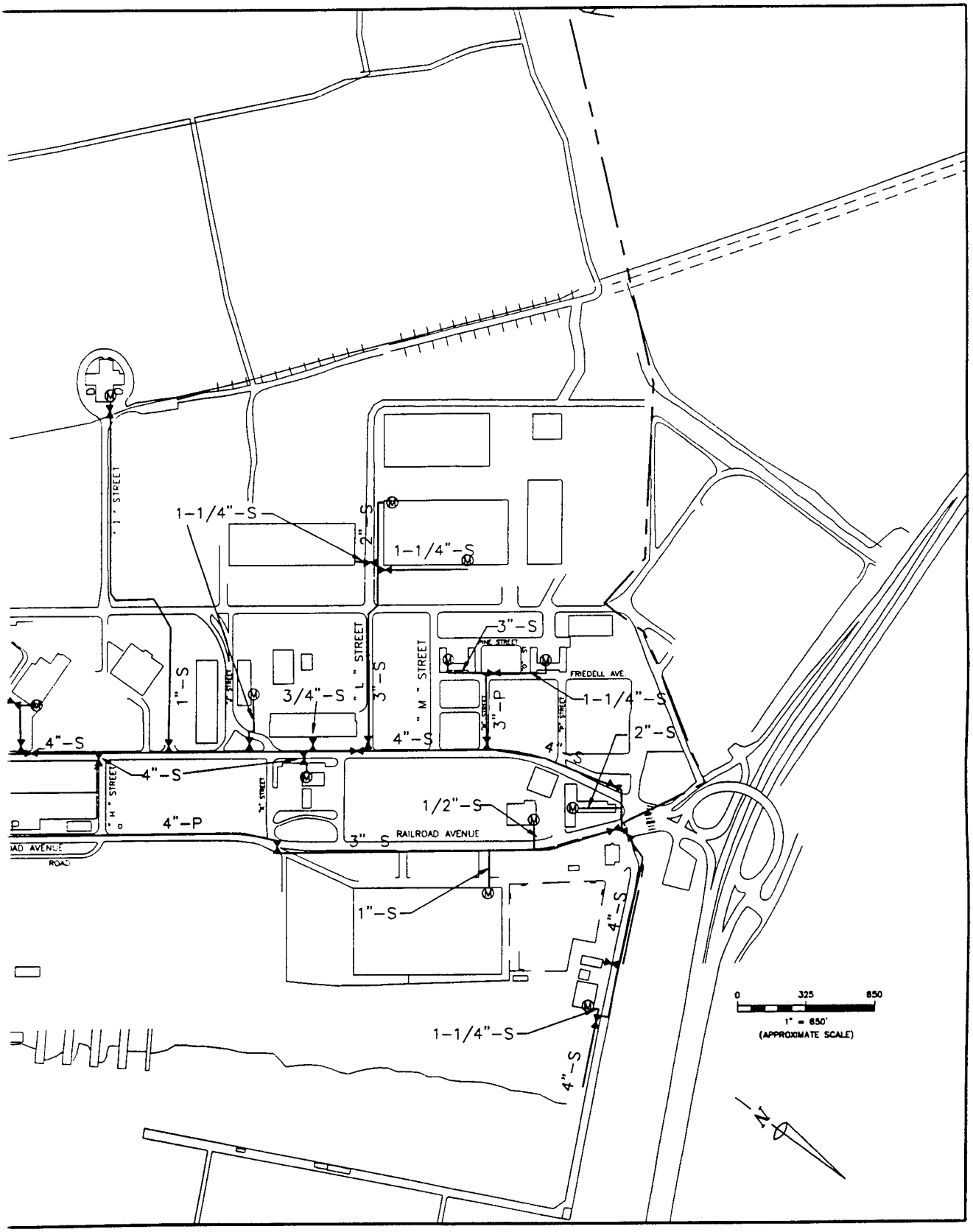
- Gas Pipe (installed in 1979)
- Gate Valve
- Ⓜ Gas Meter
- Ⓢ Gas Station (installed in 1981)
- Installed in 1985
- Installed in 1977
- 2"-P Diameter and pipe composition (P=polyethylene, S=steel)

NOTE: Pipes under 1" diameter are not shown.



Area Shown

(2)

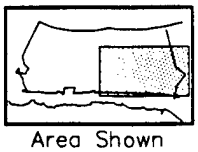


1985

1977

nd pipe composition
ylene, S=steel)

1" diameter are not shown.



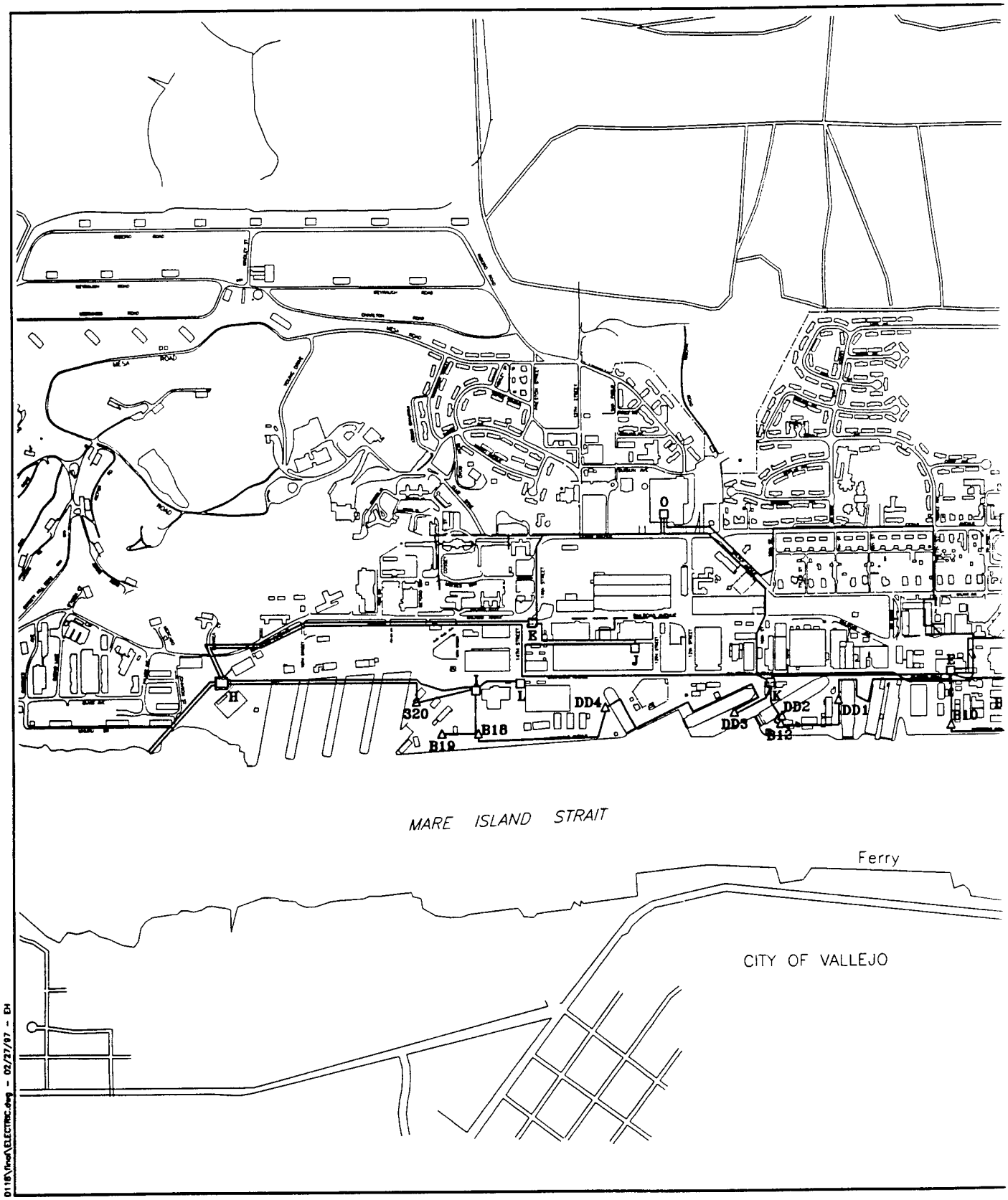
Area Shown

Natural Gas System

Mare Island, California

3

Figure I-4b



LEGEND:

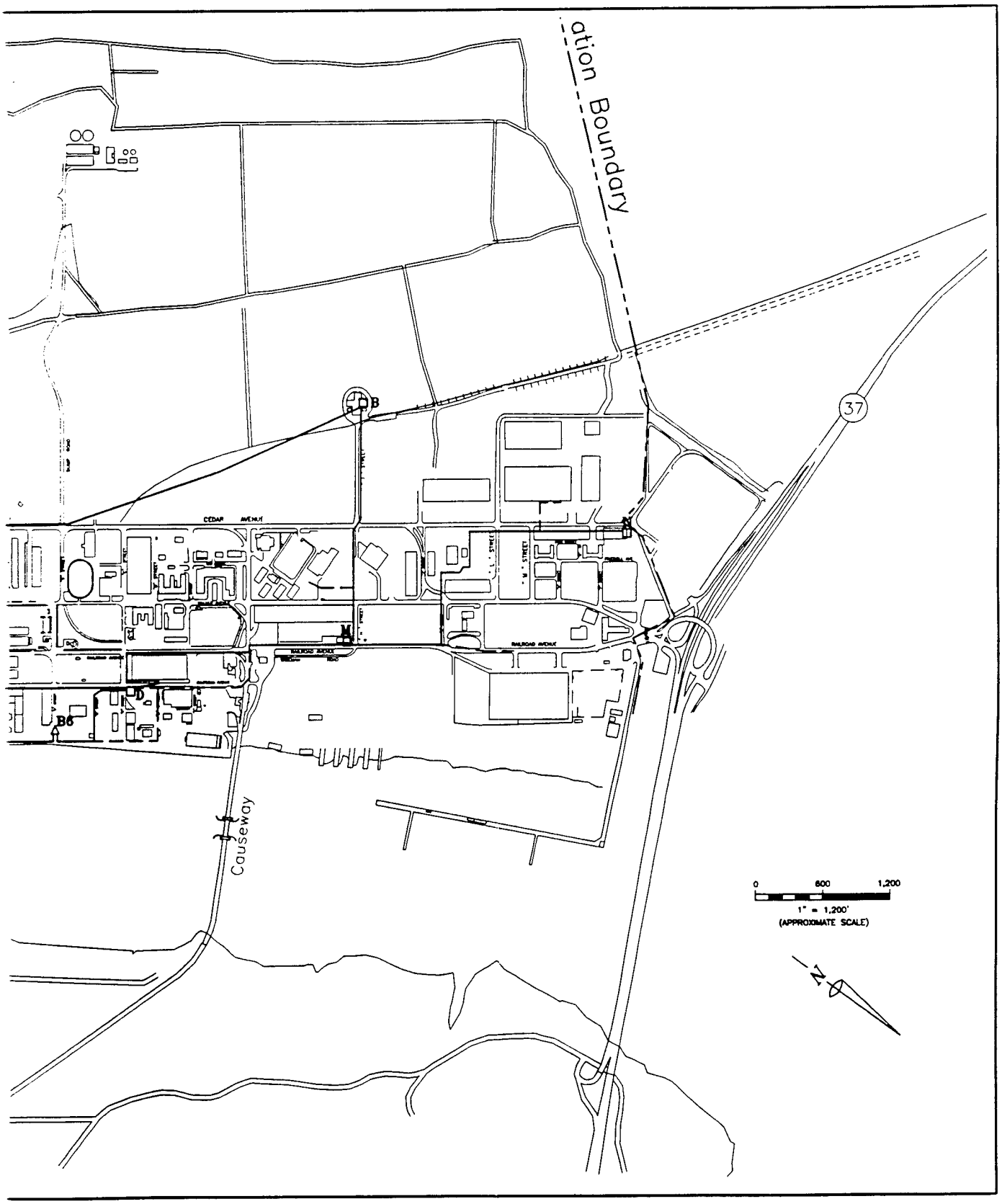
M	Substation
B6	Substation Berth
DD1	Substation Dry Dock

Source: Vallejo, 1994c

(2)

LEGEND:

□ M	Substation	———	12KV Power Line
△ B6	Substation Berth	- - - - -	12KV of 2.4KV Power Line
△ DD1	Substation Dry Dock		



<V Power Line

<V of 2.4KV Power Line

Electrical System

Mare Island, California

(3)

Figure I-5

The storm sewer system intercepts rain water and surface water runoff and conveys it to the Mare Island Strait through outlets.

LEGEND:

Existing Gravity Line

Pipe known to be re

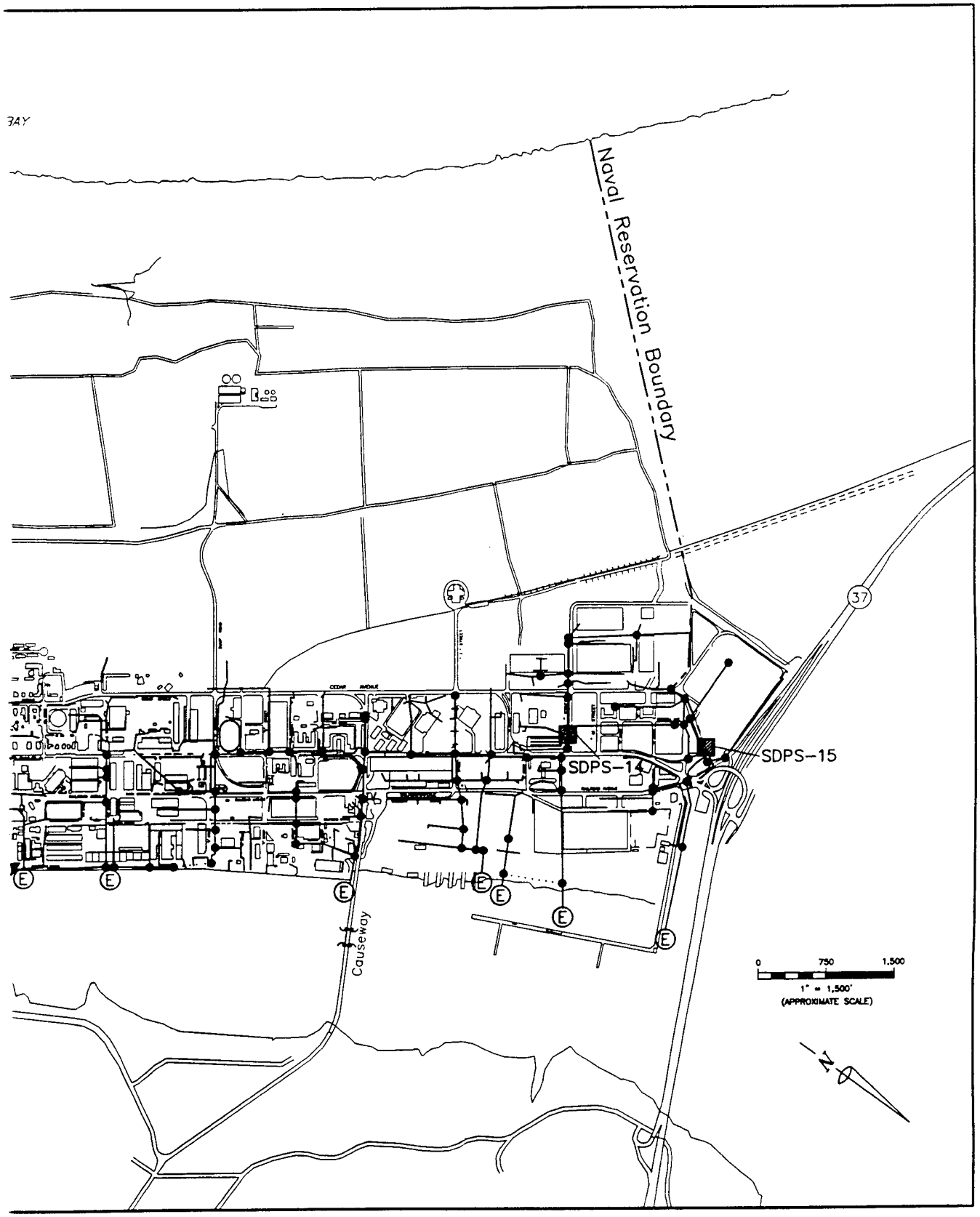
New Main connectior

Storm Drain Pump S

Source: Vallejo, 1994c

LEGEND:

- Existing Gravity Line
- Pipe known to be replaced
- New Main connections
- Storm Drain Pump Station (SDPS)
- (E) Existing Storm Water Outlet
- ▼ Emergency Overflow (EOF)



(E) Existing Storm Water Outlet

▼ Emergency Overflow (EOF)

Storm Sewer System

Mare Island, California

3

Figure I-6

TABLE I-1
SALTWATER PUMP STATIONS

Pump Station ID	No. of Pumps	Capacity (gpm)	Rating (psi)
Bldg. 121	3	1500	160
	2	4000	160
Pumphouse A252	1	NA	NA
Berth 2	2	1500	160
Berth 55	1*	1800	315
Pier 21	1	NA	NA
Pier 34	1*	NA	NA
Pier 35	1*	NA	NA

Source: Vallejo 1994c

*Pumps are not operational.

TABLE I-2
SANITARY WASTEWATER PUMP STATIONS SHIP-TO-SHORE

Pump Station ID	Location	No. of Pumps	Capacity (gpm)	Rating (hp)	Condition
STS-A	Waterfront Ave. at Berth 4	2	1000	15	Fair
STS-C	Waterfront Ave. at Berth 8	2	NA	15	Good
STS-E	South side of Ways No. 1	1*	250	NA	Good
STS-F	North side of Ways No. 2	1*	250	NA	Good
STS-H	West end of Dry Dock No. 1	2*	100	NA	Good
STS-I	Northwest end of Dry Dock No. 2	3	350	15	Poor
STS-J	Northwest of Berth 13	2	500	3	Poor
STS-K	Southwest side of Dry Dock No. 3	2	500	15	Good
STS-L	Northwest of Berth 15	2	300	3	Fair
STS-M	North side of Dry Dock No. 4	2	440	15	Fair
STS-N	Waterfront Ave. at Berth 16	2	900	7.5	Good
STS-O	Waterfront Ave. at Berth 18	2	1000	10	Good
STS-R	Center of Pier 21	2	880	7.5	Good
STS-S	Center of Pier 22	2	880	7.5	Good
STS-T	Center of Pier 23	2	1000	7.5	Good
STS-V	Southwest of Berth 24	2	500	7.5	Fair

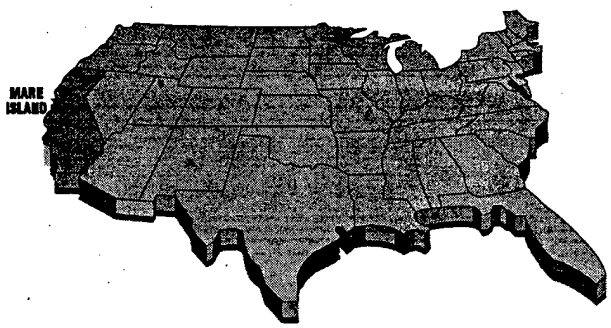
* Ejectors, not pumps, are located at these stations
NA - not available
Source: Vallejo 1994c

TABLE I-3
RECYCLING ON MARE ISLAND (FY 1993)

Material	Tons
Aluminum	94.7
Aluminum cans	2.4
Brass	19.3
Cardboard	254.6
Copper	104.5
Ferrous metals	2,936.2
Food waste	(12 lot)
Glass	22.1
Hi-temp alloys	14.4
Other metals	785.4
Paper	124.3
Plastic	1.5
Timber/wood	656.8
Newspaper	48.0
TOTAL	**5,064.2**

Source: Nguyen 1994

This page intentionally left blank.



APPENDIX J

HAZARDOUS MATERIALS

APPENDIX J
HAZARDOUS MATERIALS AND WASTE

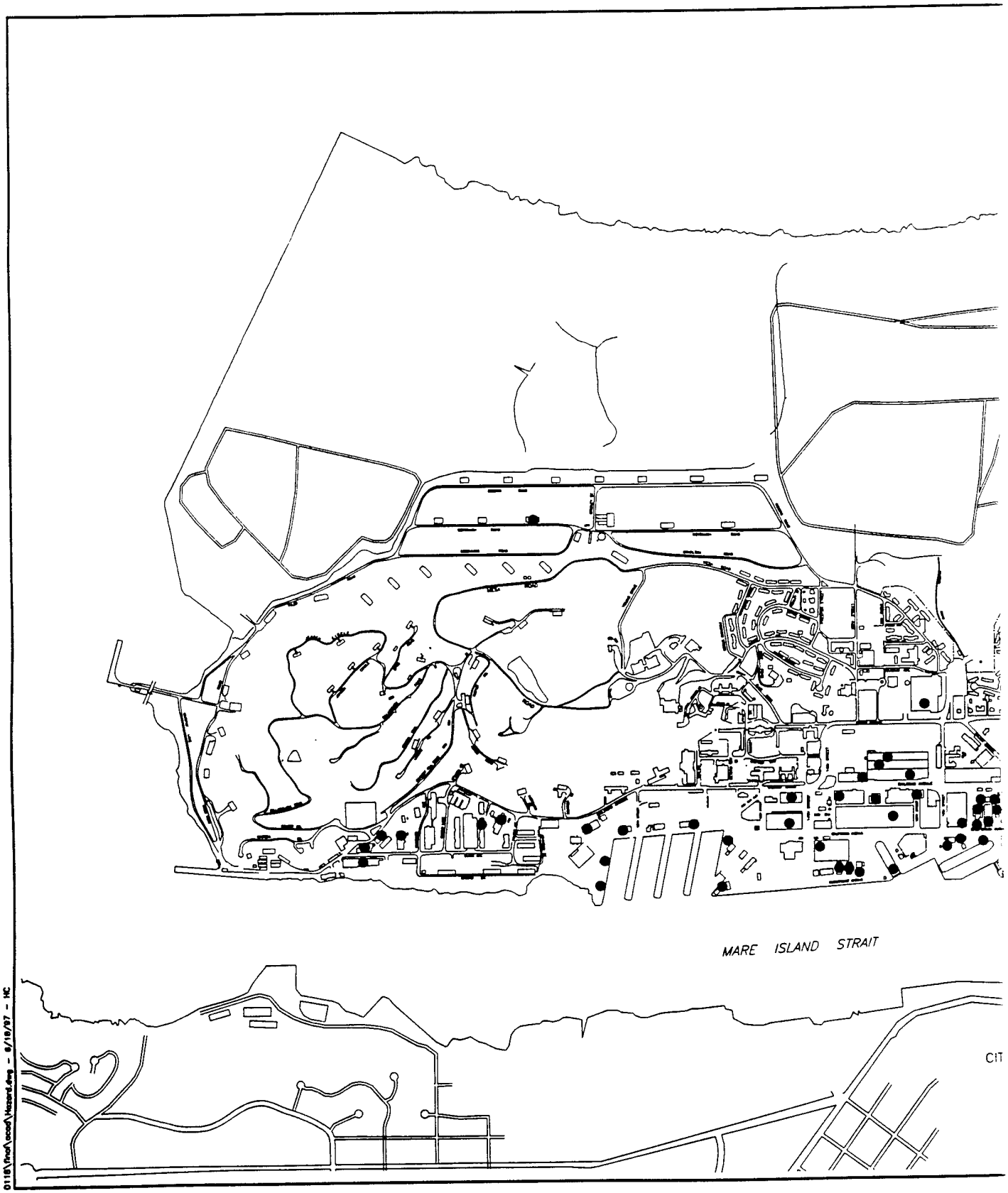
Acronyms

AST	aboveground storage tank
cf	cubic feet
cu yd	cubic yards
gal	gallons
G-RAM	General Radioactive Material
Mgal	million gallons
NNPP	Naval Nuclear Propulsion Program
OWS	oil/water separator
ppm	parts per million
pt	pint
qt	quart
sq ft	square feet
UST	underground storage tank

TABLE J-1
HAZARDOUS WASTE TREATMENT FACILITIES

Reuse Plan Area	Unit ID	Bldg No.	Relative Location	Process	Permit Description
3. Mixed Use: Office-Light Industry	MI-AERO-1	259		Aerosol can puncturing	Conditionally Exempt - Specified Wastestream
	MI-AERO-2	259		Aerosol can puncturing	Conditionally Exempt - Specified Wastestream
	MI-AERO-3	259		Aerosol can puncturing	Conditionally Exempt - Specified Wastestream
	MI-T2-1	near 471	Berth 4	Oil/water separation	Conditionally Authorized
	MI-BTB-1	near 471	Berth 4	Oil/water separation	Conditionally Authorized
13. Open Space-Recreation	MI-IWTP-1	Landfill	IWTP	Phase separation, pH adjustment, sludge dewatering	Conditionally Authorized

Source: U.S. Navy 1994d

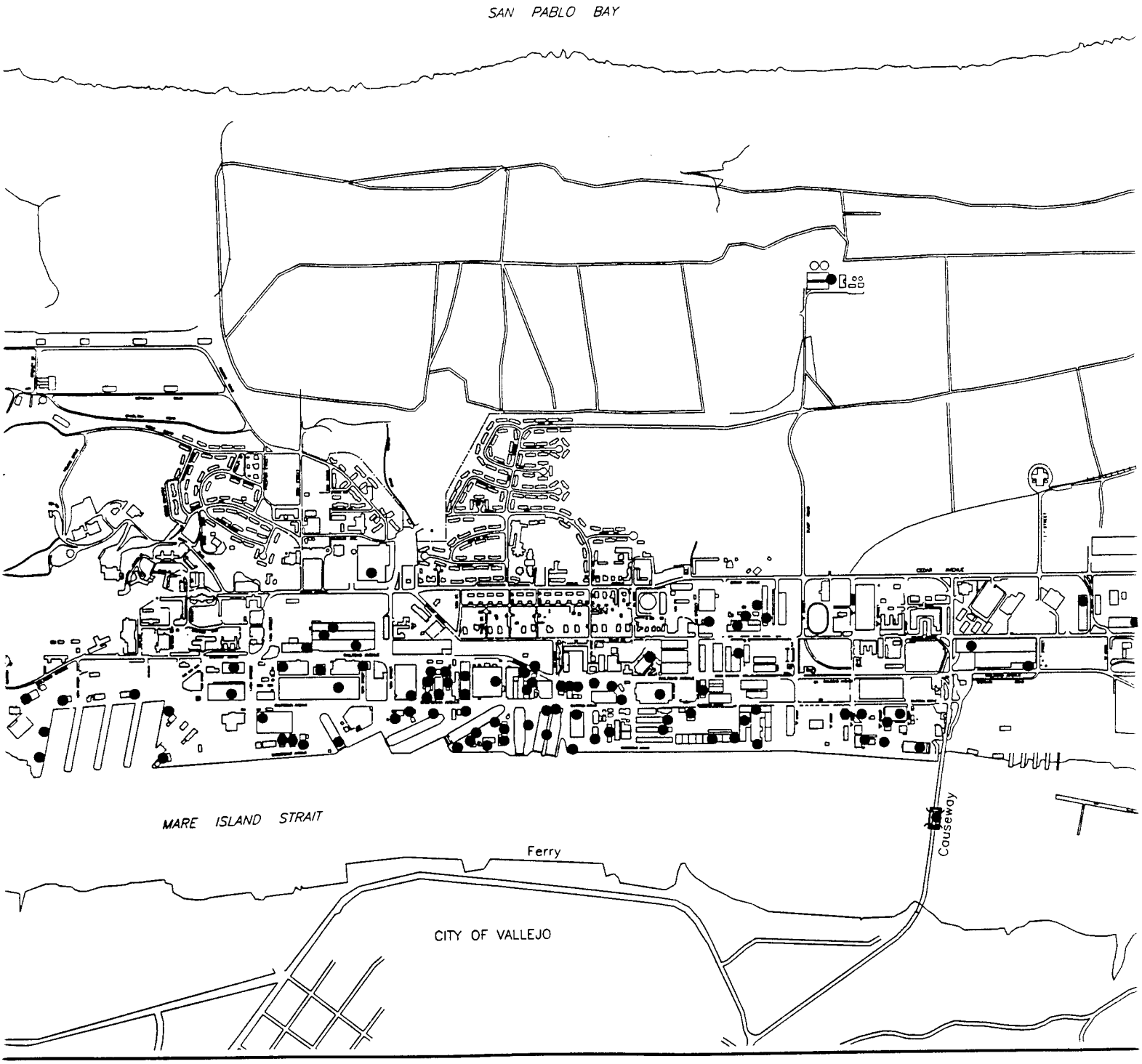


Hazardous materials used for base support and industrial operations are stored throughout Mare Island. This figure represents 1994 conditions.

LEGEND:

Hazardous Material Stora

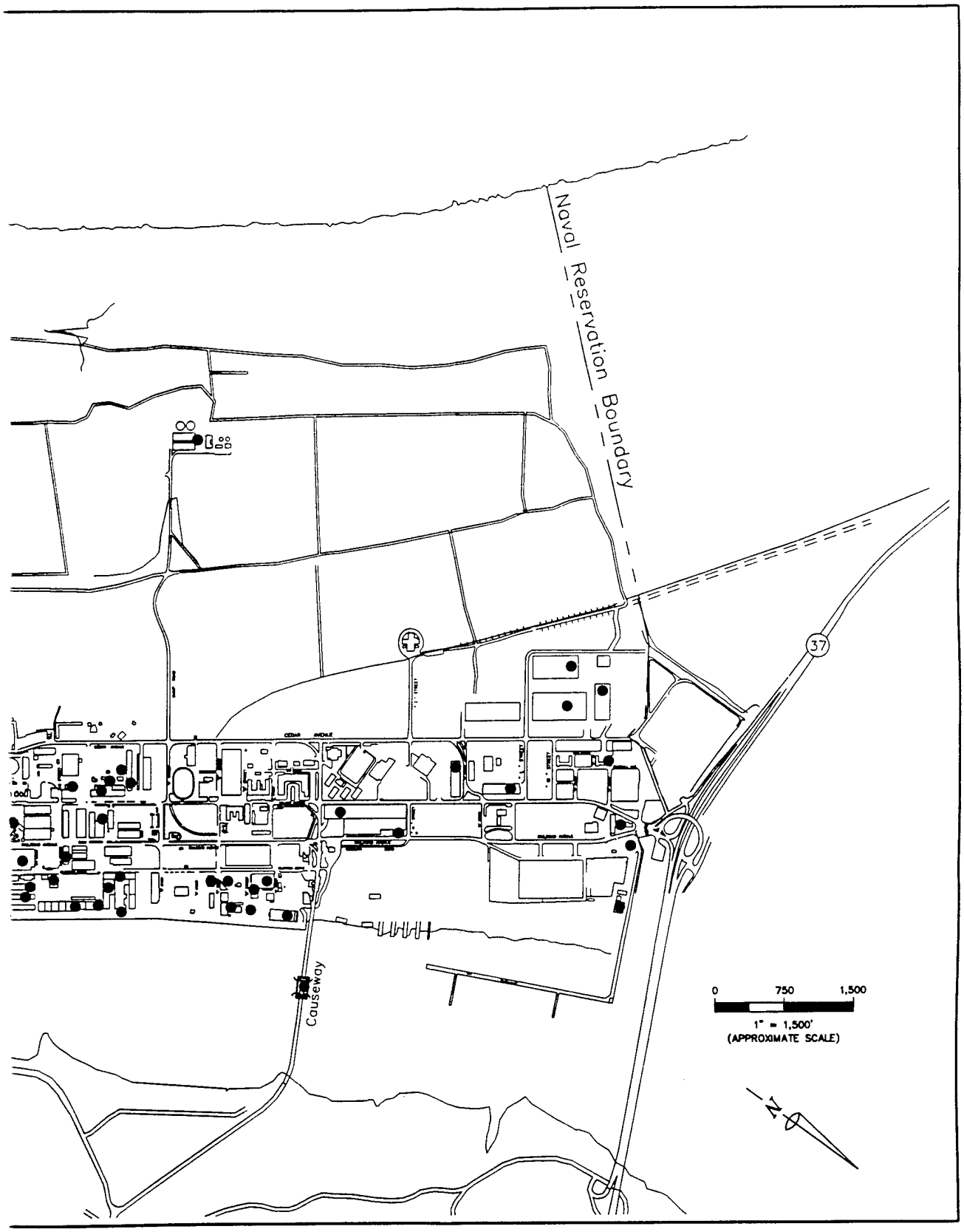
Source: U.S. Navy, 1994c



LEGEND:

● Hazardous Material Storage Areas

H



Hazardous Material Storage Areas

Mare Island, California

(3)

Figure J-1

TABLE J-2
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
1. North Light Industry	571	Inside near corner	1082-2	Closed	16 Drums	55 gal	Corrosive solids, combustible liquids, combustible solids	
	571	Southeast	1082-1	Closed	24 Drums	55 gal	Combustibles and corrosive solids	
	627	Inside, Bay H17	67-3	Closed		55 gal	Flammable liquids	
	759	Northeast outside	1010-1	Closed	10 Drums	55 gal	Corrosive solids, combustible liquids, combustible solids	
	759	West wall inside	938-6	Closed	150 Drums	55 gal	Toxic, flammable, combustible, corrosives, mixed waste	
	791	Center of West wall inside B. 791	38-5	Closed	4 Drums	55 gal	Flammable liquids, combustible liquids	
	993	Inside fenced area adjacent to B. 993	1097-1	Closed	20 Drums	55 gal	Flammable, combustibles	
2. Neighborhood Center	637	North next to Tire Shop	02-2	Closed	8 Drums	55 gal	Corrosive solid, corrosive liquid	12 double pallets
	637	South wall, middle exterior	785-1	Closed	1	480 gal	Combustible liquid	
	835	East side outside	PWC-550-1	Closed		55 gal	Corrosives and combustibles	
	861	West of Bldg 861 next to Baker Tank 837N	07-9	Closed	4 Drums	55 gal	Combustible solids, toxic solids	
3. Mixed Use: Office-Light Industry	117	East	56-4	Closed	36 Drums	55 gal	Flammables, combustibles	

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	117	Northeast corner	67-1	Closed	16 Drums	55 gal	Flammable solid, combustible liquid, combustible solid	
	117	Northeast wall	17-5	Closed	4 Drums	55 gal	Combustible solids	
	117	North end between Bldg 117 & Bldg 1345	07-8	Closed	4 Drums	55 gal	Combustibles	
	117	South side outside	38-2	Closed	24 Drums	55 gal	Flammable liquids, combustible liquids, ORM-E	
	117	South side, inside Wonder Arch	38-8	Closed	25 Drums	55 gal	Flammable liquid, flammable solid, combustible solid, combustible liquid	
	117	West side, in paint storage room	71-8	Closed	4 Drums	55 gal	Flammable liquids	
	121	West by CIA fence	660-1	Closed	36 Drums	55 gal	Combustibles, corrosive solids, flammable	This HWAA used to be 03-1
	145	Northeast wall	56-6	Closed	8 Drums	55 gal	Corrosives, flammable liquids, combustible liquids	
	147	Northeast wall	38-1	Closed	8 Drums	55 gal	Flammable solids, combustible liquids	
	155	Northeast wall	17-4	Closed	4 Drums	55 gal	Combustible solids, flammable solids	
	165	North wall inside Bldg 165	26-1	Closed	12 Drums	55 gal	ORM-E	
	213	South wall inside	106-8	Open	Drums		Corrosives, flammable solids & liquids, oxidizers, Non-RCRA waste	

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	215	East side outside	500-2	Closed	8 drums	55 gal	Combustibles and corrosives	
	225	Northeast corner	51-3	Closed	12 drums	55 gal	Corrosive solid	3 drip pans
	237	West wall towards South end of bldg	133-1	Closed	8 drums	55 gal	ORM-E	
	271	Northeast inside	300-1	Closed	6 Drums		Mixed waste	
	461	West wall inside	51-4	Closed	24 Drums	55 gal	ORM-E	
	471	East	99-2	Closed	1	54000 gal	ORM-E	
	483	2nd floor	500-1	Closed	8 Drums	55 gal	Flammable liquids, combustible solids	
	483	South side on the 2nd floor	500-5	Closed	8 Drums	55 gal	Flammable liquids, combustible solids	
	483	Southwest corner on 1st floor	500-6	Closed	8 Drums	55 gal	Flammable liquids, combustible solids	
	515	Rail cars next to bldg	99-5	Closed	5 Tank Cars	unknown	Corrosive liquid	
	515	South side outside	99-6	Closed	5 Tank Cars	unknown	ORM-E	
	69	North side outside	71-10	Closed	1	440 gal	Flammable liquids	
	795	Northwest corner outside Bldg 795	99-4	Closed	8 Drums	55 gal	ORM-E	
	85	North wall, middle	500-4	Closed	8 Drums	55 gal	Flammables, combustibles, ORM-E	

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	865	South wall, outside	71-9	Closed	Drums		Flammable liquids	
	89	North	72-1	Closed		unknown	Corrosives and combustibles	
	923	North side inside bldg	811-1	Closed	36 Drums	55 gal	Flammable liquid, combustible liquid, ORM-E	
	Berth 3	Northwest of Bldg 471	106-2	Closed	Drums	55 gal	ORM-E	150 empty drums
	Berth 4	Northeast of Bldg 471, adjacent to berths 3 & 4	99-9	Closed	1 Baker Tank	5000 gal	Combustible liquid	
	Berth 4	Tank car next to berth	99-8 Rev A	Closed	1 Tank Car	4000 gal	Combustible liquids	
	Berth 5	In fenced area next to water	99-3	Closed	1	72000 gal	ORM-E	
4. Historic District	108	South wall next to Paint Shack	71-6	Closed	1	440 gal	Flammable liquid	
	1304	Between Ways 1 & 2	71-7	Closed	4 Drums	55 gal	Flammable liquids	
	144	North	51-2	Closed	28 Drums	55 gal	Corrosive solids, corrosive liquids	
	332	East	99-7 Rev A	Closed	2 Tank Truck	3000 gal	Toxic liquids	
	65	South wall in center area	1090-1	Closed	1	440 gal	Flammable solid, ORM-E	
	Berth 12	YC-1448, Barge	56-7	Closed	1	120000 gal	ORM-E	Mobile Barge

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	Berth 12	YC-1471, Barge	56-3	Closed	1	24000 gal	ORM-E	Mobile Barge
	Berth 12	YC-1472, Barge	56-5	Closed	1	53500 gal	ORM-E	Mobile Barge
	Berth 12	YC-832, Barge	56-8	Closed	1	44000 gal	ORM-E	Mobile Barge
5. Heavy Industry	112	2nd Floor, Southwest Sail Loft	72-6	Closed	20 Drums	55 gal	Flammable liquid, HW solids	
	112	Northeast wall	72-3	Closed	12 Drums	55 gal	Corrosive liquids, combustible solids, corrosive solids	
	112	Northwest corner, outside Bldg 112	99-1	Closed	16 Drums	55 gal	Combustible solid	
	112	Sail loft	72-4	Closed	20 Drums	55 gal	Flammable liquids	
	112	West wall inside Bldg 112	72-8	Closed	8 Drums	55 gal	Combustible solid, corrosive liquid	
	113	West	106-7	Closed	84 Drums	55 gal	Flammable, corrosive, ORM-E	
	124	North	64-1	Closed	72 Drums	55 gal	Flammable liquid, flammable solid, ORM-E, corrosive solid, corrosive liquid	
	126	Southeast corner of clean room inside Bldg 12	56-9	Closed	36 Drums	55 gal	Flammable liquid, flammable solid, combustible liquid, combustible solid	

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	126	West	38-3	Closed	48 Drums	55 gal	Flammable liquids, combustible liquids, corrosives, ORM-E	
	126	West	56-1	Closed	36 Drums	55 gal	Flammables, combustibles	
	1310	Inside fenced area in Northeast corner	17-1	Closed	20 Drums	55 gal	Combustible liquid, combustible solid	
	1310	West wall inside Bldg 1310	17-2	Closed	4 Drums	55 gal	Combustible solid	
	1332	West	106-5	Closed	84 Drums	55 gal	Poison, flammable, corrosive, oxidizer	
	206	South wall of Bldg 810 closest to Bldg 206	134-1	Closed	1	440 gal	Flammable liquids, combustible liquids, hazardous waste solids NOS, compressed gas NOS	
	290	East (bldg demolished)	72-2	Closed			Combustible and corrosives	
	382	Southeast corner outside	41-1	Closed	24 Drums	55 gal	Flammable solid, combustible liquid, combustible solid	
	388	North of Bldg 388	11-1	Closed	8 Drums	55 gal	Flammable solid	
	672	Northwest corner	17-3	Closed	4 Drums	55 gal	Flammable solids	
	674	South	56-2	Closed	24 Drums	55 gal	Corrosives solids and liquids	
	676	3rd floor	31-2	Closed	4 Drums	55 gal	Flammable liquids, combustible liquids	

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	676	4th floor	38-4	Closed	20 Drums	55 gal	Combustible liquids, flammable liquids, flammable solids	
	676	Southwest corner inside Bldg 676	135-1	Closed	8 Drums	55 gal	ORM-E	
	678	Between Bldg 676 and 678	06-1	Closed	16 Drums	55 gal	Flammable liquid, combustible liquid	
	686	South	06-2	Closed	1	1400 gal	Combustible liquid	
	690	Northwest corner	105-1	Closed	4 Drums	55 gal	Alcohol, acetone, oil	
	722	South wall near Southeast corner	1068-1	Open	1	1000 gal	Flammables, combustibles, toxics	
	738	Outside by Northwest corner	31-1	Closed	36 Drums	55 gal	Flammable liquid, combustible liquid, ORM-E	
	742	East	106-9	Closed	Drums	55 gal	Corrosive solid	Unable to read permit for exact capacity
	750	South	71-1	Closed	60 Drums	55 gal	Flammable liquids	
	750	South side outside	71-3	Closed	1	440 gal	Flammable liquids	
	814	East	41-2	Closed	24 Drums	55 gal	Corrosives and combustibles	
	Berth 15	North near nuclear work area	72-5	Closed	1	660 gal	ORM-E	
	DD-3	North side next to paint shack	71-5	Closed	1	440 gal	Flammable liquids	
	DD-4	South side next to paint shack	71-4	Closed	1	440 gal	Flammable liquids	
6. Farragut Village	1327	East next to car wash	02-3	Closed	72 drums	55 gal	Combustible solid, combustible liquid, flammable liquid	

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

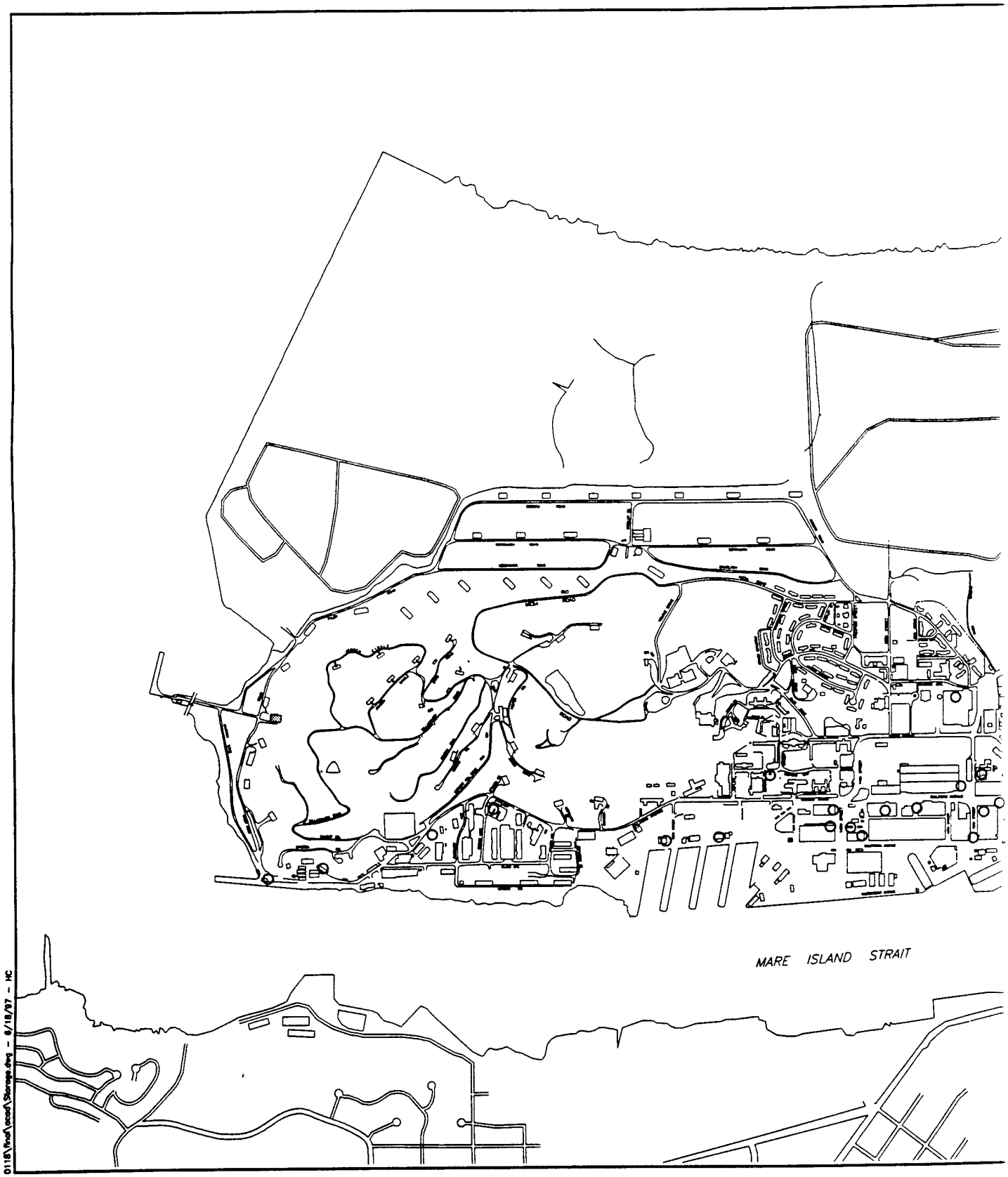
Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	231	Northwest corner outside	02-1	Closed	72 drums	55 gal	Combustible solids, combustible liquids, flammable liquids	
8. Coral Sea Village	84	Adjacent to Northeast wall of Bldg 84/84A	1030-1	Closed	12 Drums	55 gal	Flammable liquids	
9. Education-Office	866	Northwest corner on 2nd floor	51-1	Closed			Flammable liquid, combustible liquid, combustible solid, flammable solid	
	866	Northwest, 1st floor	51-6 Rev A	Closed	50 Drums	55 gal	Flammable liquid, corrosive solids, combustible liquid, combustible solid, Flammable solid	
	866	South wall, 3rd floor	51-5	Closed	48 Drums	55 gal	Flammable liquids, combustible liquids, combustible/flammable/ corrosive solids	
	866	South side outside	67-2	Closed	16 drums	55 gal	Flammables, combustibles, corrosive liquids	
	H21	East side inside bldg	1080-1	Closed	24 Drums	55 gal	Flammables, combustibles, corrosives	
	866	South side outside (former 52-1)	67-4	Closed	16 Drums	55 gal	Flammable liquids, combustible liquids, corrosives, ORM-E	Formally 52-1
10. Marina-Residential	724	Northeast corner	07-4	Closed	8 Drums	55 gal	Flammable liquids	
	724	Southeast	72-7	Closed	24 Drums	55 gal	Corrosive liquid, corrosive solid, combustible solid, solvents, flammables	

TABLE J-2 *(continued)*
HAZARDOUS WASTE ACCUMULATION AREAS

Reuse Plan Area	Bldg No.	Relative Location	HWAA	Status	No. of Units	Unit Capacity	Material Stored	Remarks
	724	West in fenced area	106-6	Closed	24 Drums	55 gal	Corrosives, acids, toxics	
	900	Southeast corner	71-2	Closed	1	440 gal	Flammable liquids	
	A187	Northwest side	430-1	Closed	16 Drums	55 gal	Combustibles	
	A216	By dock area of Bldg A216	PMS395EL	Closed	1	220 gal	Combustible liquid, combustible solid	
	A65	Southeast corner	1072-1	Closed	36 Drums	55 gal	Flammable liquid, combustible liquid, combustible solid	
12. Regional Park	A154	Entire Bldg	PRC-1	Closed	Drums	55 gal	All	Unable to read permit for capacity
	A228	Bunker Northwest of Bldg	1004-1	Closed		unknown	Corrosives and combustibles	
	A228	Northwest across street from bldg	1004-3	Closed	10 Drums	55 gal	Combustible liquid, flammable liquid, flammable gas, corrosive liquid	
	A228	South side of bunker, NW of Bldg	1004-2	Closed		unknown	Corrosives and combustibles	
13. Open Space-Recreation	Land-Fill	Landfill, South of IT trailer	IT-1	Closed	400 drums	55 gal	Solids	
	Land-Fill	Landfill, West of equipment maintenance area	455-1	Closed	24 dump-sters	8 cu. yd	ORM-C	

Source: U.S. Navy 1994d

This page intentionally left blank.

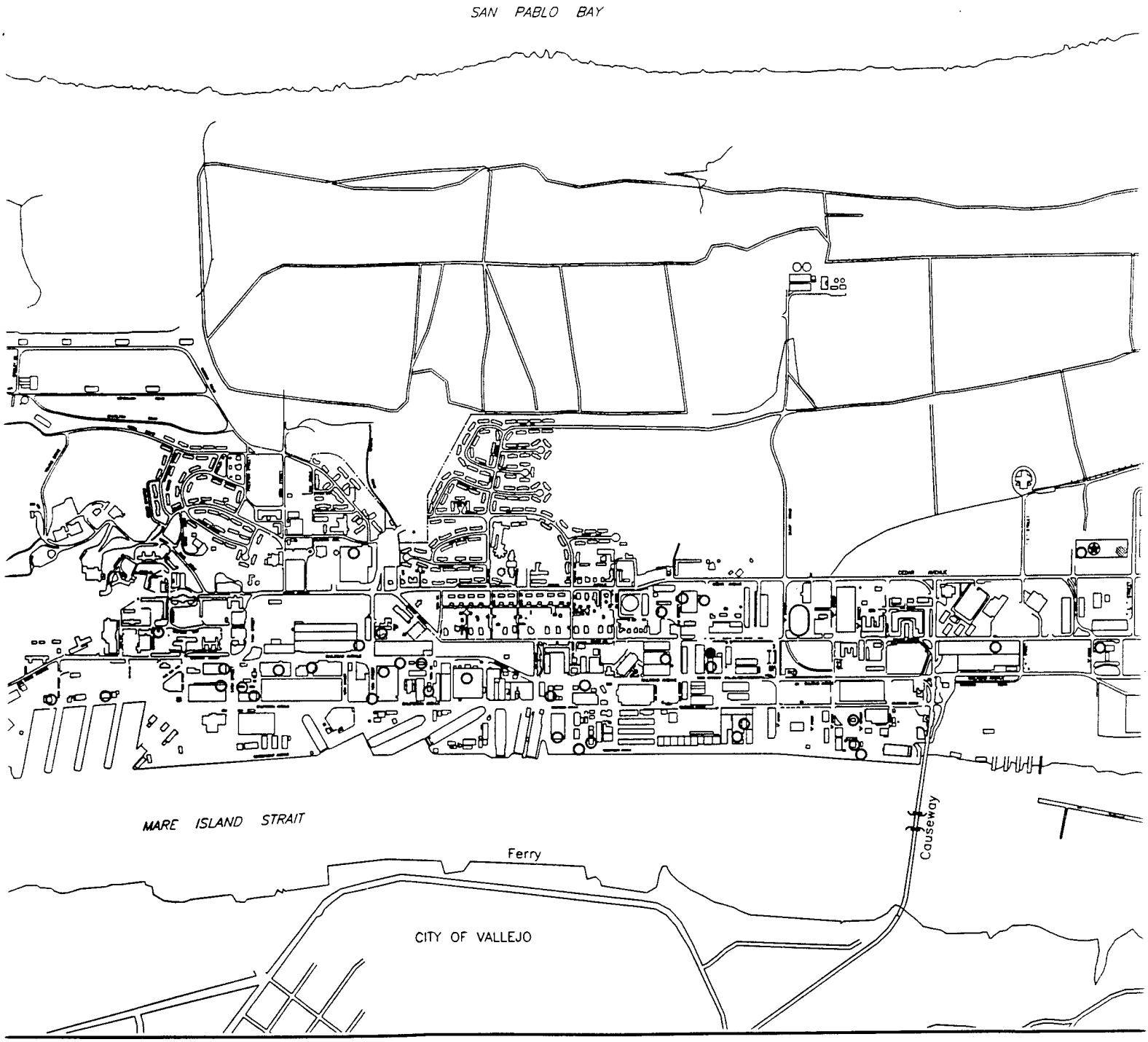


Hazardous waste accumulation areas can store hazardous wastes for up to 90 days. Hazardous waste storage areas may store wastes for up to one year. This figure represents 1995 conditions.

LEGEND:

- ○ Hazardous Waste Accumul
- ● Hazardous Waste Storage
- ⊛ Mixed Waste Storage Area

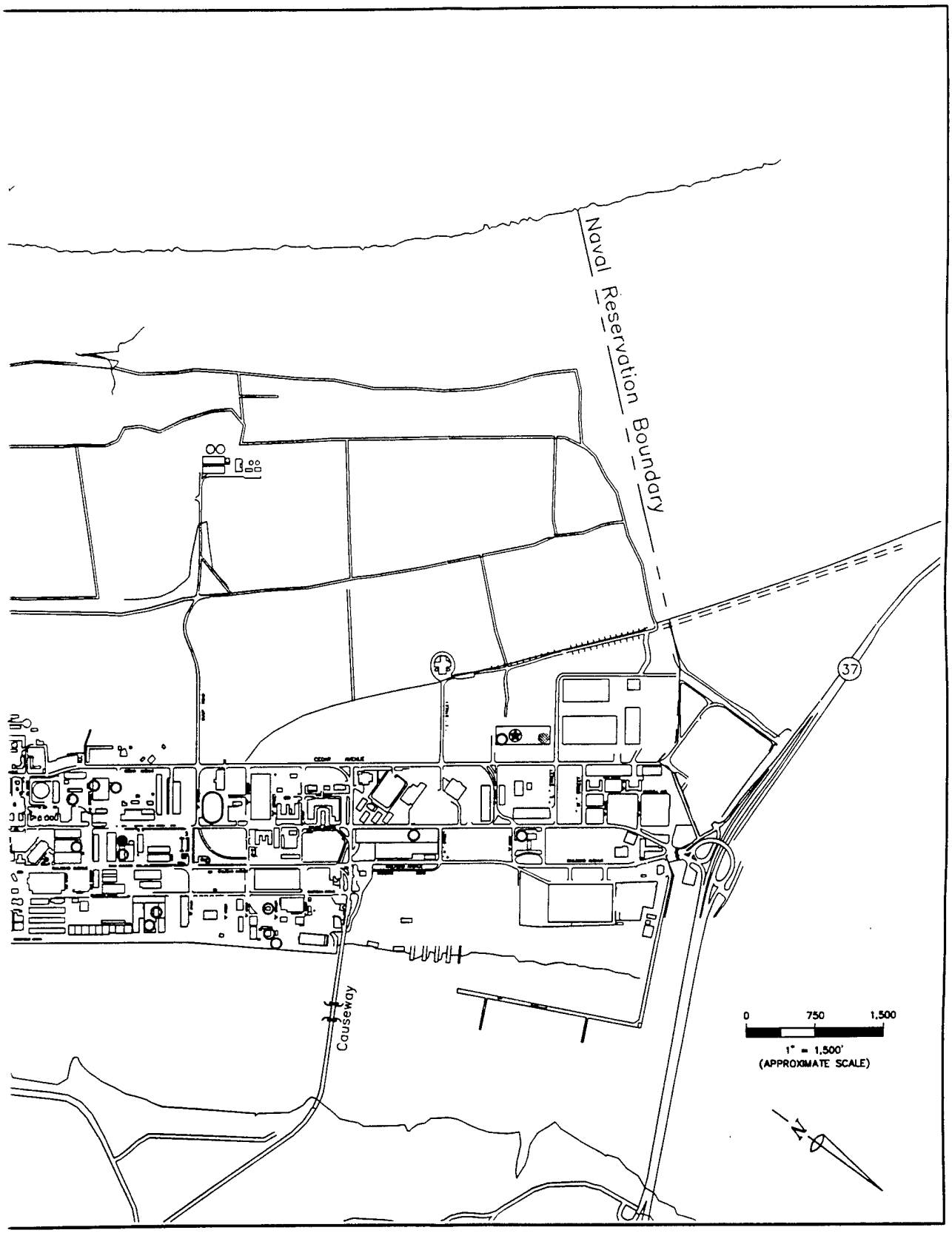
Source: U.S. Navy, 1994c



LEGEND:

- ○ Hazardous Waste Accumulation Areas (90 Days)
- ● Hazardous Waste Storage Areas (1 Year)
- ⊛ Mixed Waste Storage Areas

Hazardous Waste Accu



Hazardous Waste Accumulation and Storage Areas

Mare Island, California

(3)

Figure J-2

TABLE J-3
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
1. North Light Industry	571	Oil	unknown	6/1/89	Land
	601	Paint	5 gal	10/8/93	Concrete
	627	Hydraulic oil	10 gal	12/1/88	Land
	627	Oil	2 gal	9/1/88	Land
	627	Oil	5 gal	9/1/88	Land
	641	Oil	unknown	5/21/92	Concrete
	655	Oil	1 gal	5/8/92	Soil
	759	Oily waste water	7 gal	6/1/92	Soil
	759	Sandblast abrasive	54 cf	8/27/91	Soil
	993	Epoxy paint	55 gal	4/22/92	Concrete
	993	Gas	1 gal	3/1/89	Land
	993	Gasoline	unknown	6/15/92	Concrete
	993	Gasoline	15 gal	2/19/92	Concrete, Storm Drain
	993	Oil	15 gal	9/1/88	Land
	993	Oil	50 gal	7/1/89	Land
	993	Oil/liquid mixture	unknown	11/1/91	Soil
	993	Oily water and poss. Antifreeze	50 gal	1/24/91	Soil
	993	Unleaded gasoline	4 gal	2/24/93	Concrete
	Pier 55	Oil	1 gal	2/1/89	Land
2. Neighbor-hood Center	409	Oily substance	unknown	7/19/91	Asphalt
	489	Cosmoline- tar like preservative	1570 gal	12/15/89	Concrete
	545	Gas	2 gal	11/1/88	Land
	559	Gas & Oil	4 gal	10/1/89	Land
	559	Motor oil, 30 wt	5 gal	5/1/89	Land
	637	Diesel	13 gal	10/1/89	Land
	637	Gas	5 gal	1/1/89	Land
	637	Oil, water & antifreeze	1 gal	10/1/89	Land
	661	Hydraulic oil	5 gal	3/1/89	Land
	661	Oil	5 gal	6/1/89	Land

TABLE J-3 *(continued)*
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
	661	Oil	10 gal	6/9/93	Storm Drain
	675	Diesel	100 gal	3/1/89	Land
	691	Oil contaminated w/ 39,000 ppm PCB	unknown	2/5/93	Concrete
	761	Gas	0.1 gal	11/1/88	Land
	811	Hyd oil	100 gal	1/13/91	Concrete, Storm Drain
	831	Asbestos	0.5 gal	5/8/92	Air
	839	Diesel	unknown	4/5/91	Concrete, sanitary
3. Mixed Use: Office-Light Industry	117	Gas	8 gal	9/1/88	Land
	117	Oily waste water	100 gal	8/9/91	Concrete
	121	Chemicals	0 gal	4/30/91	Concrete
	121	Diesel	3 gal	3/1/89	Land
	121	Diesel	10 gal	3/1/89	Land
	121	Oil	unknown	1/21/93	Concrete
	121	Oil	1 pt	2/23/93	Concrete
	121	Oil	2 gal	1/1/89	Land
	121	Sulfuric acid	80 gal	6/14/91	Soil
	121	Transmission fluid	1 gal	2/24/93	Concrete, Storm Drain
	1345		unknown	12/11/92	Concrete
	1345	Diesel #2	18,000 gal	6/14/91	Water, Soil, Concrete, Storm Drain, Sanitary Drain, IWTC Drain
	153	Oil	4 gal	6/8/92	Concrete
	155	Oil	1.5 gal	6/9/92	Concrete
	163	Oil	5 gal	11/1/88	Land
	201	Diesel	20 gal	4/2/93	Concrete, Storm Drain
	201	Diesel oil	15 gal	9/1/88	Land
	225	Hydraulic oil	unknown	5/6/92	Soil
	273	Hydraulic oil	unknown	3/13/92	Soil
	387	Gas	1 gal	3/1/89	Land
	471	Oil	1 gal	3/10/92	Storm Drain
	483	Gas	5 gal	5/1/89	Land
	483	Hydraulic oil	0.5 gal	2/1/89	Land
	483	Oil	2 gal	2/1/89	Land
	483	Solvent	5 gal	3/2/92	Concrete
	497	Mercury	unknown	7/11/91	Sanitary drain
	507	Transformer Oil	3 gal	1/3/95	Concrete, asphalt

TABLE J-3 *(continued)*
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
	509	Gas	2 gal	8/1/89	Land
	541	Sandblast grit	unknown	9/1/91	Soil, air
	599	Oil	0.1 gal	4/1/89	Land
	607	Tar	1 gal	8/14/89	Concrete
	689	Lead acid	2 gal	10/14/93	Concrete
	757	Oil	30 gal	11/1/88	Land
	87	Gas	1 gal	12/1/88	Land
	87	Transmission fluid	1 gal	3/1/89	Land
	Berth 10		unknown	6/10/91	Water
	Berth 10	Diesel fuel	unknown	6/21/91	Water
	Berth 10	Diesel fuel	100 gal	11/26/91	Concrete
	Berth 10	Oil	1 gal	2/19/93	Concrete
	Berth 2	Oil and Storm Water	1 gal	11/15/94	Water, storm drain
	Berth 3		50 gal	5/26/92	Concrete
	Berth 3	Diesel	25 gal	5/1/88	Water
	Berth 3	Fuel	1 gal	5/1/88	Water
	Berth 4	Brown substance	unknown	5/22/91	Soil
	Berth 4	Diesel fuel	1 gal	3/28/91	Water
	Berth 4	Diesel fuel	2 gal	3/26/91	Water
	Berth 4	Diesel fuel	100 gal	12/4/90	Water
	Berth 4	Diesel oil	1 gal	12/8/92	Water
	Berth 4	Hydraulic oil	2 gal	1/8/92	Concrete
	Berth 4	Hydraulic oil	10 gal	1/8/93	Concrete
	Berth 4	Oily waste water	550 gal	5/20/92	Concrete
	Berth 4	Petroleum	unknown	2/11/92	Water
	Berth 4	Waste material	30 gal	2/1/87	Water
	Berth 5	Diesel	1 gal	4/16/92	Water
	Berth 5	Diesel/petro product	unknown	11/25/91	Water
	Berth 5	Petroleum	unknown	2/11/92	Water
	Berth 6	Diesel fuel & oily bilge water	2 gal	6/28/93	Water
	Berth 8	Fuel	10 gal	1/1/90	Water
	Berth 8	Solvent	5 gal	1/1/88	Water, storm drain
	Berth 9		unknown	6/10/91	Water
	Berth 9	Diesel	1 gal	10/1/89	Land
	Berth 9	Oil	1 gal	10/1/89	Land
	Berth 9	Oil & creosote	0.1 gal	3/1/89	Water
4. Historic District	108		25 gal	12/9/92	Water, Soil, Concrete, Storm Drain, Sanitary Drain

TABLE J-3 *(continued)*
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
	116	Cutting oil	5 gal	9/28/93	Concrete
	235	Gas	0.25 gal	2/1/89	Land
	235	Transmission fluid	0.25 gal	3/1/89	Land
	45	Hydraulic oil	10 gal	9/1/88	Land
	45	Sewer water	10 gal	10/15/93	Soil, Concrete
	516	Oil	2 gal	1/1/89	Land
	65	Industrial waste	0.5 gal	9/27/93	Storm Drain
	65	Industrial wastewater	250 gal	8/12/92	Water, Concrete, Storm Drain
	99A	Fuel	unknown	10/1/88	Land
	Berth 12	Diesel	0.5 gal	4/23/92	Concrete
	Berth 12	Hydraulic fluid	1 gal	4/27/92	Water
	DD-1	Residue	unknown	1/24/91	Water
	DD-1	Diesel	2 gal	12/1/88	Land
	DD-1	Diesel	50 gal	7/1/89	Land
	DD-1	Diesel	200 gal	8/1/89	Land
	DD-1	Gasoline	10 gal	9/1/88	Land
	DD-1	Hydraulic fluid	unknown	3/5/93	Concrete
	DD-1	Hydraulic fluid	1 gal	3/24/93	Concrete
	DD-1	Oil	1 gal	5/1/92	Concrete
	DD-1	Oil	6 gal	5/1/89	Land
	DD-1	Paint	1 qt	3/23/93	Concrete
	DD-1	Sewage	unknown	4/2/92	Concrete
	DD-2	Diesel	10 gal	4/16/92	Concrete, Storm Drain
	DD-2	Oil	unknown	3/28/91	Concrete
	DD-2	Oil	1 gal	1/1/89	Land
	DD-2	Oil	2 gal	10/21/91	Storm Drain
	DD-2	Oil	5 gal	3/1/87	Water
	DD-2	Oil	10 gal	4/2/92	Concrete
	Ways 1	Aerosol, petroleum, linseed oil	1 gal	3/12/91	Water, Concrete
	Ways 1	Hydraulic	unknown	4/7/93	Concrete
	Ways 1	Hydraulic fluid	0.5 gal	2/23/93	Concrete
5. Heavy Industry	106	Oil	2 gal	5/1/89	Land
	112	Paint remover	20 pt	2/11/91	Concrete
	114	Copper naphthanate - type a	unknown	2/28/92	Concrete, Storm Drain
	114	Gas, asphalt & soil	2 gal	3/1/89	Land
	118	Hydraulic oil	15 gal	9/1/88	Land

TABLE J-3 *(continued)*
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
	126	Oil	unknown	10/1/88	Land
	146	Sulfuric acid solution	unknown	1/28/93	Concrete
	208	Fuel	0.25 gal	12/1/88	Land
	672	Oil	unknown	1/1/89	Land
	676	Coolant residue	unknown	3/17/93	Concrete
	676	Diesel	unknown	6/15/92	Concrete
	676	Hydraulic fluid (oil)	unknown	12/22/92	Concrete
	678	Diesel fuel and some water	7 gal (max)	5/22/91	Concrete
	678	Hydraulic oil	5 gal	1/12/93	Concrete, Storm Drain
	680	Hydraulic oil	20 gal	8/1/89	Land
	690		0.5 gal	8/7/89	Concrete
	690	Diesel fuel	0.5 gal	8/16/89	Concrete
	690	Hydraulic oil	20 gal	8/1/89	Land
	692	Cooking grease	10 gal	9/1/88	Land
	728	Paint thinner	unknown	9/30/93	Concrete
	738	Diesel, oil	10 gal	6/15/92	Concrete
	742	Oil	10 gal	2/1/89	Land
	742	Oil	50 gal	2/5/92	Soil
	750	Fuel oil	5 gal	10/10/91	Soil
	750	Hydraulic fluid	unknown	11/29/91	Soil
	750	Hydraulic fluid	1 gal	3/27/93	Concrete
	766	Diesel	1 gal	12/1/88	Land
	814	Oil	10 gal	9/1/88	Land
	Berth 13	Oil	1 gal	10/1/88	Water
	Berth 16	Fuel	2 gal	11/1/88	Water
	Berth 16	Hydraulic oil	8 gal	11/1/88	Land
	Berth 18	Diesel & oil	20 gal	3/1/86	Water
	Berth 18	Fuel & waste oil	10 gal	1/1/88	Water
	Berth 20	Fuel	15 gal	1/1/88	Water
	Berth 20	Fuel oil	0.1 gal	1/15/91	Water
	Berth 20	Gasoline	unknown	2/22/93	Water, Concrete
	Berth 20	Oil	0.25 gal	1/1/89	Land
	Berth 20	Oil	2 gal	10/1/88	Water
	Berth 20	Oil	1 gal	11/1/88	Water
	Berth 20	Oils	5 gal	11/30/92	Concrete
	Berth 20	Waste oil	unknown	4/2/93	Water
	DD-3	Diesel fuel	1 gal	12/11/92	Water, Concrete
	DD-3	Diesel oil	unknown	9/30/91	Water
	DD-3	Fuel oil	30 gal	11/12/91	Storm Drain
	DD-3	Gas	1 gal	12/1/88	Land
	DD-3	Oil	2 gal	3/1/89	Land

TABLE J-3 *(continued)*
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
	DD-3	Oil	15 gal	9/1/88	Land
	DD-4	Asphalt oil	5 gal	11/1/88	Land
	DD-4	Diesel	30 gal	9/1/89	Land
	DD-4	Grease, oily water	unknown	12/17/92	Concrete
	DD-4	Hydraulic oil	20 gal	1/1/89	Land
	DD-4	Oil	2 gal	3/1/89	Land
	DD-4	Oil	20 gal	3/1/89	Land
	GS2	Oil	8 gal	9/1/89	Land
	Pier 21	Diesel fuel	2 gal	3/13/91	Water
	Pier 22	Anti-freeze	1 gal	10/12/93	Concrete
	Pier 22	Bilge material	3 gal	3/1/88	Water
	Pier 22	Diesel Oil/ Water	5 gal	2/7/91	Asphalt
	Pier 22	Diesel	1 gal	10/25/93	Water
	Pier 22	Fuel	1 gal	10/1/88	Water
	Pier 22	Fuel	2 gal	8/1/85	Water
	Pier 22	Fuel	500 gal	1/1/89	Water
	Pier 22	Oil	3 gal	5/1/89	Water
	Pier 22	Oil	35 gal	8/1/88	Water
	Pier 22	Oily waste	0.5 gal	2/5/93	Water
	Pier 22	Unknown	unknown	9/1/88	Water
	Pier 22	Unknown	15 gal	9/1/88	Water
6. Farragut Village	231	Oil	2 gal	9/1/88	Land
	376	Hydraulic oil	30 gal	3/1/89	Land
	889	Hydraulic fluid	2 gal	2/19/93	Soil
8. Coral Sea Village	84	Latex tan paint	0.25 gal	5/17/91	Concrete, Storm Drain
	84	Paint	1 gal	1/24/91	Storm drain
	M5	Gas, oil & brake fluid	unknown	2/24/93	Concrete
9. Education-Office	726	Engine oil	1 gal	3/1/89	Land
	866	Unknown-purple liquid	2 gal	3/29/91	Concrete
	926	Latex paint	unknown	1/7/93	Soil, Concrete, Storm Drain
	H70	Pump oil	1 gal	3/1/89	Land
	944	PCB liquid	unknown	5/3/91	Concrete

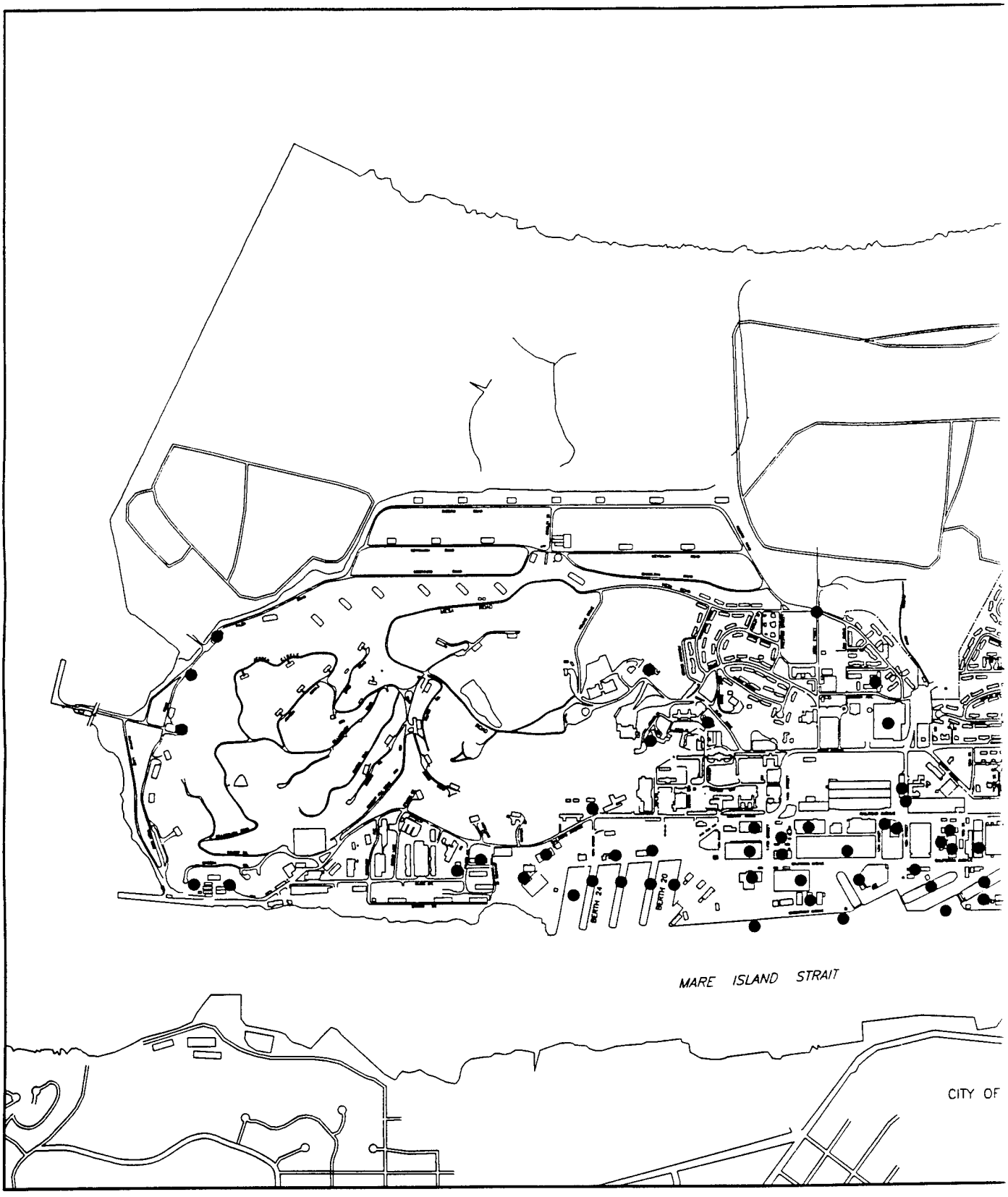
TABLE J-3 *(continued)*
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
10. Marina-Residential	762	Gasoline and oil mixture	1 gal	2/19/93	Concrete
	900	Oil	1 gal	2/1/89	Land
	900	Sandblast grit	unknown	1/24/92	Soil, air
	918	Oil	unknown	1/21/92	Sanitary drain
	A220	Sandblast grit	unknown	2/25/92	Soil, air
	A220	Sandblast grit	unknown	3/3/92	Soil, air
	A80	Hydraulic oil	unknown	2/1/89	Land
	Berth 24	Oil and water	unknown	2/14/91	Soil
	Berth 24	Water and oil	210 gal	2/20/91	Soil
	Pier 23	Diesel contaminated water	0.1 gal	9/24/93	Water
	Pier 23	Fuel	5 gal	4/1/88	Water
	Pier 23	Marine diesel fuel	5 gal (max)	9/24/93	Water, Concrete
	Pier 23	Diesel contaminated bilge water	50 gal	3/15/91	Water
	Pier 23	Fuel Oil	unknown	2/2/91	Water
	Pier 23	Grease	1 gal	7/2/91	Water
	Pier 23	Oil	1 gal	10/1/88	Water
	Pier 23	Paint & solvent residue	2 gal	11/1/88	Water
	Pier 23	Unknown	unknown	9/1/88	Water
12. Regional Park	A154	Metallic materials & PCB	80 cu yd	2/12/91	Concrete
	A165	Motor oil	1 qt	2/1/93	Soil
	A169	Diesel fuel	20 gal	1/8/92	Concrete
	A195	Gas, oil, water	55 gal	12/1/88	Land
	A25	Fuel oil	unknown	1/13/92	Soil
	A267	Paint	0.5 gal	5/10/91	Concrete
13. Open Space-Recreation	969	Remediated soil with lead & oil	50 sq. ft.	2/28/92	Soil
	IWTP	Contaminated diesel & sewage	300 gal	2/14/92	Soil, Storm Drain
	IWTP	Sewage	2500 gal	3/12/92	Soil
	Land Fill	Diesel, oil	0.25 gal	10/29/93	Soil
	Land Fill	Hydraulic Oil	Unknown	11/5/91	Soil
	Land Fill	Oily Substance	Unknown	8/29/94	Soil
	Land Fill	Oil	5 gal	9/1/89	Land
	Land Fill	Oily dirt	unknown	3/31/92	Soil

TABLE J-3 *(continued)*
HAZARDOUS MATERIAL SPILLS

Reuse Plan Area	Bldg Number	Substance	Quantity Released	Spill Date	Released to:
Main Gate	513	Gas	1 gal	10/1/88	Land
	551	Gas	1 gal	10/14/93	Concrete
Unknown	M. I. Strait	Bilge water	100 gal	8/29/94	Water
	M. I. Strait	Diesel	5 gal	2/1/86	Water
	M. I. Strait	Diesel	11 gal	6/1/86	Water
	M. I. Strait	Diesel	25 gal	9/1/86	Water
	M. I. Strait	Diesel	55 gal	12/1/86	Water
	M. I. Strait	Diesel	70 gal	8/1/86	Water
	M. I. Strait	Diesel	500 gal	7/1/88	Water, storm drain
	M. I. Strait	Fuel	2 gal	6/1/86	Water
	M. I. Strait	Oil	25 gal	12/1/86	Water
	M. I. Strait	Oil	55 gal	12/1/86	Water
	M. I. Strait	Sewage & Waste Oil	30 gal	12/1/86	Water
	M. I. Strait	Sewage & Waste Oil	30 gal	5/1/87	Water
	M. I. Strait	Waste Oil	20 gal	3/1/87	Water
	M. I. Strait	Waste Oil	25 gal	1/1/87	Water
	M. I. Strait	Waste Oil	60 gal	6/1/86	Water

Source: U.S. Navy 1994d



The Mare Island Shipyard Hazardous Waste Correction Notice Program tracks all significant hazardous waste releases. This figure represents 1995 conditions.

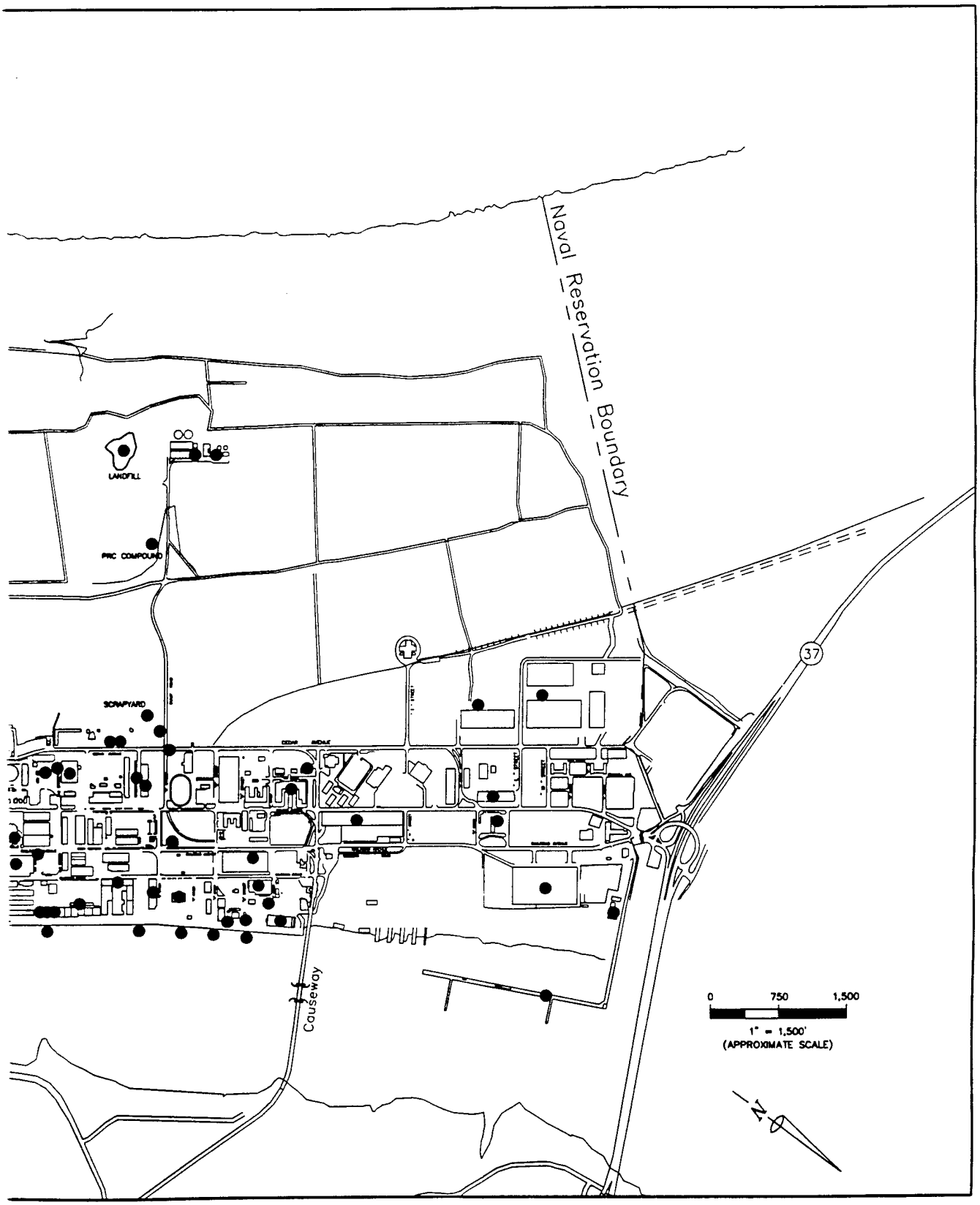
LEGEND:

● Hazardous Spill Locations

Source: U.S. Navy, 1994

LEGEND:

● Hazardous Spill Locations



Hazardous Material Spills

Mare Island, California

3

Figure J-3

TABLE J-4
INSTALLATION RESTORATION PROGRAM SITES

Reuse Plan Area	IR No	Substance Description	Site Name	SWMU Number	General Area/Bldg	Relative Location
1. North Light Industry	IR08	Lead oxide	Battery Storage Area	SWMU-028	629	North of building 629
	IR17	Paints, Varnishes, solvents; Constituents of Concern: heavy metals, VOCs, SVOCs, PCBs	Old Paint Shop Foundation		503	North of Building 503
2. Neighbor-hood Center	IR01	Industrial & non-industrial wastes; abrasives, paints, solvents, acids, plating & mercury wastes, petroleum, PCBs, asbestos, medical/ biological. Constituents of Concern: VOCs, SVOCs, PCBs, metals, TPH, & waste oil.	Facility Landfill, Historic Landfill (See Note 1)	SWMU-039 SWMU-089	Landfill	Along Dump Road
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 source drains in 30 buildings within the industrial area feed to the IWTP
	IR16	Lead Oxide	Lead Oxide Areas			Four Areas along "A" Street & Cedar Ave
	IR18	Leaded & unleaded gasoline; Constituents of Concern; metals, TPH	Former Base Exchange Gas Station		565	Cedar, "D", Oak & "E" Streets; one square block
3. Mixed Use: Office-Light Industry	IR01	Industrial & non-industrial wastes; abrasives, paints, solvents, acids, plating & mercury wastes, petroleum, PCBs, asbestos, medical/ biological. Constituents of Concern: VOCs, SVOCs, PCBs, metals, TPH, & waste oil.	Facility Landfill, Historic Landfill (See Note 1)	SWMU-039 SWMU-089	Landfill	Along Dump Road
	IR03	Diesel, solvents; Constituents of Concern: TPH, metals, VOCs, SVOCs	Berths 4 &5	SWMU-034	Berth 4 & 5	Areas near and between berths
	IR07	Lead, waste battery acid; Constituents of Concern: metals, TPH, acids	Station T-3, Acid Pre-treatment Plant (See Note 2)	SWMU-035 SWMU-036 SWMU-037 SWMU-038	463 463a	California and E Street

TABLE J-4 *(continued)*
INSTALLATION RESTORATION PROGRAM SITES

Reuse Plan Area	IR No	Substance Description	Site Name	SWMU Number	General Area/Bldg	Relative Location
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
	IR15	Plating solutions (acid & base), chromium, antimony, copper, oils, solvents, cyanide & caustic solutions; Constituents of Concern: metals, TPH, VOCs	Plating Shop	SWMU-040 SWMU-041 SWMU-058	225, 983	5th Street & Waterfront
	IR20	Acids, lead, heavy metals	Battery Acid Storage (See Note 2)	SWMU-063 SWMU-064	463, 463A	California and E Street
4. Historic District	IR09	Gasoline, diesel, oils, paints & epoxies, solvents (alcohol, ketones, toluene, ethanol, acetates, turpentine, etc.), spent abrasives; Constituents of Concern: metals, TPH, BTEX	Paint Shop Storage Tanks	SWMU-071	334	Southwest of building 334
	IR12	PCBs	Electrical Substation	SWMU-107	516	Dry Dock #2
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
5. Heavy Industry	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
	IR19	Acids, heavy metals, TPH	Chemical Cleaning Facility	SWMU-008 SWMU-009 SWMU-010 SWMU-011 SWMU-012 SWMU-013 SWMU-014 SWMU-015 SWMU-016 SWMU-017	814	Inside & around building and in soil
	IR21	Fuel oils, lead: Constituents of Concern: metals, TPH	Forge Shop	SWMU-021	386	Inside building near northeast corner

TABLE J-4 *(continued)*
INSTALLATION RESTORATION PROGRAM SITES

Reuse Plan Area	IR No	Substance Description	Site Name	SWMU Number	General Area/Bldg	Relative Location
6. Farragut Village	IR01	Industrial & non-industrial wastes; abrasives, paints, solvents, acids, plating & mercury wastes, petroleum, PCBs, asbestos, medical/ biological. Constituents of Concern: VOCs, SVOCs, PCBs, metals, TPH, & waste oil.	Facility Landfill, Historic Landfill (See Note 1)	SWMU-039 SWMU-089	Landfill	Along Dump Road
	IR10	PCBs	Electric Equipment Storage Yard	SWMU-026 SWMU-052 SWMU-107	831	In building 831 and adjacent storage yard
	IR13	PCBs	Electrical Transformer Spill	SWMU-107	433	Adjacent to the north wall
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
	IR23	Diesel, TPH			772	In and around tan[illegible]
9. Education-Office	IR11	PCBs, VOCs	Electric Equipment Cleaning Area	SWMU-107	866	Cleaning area, nort[illegible] building
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-041 SWMU-040 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
10. Marina-Residential	IR04	Spent abrasives: Constituents of Concern: metals, VOCs	Sandblasting Area	SWMU-023	900	East to Mare Island Strait
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
12. Regional Park	IR05	Burned explosives; Constituents of Concern: metals, trace explosives, VOCs	Concord Annex	SWMU-079 SWMU-080 SWMU-081 SWMU-101	Annex	Open area at south end of shipyard near dike 12

TABLE J-4 *(continued)*
INSTALLATION RESTORATION PROGRAM SITES

Reuse Plan Area	IR No	Substance Description	Site Name	SWMU Number	General Area/Bldg	Relative Location
	IR22	Arsenic, beryllium, cobalt, copper, nickel, lead, explosives, pesticides; Constituents of Concern: metals, trace explosives, pesticides	Buried Magazines	SWMU-083 SWMU-084	A249, A250	In & around magazines
13. Open Space-Recreation	IR01	Industrial & non-industrial wastes; abrasives, paints, solvents, acids, plating & mercury wastes, petroleum, PCBs, asbestos, medical/ biological. Constituents of Concern: VOCs, SVOCs, PCBs, metals, TPH, & waste oil.	Facility Landfill, Historic Landfill (See Note 1)	SWMU-039 SWMU-089	Landfill	Along Dump Road
	IR02	PCBs, waste oil (see also IR01)	Oil Sumps (See Note 1)	SWMU-076 SWMU-077	Landfill	"A" Street/Dump Road
	IR06	Lead, chromium, PCBs, diesel fuel, lubricating oils, industrial wastes; Constituents of Concern: PCBs, metals, VOCs, SVOCs, herbicides	Industrial Waste Treatment Plant (IWTP) Surface Water Impound-ments	SWMU-043 SWMU-044 SWMU-074 SWMU-075 SWMU-102	981	Surface water impoundments
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
	IR16	Lead Oxide	Lead Oxide Areas			Four Areas along "A" Street & Cedar Ave
	IR24	Industrial sludge; Constituents of Concern: metals, VOCs, TPH, PCBs	Digester tanks		867	West of building, two tanks
Dredge Ponds	IR01	Industrial & non-industrial wastes; abrasives, paints, solvents, acids, plating & mercury wastes, petroleum, PCBs, asbestos, medical/ biological. Constituents of Concern: VOCs, SVOCs, PCBs, metals, TPH, & waste oil.	Facility Landfill, Historic Landfill (See Note 1)	SWMU-039 SWMU-089	Land-Fill	Along Dump Road

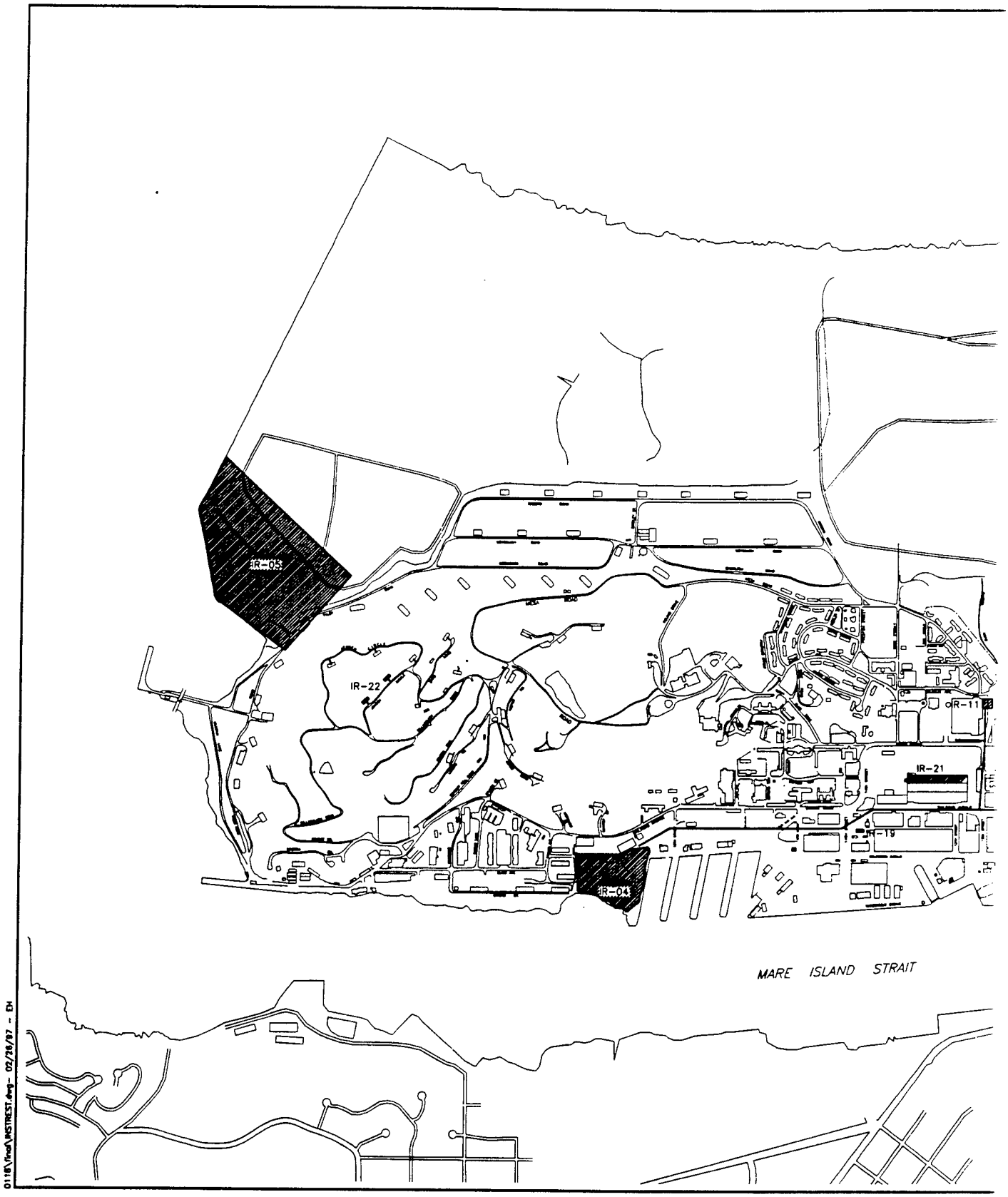
TABLE J-4 *(continued)*
INSTALLATION RESTORATION PROGRAM SITES

Reuse Plan Area	IR No	Substance Description	Site Name	SWMU Number	General Area/Bldg	Relative Location
Wetlands	IR01	Industrial & non-industrial wastes; abrasives, paints, solvents, acids, plating & mercury wastes, petroleum, PCBs, asbestos, medical/ biological. Constituents of Concern: VOCs, SVOCs, PCBs, metals, TPH, & waste oil.	Facility Landfill, Historic Landfill (See Note 1)	SWMU-039 SWMU-089	Land-Fill	Along Dump Road
	IR05	Burned explosives; Constituents of Concern: metals, trace explosives, VOCs	Concord Annex	SWMU-079 SWMU-080 SWMU-081 SWMU-101	Annex	Open area at south end of shipyard near dike 12
	IR14	Industrial waste water, solvents, petroleum products, acid and base solutions; Constituents of Concern: heavy metals, PCBs, VOCs, SVOCs, acids, alkaline solutions	IWTP Collection System	SWMU-034 SWMU-040 SWMU-041 SWMU-092 SWMU-094 SWMU-095		Piping systems from 120 sources drains in 30 buildings within the industrial area to the IWTP
	IR16	Lead Oxide	Lead Oxide Areas			Four Areas along "A" Street & Cedar Ave

Notes: 1. IR01/IR02 are being managed as one unit.
2. IR07/IR20 are being managed as one unit.

Source: U.S. Navy 1994c; U.S. Navy 1991

This page intentionally left blank.

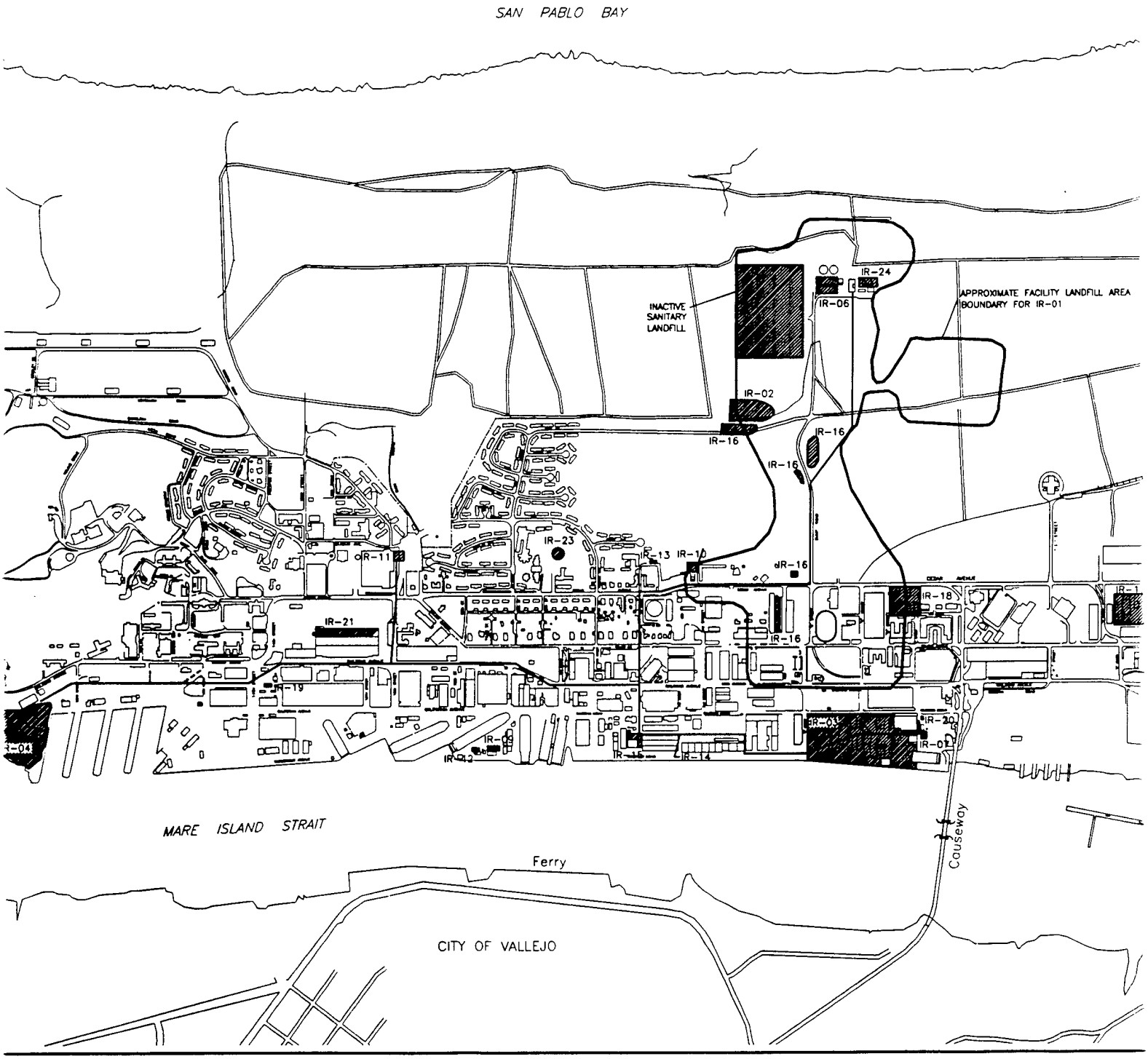


The installation restoration program identifies, assesses, characterizes, and cleans up or controls contamination.

LEGEND:

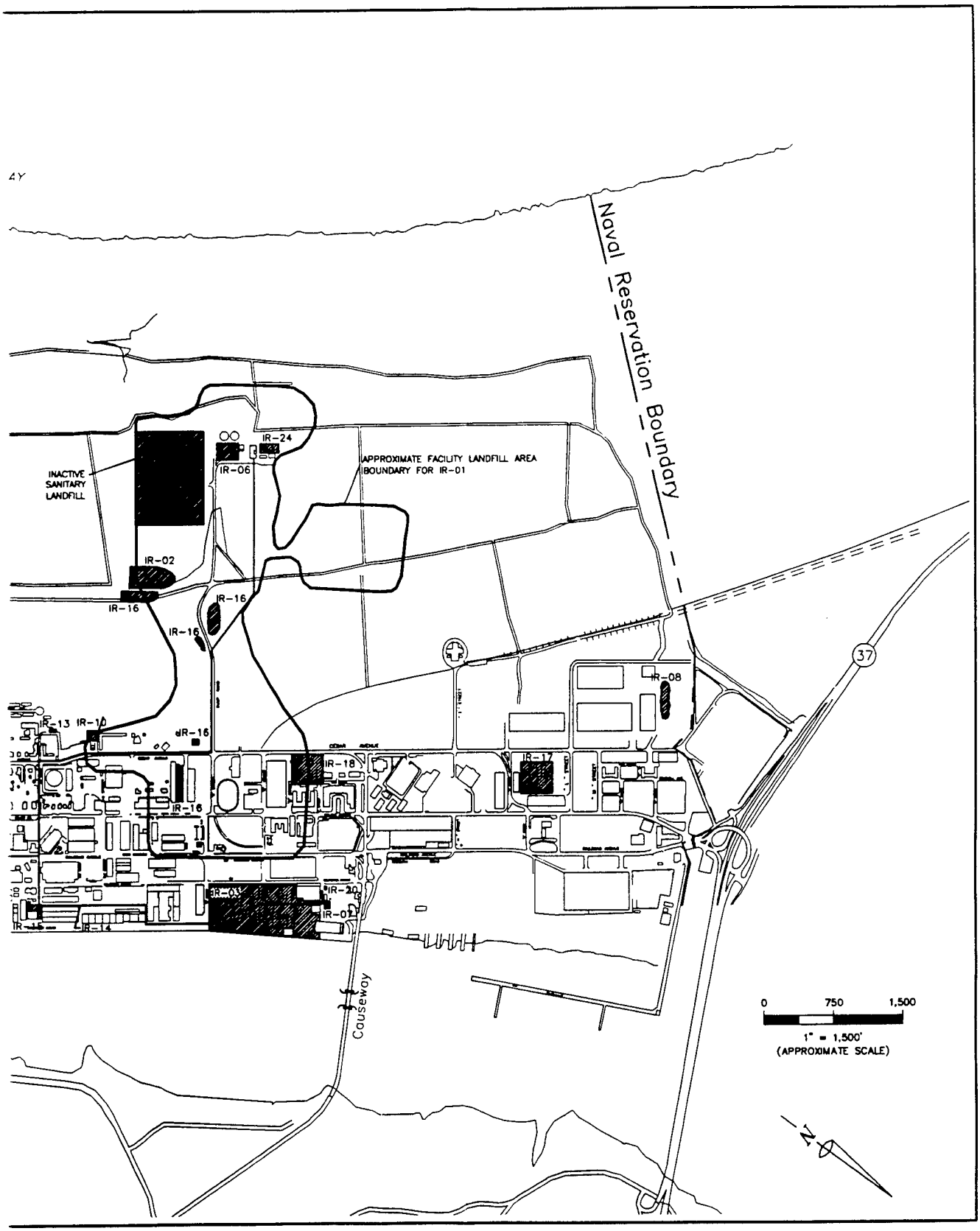
IR-04 Installation Restoration

Source: U.S. Navy, 1994c



LEGEND:

IR-04 Installation Restoration Sites



Installation Restoration Sites

Mare Island, California

3

Figure J-4

TABLE J-5
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
1. North Light Industry	SWMU-003	Radiological materials storage	751		Various radionuclides (investigation handled by G-RAM program)
	SWMU-028	Battery storage area	629	IR08	Spent batteries
	SWMU-086	Waste oil tank	993		Lubricating oil; transmission & brake fluids
	SWMU-108	Areas of potential radium releases	751		Radium 226 (investigation handled by G-RAM program)
	SWMU-123	Areas of potential radium release	627		Radium 226 (investigation handled by G-RAM program)
	SWMU-124	Areas of potential radium release	655		Radium 226 (investigation handled by G-RAM program)
	XPA/SI-001	North shore piers	Pier 53 Pier 54 Pier 55 Pier 56		Ordnance
	XPA/SI-013	Ammunition handling in waterfront and reserve fleet areas			Unexploded items and associated components
2. Neighborhood Center	SWMU-026	Hazardous material storage area	831	IR10	PCB waste
	SWMU-052	PCB storage area	831	IR10	PCB wastes
	SWMU-065	Pesticide rinsing gravel pad	455		Chlorinated hydrocarbons, herbicides, insecticides, pesticide rinse water, pesticides
	SWMU-085	Container storage area (mercury waste bldg)	535		Diatomaceous earth, dilute aqueous solutions, mercuric nitrate, mercury, ship boiler water
	SWMU-087 SWMU-088	Waste oil tank	637		Lubricating oil, transmission & brake fluids
	SWMU-098	Wastewater generate at transportation shop	637		Degreasers, fuels, greases, metals, oils, solvents

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-113	Pesticide storage	455		Pesticides
	SWMU-122	Areas of potential radium release	545		Radium 226 (investigation handled by G-RAM program)
	SWMU-129	DRMO storage facility	661		metals, oil
	XPA/SI-004	Transportation shops	637 639 811		Batteries, detergents, fuels, greases, heavy metals, oils, solvents, waste oil
3. Mixed Use: Office-Light Industry	SWMU-001	Radioactive materials storage	207		Various radionuclides (investigation handled by G-RAM program)
	SWMU-008 SWMU-009 SWMU-010 SWMU-011 SWMU-012 SWMU-013 SWMU-014 SWMU-015 SWMU-016 SWMU-017	Acid tanks	85 87 89 91	IR19	Acids, neutralized acids
	SWMU-027	Hazardous material container storage area	213		PCB contaminated soil, PCB liquid material, transformers and rectifiers
	SWMU-034	Industrial waste gravity oil separator, Station T-2	477	IR03 IR14	Diesel oil, hydraulic oils, inorganic chemicals, lubricating oils, scrap oil collection barge, settle water, wash water
	SWMU-035 SWMU-036	Industrial waste acid neutralization sedimentation tank 1, Station T-3	987	IR07	Lead waste, neutralized sulfuric acid

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-037	Industrial waste acid neutralization sedimentation tank, Station T-3	987	IR07	Lead waste, neutralized, 50% sodium hydroxide, sulfuric acid
	SWMU-038	Industrial waste acid sump, Station T-3	987	IR07	Lead, sulfuric acid, waste water, water
	SWMU-040	Industrial waste cyanide sump, Station T-1	983	IR14 IR15	Alkaline cyanide
	SWMU-041	Industrial waste cyanide oxidation reaction tank, Station T-1	983	IR14 IR15	Alkaline waste
	SWMU-057	Pipe cleaning dip tanks	101 273 855		Cleaning chemicals, corrosive removal, dilution water, nitric acid, rust, soda ash, sodium dichromate, sodium hydroxide, solvents, sulfuric acid, trisodium phosphate
	SWMU-058	Plating shop sump	225	IR15	Caustic, chromic acid, cyanide, lye, muriatic acid, nitric acid, soda, sulfuric acid
	SWMU-060	Sulfuric acid collection sump	461		Sulfuric acid
	SWMU-061	Battery shop electrolyte container	461		Potassium hydroxide electrolyte
	SWMU-062	Battery plate accumulation area	461		Antimony battery plates, silver plates, spent lead
	SWMU-063	Sulfuric acid mixing area	463 463A	IR20	Sulfuric acid
	SWMU-064	Industrial waste treatment acid storage facility, Station T-3	463 463A	IR20	Acid rinse water
	SWMU-066	Saltwater sump	121		Boiler blowdown
	SWMU-067	Waterfront dumpsters (Bldg 128 demolished)	101 273 855		Asbestos waste, lead, lubricating oils, metal shavings, paint, paint thinner, sawdust, scrap, solvent cans, solvents, wood
	SWMU-096	Sheetmetal operations (Bldg 62 demolished)	117 155		Deoxidizing dip tank solutions

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-097	Pipe cleaning dip tanks	101 273 855		Distilled water, nitric acid, stoddard solvent, sulfuric acid
	SWMU-104	IW oil sludge tank	985		Oil sludge tanks
	SWMU-107	PCBs mgt accumulation areas	213		PCB waste
	SWMU-108	Areas of potential radium releases	387 91		Radium 226 (investigation handled by G-RAM program)
	SWMU-115	Sheet metal shop	117		Sheet metal operations
	SWMU-116	Storage	155		Sheet metal operations
	SWMU-121	Areas of potential radium release	239		Radium 226 (investigation handled by G-RAM program)
	SWMU-128	Diesel spill site (June 3, 1991)	Berth 10		Diesel fuel
4. Historic District	SWMU-020	Welding shop dumpster - sheet metal shop	116		Developers, empty containers, kimwipes saturated with penetrants, removers
	SWMU-030	Navy publication and printing waste storage area	65		Blanket washes, deglazing solvents, electrostatic solutions, kodak processing chemicals
	SWMU-031	Navy publication and printing waste storage area	47A		Blanket washes, electrostatic solutions, kodak processing chemicals
	SWMU-067	Waterfront dumpsters (Bldg 128 demolished)	108 334 46		Asbestos waste, lead, lubricating oils, metal shavings, paint, paint thinner, sawdust, scrap, solvent cans, solvents, wood
	SWMU-071	Gravity separator at Bldg 334, near IR09	334	IR09	Alcohol, brulin cleaner, epoxies, glacial acetic acid, ketones, nitrate, oakite, paint, silver, thinners
	SWMU-072	Former spent abrasive piles	334		Copper slag, nickel, paint & metal, spent abrasives
	SWMU-073	Sandblasting collection sumps	334		Copper slag, nickel, paint & metal, spent abrasives
	SWMU-096	Sheetmetal operations (Bldg 62 demolished)	116 52 62		Deoxidizing dip tank solutions

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-105	Outside machine shop past disposal and accumulation practices (Bldg 128 demolished)	108 DD-1 DD-2		Asbestos waste, heavy metals, lubricating oils, metal shavings, solvents
	SWMU-107	PCBs mgt accumulation areas	516	IR12	PCB waste
	SWMU-114	Storage shed - (Bldg demolished)	62		Sheet metal operations
	SWMU-118	Shipwrights building	108		Machine shop operations
	SWMU-120	Dry dock 1 & 2	DD-1 DD-2		Asbestos waste, lubricant oils, metal shavings, solvents
	SWMU-127	Dry dock discharge tunnel	DD-1 DD-2		Asbestos waste, lubricant oils, metal shavings, solvents
5. Heavy Industry	SWMU-004	Radioactive materials storage (Bldg demolished)	796		Investigation handled by G-RAM program
	SWMU-006	Storage, repair & disposal area for radiation detection instruments and radioluminescent dials	686		Radium 226 (investigation handled by G-RAM program)
	SWMU-007	Electrical/electronics shop waste accumulation areas	686		Detergent wastes, solvents

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-008 SWMU-009 SWMU-010 SWMU-011 SWMU-012 SWMU-013 SWMU-014 SWMU-015 SWMU-016 SWMU-017	Acid tanks	814	IR19	Acids, neutralized acids
	SWMU-018	Inside machine shop accumulation area	680		Asbestos, coolants, lead acids, mercury, oils, paint strippers, solvents,
	SWMU-019	Dumpster	680		Coolants, hydraulic oils, solvents
	SWMU-021	Forge shop waste accumulation area	386	IR21	Beryllium, paint cans, paint skins, quench oil, scrap metal
	SWMU-022	Sheetmetal operation scrap metal accumulation area	1310		Formica scrap, metal, paint-laden abrasives, rinse waste water, spun glass residues
	SWMU-024	Shipfitting shop waste accumulation area	388 390		Cleaners, electrodes, lubricants, scrap metal, solids and liquid waste, spent welding materials
	SWMU-025	Center tool shop waste accumulation area	678		Asbestos blankets, gaskets and pipe insulation, mercury, oily and solvent - saturated rags, oily metal cuttings, PCB oils, sandblasting residues, solvents, waste oils
	SWMU-029	Incinerator (both Bldgs demolished)	300 H17		Biological waste
	SWMU-059	Storage lockers at paint & rubber shop lab	746 810		Butyl acetate, empty paint cans, ethanol, methyl ethyl acetate, methyl ethyl ketone, solvents, toluene, xylene

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-067	Waterfront dumpsters (Bldg 128 demolished)	114 128		Asbestos waste, lead, lubricating oils, metal shavings, paint, paint thinner, sawdust, scrap, solvent cans, solvents, wood
	SWMU-096	Sheetmetal operations (Bldg 62 demolished)	672		Deoxidizing dip tank solutions
	SWMU-099	Storage at paint & rubber shop lab waste	746A 810		Ethanol, methyl ethyl ketone, paint waste, solvents, toluene, xylene
	SWMU-100	Metallurgical laboratory wastes	746		Bronze, manganese, metal scrap, slag, zinc dust
	SWMU-105	Outside machine shop past disposal and accumulation practices (Bldg 128 demolished)	128		Solvents, asbestos waste, heavy metals, lubricating oils, metal shavings,
	SWMU-108	Areas of potential radium and thorium releases	680 742		Radium 226, Thorium 232 (investigation handled by G-RAM program)
	SWMU-111	Machine shop	680		Acids, asbestos, cleaning solvents, cleaning solvents, lead, mercury, oils, paint strippers
	SWMU-112	Electrical/electronics shop waste accumulation areas	686		Cleaning ingredients, lubricants, methyl ethyl ketone, paints, sealants, stoddard solvent
	SWMU-117	Berth 16	672		Sheet metal operations
	SWMU-119	Outside machine shop and toolroom (Bldg demolished)	128		Machine shop operations
	XPA/SI-007	OWS between Bldgs 750 and 680 (allegedly)	750		Oils, PCBs
	XPA/SI-006	Raised circular area of asphalt	742		BTEX, Metals, PCBs, SVOCs, TPH, TRPH, VOCs
6. Farragut Village	SWMU-107	PCBs mgt accumulation areas	433 831	IR10 IR13	PCB waste

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-109	Chlordane-contaminated, MI elementary school and wave barracks (Bldg 735 & 765 demolished)	735 765 864		Chlordane
	SWMU-126	MI elementary school and wave barracks (Bldg 735 & 765 demolished)	735 765 864		Chlordane
9. Education-Office	SWMU-005	Radioactive materials storage	866	IR11	Radium 226 (investigation handled by G-RAM program)
	SWMU-006	Storage, repair & disposal area for radiation detection instruments and radioluminescent dials	866	IR11	Various radionuclides (investigation handled by G-RAM program)
	SWMU-007	Electrical/electronics shop waste accumulation areas	866	IR11	Detergent wastes, solvents
	SWMU-029	Incinerator (both Bldgs demolished)	300 H17		Biological waste
	SWMU-032	Naval regional medical center dumpster	H73		Laboratory reagents, pharmaceutical containers, X-ray developing & fixing solutions, X-ray solutions
	SWMU-051	Industrial sewer system	866	IR11	Wastewater
	SWMU-107	PCBs mgt accumulation areas	866	IR11	PCB waste

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-110	Combat systems tech schools command (old naval hospital site)	H-1 H-72 H-73 H-74 H-79 H-80 H-81 H-83 H-84 H-89		Cleaning chemicals, empty pharmaceutical containers, infectious biological wastes, solvents
10. Marina-Residential	SWMU-023	Sandblasting area	900	IR04	Metals and metallic oxides, spent paint-laden abrasives
	SWMU-068	Paint spray booth waste mgt units	900		Paint contaminated water, paints, thinners
	SWMU-069	Dip tanks	900		Alodines, deoxidizers, Irridite, rinsewaters
	SWMU-070	Water curtain sumps	900		Wastewater
	XPA/SI-008	Paint shed	1300		Painting contaminants
12. Regional Park	SWMU-079	Concord annex circle pit	A169	IR05	Flashed material
	SWMU-080	Concord annex ordinance	A169	IR05	Detonation residues, detonators, drug contraband, inert ordnance, powders, primers, projectiles, warheads
	SWMU-083 SWMU-084	Former container storage area	A249 A250	IR22	Contaminated oil, diethythiourea, ethylene glycol, freon solvent, isopropyl, methylene chloride, minerals, monoethanolamine, oxygen-generating canister, sprits, stoddard solvent, sulfuric acid

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-091	Container storage area	A195		Alcohols, barium perchlorate canister, epoxy compound ethers, hydrogen peroxide solution, reactive waste, solvents
	SWMU-101	Concord annex ordinance and addition sites	A169	IR05	Ordnance
	XPA/SI-002	South shore tidal beach	Btwn Piers 34 and 35		Ordnance
	XPA/SI-009	Dike 14 area (bay south of island)			Lead, ordnance (disposal)
	XPA/SI-010	Buried magazine area (ammunition depot)			Lead, ordnance (storage)
13. Open Space-Recreation	SWMU-039	Dump road area	Land-fill	IR01	Commercial waste and soil, construction debris, household garbage, unspecified industrial waste
	SWMU-042	Industrial waste primary sedimentation tank	981	IR06	Metal cleaning solutions, oil-water separator waste, photographic solutions, wastewater from electroplating
	SWMU-043 SWMU-044	Industrial waste east and west blending ponds	981	IR06	Acid wastewaters, cyanide, oily water
	SWMU-045	Industrial waste chrome reduction mix tank	981	IR06	Industrial waste, sulfur dioxide, sulfuric acid
	SWMU-046	Industrial waste chrome reduction mix tank	981	IR06	Sulfuric, acid and dioxide, wastewater from IW
	SWMU-047	Industrial waste neutralization mix tank	981	IR06	Aluminum, calcium hydroxide, polyelectrolyte, wastewater from IW
	SWMU-048	Industrial waste flocculation tank	981	IR06	Wastewater from IW
	SWMU-049	Industrial waste final sedimentation tank	981	IR06	Toxic wastewater
	SWMU-050	Industrial waste oil sump tank	981	IR06	Diesel fuel, lubricating oils

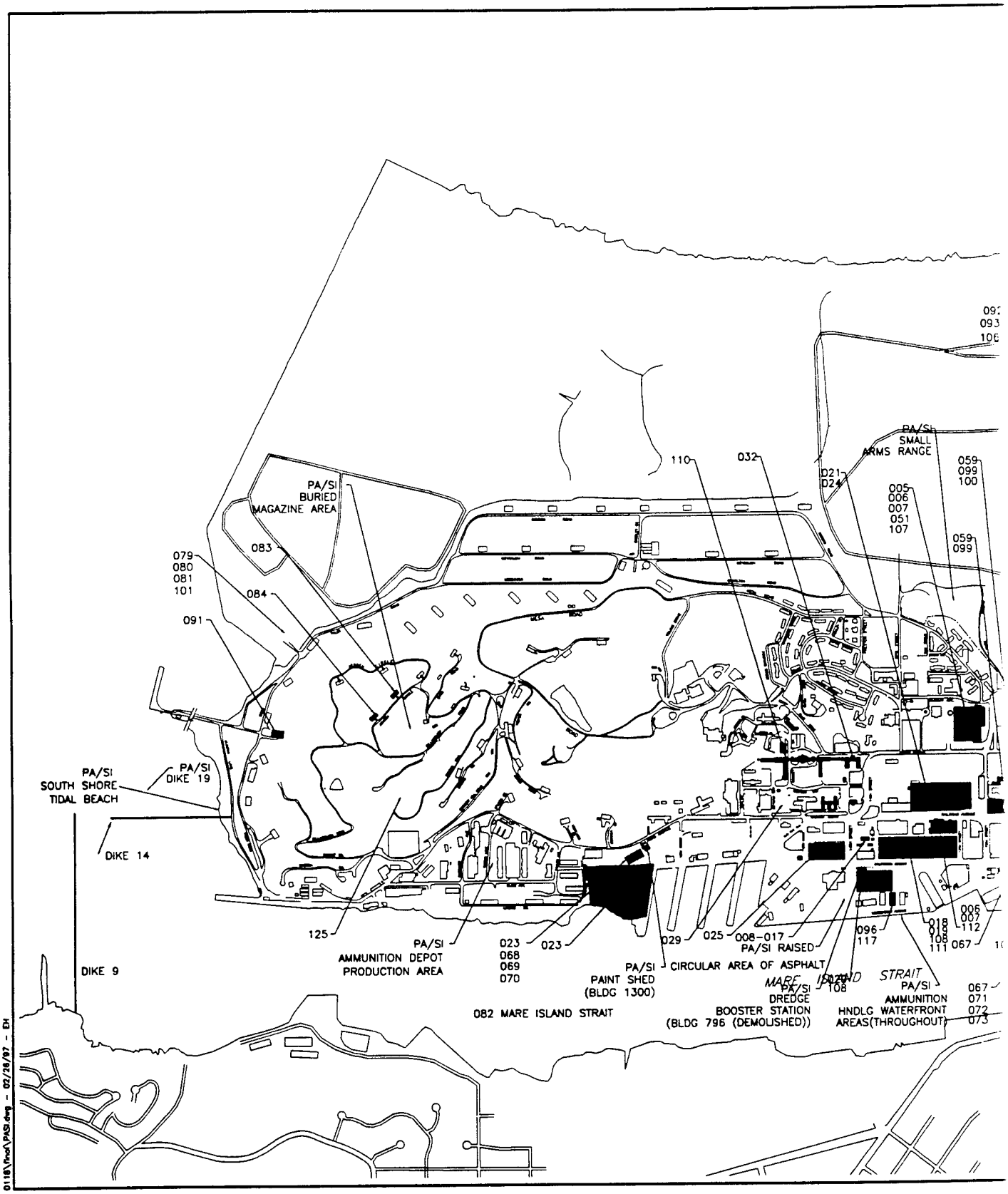
TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-054	Asbestos holding area	Land-fill	IR01	Polyethylene - bagged asbestos
	SWMU-074 SWMU-075	Sludge holding ponds	981	IR06	Alkylines, caustics, heavy metals, solvents
	SWMU-076 SWMU-077	Oil Sump No. 1 Oil Sump No. 2	Land-fill	IR02	Lubricating oils, waste oils
	SWMU-089	Facility landfill	Land-fill	IR01	Asbestos, batteries, cleaning fluids, grease, gun turrets, infectious waste, mercury, misc. Garbage, paint thinners, rubber lab waste, shipboard wastes, sludges, solvents, spent abrasives, spent plating wastes, waste oils, waste solvents
	SWMU-090	Waste holding pond	IWTP	IR06	Wastewater
	SWMU-092	IW pipeline collection system	IWTC	IR14	Wastewater
	SWMU-094	IW pipeline collection system lift station sumps	IWTC	IR14	PCBs
	SWMU-095	IW pipeline collection system wet wells	IWTC	IR14	PCBs
	SWMU-102	Sludge holding ponds	981	IR06	Alkylines, caustics, heavy metals, solvents
	SWMU-103	IW oil sump tank	981	IR06	Diesel fuel, lubricating oils, PCBs
	XPA/SI-005	Decontamination building/fire training school (all bldgs demolished)	633 635 647		Fire fighting contaminants, radium (instruments), fire fighting contaminants
Dredge Ponds	XPA/SI-014	Dredge pond areas (west side of island)			Ordnance
Wetlands	SWMU-002	Radioactive materials storage	593		Radium 226 (investigation handled by G-RAM program)
	SWMU-078	Fill area	505		Rubber fill
	SWMU-108	Areas of potential radium releases	593, 505		Radium 226 (investigation handled by G-RAM program)
	XPA/SI-003	Area south of Bldg 505	505		Construction debris, rubble, soil
Multiple	SWMU-053	Asbestos dumpsters			Asbestos waste

TABLE J-5 *(continued)*
PRELIMINARY ASSESSMENT/SITE INSPECTION SITES
(LISTED BY SWMU NO.)

Reuse Plan Area	SWMU Number	Description	Bldg Number	IR No.	Substance
	SWMU-081	Concord annex storm sewers	Annex	IR05	Stormwater runoff
	SWMU-082	Mare island strait			Acids, caustics, detergents, grease, heavy metals, oil, paints, PCBs, solvents
	SWMU-092	IW pipeline collection system		IR14	Industrial wastewater
	SWMU-093	Storm sewer system			Coolants, lead acids, liquid wastes, mercury, metal plating solutions, neutralized acids, oils , paint strippers, solvents
	SWMU-106	Sanitary sewer system			Raw sewage
	SWMU-125	South end of island			Ordnance
	XPA/SI-011	Landfill areas (southwest side of island)			Ordnance (storage)
	XPA/SI-012	Small arms ranges			Small arms ammo, lead
	XPA/SI-013	Ammunition handling waterfront areas & reserve fleet areas (Mare Island straits)			Ordnance (disposal)
	XPA/SI-015	Ammunition depot production area (south end)			Ordnance (manufacture)
Unknown	SWMU-033	Waste crankcase oil tank			Crankcase oil

Source: U.S. Navy 1994c

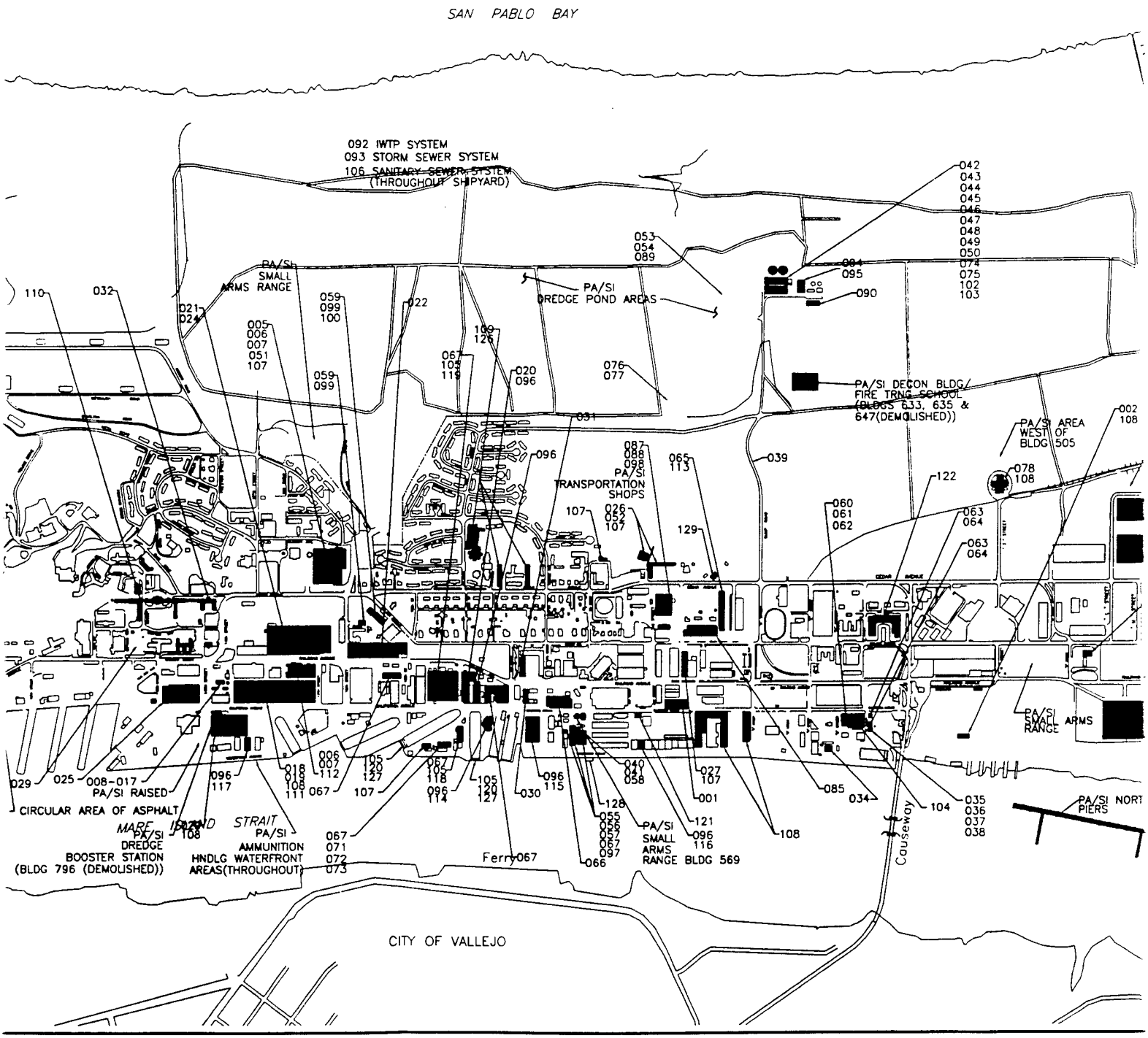


The preliminary assessment identifies areas of potential contamination. A site inspection is conducted when additional information is needed to evaluate a site.

LEGEND:

Sites Undergoing PA or are former Solid Waste (SWMU) numbers)

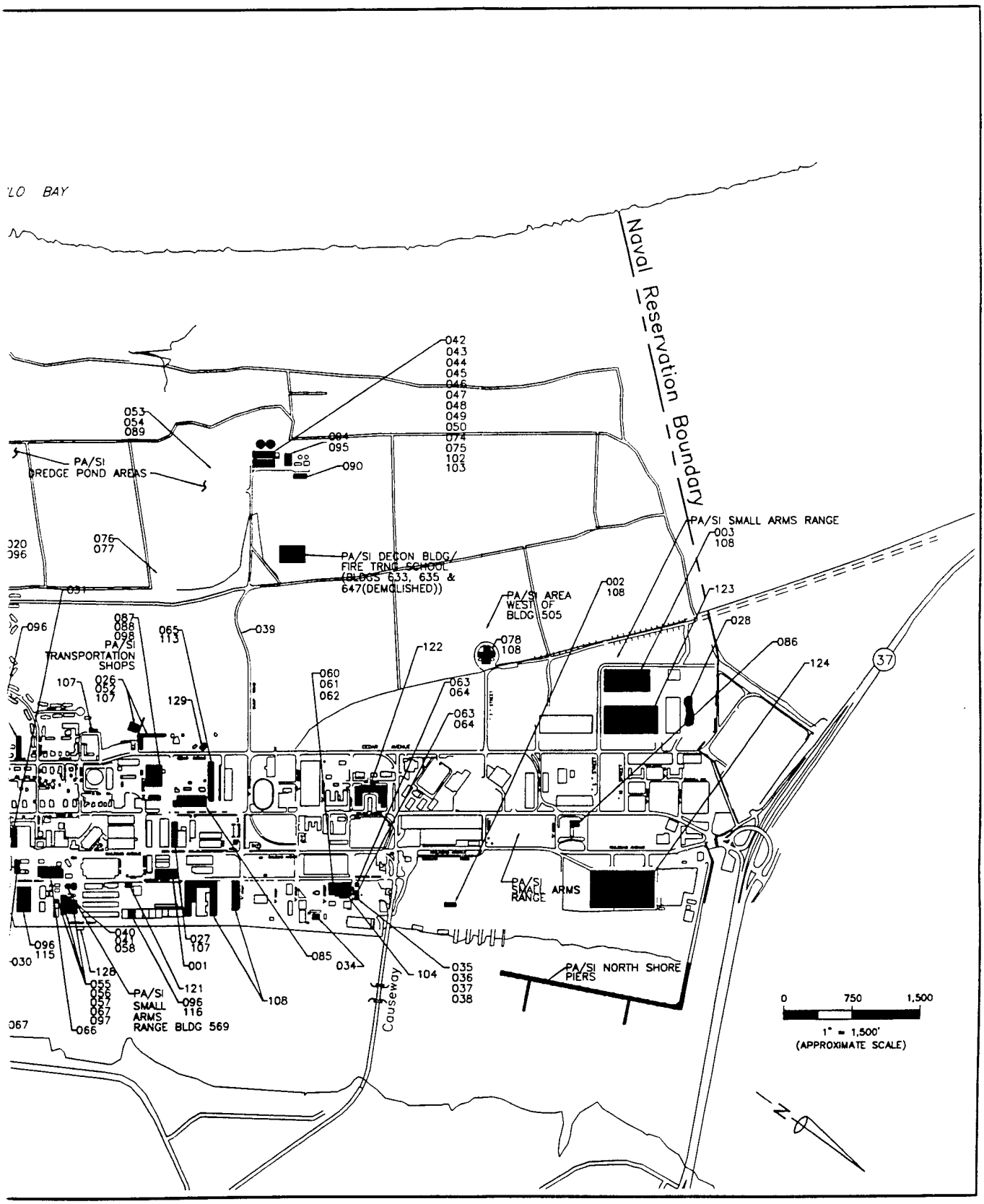
Source: U.S. Navy, 1994c



LEGEND:

Sites Undergoing PA or SI Activities (Numbers used are former Solid Waste Management Unit (SWMU) numbers)

Areas Undergoing



ers used

Areas Undergoing Preliminary Assessment or Site Investigation

Mare Island, California

3

Figure J-5

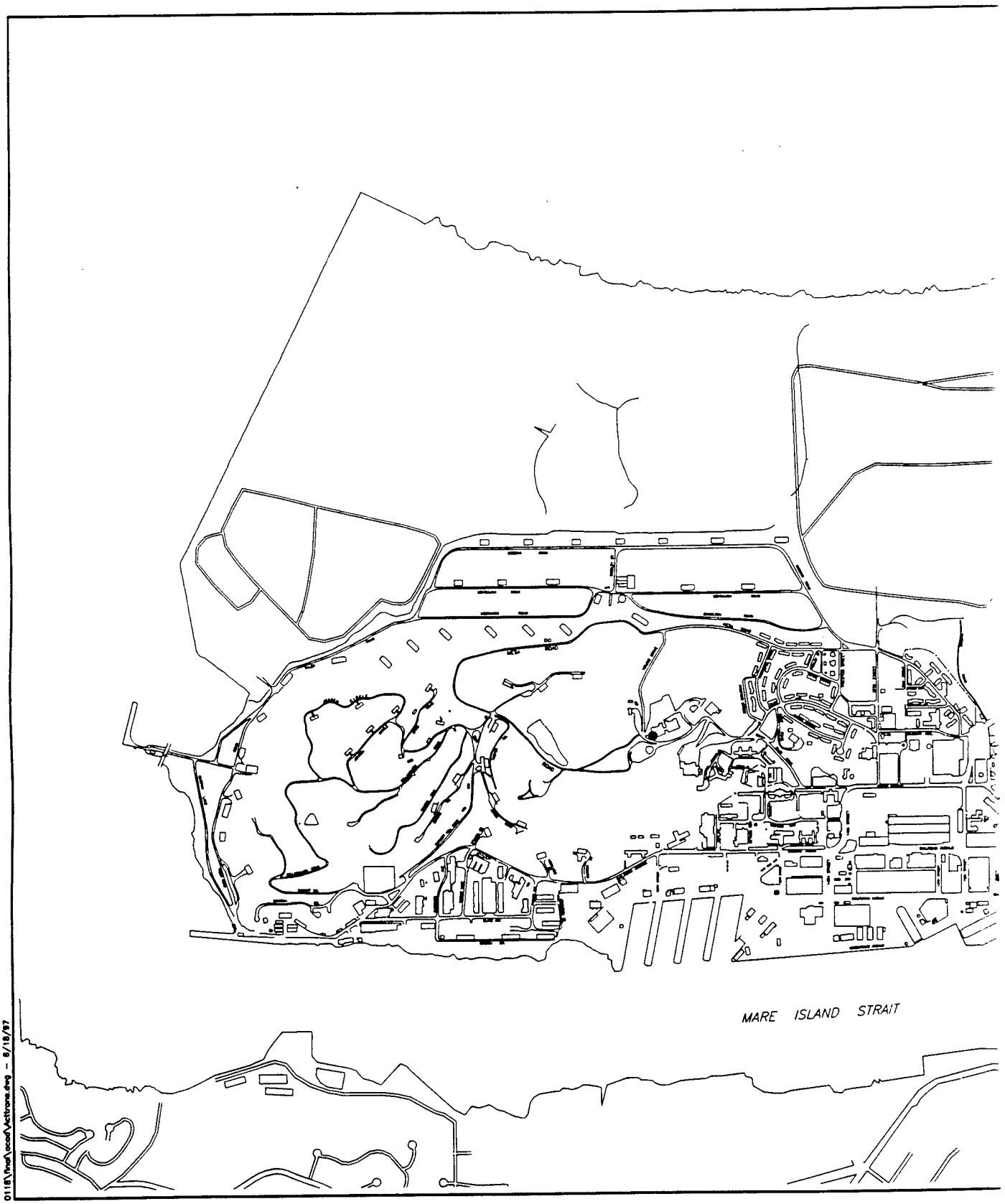
TABLE J-6
PCB CONTAMINATED EQUIPMENT (>50 ppm)

Reuse Plan Area	Bldg Number	Transformer Number	PCB Concentration	Status	Relative Location	Type Equipment
1. North Light Industry	797	T-0565	73.5 ppm	Active	Pier 55	Transformer
	797	T-0567	308 ppm	Active	Pier 55	Transformer
	797	T-0568	54.8 ppm	Active	Pier 55	Transformer
	797	T-1102	308.3 ppm	Active	Pier 55	Transformer
	797	T-1104	139 ppm	Active	Pier 55	Transformer
2. Neighborhood Center	661	T-0409	64 ppm	Active	Scrap Yard	Transformer
	661	T-0410	210 ppm	Active	Scrap Yard	Transformer
	661	T-0411	94 ppm	Active	Scrap Yard	Transformer
	675	T-1446	140 ppm	Active	Scalehouse, Cedar Ave.	Transformer
3. Mixed Use: Office-Light Industry	121	T-0935	119.1 ppm	Active	Power Plant	Transformer
	121	Various	499 ppm	Active	Power Plant, Railroad & 14th St	Oil Circuit Breaker (10 btwn 121 & 822)
	461	RA-25	755 ppm	Active	California & "E" Street	Rocker Arm
	785	T-0794	135 ppm	Active	Station 3, Berth 4	Transformer
	787	T-0890	169.9 ppm	Active	Station 7, Berth 6	Transformer
	85	T-1005	64.7 ppm	Active	Berth 7	Transformer
4. Historic District	834	T-1051	141 ppm	Active	Ways 1 & 2	Transformer

TABLE J-6 *(continued)*
PCB CONTAMINATED EQUIPMENT (>50 ppm)

Reuse Plan Area	Bldg Number	Transformer Number	PCB Concentration	Status	Relative Location	Type Equipment
5. Heavy Industry	690	T-1490	500 ppm	Active	California & 11th Street	Transformer
	822	Various	500 ppm	Active	Station F	Oil Circuit Breaker (10 btwn 121 & 822)
6. Farragut Village	1104	T-0028	397 ppm	Active	501 Tisdale Pole	Transformer
	563	T-0460	122 ppm	Active		Transformer
	563	T-0999	107.6 ppm	Active		Transformer
9. Education-Office	1324	T-0091	94.6 ppm	Active	Golf Course Dr.	Transformer
	1324	T-0092	127 ppm	Active	Golf Course Dr.	Transformer
Main Gate	BH2	T-0507	68 ppm	Active	Causeway Bridge	Transformer

Source: U.S. Navy 1994d

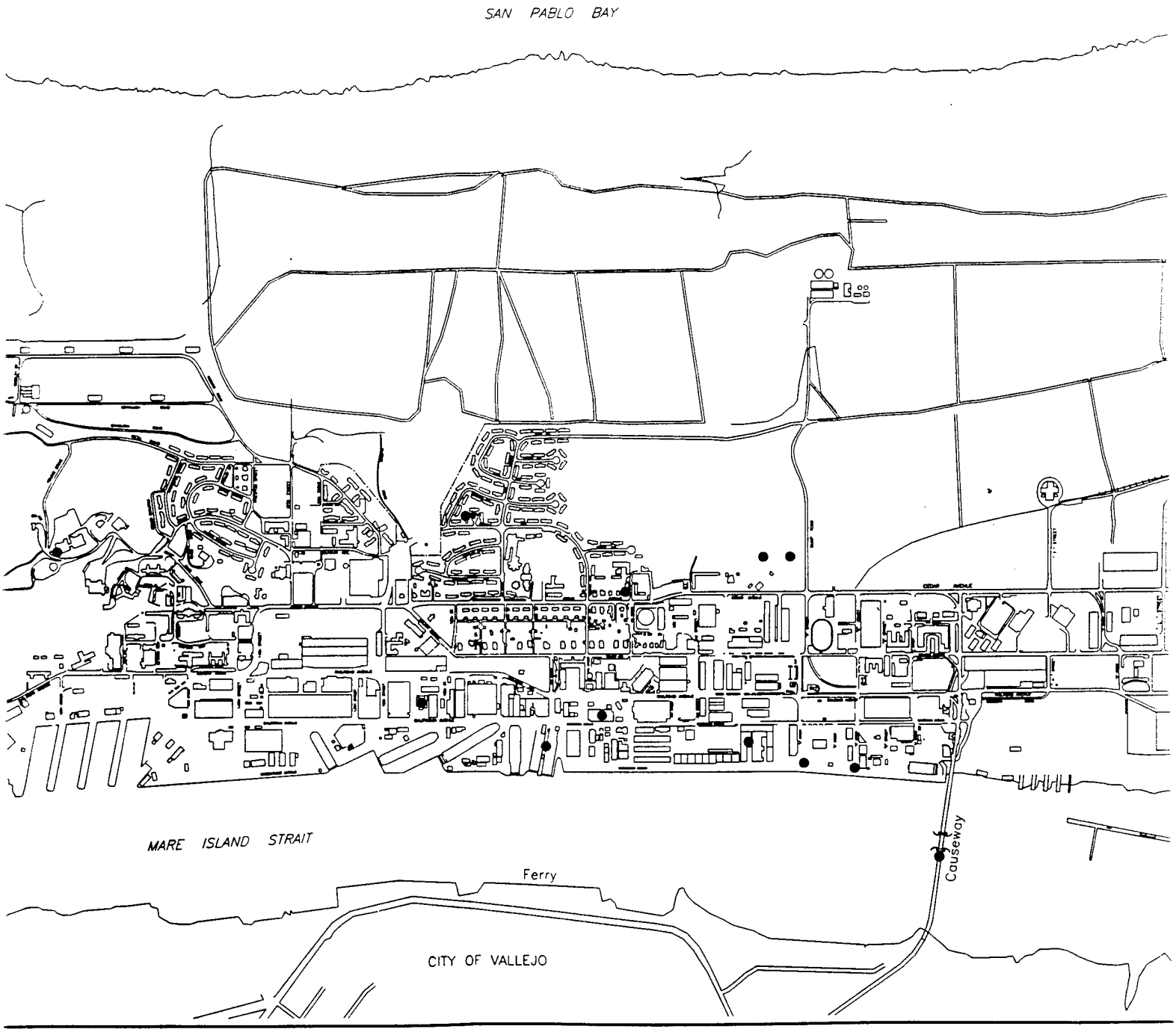


Many electrical transformers use hydraulic fluids containing PCBs. This figure represents 1995 conditions.

LEGEND:

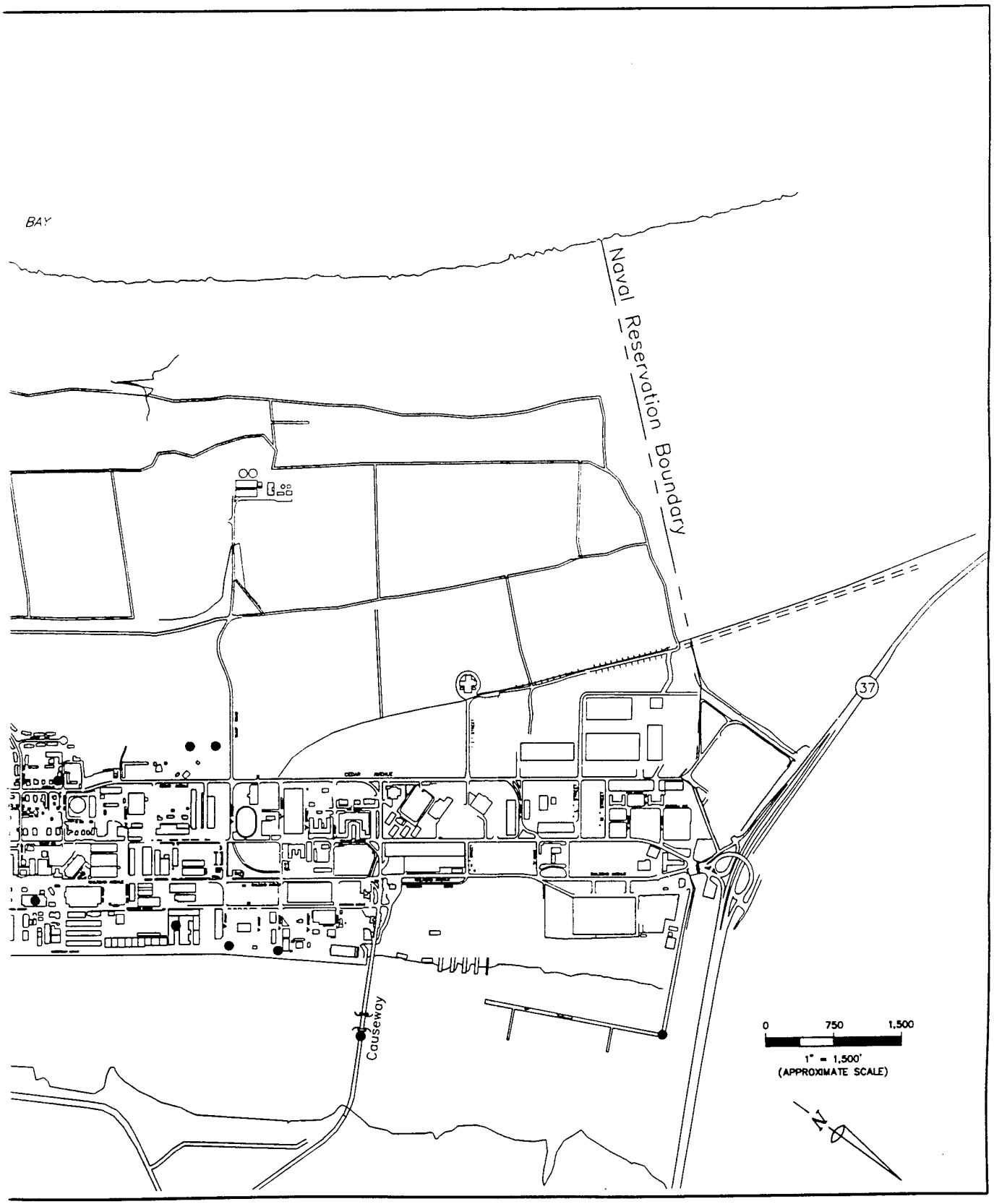
Active Transformers Cor

Source: U.S. Navy, 1994c



LEGEND:

● Active Transformers Containing PCBs (>50 ppm)



ɔ ppm)

Active Transformers Containing PCBs (> 50ppm)

Mare Island, California

3

Figure J-6

TABLE J-7
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
1. North Light Industry	AST	503		NE corner	Inactive	Diesel Fuel				4000 gal	
	AST	627		North end Col. H-28	Removed	Alodine		Sept 94		100 gal	Metal
	AST	797	(2 tanks)		Inactive	Diesel	Diesel Day Tanks			275 gal (ea.)	Steel
	OWS	571		NE side (car wash)	Inactive	Oil/Water					Concrete
	UST	503	1		Suspect						Steel
	UST	577	S		Removed	Oily Water/Waste Oil		8/23/90		2000 gal	Steel
	UST	627	1		Abandoned	Diesel/Water	Cleaned and closed in place			4000 gal	Concrete
	UST	627	2		Abandoned	Oil/Water/ Diesel/Fuel Oil	Cleaned and closed in place			200 gal	Concrete
	UST	655			None Located		No UST Located				
	UST	759			None Located		No UST Located				
	UST	993	1		Inactive	Gasoline				12000 gal	Fiberglass
	UST	993	2		Inactive	Gasoline				12000 gal	Fiberglass
	UST	993	3		Inactive	Gasoline				12000 gal	Fiberglass
	UST	993	4		Removed	Waste Oil		7/18/90		500 gal	Fiberglass
	UST	999			Removed	Heating Fuel Oil/Diesel	Was a leaker	7/90		6000	Fiberglass
2. Neighborhood Center	AST	637			Inactive	Waste Oil	Oil Storage			480 gal	Steel
	AST	811			Inactive	Diesel	Vehicle Wash			60 gal	Steel
	UST	241		Bldg 637 SE corner	Suspect	Oil					

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	UST	565	1		Removed	Spent abrasives		8/23/90	IR18	5000 gal	Steel
	UST	565	2		Removed	Gasoline/water		8/23/90	IR18	5000 gal	Steel
	UST	565	3		Removed	Gasoline/water		8/31/90	IR18	5000 gal	Steel
	UST	565	4		Removed	Gasoline/water		8/23/90	IR18	5000 gal	Steel
	UST	637	1		Removed	Waste Oil		8/23/90		16000 gal	Steel
	UST	637	2		Removed	Spent abrasives/ waste oil/diesel		8/31/90		16000 gal	Steel
	UST	839			Removed	Diesel		5/29/96		2000 gal	Fiberglass
3. Mixed Use: Office-Light Industry	AST	121		NW corner,out side	Inactive	Sulfuric Acid				12,000 gal	Steel
	AST	121		NW corner, outside	Inactive	Sodium Hydroxide				12,000 gal	Steel
	AST	121			Active	Diesel	Cold Start Engine			275 gal	Steel
	AST	165		SW corner	Active	Propane				800 gal	
	AST	225			Removed	Unknown			IR15	3000 gal	Steel
	AST	461		Col B-7/B-8	Inactive	Electrolyte				325 gal	Fiberglass
	AST	461		Col. C-13	Inactive	Electrolyte				225 gal	Fiberglass
	AST	461		Col. E-13/E-14	Inactive	Electrolyte				250 gal	Fiberglass
	AST	461		Col. W-12	Inactive	Electrolyte				1200 gal	Fiberglass
	AST	461		Col W-13/C-13	Inactive	Sulfuric Acid				500 gal	Fiberglass
	AST	461		North end, east side	Inactive	Sulfuric Acid				3,200 gal	Fiberglass
	AST	461	2	North end, east side	Inactive	Sulfuric Acid				3,200 gal	Fiberglass

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	AST	461	3	North end, east side, outside	Inactive	Sulfuric Acid				3,200 gal	Fiberglass
	AST	461	4	North end, east side, outside	Inactive	Sulfuric Acid				3,200 gal	Fiberglass
	AST	461	5	North end, east side outside	Inactive	Sulfuric Acid				1,600 gal	Fiberglass
	AST	461	6	North end, east side, outside	Inactive	Sulfuric Acid				1,600 gal	Fiberglass
	AST	463	1&3	Outside	Inactive	Sulfuric Acid			IR20	5,000 gal	Steel
	AST	463	2,4 &6	Outside	Inactive	Electrolyte			IR20	5,000 gal	Lead-Lined Wood
	AST	463	5&7	Outside	Inactive	Sulfuric Acid (Diluted)			IR20	5,000 gal	Lead-Lined Wood
	AST	471	D1 thru D6		Inactive	Diesel			IR03	11,400 gal	Steel
	AST	509		Berth 1	Inactive	Diesel	Diesel Fuel Tank			300 gal	Steel
	AST	795	1 thru 8	West yard	Inactive	Hydraulic Oil			IR03	3,000 gal	
	AST	795	9 thru 10	West yard	Inactive	Oil			IR03	3,000 gal	
	AST	795	11 thru 18	Inside bldg	Inactive	Hydraulic Oil			IR03	1000 gal	
	AST	795	19-23	West yard	Inactive	Hydraulic Oil			IR03	1000 gal	
	AST	795	24	West yard	Inactive	Hydraulic Oil			IR03	1,000 gal	

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	AST	795	25	Inside bldg	Inactive	Hydraulic Oil			IR03	1,000 gal	
	AST	795	26	Inside bldg	Inactive	Hydraulic Oil			IR03	500 gal	
	AST	795	27 thru 28	Outside Bldg.	Inactive	Diesel Fuel			IR03	1000 gal	
	AST	795	D-11 & D-12	North side, outside	Inactive	Diesel Fuel			IR03	500 gal	
	AST	987			Inactive	Sulfuric Acid (diluted)			IR07	12000 gal	Fiberglass
	AST	987	T-3		Inactive	Sodium Hydroxide			IR07	5900 gal	Steel
	OWS	477	T2-1	Berth 4	Inactive	Oil/Water			IR03	5760 gal	Concrete
	OWS	477	BTB-1	Berth 4	Inactive (mobile)	Oil/Water			IR03		Steel
	UST	201			Removed	Diesel		5/29/96		1000 gal	Steel
	UST	225			Removed	Chromic Acid		4/28/87	IR15	3000 gal	Steel
	UST	497			None Located		No UST Located				
	UST	521			Removed	Water/Gasoline/ Fuel Oil		8/20/90		110 gal	Steel
	UST	521	OR-10		Abandoned	Fuel/Oil					Concrete
	UST	693	D10		Removed	Diesel	Removal scheduled for after '96	10/25/96	IR03	19200 gal	Concrete
	UST	693	D7		Removed	Diesel	Removal scheduled after '96	11/13/96	IR03	19200 gal	Concrete
	UST	693	D8		Removed	Diesel	Removal scheduled for after '96	10/25/96	IR03	19200 gal	Concrete

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	UST	693	D9		Removed	Diesel	Removal scheduled for after '96	11/13/96	IR03	19200 gal	Concrete
	UST	829			Removed	Diesel		1/12/96		17640 gal	Steel
4. Historic District	AST	332			Inactive	Diesel				400 gal	Steel
	AST	334		NW corner, outside	Inactive	Diesel	Emergency Gen Fuel Supply		IR09	400 gal	Steel
	AST	65	2 Cyl	East side, outside	Inactive	Anhydrous Ammonia				100 gal(each)	
	AST	DD-1	S3G	Drydock #1	Inactive	Diesel	Emergency Generator Fuel Tank			600 gal	Steel
	UST	108			Removed	Water/ Diesel Fuel/Gas		12/15/92		710 gal	Steel
	UST	108	A		None Located						
	UST	334	1		Removed	Oil		3/30/87	IR09	10000 gal	Steel
	UST	334	2		Removed	Waste Paint/ Dryer with metals		3/30/87	IR09	5000 gal	Steel
	UST	334	3		Removed	Turpentine		3/30/87	IR09	5000 gal	Steel
	UST	334	4		Removed	Alcohol		3/30/87	IR09	10000 gal	Steel
	UST	46			Removed	Diesel/Gas/Water /Bunker Oil		2/1/93		130 gal	Steel
	UST	50			Removed	Waste Oil/ water/Gas		2/23/93		100 gal	Steel
5. Heavy Industry	AST	112		Outside	Inactive	Unknown				250 gal	Steel
	AST	112		Outside	Inactive	Unknown				250 gal	Steel

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	AST	112	DCK6	Outside	Inactive	Freon 113				230 gal	Steel
	AST	126		Main floor hose dept.	Removed	Mineral Spirits		Unknown			
	AST	126	1	NW corner tank room	Inactive	Solvent				2514 gal	
	AST	126	10	NW corner tank room	Removed	Nitric Acid/Chromic Acid		Unknown		250 gal	
	AST	126	11	NW corner tank room	Inactive	Sulfuric Acid/Sodium Dichromate				2250 gal	Metal
	AST	126	12	NW corner tank room	Inactive	Sulfuric Acid				2250 gal	Metal
	AST	126	13	NW corner tank room	Inactive	Sodium Matasilicate/ Sodium				1000 gal	Metal
	AST	126	14	NW corner tank room	Inactive	Nitric/ Hydrofluoric Acid				1000 gal	Metal
	AST	126	15	NW corner tank room	Inactive	Paint Stripper				1000 gal	
	AST	126	2	NW corner tank room	Inactive	Sodium Hydroxide/ Solvent				2250 gal	
	AST	126	3	SW corner clean room	Inactive	Trisodium Phosphate/ Detergent				2250 gal	Metal

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	AST	126	6	NW corner tank room	Inactive	Hydrochloric Acid/Cupric Chloride				2250 gal	Metal
	AST	126	8	NW corner tank room	Inactive	Sodium Carbonate				2250 gal	Metal
	AST	126	9	NW corner tank room	Inactive	Sulfuric Acid/Sodium Carbonate				2250 gal	
	AST	126	16	NW corner tank room	Empty					1000 gal	
	AST	1310	3	West side, middle, tank room	Inactive	Hydrofluoric/ Nitric Acids				750 gal	
	AST	390		West side, outside	Inactive	Propane				800 gal	
	AST	670		NW corner, outside	Removed	Propane		Unknown		250 gal	
	AST	674		Outside	Inactive	Hot water				500 gal	Steel
	AST	680		SE corner	Inactive	Oil	Material Storage Area			50 gal	Steel
	AST	750	4 Tanks	2nd floor Chemsol Dept.	Inactive	Plastisol				109 gal(each)	
	AST	Berth 18		Berth 18	Inactive	Propane				100 gal	
	AST	DD-3	2 tanks	2 Tanks	Inactive	Potassium Chromate				5,500 gal (each)	

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	AST	DD-3	Rail-car	Railcar	Inactive	Potassium Chromate				10000 gal	
	OWS	742	A		Suspect	Unknown	No UST Located			1200 gal	
	OWS	750		Alley near 680	Abandoned	Waste Oil/PCBs				12000 gal	Concrete
	OWS	750	A		Suspect	Oil/Sand					Concrete
	UST	682	1		Removed	Gasoline	Constructed '85 for diesel but never used	9/11/96		10000 gal	Steel
	UST	682	2		Removed	Diesel	Constructed '85 but never used	9/11/96		10000 gal	Steel
	UST	688	1 thru 3		None Located		No UST located				
	UST	742			None located						
	UST	810			Removed	Gasoline/Diesel/ Water		1/21/93		10300 gal	Steel
6. Farragut Village	AST	772		Pump House	Inactive	Diesel				500 gal	Steel
	OWS	231		Car wash	Inactive	Oil/water/ sediment				9000 gal	Concrete
	UST	231	1		Removed	Gasoline		10/26/95		8000 gal	Steel
	UST	231	2		Removed	Gasoline	Sched'd for re-moval after '96	10/26/95		8000 gal	Steel
	UST	243	1	Bldg 231 east	Removed	Diesel/ Gasoline/Water		12/15/92		6300 gal	Steel
	UST	243	2	Bldg 231 east	Removed	Diesel/ Gasoline/Water		12/15/92		6300 gal	Steel
	UST	563	1 to 4		None located		No UST located				

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	UST	563	A		None located		No UST located				
	UST	737			None located		No UST located				
	UST	772			Out of service	Diesel/Fuel Oil			IR23	2 Mgal	Concrete
	UST	Q1-2	OR-15	7th/Cedar, SW corner	Suspect						
	UST	Q11-12	OR-16	9th/Cedar, NE corner	Suspect					151,000 gal	
8. Coral Sea Village	UST	84		Courtyard	None located		No UST located				
	UST	84		North	None located		No UST located				
	UST	898			None located		No UST located				
	UST	1230			None located						
	UST	M122			None located						
9. Education-Office	AST	866	S454	1st floor, col. R-8	Inactive (empty)	Varnish Dip				75 gal	Steel
	AST	866	S454	1st floor, col. R-9	Inactive	Varnish/Resin				750 gal	Steel
	AST	866		3rd fl. elec-troplating	Inactive	Solder				713 lbs	
	AST	866		5th floor, clean room	Inactive	Alodine 1%/water 99%				100 gal	
	AST	866		5th floor, col. B-18	Inactive	Dry Cleaning Solvents				26 gal	
	AST	866		1st floor, col. R-3	Inactive	Epoxy				3000 gal	Steel
	AST	866	S453	1st floor, col. R-8	Inactive	Varnish Dip				400 gal	Steel

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	AST	866	S454	1st floor, col R-8	Inactive	Varnish Dip				75 gal	Steel
	AST	1324		Schools command	Inactive	Fuel Oil				10,000 gal	Steel
	OWS	866	A		Inactive	Unknown			IR11	3000 gal	Concrete
	UST	866			Removed	PCBs/ Waste Oil		11/2/90		3000 gal	Concrete
	UST	886			Removed	Fuel Oil/Diesel		2/1/93		2000 gal	Fiberglass
	UST	930	A		None Located		No UST Located				
	UST	930	B		None Located		No UST Located				
	UST	H34			Removed	Contaminated Water/Diesel/Unknown		12/22/92		575 gal	Steel
	UST	H74			Abandoned	Fuel Oil				6,900 gal	Steel
10. Marina-Residential	UST	A190			Removed	Contaminated Water/Solids		12/22/92		470 gal	Steel
	UST	A190	1		Suspect						
	UST	A190	2		Suspect						
	UST	A190	3		Suspect						
	UST	A190	4		Suspect						Concrete
	UST	A215			None Located						
	UST	A221	W		Suspect						
	UST	A225			Removed	Fuel Oil/ Oil/Water		7/18/90		200 gal	Steel
	UST	A246	E	East	Removed	Diesel		1/26/93		2000 gal	Fiberglass
	UST	A246	W	West	None Located						
	UST	A71			Removed	Diesel/Water		1/26/93		1000 gal	Steel

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	UST	A71	N	Courtyard North	Removed	Paint/ Diesel/Waste Oil		7/18/90		500 gal	Steel
	UST	A71	S	South	Removed	Gas, Water, Diesel		8/20/90		2000 gal	Steel
11. Golf Course	UST	658			Removed	Fuel Oil/Diesel		3/25/93		100 gal	Steel
12. Regional Park	UST	A16			None Located		No UST Located				
	UST	A191			Removed	Diesel		9/20/90		5000 gal	Steel
	UST	A194			None Located		No UST located				Steel
	UST	A194	1		None Located		No UST located				Steel
	UST	A194	2		None Located		No UST located				
	UST	A195			Removed	Solvent/ Diesel		7/18/90		500 gal	Steel
	UST	A226			Removed	Diesel/ Water		7/17/90		500 gal	Steel
	UST	A226	W		Suspect						
	UST	A229			None located						
	UST	A229	01		Suspect		Tank located- Volume Unknown				
	UST	A229	02		Suspect						
	UST	A230			Removed	Diesel		7/17/90		500 gal	Steel
	UST	A231			Removed	Diesel		7/17/90		500 gal	Steel
	UST	A25			Removed	Diesel/Heat Oil		3/29/93		400 gal	Steel
	UST	A259			Removed	Diesel		7/17/90		1000 gal	Steel
	UST	A267			Removed	Diesel/ Water		7/17/90		500 gal	Steel
	UST	A58			Removed	Heating Fuel Oil/Diesel		3/29/93		570 gal	Steel

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

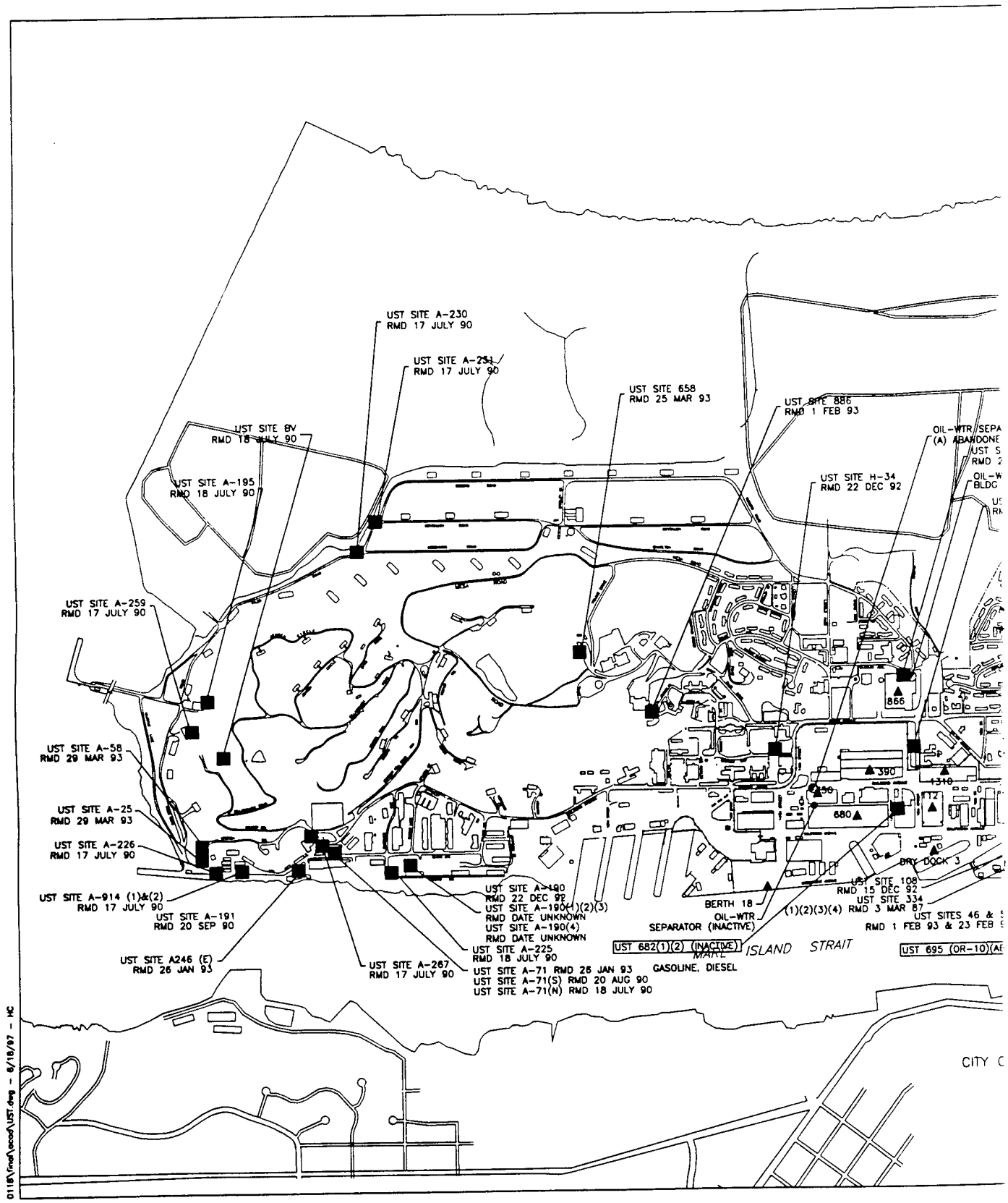
Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	UST	A914	1		Removed	Mineral Spirits/Water/ Diesel		7/17/90		1000 gal	Steel
	UST	A914	2	Bldg A-154 east	Removed	Mineral Spirits/Water/ Diesel		7/17/90		1000 gal	Steel
13. Open Space-Recreation/	AST	869		NE side	Inactive	Diesel			IR01, IR24	400 gal	Steel
	AST	869		NE side	Inactive	Propane			IR01, IR24	200 gal	Steel
	AST	869		NE side	Inactive	Propane			IR01, IR24	200 gal	Steel
	AST	871		North end basement	Inactive	Sulfuric Acid			IR01, IR06	4,500 gal	Steel
	AST	871		North inside bldg.	Inactive	Sulfur dioxide			IR01, IR06	2000 lbs	Steel
	AST	871		On roof	Inactive	Calcium hydroxide			IR01, IR06	45,000 lbs	Steel
	AST	871		North end basement	Inactive	Sulfuric Acid			IR01, IR06	2000 gal	Steel
	AST	871		North inside bldg.	Inactive	Sulfur dioxide			IR01, IR06	2,000 lbs	Steel
	UST	633	01	Fire Training Facility	Non located						
	UST	635	01	Fire Training Facility	Suspect						
	UST	635	02	Fire Training Facility	Suspect						

TABLE J-7 *(continued)*
STORAGE TANKS AND OIL/WATER SEPARATORS

Reuse Plan Area	Type	Bldg No.	Tank No.	Location	Status	Contents	Remarks	Date Removed	IR Site	Volume	Construction
	OWS	635	B	Old fire training school	Suspect	Oil			IR01	35000 gal	Concrete
	UST	647	01	Old fire training school	Suspect						
	UST	647	02	Old fire training school	Suspect						
	UST	IWTP	1		Removed	Diesel		2/3/93	IR24	520 gal	Steel
17 Not defined on re-use map. Possible USFWS Interpretive Center	UST	505		Bldg 505A(s)	Removed	Water/Spent Abrasives/Fuel Oil		12/15/92		4650 gal	Steel
	UST	505	1	Bldg 505A(s)	Removed	Gasoline		7/18/90		3000 gal	Steel
	UST	505	2		None located						
	UST	M32		Marine Corps	Removed	Fuel Oil		12/4/96		500 gal	Steel
	UST	M37		Marine Corps	Abandoned	Fuel Oil				300 gal	Steel
	UST	M51		Marine Corps	Abandoned	Fuel Oil				750 gal	Steel

Source: U.S. Navy 1994d

This page intentionally left blank.



Mobile aboveground storage tank sites are not included on this map. Unknown and suspect-status underground storage tank sites also are not shown. This figure represents 1996 conditions.

LEGEND:

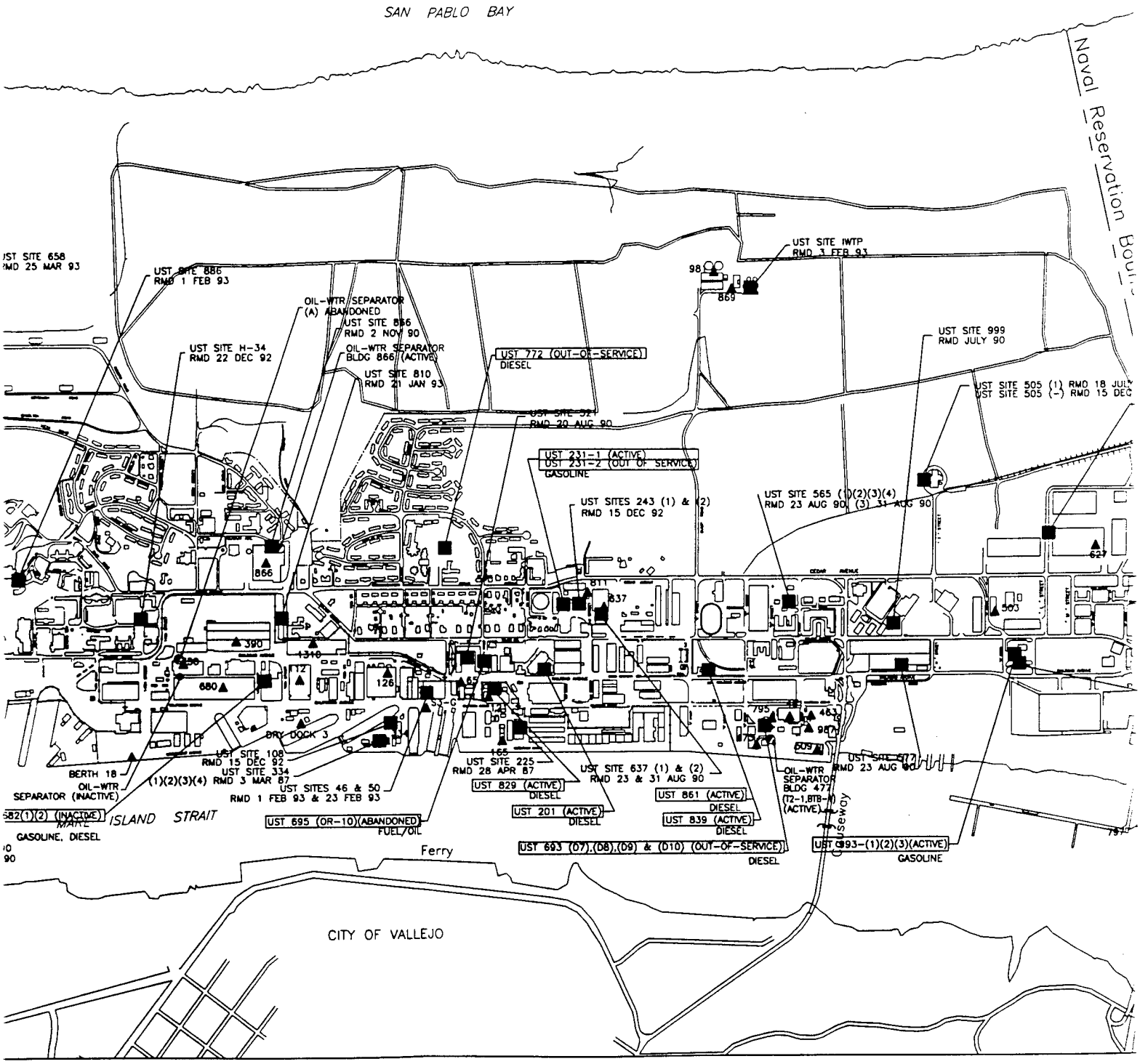
▲760 Aboveground Storage Tc

■ Underground Storage Tc (Active and Removed Tc

◐ Oil-Water Separaters

—●—●— CIA

Source: U.S. Navy, 1994c



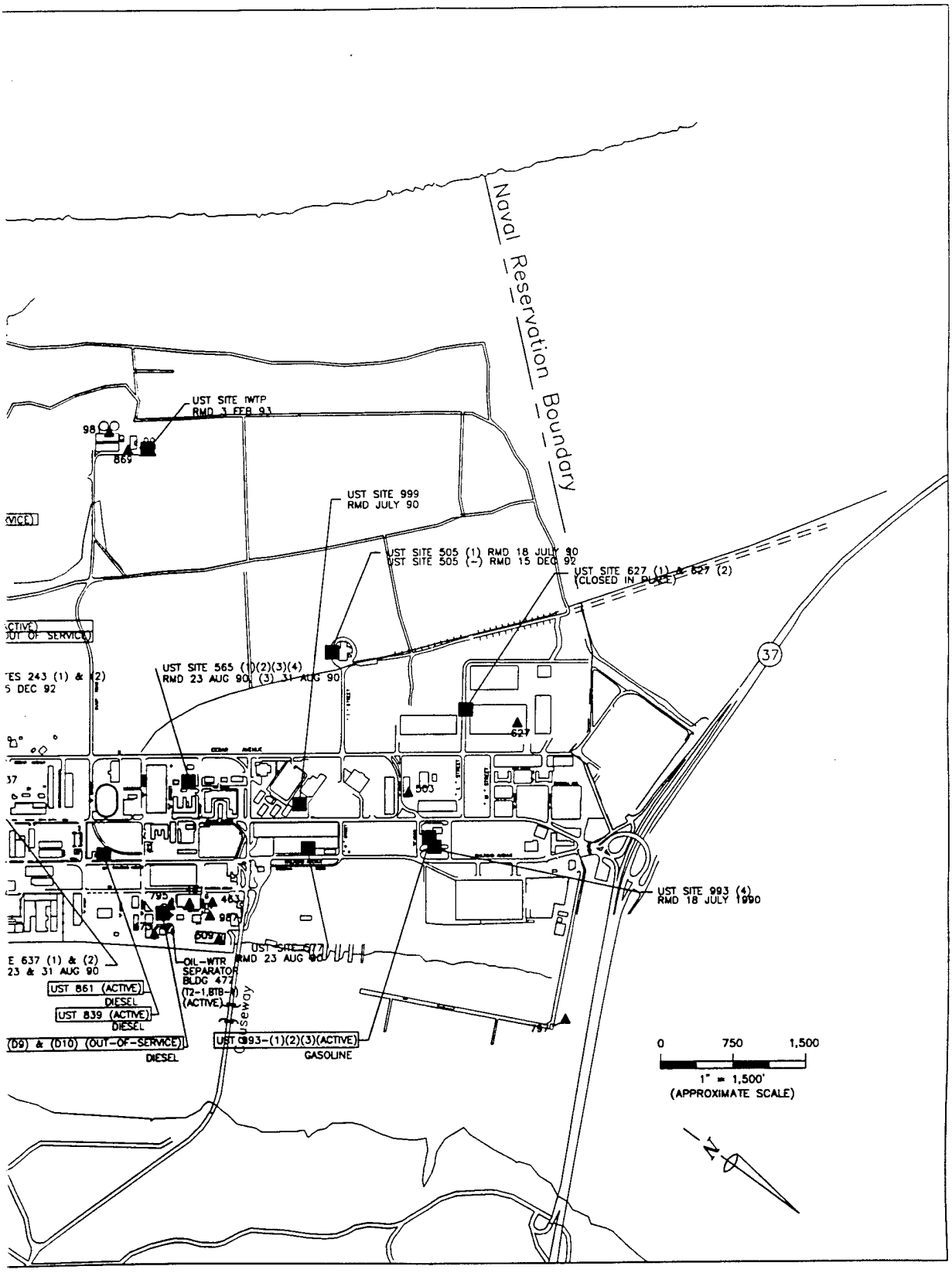
LEGEND:

▲760 Aboveground Storage Tank Sites (Tank Number)

■ Underground Storage Tank Sites (Active and Removed Tanks)

◐ Oil–Water Separaters

—o—o— CIA



Underground Storage Tanks, Aboveground Storage Tanks, and Oil/Water Separators

Mare Island, California

(3)

Figure J-7

TABLE J-8
TYPICAL PESTICIDE USAGE (1989-1993)

Location	Pesticide Common Name	EPA Reg. Number
Clinic/Hospital	Ficam W	45639-1
	PT-565 Plus Pyrethrum	499-285
Food Handling	Dursban 4E	464-360
	Ficam W	45639-1
	PT-565 Plus Pyrethrum	499-285
	Talon G	10182-41
	Tempo WP	3125-380
	Vaponite 2	201-235
	W.C. Insect Finish	499-1822A-16101
Food Storage	Ficam W	45639-1
	Talon G	10182-41/10182-38
Golf Course	Amine 2, 4-D	2217-633
	Amizol	264-119/264-114
	Daconil	2787-50534-4/ 2787-50554-AC4
	Demon EC	10182-105
	Demon WP	10182-71
	Dursban	449-147
	Dursban Dow Fog	464-428
	Ficam W	45639-1
	Golden Bear IIII	8898-16
	Krovar I	352-355
	Krovar IDF	352-502
	PT 240 Permadust	449-220
	Princep-4G	100-435
	PT-565 Plus Pyrethrum	499-285
	Bug Out Pyrethrin	7405-3-11426
	Total Release Aerosol Pyrethrin	4758-137
	Pyrethrum T/L	4758-138
	PT 400 Ultraban	400-271
	Roundup	524-370
	Roundup	524-308
	Scourge	432-667
	Sevin 50	264-314
	Surflan	1471-113
	Torus 2E	35977-26
	Vaponite 2	201-235
	Wasp-Freeze II	499-240
	Wasp-Hornet Spray (Poly-Who-4)	44446-4-11426
	Weedar 64	264-2

TABLE J-8 *(continued)*
TYPICAL PESTICIDE USAGE (1989-1993)

Location	Pesticide Common Name	EPA Reg. Number
Housing	Biomist 4+12	8329-34
	Combat Ant Bait	
	Combat Roach Control	
	Demon EC	10182-105
	Demon WP	10182-71
	Dursban	449-147
	Dursban 4E	464-360
	Dursban Dow Fog	464-428
	Dursban TC	464-562
	Ficam D	45638-3
	Ficam W	45639-1
	FVS Insect Fogger	4758-136
	Gencor 5E	2724-304-50809
	Gencor Fogger	2724-324-50809
	Max Force Feral Ant Killer	
	PT 240 Permadust	449-220
	Pro Control Ant Bait Station	
	PT-565 Plus Pyrethrum	499-285
	Bug Out Pyrethrin	7405-3-11426
	Total Release Aerosol Pyrethrin	4758-137
	Pyrethrum T/L	4758-138
	Rodent Cake Diphacinone	12455-5
	Safrotin	2724-314-50809
	Talon G	10182-41
	Vaponite 2	201-235
	Wasp-Freeze II	499-240
	Wasp-Hornet Spray (Poly-Who-4)	44446-4-11426
Industrial	Amine 2, 4-D	2217-633/264-114
	Amizol	264-114
	Avitrol	11649-7
	Daconil	2787-50534-4
	Dursban	449-147
	Dursban 4E	464-360
	Dursban Dow Fog	464-428
	Dursban TC	464-562
	Ficam W	45639-1
	Gencor 5E	2724-3045-0809
	Gencor Fogger	2724-324-50809
	Krovar I	352-355
	Krovar IDF	352-502
	PT 240 Permadust	449-220
	Princep-4G	100-435
	Total Release Aerosol Pyrethrin	4758-137
	Bug Out Pyrethrin	7405-3-11426
	PT-565 Plus Pyrethrum	499-285

TABLE J-8 *(continued)*
TYPICAL PESTICIDE USAGE (1989-1993)

Location	Pesticide Common Name	EPA Reg. Number
	Rodentcide Bait Block	
	Roundup	524-308
	Roundup	524-370
	Safrotin	2724-314-50809
	Sevin 50	264-314
	Surflan	1471-113
	Talon G	10182-41
	Wasp-Freeze II	499-240
	Wasp-Hornet Spray (Poly-Who-4)	44446-4-11426
	Weedar 64	264-2
	Vaponite 2	201-235
Marsh & Dredge Ponds	Altosid Liquid Larvicide	2724-392-64833
	Altosid Pellets	2724-448-64833
	Golden Bear IIII	8898-16
	Scourge	432-667
	Vectobac 12AS	275-66
	Vectobac G	275-50
	Vectobac Technical Powder	275-54
Storm Drains	Altosid Liquid XR Extended Briquets residual	2724-421-64833
	Golden Bear IIII	8898-16
Office	Altosid Liquid Larvicide	2724-392-64833
	Avitrol	11649-7
	Demon EC	10182-105
	Demon WP	10182-71
	Dursban	449-147
	Dursban TC	464-562
	Ficam W	45639-1
	FVS Insect Fogger	4758-136
	PT-565 Plus Pyrethrum	499-285
	Pyrethrum T/L	4758-138
	Talon G	10182-41
Ornamental Turf and Trees	Daconil	2787-50534-4
	Ficam W	45639-1
	Sevin 50	264-314
	Weedar 64	264-2
Quarters	Avitrol	11649-7
	Biomist 4+12	8329-34
	Demon EC	10182-105
	Demon WP	10182-71
	Dursban 4E	464-360
	Dursban Dow Fog	464-428
	Dursban TC	464-562
	Ficam W	45639-1
	FVS Insect Fogger	4758-136

TABLE J-8 *(continued)*
TYPICAL PESTICIDE USAGE (1989-1993)

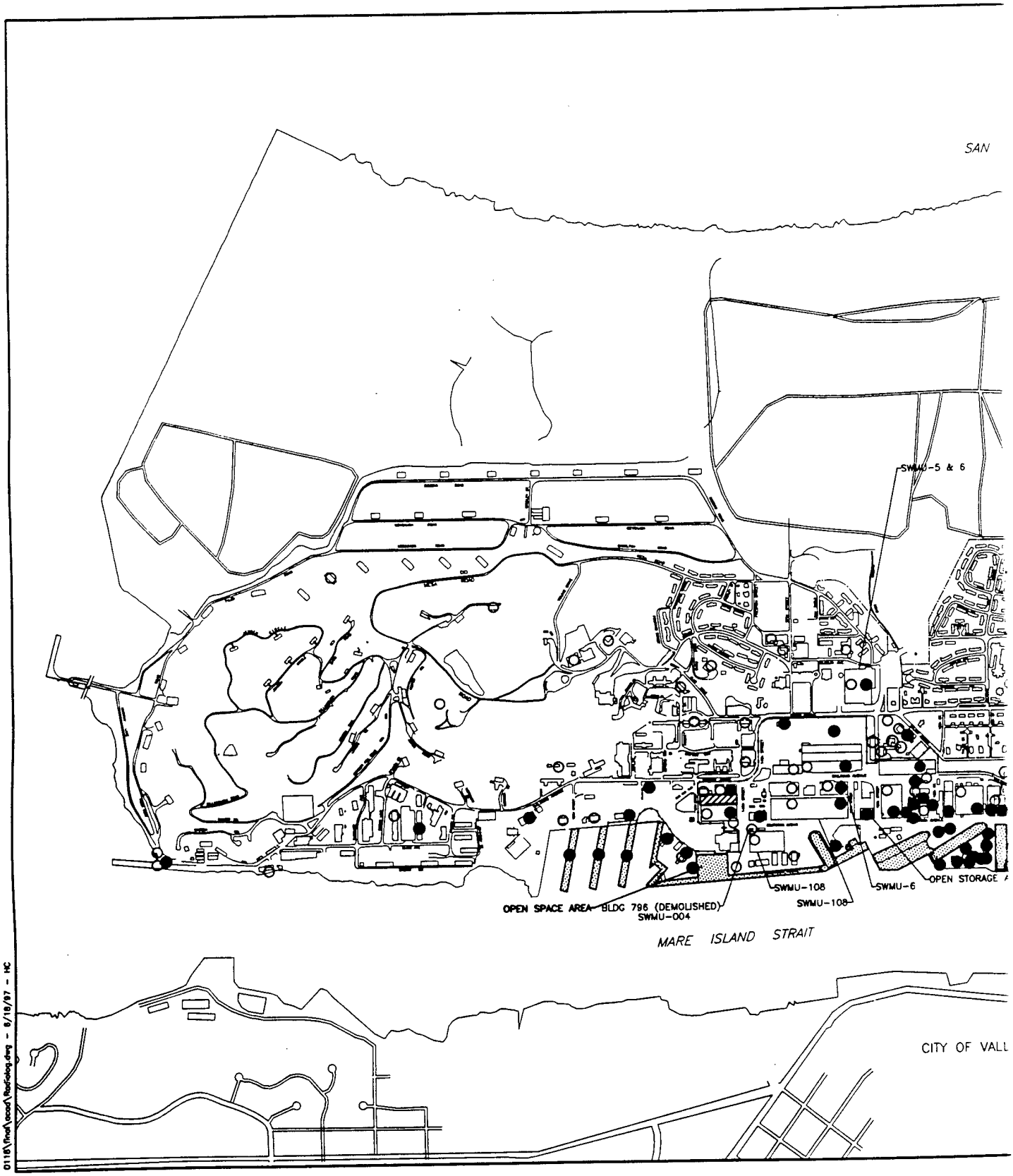
Location	Pesticide Common Name	EPA Reg. Number
	Gencor 5E	2724-3045-0809
	Gencor Fogger	2724-324-50809
	PT 240 Permadust	449-220
	PT-565 Plus Pyrethrum	499-285
	Bug Out Pyrethrin	7405-3-11426
	Pyrethrum T/L	4758-138
	R-C Spray	36232-2
	Safrotin	2724-314-50809
	Talon G	10182-41
	Vaponite 2	201-235
Recreation Areas	Avitrol	11649-7
	Demon EC	10182-105
	Demon WP	10182-71
	Dursban	449-147
	Dursban 4E	464-360
	Dursban Dow Fog	464-428
	Dursban TC	464-562
	Ficam W	45639-1
	FVS Insect Fogger	4758-136
	Gencor 5E	2724-304-50809
	Gencor Fogger	2724-304-50809
	PT 240 Permadust	449-220
	PT 400 Ultraban	400-271
	PT-565 Plus Pyrethrum	499-285
	Bug Out Pyrethrin	7405-3-11426
	Total Release Aerosol Pyrethrin	4758-137
	Pyrethrum T/L	4758-138
	Safrotin	2724-314-50809
	Scourge	432-667
	Torrus 2E	35977-26
	Vaponite 2	201-235
	Wasp-Freeze II	499-240
	Wasp-Hornet Spray (Poly-Who-4)	44446-4-11426
Right-of-Way, Unimproved & Semi-Improved Ground	Amine 2, 4-D	2217-633
	Amizol	264-119/264-114
	Dursban	449-147
	Ficam W	45639-1
	Krovar I	352-355
	Krovar IDF	352-502
	Princep-4G	100-435
	Roundup	524-370
	Roundup	524-308
	Surflan	1471-113
	Weedar 64	264-2

TABLE J-8 *(continued)*
TYPICAL PESTICIDE USAGE (1989-1993)

Location	Pesticide Common Name	EPA Reg. Number
Vessels	Baygon	3125-214-ZA
	Dursban	449-147
	Total Release Aerosol Pyrethrin	4758-137
	PT-565 Plus Pyrethrum	499-285
	R-C Spray	36232-2

Source: U.S. Navy 1994d

This page intentionally left blank.



Radioactive materials have been used in the Naval Nuclear Propulsion Program (NNPP). General radioactive materials (G-RAM) have been used to support the Radiological Affairs Support Program. This figure represents 1995 conditions.

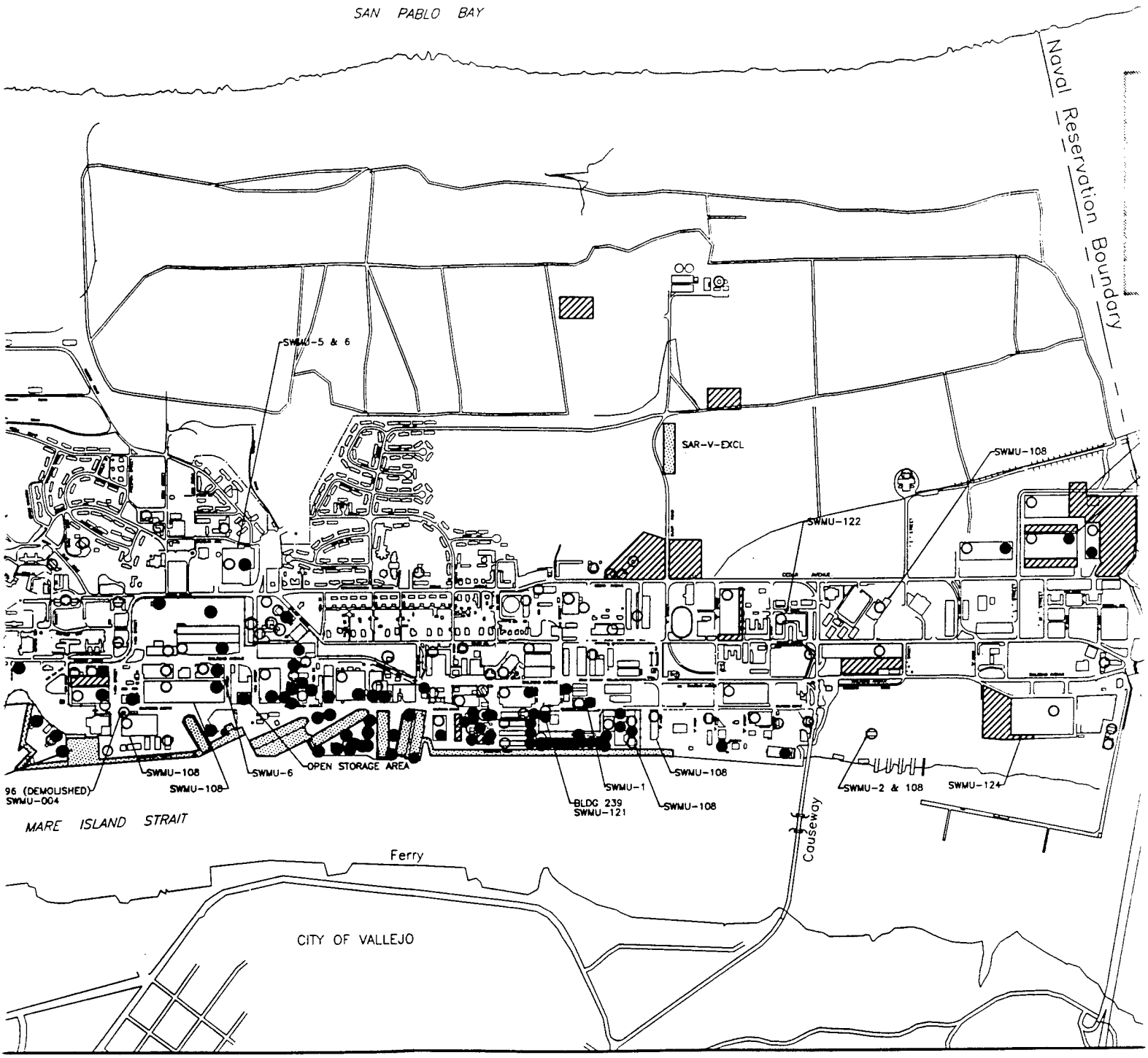
LEGEND:

or G-RAM Facil

or NNPP Facilit

Controlled Ir

Source: U.S. Navy, 1994c

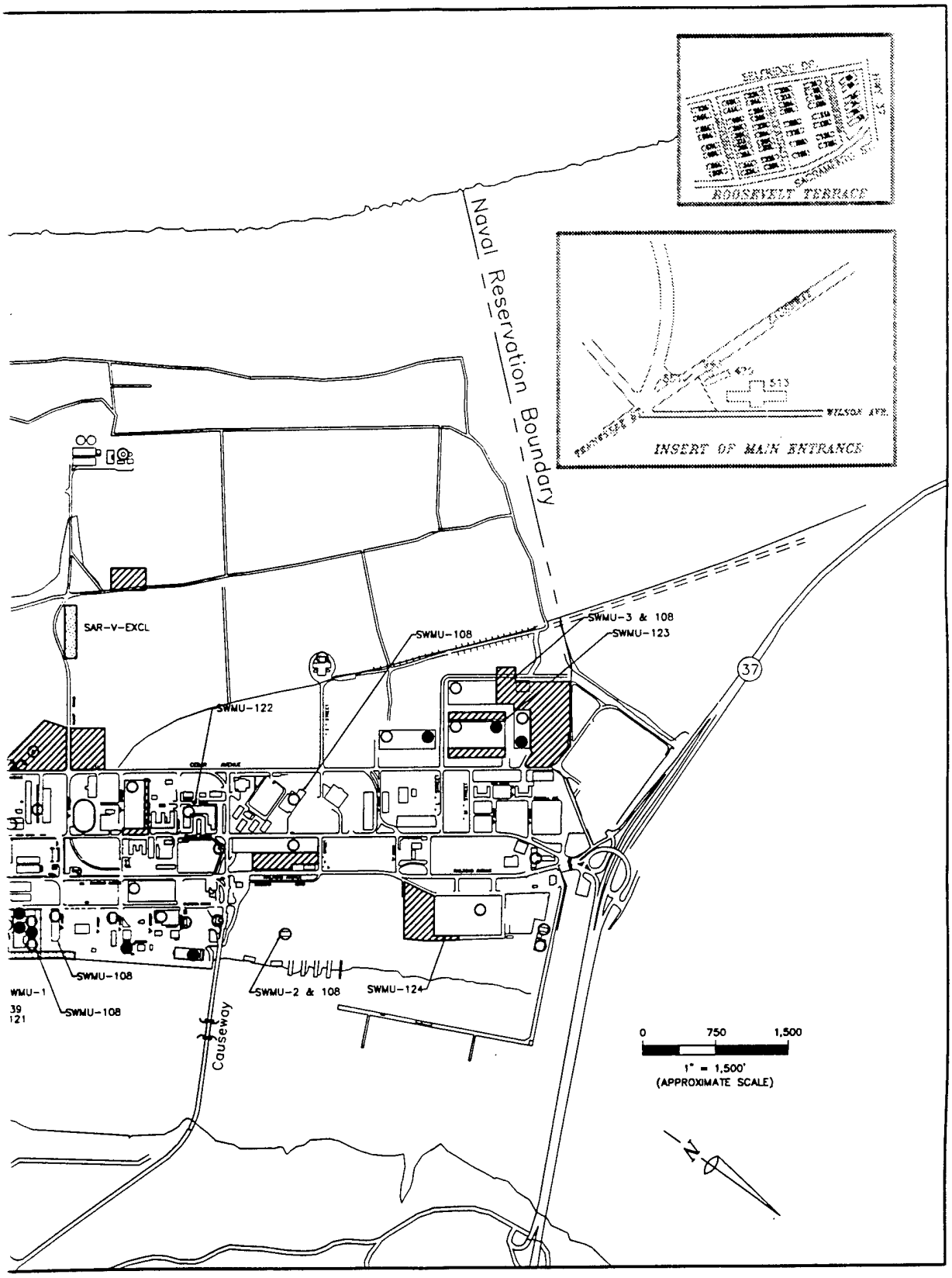


LEGEND:

or ○ G-RAM Facilities/Areas

or ● NNPP Facilities/Areas

Controlled Industrial Area



Facilities/Areas Requiring Radiological Survey

Mare Island, California

3

Figure J-8

TABLE J-9
FACILITIES/AREAS REQUIRING RADIOLOGICAL SURVEY

NOTE: Facilities/areas designated as "N" or "G" require radiological surveys, based on their past history of use, to document the absence of radioactivity.

Facilities/areas designated as "(N)" or "(G)" have no history of radiological usage, but are being surveyed as an added measure of precaution.

Reuse Plan Area	Bldg No	NNPP	G-RAM
1. North Light Industry	571		G
	627	N	G
	629	N	G
	655		G
	751		G
	755		G
	759	N	(G)
	791		(G)
	793		(G)
2. Neighborhood Center	275		(G)
	409		G
	459		G
	535		G
	527		G
	545		G
	637		(G)
	661		G
	679		G
	691		(G)
	SAR-N-EXCL	N	
3. Mixed Use: Office-Light Industry	101	N	G
	115	N	G
	117	(N)	
	121		G
	141	N	
	143	N	
	145	N	
	147	N	
	149	N	
	151	N	
	153	N	(G)
	155	N	
	163	N	
	165		G
	201		G
	207	N	G
	213		(G)
	215	N	G
	239	N	G

TABLE J-9 (continued)
FACILITIES/AREAS REQUIRING RADIOLOGICAL SURVEY

Reuse Plan Area	Bldg No	NNPP	G-RAM
	253		G
	463A		G
	631		(G)
	855		G
	271	N	
	273	N	G
	331	(N)	
	333	(N)	
	335A, B, C	(N)	
	387		G
	461		G
	469	N	
	483	N	G
	497		G
	509	N	
	515	(N)	
	521		(G)
	569	(N)	(G)
	599		G
	607	(N)	
	69	N	(G)
	71	(N)	
	73	N	
	77	(N)	
	85	N	G
	853		G
	87	(N)	
	89	N	G
	91	(N)	G
	Berth 10	N	
	Berth 6	N	
	Berth 7	N	
	Berth 8	N	
	Berth 9	N	
	LFA-163S	N	
	LFA-273E	N	
	LFA-69N&S	N	
4. Historic District	108	N	
	110	(N)	
	116	(N)	G
	130	(N)	
	132	N	G
	140	(N)	
	142	N	
	144	(N)	

TABLE J-9 (continued)
FACILITIES/AREAS REQUIRING RADIOLOGICAL SURVEY

Reuse Plan Area	Bldg No	NNPP	G-RAM
	164	(N)	G
	332	(N)	
	334	(N)	G
	340	(N)	
	45	(N)	
	52	(N)	
	65		G
	Berth 11	N	
	Berth 12	N	
	DD-1	N	
	DD-2	N	
	RC-1	N	
	RC-2	N	
	RE-34	N	
	RE-35	N	
	Ways 1	N	
	Ways 2	N	
	SAR-DD-2	N	
	RLA-DD-2W	N	
	SAT-DD-2E	N	
	SS9T-RC-1	N	
	SS9T-RC-2	N	
5. Heavy Industry	106	(N)	
	112	(N)	(G)
	120	(N)	
	126	(N)	G
	1310	(N)	
	136	(N)	
	152	(N)	
	302	(N)	
	390	N	G
	670		(G)
	676	N	G
	678	(N)	G
	680	N	G
	686	N	G
	690	N	
	694		G
	702		(G)
	720	(N)	
	722	(N)	
	728A	(N)	
	738	(N)	
	742		G
	750		G
	788	(N)	(G)

TABLE J-9 (continued)
FACILITIES/AREAS REQUIRING RADIOLOGICAL SURVEY

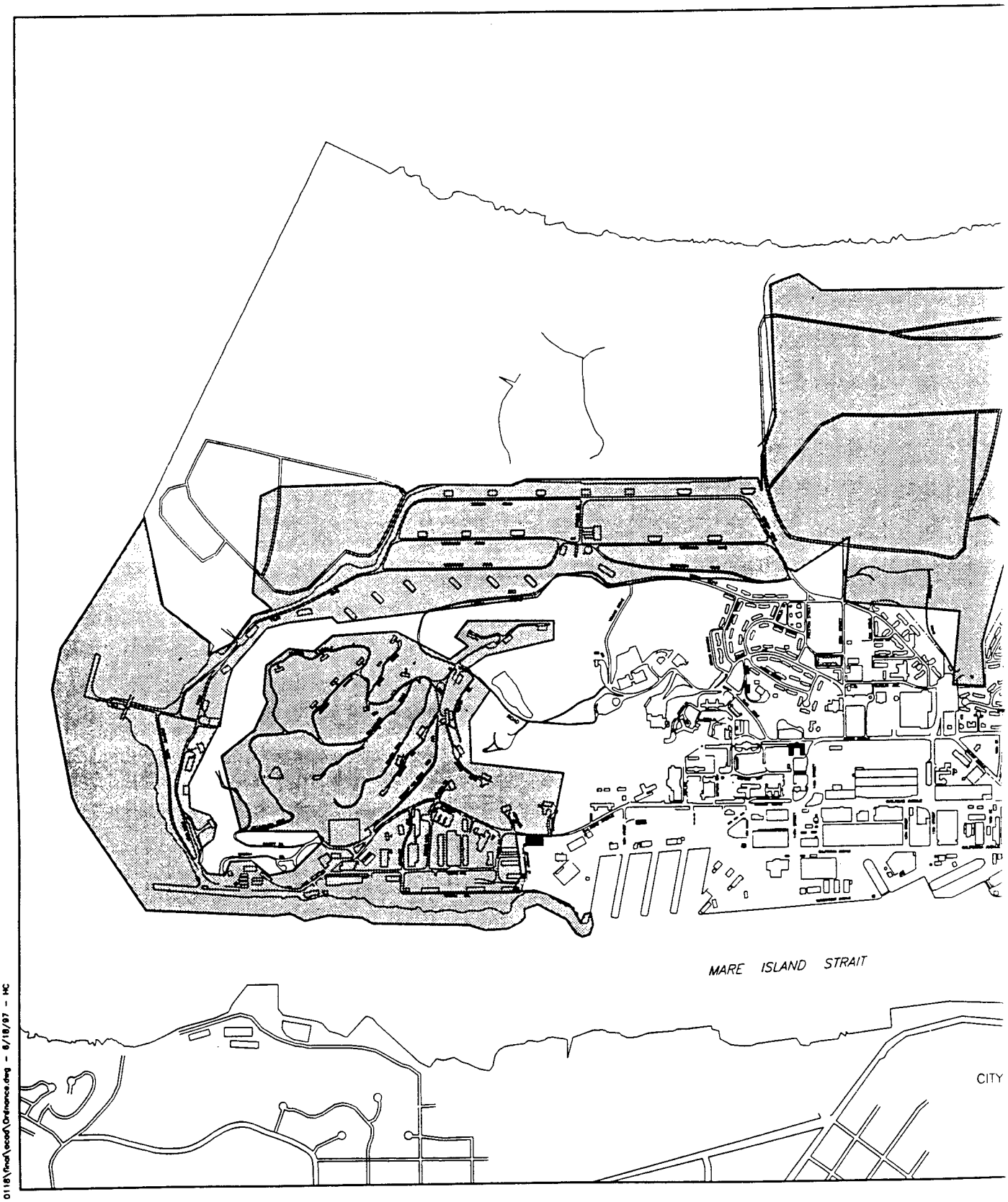
Reuse Plan Area	Bldg No	NNPP	G-RAM
	804		G
	810		(G)
	88	(N)	
	Berth 13	N	
	Berth 14	N	
	Berth 15	N	G
	Berth 16	N	
	Berth 17	N	
	Berth 18	N	
	Berth 19	N	
	Berth 20	N	
	DD-3	N	
	DD-4	N	
	FA4	(N)	
	Pier 21	N	
	Pier 22	N	
	114-114A		(G)
	118	(N)	(G)
	150	(N)	
	206		G
	208		G
	386		(G)
	388	N	G
	796		(G)
	SAR-S-EXCL	N	
	SAR-STATION 6	N	
	SAT-684N	N	
	746-746A	N	G
	732	(N)	
	734	(N)	
	S32-05	(N)	
	S32-06	(N)	
	SAR-BERTH15	N	
	SAR-BERTH18	N	
	SAT-112S	N	
	SAT-DD-3N	N	
	SAT-DD-3S	N	
	RLA-1326N	N	
	SAR-DD-3S	N	
	SAR-DD-3W	N	
	WA-7	N	
6. Farragut Village	529		(G)
	531		(G)
	737		(G)

TABLE J-9 (continued)
FACILITIES/AREAS REQUIRING RADIOLOGICAL SURVEY

Reuse Plan Area	Bldg No	NNPP	G-RAM
8. Coral Sea Village	764		(G)
	84		(G)
	1230		(G)
9. Education-Office	1324		G
	866	N	G
	A900		G
	A904		G
	H1		G
	H70		G
	H73		(G)
	1306		G
	H74		G
10. Marina-Residential	724		(G)
	762		G
	900	N	
	A130	(N)	
	A131		(G)
	Pier 23	N	
	736	(N)	
	A246		(G)
11. Golf Course	A209		G
12. Regional Park	A136		(G)
	A148		G
	A228	(N)	(G)
Main Entrance	513		(G)
13. Open Space-Recreation	633		G
	647		(G)
	981		G
	Landfill		G
Wetlands	505		G
	589		(G)
	593		G
	ORDLAND-04		G
Multiple Areas	Storm Sewers	(N)	G
	RAM-TR	N	
Dredge Ponds	ORDLAND-07		G

Source: U.S. Navy 1994d

This page intentionally left blank.



0118\final\ecod\Ordnance.dwg - 6/18/97 - HC

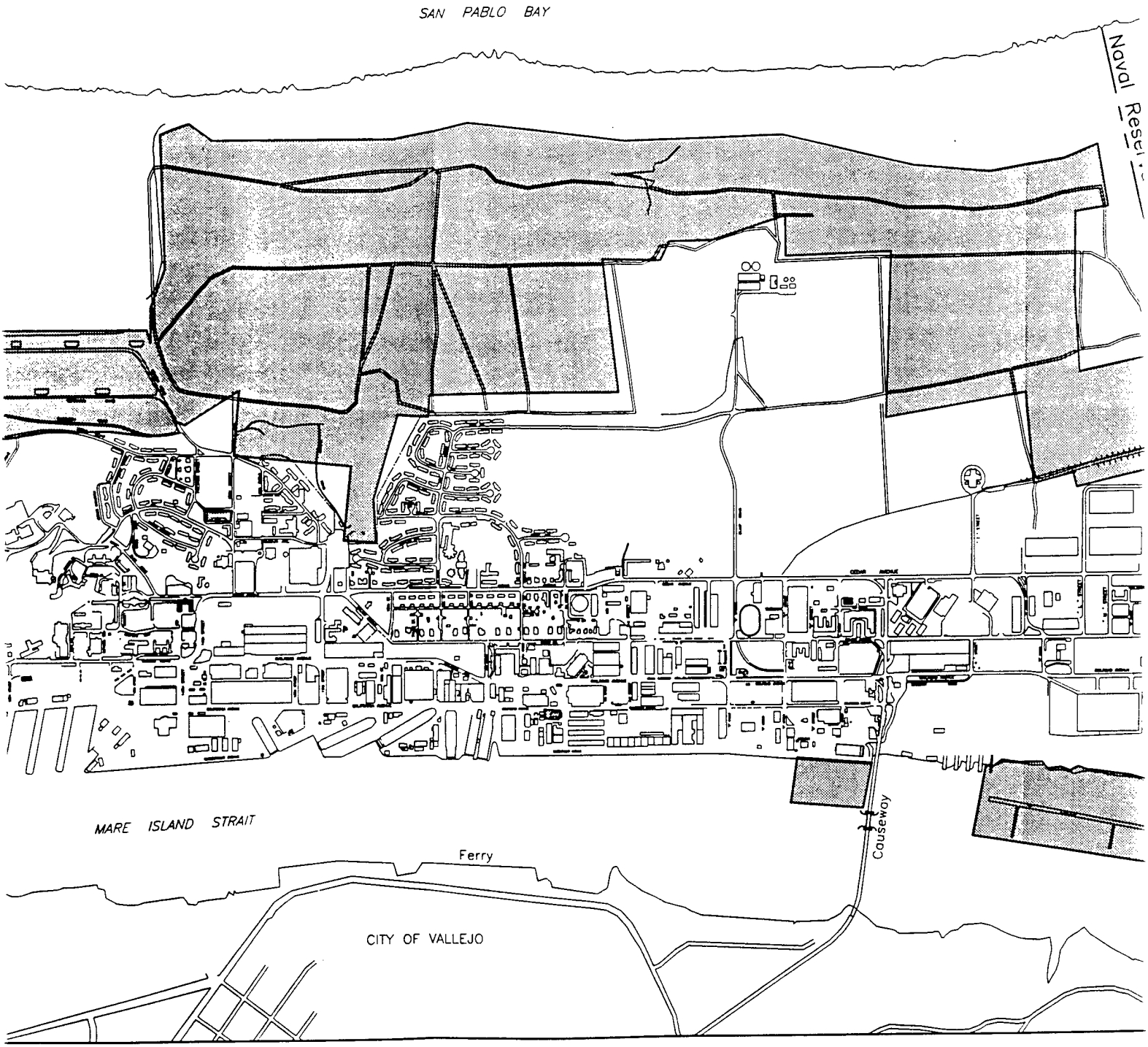
Ordnance has been manufactured, stored, and disposed of on Mare Island throughout its history. This figure represents 1995 conditions.

LEGEND:

Potential Ordnance Areas

Ordnance Storage Locations

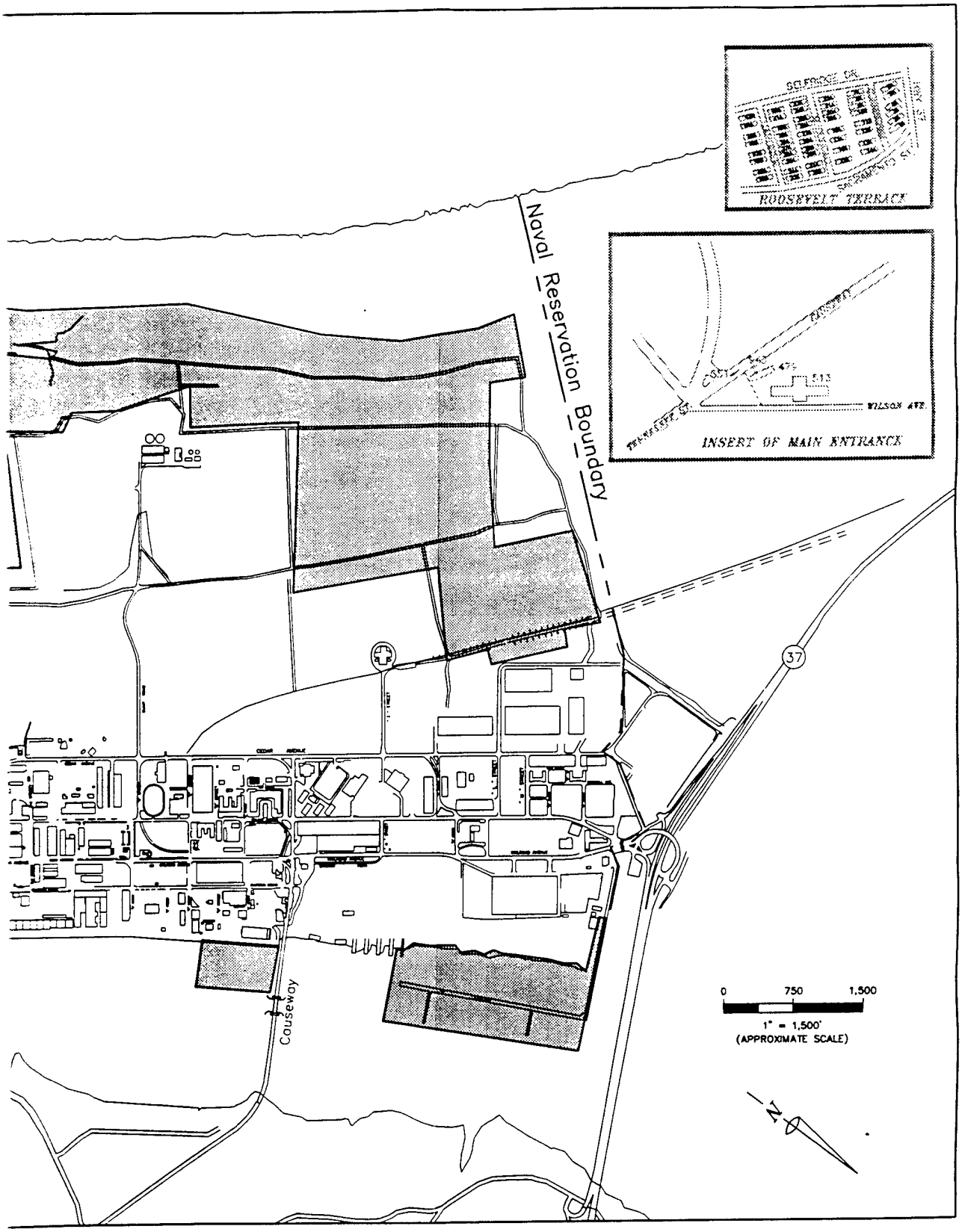
Source: U.S. Navy, 1994c



LEGEND:

Potential Ordnance Areas

Ordnance Storage Locations



Potential Ordnance Areas

Mare Island, California

3

Figure J-9

TABLE J-10
ORDNANCE

Reuse Plan Area	Bldg No	Relative Location	Ordnance Description	Comments
1. North Light Industry Area	751		Ready Service Material	
	Piers 53-56	Piers-Berthing		Possible contamination
2. Neighbor-hood Center	729	At police station	Ready Service Magazine	Maintain GSA safe-bullets and ammo inside
3. Mixed Use: Office-Light Industry	569	Basement	Inert Ordnance	Firing range; lead; nonusable; polluted
6. Farragut Village	See descr-iption		About 78 buildings (mostly housing) are located on the site of a past (c 1911) rifle range	No ordnance detected during PA. No remediation anticipated.
8. Coral Sea Village	M-37	Basement	Inert Ordnance	Firing range; lead
9. Education-Office	H73	Old hospital	Reactionary/Small Arms Ammo	
10. Marina-Residential	597	Outside; mag sbu-11		
	A130		Ord Warehouse	Not contaminated
	A131		Ord Warehouse	Not contaminated
	A159		Bag Filling-Cartridge Segregation	Possible contamination
	A187		Major Caliber Proj./Load & Rnv	Possible contamination
	A187		Proj. Charge Ext Maintenance	Possible contamination
	A215		Ord Warehouse	Possible contamination
	A215		Projectiles/Return Cartridges	Possible contamination
	A216		Med. Cal. Projectile-Rocket	Possible contamination
	A220		Ord Warehouse	Not contaminated
	A221		Ord Warehouse	Not contaminated
	A222		Ord Warehouse	Not contaminated

TABLE J-10 *(continued)*
ORDNANCE

Reuse Plan Area	Bldg No	Relative Location	Ordnance Description	Comments
	A223		Ord Warehouse	Not contaminated
	A224		Ord Warehouse	Not contaminated
	A225		Ord Warehouse	Not contaminated
	A246		Ready Services; Small Arms	Naval investigative services
	A248		20mm/40mm	Possible contamination
	A256		Ord Warehouse	Not contaminated
	A258		Ord Warehouse	Not contaminated
	A265		Explosive Sifting	Possible contamination
	A31		Magazine	Not contaminated
	A49		Ord Warehouse	Not contaminated
	A54		Magazine	Not contaminated
	A65		Ord Warehouse	Not contaminated
	A69		Ord Warehouse	Not contaminated
	A72		S&A Maintenance	Not contaminated
	A75		Powder Bag Manufacture	Possible contamination
	A76		Powder Bag Manufacture	Possible contamination
	A80		Fuse Segr/Exterior Main	Possible contamination
11. Golf Course	A139		Magazine	Not contaminated
	A140		Magazine	Not contaminated
	A141		Magazine	Not contaminated
	A156		Magazine	Not contaminated
	A156	Magazine	Inert Ordnance	Non-explosive material
	A171	Magazine	Inert Ordnance	Non-explosive material
	A188		Magazine	Not contaminated
	A189		Magazine	Not contaminated
	A199		Ord Warehouse	Not contaminated
	A206		Magazine	Not contaminated
	A207		Magazine	Not contaminated
	A208		Magazine	Not contaminated
	A209		Magazine	Not contaminated
	A210		Magazine	Not contaminated
	A211		Magazine	Not contaminated
	A212		Magazine	Not contaminated
	A213		Magazine	Not contaminated
	A218		Magazine	Not contaminated
	A219		Magazine	Not contaminated

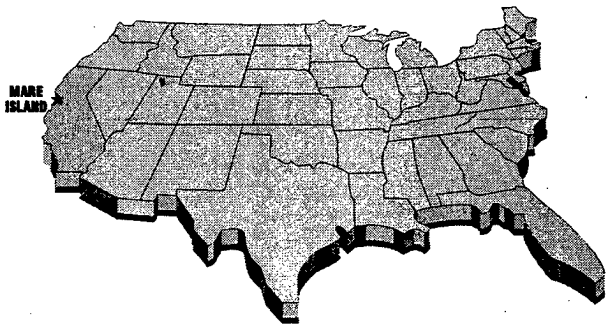
TABLE J-10 *(continued)*
ORDNANCE

Reuse Plan Area	Bldg No	Relative Location	Ordnance Description	Comments
12. Regional Park	A1		Magazine	Not contaminated
	A103		Magazine	Not contaminated
	A11		Magazine	Not contaminated
	A121		Magazine	Not contaminated
	A147		Magazine	Not contaminated
	A148		Magazine	Not contaminated
	A149		Magazine	Not contaminated
	A149	Magazine	Inert Ordnance	Not contaminated
	A15		S&A-Maintenance	Not contaminated
	A150		Magazine	Not contaminated
	A150	Magazine	Inert Ordnance	Non-explosive material
	A151		Magazine	Not contaminated
	A152		Magazine	Not contaminated
	A154		Ord Warehouse	Not contaminated
	A155		S&A Maintenance	Not contaminated
	A16		Magazine	Not contaminated
	A161		Magazine	Not contaminated
	A162		Magazine	Not contaminated
	A163		Magazine	Not contaminated
	A164		Ord Warehouse	Not contaminated
	A165		Magazine	Not contaminated
	A166		Magazine	Not contaminated
	A167		Magazine	Not contaminated
	A168		Magazine	Not contaminated
	A169		Magazine	Not contaminated
	A17		Inflammables	Possible contamination
	A170		Magazine	Not contaminated
	A172		Magazine	Not contaminated
	A176		Inert Ordnance	Not contaminated
	A195		Gun Ammo/Bomb Cabling/Mk 44 Mo	Not contaminated
	A2		Ord Warehouse	Not contaminated
	A20		Ord Warehouse	Not contaminated
	A204		Magazine	Not contaminated
	A205		Magazine	Not contaminated
	A214		Magazine	Not contaminated
	A217		Magazine	Not contaminated
	A226		Tank east of A11	Not contaminated
	A249		Magazine	Not contaminated
	A250		Magazine	Not contaminated
	A250	Adjacent to mag on hill	Cap Magazine	

TABLE J-10 *(continued)*
ORDNANCE

Reuse Plan Area	Bldg No	Relative Location	Ordnance Description	Comments
	A259		Mine Anchor Assembly	Adv. Weapon container renovation
	A3		Ord Warehouse	Not contaminated
	A4		Magazine	Not contaminated
	A5		Ord Warehouse	Not contaminated
	A6		Ord Warehouse	Not contaminated
	A8		Magazine	Not contaminated
	A81		Magazine	Not contaminated
	A82		Magazine	Not contaminated
	A83		Magazine	Not contaminated
	A84		Magazine	Not contaminated
	Pier 34	Pier ammo/ Berthing		Not contaminated
Wetlands	A173		Magazine	Not contaminated
	A174		Magazine	Not contaminated
	A175		Magazine	Not contaminated
	A178		Magazine	Not contaminated
	A179		Magazine	Not contaminated
	A180		Magazine	Possible contamination
	A181		Magazine	Not contaminated
	A182		Magazine	Not contaminated
	A183		Magazine	Not contaminated
	A184		Magazine	Not contaminated
	A186	Building	Inert Ordnance	Not contaminated

Source: U.S. Navy 1994d; John Randell, S. Sports Environmental Detachment, Vallejo, 1997.



APPENDIX K

MARE ISLAND LEASING-TENANT LIST (MARCH 1998)

APPENDIX K
MARE ISLAND LEASING-TENANT LIST (MARCH 1998)

Name	Facilities Description		Use	Jobs	Bldg Sq Ft	Land Sq Ft	Exp Date
Alco Iron & Metal Corp		Bldg 629	Manuf.	10	63,437	215,897	7/17/01
Alco Iron & Metal Corp	Bldg 734/Pier 22		Manuf.	4	1,423	208,220	4/8/99
Apparel Master Inc		Bldg, 152	Cleaner	11	6,525	16,947	5/7/01
Applied Structures Tech		Bldg 744	Manuf.	3	990	7,015	5/7/01
Babcock Construction		Bldg 124	Construct	3	2,100	9,520	5/7/01
Balfour Beatty Constr	Quarters M		Office	6	7,952	36,649	6/25/01
California Conserv. Corps	Bldg 930/934/936		Pub Serv	90	24,749	286,268	6/30/99
Cal Northern R/R Co.	Bldg 637/trackage		Rail Road	2	1,800 *		3/31/98
Carpenter Group		Bldg 112	Construct	8	57,480	60,720	5/7/01
R.G. Carter Company		Bldg 120	Construct	5	1,900	10,750	5/7/01
City of Vallejo (Mkting Cntr)		Bldg 485	Sales	1	3,379	16,160	6/25/01
CS Marine Constructors	Berth 19		Construct	10	0	83,513	5/7/01
Far-Tech Industries		Bldg 690	Manuf.	4	10,913	35,570	5/7/01
Ferry Refueling Ser (Vallejo)	Bldgs 471/473/477/923/Berth 4		Pub Work	11	5,717	29,148	6/25/01
Fishery Foundation of Calif	Shed next to Bldg 117		Manuf.	4	1,024	2,048	6/30/98
Historic Park Foundation	Bldg 104 (Chapel)/Bldg 215/Quarters A		Cultural	3	17,738	228,290	6/25/01
Island Energy	Quarters P		Office	6	3,414	18,700	6/25/01
Jeffco Paint & Coating	Bldgs 750/688		Manuf.	85	80,217	237,219	5/7/01
Jeffco Paint & Coating	Bldgs 738/874/931/1332		Manuf.	0	23,625	87,676	5/7/01
Jeffco Paint & Coating			Manuf.	0	0	118,460	11/17/99
Latham Truss, Inc.	Bldgs 98/507		Manuf	20	42,119	156,014	6/25/01
Lennar Partners, Inc.	Quarters D		Prop. Mgmt.	1	7,878	44,287	11/30/98
MI Golf Course & Resort	Golf course		Golf course	20	23,217	4,181,760	8/31/00
Pacific Lumber & Shipping	Bldg 100/100A/102/Quarters O		Manuf./Other	10	48,757	224,252	8/20/98
Refractory Engr & Const		Bldg 457	Manuf.	2	3,750	17,250	6/25/01
Shining Star Children's Hse		Bldg 533	Education	7	4,000	31,439	12/3/01
Solonic's Inc	Bldgs 136/138		Manuf.	5	4,960	13,704	5/7/01
Tool Crib		Bldg 142	Manuf.	3	4,800	6,490	6/25/01

Name	Facilities Description	Use	Jobs	Bldg Sq Ft	Land Sq Ft	Exp Date
Vallejo Unified School Dist.	Bldgs 902/1003	Education	25	13,629	122,929	4/8/99
Warner Brothers	Bldg 599	Movie Prod	0	112,600	0	8/20/98
Womack International, Inc.	Bldg 759/Quarters K	Manuf./Office	44	139,103	349,719	5/7/01
XKT Engineering Inc.	Bldgs 382/388/390/390A/858/1338	Manuf.	114	170,800	487,680	6/30/10
Totals:			**517**	**889,996**	**7,344,494**	