SECTION 4.0

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This section of the EIR addresses the existing conditions for each resource area, the threshold for determining significance of environmental impacts, the impact analysis and the identification of environmental impacts deemed significant, mitigation measures, the impact after implementation of the mitigation measures, and a synopsis of resource-specific cumulative impacts (a complete discussion of cumulative impacts is presented in Section 7.0 of this EIR).

This EIR evaluates all of the environmental resource areas contained in the EIS/EIR for the Disposal and Reuse of Certain Real Properties at NTC San Diego and the EA for the MFH Development. Each environmental resource area is addressed according to the following format:

Existing Conditions. A discussion of the existing conditions, services, and physical environment of the Project Area.

Environmental Impacts

Threshold for Determining Significance: The amount or type of impact that constitutes a substantial or potentially substantial adverse change in the environment. Based on this criterion, project impacts can be classified as significant and unavoidable; significant, but can be mitigated, avoided, or substantially lessened; or less than significant.

Impact Analysis: A discussion of the impacts of the Project in qualitative and/or quantitative terms, based on the proposed land uses identified in the project description (Section 2.0, Figure 2-3).

Mitigation Measures. A discussion of the measures required to avoid, mitigate, or substantially lessen adverse impacts.

Impact after Mitigation. A discussion of the level of impact of the Project following implementation of required or recommended mitigation measures.

Cumulative Impacts: A statement of conclusion regarding impact of the Project in conjunction with implementation of other projects.

Resource Areas Analyzed

Land Use
Transportation and Circulation
Cultural Resources
Population, Employment, and Housing
Infrastructure and Utilities
Biological Resources
Geology and Soils
Hydrology and Water Quality
Air Quality
Public Health and Safety
Visual Resources
Noise
Hazardous Substances and Wastes
Community Services and Facilities

A detailed discussion of environmental impacts and associated mitigation measures is provided in the following section. Regarding the NTC San Diego property, as indicated in the previously approved EIS/EIR, significant impacts have been identified for land use, transportation and circulation, cultural resources, biological resources, geology and soils, hydrology and water quality, public health and safety, visual resources, and community services and facilities. With the exception of transportation and circulation (most of these impacts are unmitigable), these significant impacts can be reduced to below a level of significance with implementation of identified mitigation measures. Regarding the MFH Development property, as indicated in the previously approved EA, significant impacts have been identified for transportation and circulation, air quality, public health and safety, noise, and public services and utilities (schools). All of these impacts can be reduced to below a level of significance with implementation of identified mitigation measures.

4.1 LAND USE

4.1.1 Existing Conditions

4.1.1.1 Surrounding Land Use

The Project Area is located within the incorporated boundaries of the City of San Diego on San Diego Bay, a highly developed residential and commercial area approximately 2 miles west of downtown San Diego (Figure 4.1-1). The Project Area is bounded by the Peninsula community of Point Loma to the north and west, United States Marine Corps Recruit Depot (MCRD) to the northeast, San Diego International Airport (Lindbergh Field) to the east, and Fleet Anti-Submarine Warfare (ASW) Training Center and San Diego Bay to the south (Figure 4.1-1) (City of San Diego 1998a).

Land use to the north and east includes commercial, light industrial, institutional, and residential along the Midway/Pacific Highway Corridor community. General land use within areas to the south and west of the Project Area (along San Diego Bay) includes commercial, commercial/recreation, single- and multi-family housing, commercial fishing and marine-related industrial, as well as tourist-based commercial and recreational designations. In addition, tourist-based commercial and recreational land uses are popular in the area. Major land use areas (Peninsula community, Midway/Pacific Highway Corridor community, ASW Training Center, MCRD, and Lindbergh Field) are described below (City of San Diego 1998a).

Peninsula Community

The Peninsula community, which encompasses about 4,409 acres of land, is a highly urbanized community comprised of ten distinct residential neighborhoods; the Roseville and Loma Portal neighborhoods are located adjacent to the Project Area (City of San Diego 1998a). Land use in the Peninsula community consists primarily of single-family and multi-family housing, as well as commercial uses, fishing and marine-related industrial uses, and public uses (City of San Diego 1998a; City of San Diego 1998b).

Substantial mature vegetation and Mediterranean architecture characterize the Loma Portal neighborhood. The neighborhood also includes Point Loma High School and Loma Portal Elementary School. The Roseville neighborhood consists of a small

commercial district east of Rosecrans Street and adjacent single- and multi-family development east of the Fleetridge neighborhood. This area includes a mix of single- and multi-family housing in one- and two-story structures, as well as hotels and office buildings in the northern portion (City of San Diego 1998a).

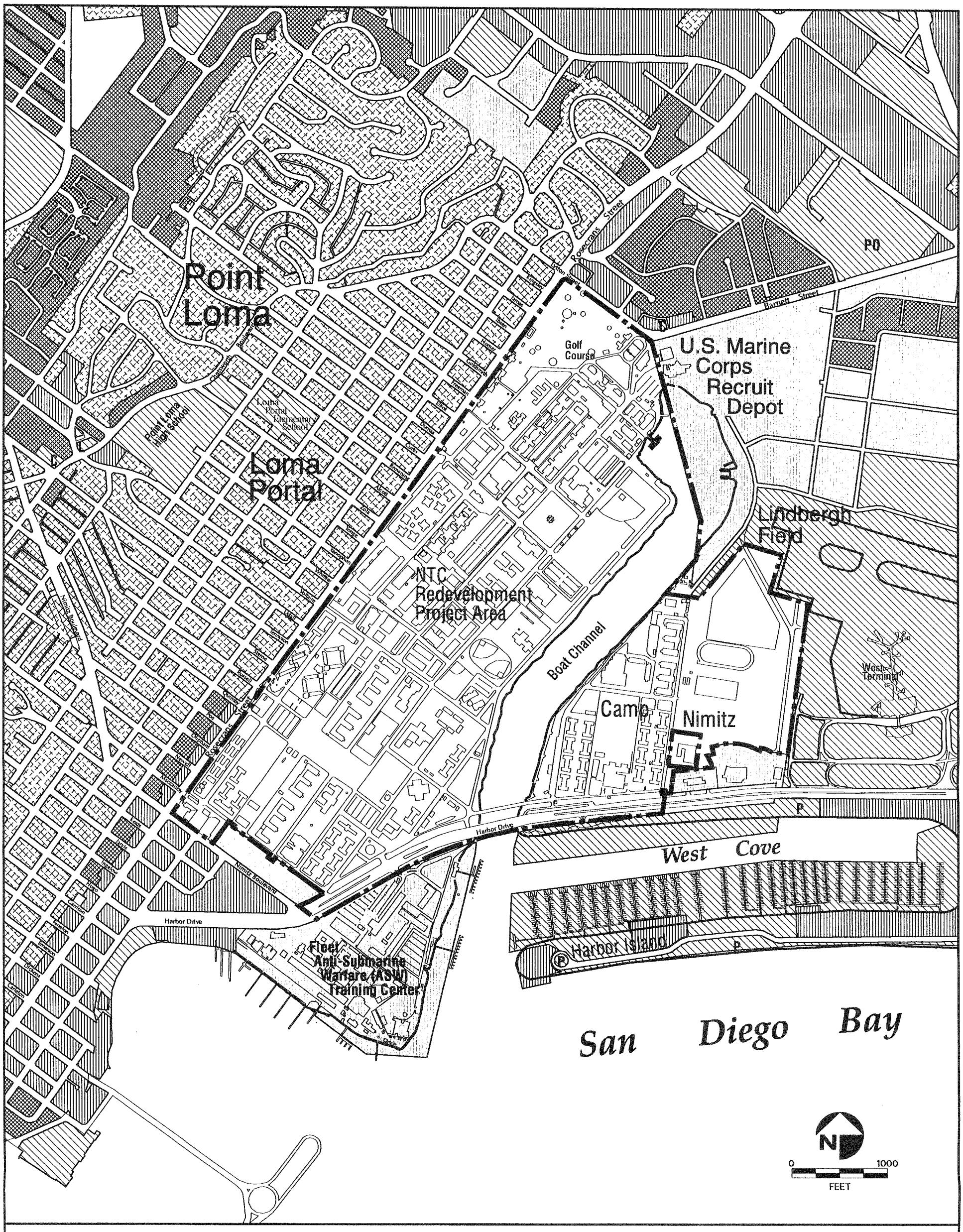
Industrial land uses within the Peninsula community support commercial fishing and marine-related activities. The commercial and sport fishing industrial area in the Roseville/Shelter Island area provides boat berthing (private and commercial), boat repair, boat sales, fuel docks, fishing supply shops, public parking, restaurants, and lodging. Military-related industrial facilities include Point Loma Naval Complex and the ASW Training Center (City of San Diego 1998a).

Midway/Pacific Highway Corridor Community

The Midway/Pacific Highway Corridor community consists primarily of urbanized commercial and industrial land uses. A mixture of large and small commercial buildings, as well as large-scale buildings and commercial parking lots defines the area. The community serves regional needs as the site of a major post office and the San Diego Sports Arena, as well as major access to Lindbergh Field. Although nearly 50 percent of the area is dedicated to commercial uses, only 30 percent is zoned for such use; commercial land use has encroached on industrial zones under regulations of the Midway Planned District. Residential areas within the community include multi-family complexes in the western portion, with the Marine Corps/Navy Gateway Village Complex directly to the north of the Project Area (City of San Diego 1998a).

Navy Fleet ASW Training Center

The ASW Training Center occupies 37.7 acres of land immediately south of the Project Area. The Navy uses this facility for training personnel in operation, maintenance, and tactical use of sonar and other ASW equipment. The site is leased from the San Diego Unified Port District (SDUPD). In accordance with DBCRA recommendations, the ASW Training Center will receive most of the NTC San Diego property not subject to disposal (City of San Diego 1998a).



Land Use

- Single Family Residential
- Multifamily Residential
- Commercial
- Military Use
- Public / Semi-Public
  - C - Church
  - P - Park
  - L - Library
  - PO - Post Office

Base Map Legend

- Project Area Boundary
- Road Rights-of-Way*

*
RUIS DISCLAIMER:
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Sources: SANDAG 1990 Land Use Coverage registered to RUIS Parcels; and Peninsula Community Plan

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Surrounding Land Uses

FIGURE
4.1-1

ntc/plots/figures/luoutbw_2.aml

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United States Marine Corps Recruit Depot (MCRD)

MCRD comprises 433 acres located adjacent to the northeastern portion of the Project Area. The primary user of the facility is the Recruit Training Regiment (RTR). Other uses include bachelor enlisted quarters (BEQs), married officer quarters (MOQs), Marine Corps Exchange (MCX) clubs, maintenance facilities, and regional medical and dental clinics. Facilities adjacent to the Project Area along Barnett Avenue include commissioned mess and administration buildings. Leases, grants, and easements comprise approximately 54 acres of the facility. Portions of MCRD adjacent to the Project Area include the northern end of the boat channel, boat ramp, and property leased to the SDUPD for airport use. A co-generation facility was transferred to MCRD in 1996 (City of San Diego 1998a).

Lindbergh Field

Lindbergh Field comprises 487 acres located adjacent to the Project Area's eastern boundary. The facility is administered by SDUPD and includes the main runway (Runway 9/27), two terminals, Federal Aviation Administration (FAA) tower, fire station (adjacent to MCRD), air freight terminals, car rental tenants, a fuel farm, and parking facilities. The runway's flight path is directly over the Project Area. Aircraft operations at Lindbergh Field totaled 223,257 in 1998 and approximately 15,000,000 passengers used Lindbergh Field and 96,341 tons of cargo (freight) was shipped from Lindbergh Field in 1998 (personal communication, SDUPD 1999).

4.1.1.2 Adopted Land Use Plans and Policies

To promote consistent growth and maintain urban development and population density standards at and in the vicinity of the Project Area, a framework for land use policy has been developed by numerous plans and programs. These documents include the Redevelopment Plan for the NTC Redevelopment Project, City of San Diego's Progress Guide and General Plan, Peninsula Community Plan, Midway/Pacific Highway Corridor Community Plan, MCRD Master Plan, Comprehensive Land Use Plan (CLUP) for Lindbergh Field, and SDUPD Master Plan. These plans and programs are described below.

Redevelopment Plan for the Naval Training Center Redevelopment Project

Prepared by the Agency, the Plan establishes priorities and presents a process and basic framework within which specific redevelopment activities will be presented for the redevelopment, rehabilitation, and revitalization of the Project Area, as analyzed in this document. The Plan was adopted on May 13, 1997 (Ordinance No. 0-18405-1). The Plan contains the following information specific to the Project:

- definition of the Project boundaries;
- description of proposed redevelopment activities;
- description of permitted uses and planning considerations;
- outline of proposed development;
- methods for financing the Project;
- actions by the City; and
- procedures for amending the Plan.

Naval Training Center San Diego Reuse Plan

This plan was adopted by the San Diego City Council, acting as the Local Redevelopment Authority, on October 20, 1998, and is applicable to the 430-acre portion of NTC San Diego transferred by the Navy to the City. This plan is designed to comply with laws and regulations affecting base reuse implementation adopted in response to the Base Closure and Realignment Act of 1988 and the Defense Base Closure and Realignment Act of 1990. The main elements of this plan comprise the land use plan for the portion of NTC San Diego transferred to the City and analyzed in this EIR, an economic and financial evaluation, and a description of implementation strategies for financing redevelopment of NTC San Diego.

City of San Diego Progress Guide and General Plan

The Progress Guide and General Plan provides several elements that potentially affect the Project Area and its surrounding environment. Since NTC San Diego was only recently placed under the jurisdictional control of the City, specific recommendations for the site do not occur in the document. However, a portion of the Transportation Element is relevant to the Project Area for land use compatibility within the Lindbergh Field noise contours (City of San Diego 1998a).

Peninsula Community Plan

The Peninsula Community Plan established the following planning strategies to maintain quality of life in the neighboring communities of Point Loma:

- conserve the character of existing single-family neighborhoods;
- promote multi-family infill development near transit lines;
- reduce traffic congestion and airport noise pollution;
- provide housing opportunities for residents of all income levels;
- promote mixed development (residential, tourism, neighborhood, and marine-related commercial) in the Roseville Commercial District and Voltaire Commercial District;
- enhance and protect physical and visual access to the bay;
- develop a balanced transportation system; and
- provide additional park and recreation facilities.

Since approximately 60 percent of the Peninsula community is located within the California coastal zone, a Local Coastal Program (LCP) land use plan was incorporated to make recommendations regarding land use, circulation, shoreline access, resource conservation, and urban design to implement the California Coastal Act (CCA) for those areas within the coastal zone. The plan identifies future needs for tourist-based and recreational development and preservation of the existing housing stock. It should be noted that the Project Area is not considered part of the LCP, but is located within the State's coastal zone jurisdiction (City of San Diego 1998a).

Midway/Pacific Highway Corridor Community Plan and Local Coastal Program

The Midway/Pacific Highway Corridor Community Plan and Local Coastal Program includes land use policies to consolidate land uses, stimulate the physical rehabilitation and economic revitalization of commercial areas, preserve existing industrial and institutional areas, and provide a variety of housing opportunities (City of San Diego 1998a).

Bay-to-Bay Connection

Plans for the Bay-to-Bay connection are preliminary in nature. The initial concepts of the provision of a waterway connection is a long term project and further studies will be necessary to ultimately define the specific connection in terms of its composition (e.g., water, park, or a combination of the two), alignment, and financing, although preliminary designs have been developed.

United States Marine Corps Recruit Depot

The development of MCRD is directed by the 1987 master plan. This plan indicates land uses, facility development plans, and design guidelines. An update to this master plan has been prepared and is currently being finalized.

San Diego Unified Port District Master Plan

The SDUPD is a local government entity established in 1962 to manage the harbor, operate Lindbergh Field, and administer the public tidelands surrounding San Diego Bay. The SDUPD Master Plan establishes official planning policies for the physical development of these areas. Although the Project Area is not under SDUPD jurisdiction, it is adjacent to the Lindbergh Field/Harbor Island Planning District. This district is primarily comprised of airport-related use, as well as commercial, industrial, and public recreational areas (City of San Diego 1998a).

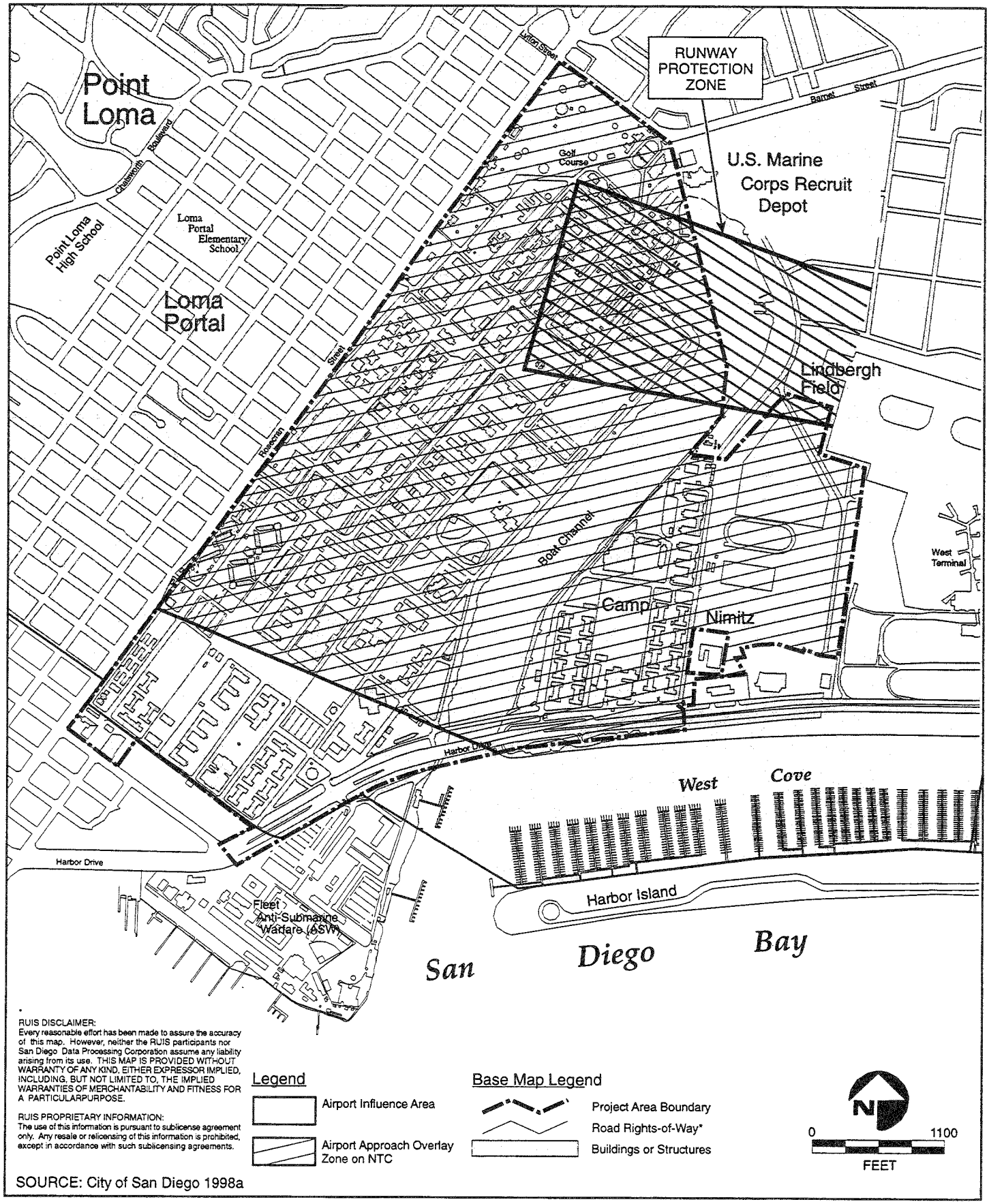
Lindbergh Field Comprehensive Land Use Plan

The Lindbergh Field CLUP was adopted in 1992 by the San Diego Association of Governments (SANDAG), the designated Airport Land Use Commission (ALUC) for the San Diego Region (SANDAG 1992a). The purpose of the CLUP is to describe the actions necessary to ensure compatible land use development on and surrounding Lindbergh Field. The CLUP describes the Airport Influence Area (AIA) (which includes the Project Area as shown in Figure 4.1-2), existing noise contours, land use compatibility, runway protection zones (RPZs), airport approach and departure surfaces, and aviation easements (City of San Diego 1998a).

Airport Influence Area. The Lindbergh Field AIA represents the boundary of the ALUC's planning and review authority (Figure 4.1-2). The AIA encompasses those areas adjacent to the airport impacted by noise levels exceeding California State Noise Standards or areas where height restrictions would be needed to prevent obstructions to navigable airspace (SANDAG 1992a) (see Section 4.12 for more information on the noise environment). The 60-and 65-decibel [dB(A)] Community Noise Equivalent Level (CNEL) noise contours are important because they establish the threshold for actions required in approving compatible land uses near airports. Proposed development plans encompassing the AIA are subject to a determination of consistency with the CLUP. New residential structures proposed within the Lindbergh Field 60 dB(A) CNEL noise contour require an acoustical analysis to show they have been designed to limit outside noise levels from intruding indoors (SANDAG 1992a). The threshold for determining compatibility of land uses proposed within the AIA is 65 dB(A) CNEL. Residential uses, schools, hospitals, convalescent homes, and churches are typically not considered compatible within the 65 dB(A) CNEL per California Noise Standards (City of San Diego 1998a).

Runway Protection Zone. The Lindbergh Field RPZ for Runway 9/27 covers a small portion of the Project Area (Figure 4.1-2). The intent of the RPZ is to preclude further incompatible development where significant risks from aircraft takeoffs and landings exist (SANDAG 1992a). Compatible uses in the RPZ, according to the CLUP, include undeveloped areas, airport storage facilities, automobile parking, and rights-of-way for utilities and streets. All other uses in the Lindbergh Field RPZ are considered either conditionally compatible or incompatible. However, land uses already exist under the Lindbergh Field RPZ (such as those land uses in the Project Area). Therefore, the CLUP prohibits an increase in development density or use intensity for uses that already occur within the RPZ (City of San Diego 1998a).

Airport Approach Overlay Zone (Municipal Code 101.0445). Because of the close proximity of the Project Area to Lindbergh Field and the overlay of the runway approach surfaces, future development is subject to the Airport Approach Overlay Zone, as described in the CLUP and City of San Diego Municipal Code (illustrated in Figure 4.1-2). This zone is used to establish a procedure to ensure the following before a building permit is issued:



SOURCE: City of San Diego 1998a

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Lindbergh Field Overlay Zones on the Project Area

FIGURE 4.1-2

Graphics/ENVIR.ASS'MT (ENV)/NTC Redevelopment/**Lindbergh Zones.FH8**

1. The provisions of the Federal Aviation Act of 1958, P.L. 85-726, have been satisfied.

2. The requirements of California Public Utilities Code Section 21659 have been satisfied.

3. The Port of San Diego has been provided the opportunity to participate in the review process.

4. Minimum vertical buffers are provided between FAA-designated air corridors and structures within the zone.

The Airport Approach Overlay Zone covers most of the Project Area. Buildings, structures, or uses not exceeding 30 feet in height are exempt from the procedures of the City's overlay zone (but are not exempt from compliance with the FAA Act of 1958, as amended [Part 77]). Within this overlay zone, the owner or developer is required to file notice of the proposed construction concurrently with the FAA and the Port of San Diego. Several approvals are required by the City to comply with this ordinance, including:

1. An acknowledgment from the FAA that the proposal either does not require notice to the FAA or that the proposed construction is not a hazard to air navigation.

2. An acknowledgment from the SDUPD that it is aware of the construction and concurs with the FAA's determination. The ordinance also establishes a procedure if the SDUPD does not concur with the FAA.

CLUP Consistency and Non-Conforming Uses. Because the areas within the AIA and RPZs of Lindbergh Field are largely urbanized, the CLUP and land use regulations allow infill development that would otherwise be considered incompatible. The City's zoning ordinance (Municipal Code, Section 59.5.0701) also allows existing nonconforming uses, which, in effect, exempts existing uses from the consistency requirement of the CLUP. However, new uses (unless considered infill development) are only permitted if in conformance with the City's and the CLUP's land use compatibility guidelines (City of San Diego 1998a).

The CLUP establishes standards and criteria for infill development, which include: 1) prohibiting uses that pose a substantial hazard due to above-ground use or storage of flammable or explosive substances such as a fuel farm, hazardous material storage, or hazardous waste disposal sites; 2) prohibiting projects that would intensify human occupancy of a site greater than 110 percent of the average intensity of existing uses within a 0.25-mile radius of the Project Area if located beneath the airport approach or departure surfaces delineated in the Airport Approach Overlay Zone; 3) requiring interior noise attenuation; and (4) prohibiting an increase in development density or use intensity within the RPZ (City of San Diego 1998a).

The CLUP focuses on impacts related to aircraft noise and safety. Traditionally, a standard land use compatibility table identifying land uses considered appropriate within various dB(A) CNEL contours is adopted by a community and integrated into its community plan. In the case of Lindbergh Field, extensive amounts of development already exist in virtually all land use categories around the airport. The CLUP identifies how these non-conforming uses should be handled. The 65 dB(A) CNEL is considered to be the threshold for residential compatibility. However, structures within the 60 dB(A) CNEL do require acoustical analysis and attenuation. The CLUP permits residential and other uses (e.g., schools, churches, and hospitals) within areas subject to noise impacts, as long as specified conditions are met. Those conditions include acquisition of avigation easements for aircraft noise, imposition of other requirements based on the exterior noise level, and construction/mitigation techniques employed in the facility. In all cases where residential uses are involved, the interior noise level must be reduced to 45 dB(A). No noise standards for commercial use are explicit in the CLUP (City of San Diego 1998a).

Lindbergh Field Immediate Action Plan

The SDUPD has completed the expansion of Lindbergh Field under its Immediate Action Plan (SDUPD 1994). The expansion occurred along the western edge of the airport adjacent to the Project Area and included an eight-gate expansion of the West Terminal (Concourse F, Terminal 2) and related roadway improvements. The expansion also included redevelopment of most on-airport roadways to improve traffic flow and access to the terminals and parking (City of San Diego 1998a).

San Diego International Airport Master Plan

The SDUPD is currently developing a Master Plan for the San Diego International Airport, which will determine how to optimize the airport's capabilities to accommodate its projected growth in air travel. A development plan was presented on July 27, 1999, and consists of the following phases:

- construction of a new ten-gate terminal, a new apron, roadway improvements on the north side of the airport along Pacific Highway, and relocation of a regional air carrier for completion between 1999 and 2005;
- expansion of the new north terminal by four gates, construction of an intermodal transportation center along Pacific Highway between Palm Avenue and Sassafras Street, and roadway improvements for completion between 2005 and 2010;
- construction of a new runway and relocation of cargo operations to the north side of the airport for completion between 2010 and 2020; and
- construction of a double-deck roadway system at existing South Terminals 1 and 2 and expansion of Terminal 2 by eight gates for completion between 2010 and 2020.

Airport Environs Overlay Zone (Municipal Code 101.0444)

Since local land use and development control cannot be controlled by the ALUC, an implementing ordinance is needed to transfer the CLUP requirements to the development review process. The purpose of the Airport Environs Overlay Zone (AEOZ) is to:

1. Ensure that land uses are compatible with the operation of airports by implementing the land use, noise attenuation, and other standards of the appropriate CLUPs as adopted by the Airport Land Use Commission;

2. Provide a mechanism whereby property owners receive information regarding the noise impacts and safety hazards associated with the property's proximity to airport operations; and

3. Protect the public health, safety, and welfare of the citizens of San Diego.

Although an ordinance, which rezones the land around Lindbergh Field into the AEOZ, was never adopted by the City Council, City staff has prepared an amendment to City code to establish an AEOZ for Lindbergh Field encompassing the 1990 60 dB(A) CNEL contour. This amendment was presented to the City's Planning Commission on December 2, 1999, and recommended for the City Council to consider an AEOZ for Lindbergh Field in February 2000. The AEOZ will assist City staff in implementing the structural noise attenuation and avigation easement requirements for property owners within the AEOZ. The proposed NTC San Diego residential and institutional land uses fall within the proposed boundaries of the AEOZ and may be subject to sound attenuation and avigation easement requirements pending final adoption of the municipal code amendment.

Council Policy 600-40 Resource Protection Ordinance Long-Range Planning Requirements

The approval of the Resource Protection Ordinance (RPO), on February 27, 1989, resulted in new regulations being applied to parcels containing environmental resources. Council Policy 600-40 was created to ensure that the preparation and adoption of long-range plans for the City include a thorough analysis of the constraints and opportunities of the planning area, including but not limited to the resources protected by the RPO. Because the Project Area contains biologically sensitive lands and significant historic sites, the Council Policy 600-40 would apply (City of San Diego 1998a).

Council Policy 600-40 directs that a development suitability analysis be conducted for all long-range plans as a first step in the plan preparation. Development, including land uses, roads, and other facilities, is to be distributed so as to minimize encroachment into hillsides, biologically sensitive lands, significant prehistoric and historic resources, and other resources addressed in the RPO. Council Policy 600-40 also requires that long-range plans be reviewed for consistency with the RPO. However, for predominantly urbanized communities, a parcel-by-parcel or ownership consistency analysis of the plan area may not be appropriate (City of San Diego 1998a).

The *Conditions and Considerations* report prepared in October 1994 at the onset of the reuse planning process includes a development suitability analysis of NTC San Diego as it relates to sensitive resources, and a Resource Management Program has been included

in the implementation element of the NTC San Diego Reuse Plan (City of San Diego 1998a).

San Diego Municipal Code 101.0462 – Resource Protection Ordinance

The purpose and intent of the RPO is to protect, preserve and, where damaged, restore the environmentally sensitive lands of San Diego, including wetlands, wetland buffers, floodplains, hillsides, biologically sensitive lands, and significant prehistoric and historic resources (City of San Diego 1998a).

Existing portions of the Project Area that would qualify as resources under this ordinance include the coastal fringe related to the boat channel and historic resources (City of San Diego 1998a).

Other Relevant Land Use Restrictions

Other policies, which address land use in and around the Project Area, are also restricted by doctrine and Public Trust (or tidelands trust).

Tidelands Trust. The State of California acquired title to tide and submerged lands upon gaining statehood in 1850. In 1911, the California State Legislature conveyed all such lands within the City of San Diego and lying between the line of mean high tide and the pierhead line to the City of San Diego. The conveyance was made in trust for the development of commerce, navigation, and fisheries (City of San Diego 1998a).

Generally, tide and submerged lands that are held in trust by municipalities and special districts can be used to accommodate and promote commerce, navigation, and fisheries. These time-honored public purposes have been expanded to also include other uses of general State interest (as opposed to strictly local interest). Other uses include visitor-serving facilities such as hotels, restaurants, marinas, parks, airports, and preservation of lands in their natural condition. The State Lands Commission is responsible for administering tide and submerged lands retained by the State. The Commission and its staff, together with the Office of the California Attorney, maintain oversight regarding the use of lands held in trust by municipalities and others (City of San Diego 1998a).

Project Area lands within "Deed 1" and "Deed 4" are not subject to the tidelands trust (Figure 4.1-3). The position of the State, through its State Lands Commission, is that the tide and submerged lands within "Deed 2" and "Deed 3" remain subject to the public trust. The position of the State Lands Commission is that the 1929 statute was not intended to free those lands from the public trust, nor was it legally effective to do so. The Commission, in meetings with officials of the City of San Diego, has advocated settlement of this controversy through a land exchange to clear inland areas within "Deed 2" and "Deed 3" of the public trust. Through such exchanges, areas on or near the water which are not currently trust lands or are in dispute, would be made trust lands and put to public trust uses (City of San Diego 1998a).

Proposition D: Height Limits (Municipal Code 101.0451). The passage of Proposition D in 1973 imposed a 30-foot height restriction for buildings within an area located generally west of Interstate 5, from the northern City limits to the Mexican border. As shown in Figure 4.1-3, the adopted Proposition D boundary is contiguous with the mean high tide line across the Project Area (City of San Diego 1998a).

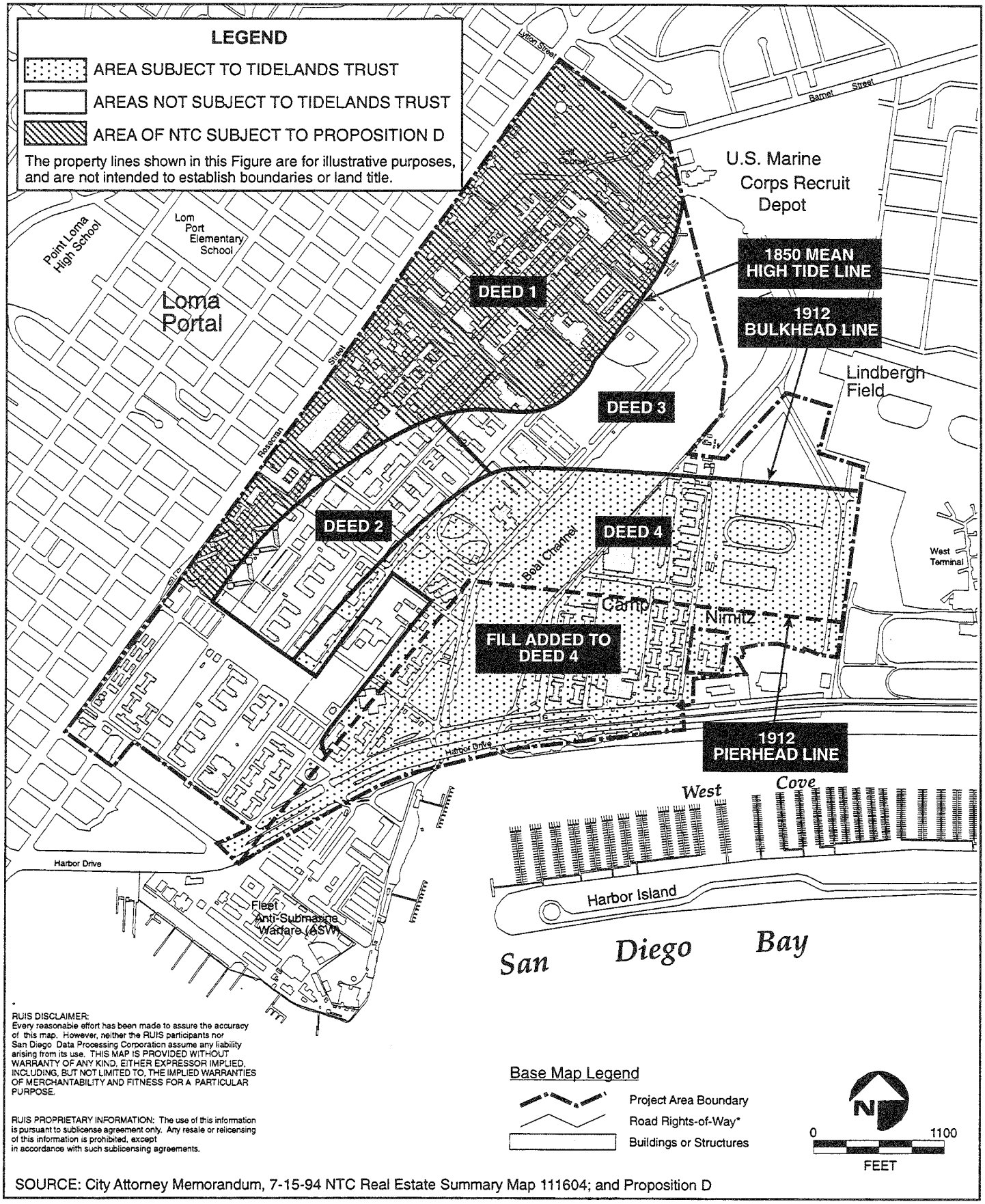
Lands owned by the federal government or the State of California (such as the SDUPD) are exempted from the 30-foot-height limit. Although the 30-foot height limit does not presently apply to NTC San Diego, future conveyance of the property to the acquiring entity would subject the portion of the Project Area shown in Figure 4.1-3 to the provisions of Proposition D (City of San Diego 1998a).

4.1.1.3 Land Use Within the Project Area

Military Use

With the exception of the uses described below, military uses in the Project Area no longer occur since NTC San Diego closed operations. In addition to the 72-acre area to be redeveloped by the Navy for military family housing (MFH), the following uses have been retained by the Navy for military and federal government needs and are currently in operation:

- Admiral Kidd Club - 30 acres
- Cogeneration Plant - 1 acre



SOURCE: City Attorney Memorandum, 7-15-94 NTC Real Estate Summary Map 111604; and Proposition D

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Areas Subject to Tidelands Trust Land Use Restrictions and Proposition D Height Restrictions

FIGURE 4.1-3

Graphics/ENVIR.ASS'MT (ENV)//NTC Redevelopment/L-U RESTRICTIONS.FH8

- Fleet Intelligence Training Center Pacific and Consolidated Area Telephone Service area - 7 acres
- Small Arms Range - 2 acres
- Navy Exchange/auto service station/medical and dental clinic - 13 acres (located on MFH Development Area)

Interim Uses in the Project Area

Portions of the Project Area are currently under lease to the City of San Diego and in turn are subleased to various institutions under license agreements. Some of the major interim uses include the MWWD lab; Head Start; a fire fighting training facility currently being used by the City of San Diego Fire Department; and storage, berthing, training, and administrative facilities used by the National Civilian Corps, the San Diego Food Bank, the Vietnam Veterans, and San Diego State University. The Small Arms Range is currently used by the San Diego Police Department and a number of military commands. The Department of Defense (DoD) also operates the following interim functions in the Project Area: Commander Naval Base San Diego (COMNAVBASE), a transition assistance program for military personnel leaving the military; the billeting of sailors during the decommissioning and repair of ships; and the Drug and Alcohol Program Administration (City of San Diego 1998a).

Easements and Lease

Easements in the Project Area include a City of San Diego sewer easement under the landfill on Camp Nimitz and a noise monitoring easement by the SDUPD to assess noise levels. The City of San Diego also has an easement over the portion of Harbor Drive between the Project Area and the ASW Training Center. A 5-acre parcel adjacent to Harbor Drive is under easement from MCRD to the City of San Diego for a sewage pump station. A "Master Lease" (including all improvements and related personal property) exists between the City of San Diego and the Navy. The Master Lease covers Buildings 234 and 235, which are subleased to the MWWD; Building 417, subleased to San Diego State University as a marine studies laboratory; and Building 619, subleased to the Head Start program as a child care facility.

In addition to the existing Master Lease, the City Council voted on April 29, 1997, to exercise its option to acquire the right to lease up to 60 buildings located on the main

base. This action is known as "Modification 4." The lease was further modified ("Modification 8"), effective May 1, 1999.

4.1.1.4 Coastal Consistency

Any agency conducting or supporting activities directly affecting the coastal zone must proceed in a manner consistent with State coastal zone management programs to the maximum extent possible. The Navy submitted a Coastal Consistency Negative Determination (CCND) to the California Coastal Commission for review and concurrence. A letter of acknowledgment/concurrence regarding the Navy's compliance with the Coastal Zone Management Act (CZMA) has been provided by the California Coastal Commission (City of San Diego 1998a).

4.1.2 Environmental Impacts

4.1.2.1 Threshold for Determining Significance

For the purposes of this EIR, land use impacts are considered significant if the Project will result in the creation of incompatible land uses within the Project Area, conflict with existing or planned land uses in the vicinity of the site, or conflict with the City's land use plans or policies (where applicable).

4.1.2.2 Impact Analysis

The following impact discussion is limited to those land uses with the potential for impacts. If a particular part of a land use is not discussed, then the reader should assume that no impact is expected. Subsequent resource sections that would affect or be affected by land use actions (e.g., visual resources, noise, biological resources) provide more specific detail on potential impacts.

Incompatible Land Use Impacts

Incompatible Impacts on the Area Surrounding the Project Area. Privacy of the surrounding residential community is not expected to be compromised by the Project because a large amount of foot traffic to and from the Project Area through the existing

residential area is unlikely. Overall, public access to the Project Area would be improved, which is considered a beneficial impact.

A slight decrease in public safety could occur to Rosecrans Street/Lytton Street users and adjacent residential areas from the driving range and increased use of the golf course. Increased use of the golf course is expected to be moderate, and current fencing already controls most errant golf balls; therefore, the impact would be less than significant. No other adjacent effects are expected from the golf course or recreational use designations.

Incompatible Land Use Impacts between Proposed Onsite Land Uses. Land uses proposed on the Project Area are shown in Figure 2-3. The proposed educational and residential land uses could create some public/private area conflicts, as well as noise- and traffic-related problems. Because of the high level of pedestrian activity expected in and around the proposed educational land use, a fair amount of pedestrian cross traffic would be expected through the residential land use area. The pedestrian use could result in some privacy problems within the residential areas, though they can be appropriately controlled with proper design; therefore, the privacy impact would be less than significant.

Activities associated with the public safety institute include defensive tactics and pistol range activities. These activities may create land use conflicts with the proposed hotel located in the Camp Nimitz area, which would result in a significant impact. The potential for public entry into this area would be increased by the adjacent high intensity use of the public trail along the boat channel. For example, a tourist might feel inclined to walk around the Camp Nimitz area and could happen upon tactical training activities that could potentially result in personal injury or interrupt the training activity.

A slight increase to public safety may occur between increased use and facility expansion/realignment of the golf course and driving range with the adjacent office/retail/museum area. Since the increase in use would only be moderate and many of the office/training uses are already in place, this impact would be less than significant.

Coastal Consistency Determination

During the disposal process for NTC San Diego, the Navy provided a Coastal Consistency Negative Determination to the California Coastal Commission. A letter of acknowledgment/concurrence regarding the Navy's compliance with the CZMA has been

provided by the California Coastal Commission. With respect to the reuse of NTC San Diego, the Project would be required to comply with the California Coastal Act (CCA).

Plan Consistency Land Use Impacts

The 430 acres of the Project Area to be redeveloped by the Agency were reviewed to determine the consistency of proposed land uses with the adopted policies listed in Section 4.1.1.2. Since the 72-acre portion of the Project Area to be developed as MFH would continue to be federal property, it is not subject to the policies and restrictions of the City of San Diego; however, the MFH Development activity would be generally consistent with such plans, ordinances, and policies because the site would remain under military ownership (Department of the Navy 1998). Consistency of implementation activities on the 430 acres of NTC San Diego subject to the NTC San Diego Reuse Plan with other relevant plans and policies is analyzed below.

Peninsula Community Plan. The local community plan is used to evaluate the Project's consistency with City land use policies for the Peninsula area. The Project is not consistent with the land use planning strategy contained within the current Peninsula Community Plan to reduce traffic congestion because of the amount of traffic congestion on roadway segments generated by the Project. However, the City of San Diego will not have jurisdiction over land uses at NTC San Diego until the property is conveyed from the Navy. The City has initiated a Specific Plan for NTC San Diego and amendments to the General Plan, Peninsula Community Plan and the Local Coastal Program. When the City has assumed authority for the property, the Specific Plan and plan amendments will be in place; therefore, impacts would not occur.

The Project would not adversely affect the existing single-family character of the surrounding area. A goal of the NTC Reuse Plan is to develop the residential area to be consistent with the scale and density of the surrounding area. No uses are proposed that would be incompatible with single-family uses. The Project also promotes multi-family infill development and represents an opportunity for public transit to serve the area.

The disposal and reuse of a military base is required to comply with the Base Closure Community Redevelopment and Homeless Assistance Act of 1994. The City has reached an agreement with homeless service providers that commits the City to spending $7.5 million to assist local homeless service providers in providing transitional housing and

other services to the homeless outside of the Project Area. This agreement was approved on June 11, 1997, by the Department of Housing and Urban Development.

In compliance with this act, the San Diego City Council is entering into an agreement with community homeless providers to financially support and assist in the provision of projects to benefit the homeless. These projects would occur in Council District 2 which includes the Peninsula community planning area. Through this agreement, the Project complies with the intent of the Peninsula Community Plan to provide housing opportunities for residents of all income levels.

The Project would improve physical access to the bay by providing recreational opportunities along the boat channel that would benefit Peninsula area residents. However, some visual access to the bay from view corridors along adjacent public streets in the area northwest of the Project Area could be blocked by proposed development. New structures in the educational or residential use areas could block views from adjacent areas. The potential for reduced visual access in the western portion of the Project Area (i.e., outside the Historic District) would result in a significant impact (refer to Section 4.11, Visual Resources). Most of the historically significant buildings in the Project Area would remain and views into the northern two-thirds of the Project Area are not expected to change.

Midway/Pacific Highway Corridor Community Plan. All goals of the plan are met with the Project; therefore, impacts would not occur.

Bay-to-Bay Connection. The bay-to-bay connection is incorporated into the vision for the NTC Reuse Plan. The NTC Redevelopment Plan accommodates the bay-to-bay connection by providing multiple land use designations, including open space recreation, within the area surrounding the corridor proposed for the connection. This land use category is intended to accommodate future alignments of the bay-to-bay connection when it is ultimately developed as a waterway and also the interim use as a linear park; therefore, impacts would not occur.

United States Marine Corps Recruit Depot Master Plan. The Project does not jeopardize any of the plans or policies of the master plan for the adjacent United States Marine Corps Recruit Depot (MCRD). Security issues do exist with the allocation of recreational uses along the boat channel. Pedestrian access to this remote location may increase the

risk of unauthorized entrance into the MCRD. This would result in a less than significant impact.

Tidelands Trust. Lands subject to tidelands trust restrictions (refer to Figure 4.1-3) are allowed certain uses, including the following:

- construction of bridges over navigable waters;
- construction of airports;
- industry related to the development of commerce and navigation;
- recreational boating, including docks and marinas;
- recreational and commercial fishing;
- general recreational activities; and
- environmental preservation.

Visitor serving hotels, open space set aside for the benefit of birds and marine life, and scientific research uses related to protection of the tidelands have all been recognized by the courts as being consistent with tidelands trust restrictions. Airport uses have been statutorily acknowledged as being consistent with the tidelands trust. Therefore, all uses proposed within the tidelands trust area are consistent with permitted tidelands trust uses except the proposed public safety institute. The public safety institute does not appear to be consistent with uses permitted on tidelands trust properties; therefore, a significant impact would result. The City has had preliminary discussions with the State Lands Commission staff regarding the inconsistency of the public safety institute with tidelands trust restrictions. In similar situations, the State Lands Commission has previously agreed to lift restrictions on State lands property in exchange for the imposition of the tidelands trust on other appropriate parcels of property not presently impressed with the tidelands trust, or that are in dispute regarding the tidelands trust.

Proposition D: Height Limits (Municipal Code 101.0451). It is assumed that the intent of this proposition is that it would apply to the Project Area if transferred from federal to private or local jurisdiction and ownership (NTC San Diego was exempt from Proposition D when it was federal government property). The 30-foot height limit would then apply to the northern portion of the Project Area within the 1850 mean high tide line (refer to Figure 4.1-3). All of the proposed uses for the Project can be accommodated within the 30-foot height limit area; therefore, impacts would not occur.

Council Policy 600-40 Resource Protection Ordinance – Long-Range Planning Requirements. Environmentally sensitive lands on the Project Area are identified in the NTC San Diego Reuse Plan and were considered during the reuse planning process. The conditions and consideration report prepared as part of the reuse planning process demonstrates compliance with this ordinance; therefore, impacts would not occur.

San Diego Municipal Code 101.0462 – Resource Protection Ordinance. All floodways, biologically sensitive areas, and significant prehistoric and historic sites have been identified and are intended to be preserved. An RPO permit would be required as individual developments are proposed under the NTC Reuse Plan; therefore, impacts with regard to RPO compliance would not occur.

San Diego Unified Port District Master Plan. The Project is consistent with the goals and proposed land uses of the SPUPD's master plan. It accommodates airport expansion as well as public access and connections with other port waterfront parks. It does not jeopardize other port-related commercial or industrial uses; therefore, impacts would not occur.

Lindbergh Field Immediate Action Plan. The Project accommodates additional expansion adjacent to the Immediate Action Plan (IAP) area improvements that have been completed. The Project would not be in conflict with SDUPD's IAP; therefore, impacts would not occur. It should be noted that since a master plan for Lindbergh Field is not available (it is currently being prepared) no other consistency determination with Lindbergh Field operations can be made at this time.

Lindbergh Field Comprehensive Land Use Plan. Uses proposed in the Lindbergh Field RPZ on the Project Area include multiple uses (e.g., office/retail/museum/institutional/ R&D) within the Historic Core subarea and recreational uses within the Recreational subarea. An increase in development density is not proposed in these areas. It is expected that use intensity would not increase over existing conditions because the existing structures are within the Historic District and similar intensity uses are proposed. In addition, it is anticipated that uses within the Recreational subarea under the RPZ would be primarily passive recreational uses, such as parking, open space, pedestrian and bicycle paths, as well as a possible expansion of the golf course area. There are no proposals to build active recreational facilities in this area. Although it is possible that the Recreational subarea could accommodate public events from time to time which may

result in an increase of intensity over the average daily use, it is unlikely that the intensity generated by special events would exceed existing intensity of the parade and ballfields for military functions. As a result, impacts regarding conformance with the Lindbergh Field CLUP and the RPZ would not occur.

According to the City's Progress Guide and General Plan Land Use Noise Level Compatibility Standards, several existing and proposed land uses (e.g., retail) in the Project Area are considered incompatible with noise levels produced by Lindbergh Field operations. According to Figure 4.12-3, land uses considered to be incompatible include:

- educational uses in the 60-decibel (dB(A)) Community Noise Equivalent Level (CNEL) and greater contour;
- recreational uses in the 65 dB(A) CNEL and greater contour;
- office uses in the 65 dB(A) CNEL and greater contour;
- golf course in the 75 dB(A) CNEL and greater contour; and
- retail uses in the 75 dB(A) CNEL and greater contour.

Although all of these uses (with the exception of retail) already exist in the Project Area and are generally consistent with and at similar densities to the surrounding Point Loma community, they are considered incompatible uses within the CLUP noise contours listed above according to the City's General Plan. This would result in a significant land use policy impact.

Airport Environs Overlay Zone. Proposed land uses (e.g., hotel, residential) would be significantly impacted if constructed within the 60 dB(A) CNEL contour.

Airport Approach Overlay Zone. Any new structure proposed to be constructed within the Airport Approach Overlay Zone would trigger a formal review and approval process by the FAA and the City to determine if the structure would be a hazard to airport safety. Although the location and height of new structures are not proposed or known at this time, the FAA and the City have the responsibility to make a determination on compliance of proposed new structures with this overlay zone. If any proposed new structures were determined by the FAA and the City to be incompatible with the overlay zone, they would not be approved, and thus impacts would not occur.

Appropriate Commitment of Land Resources Impacts

Public access to San Diego Bay and the boat channel represents important opportunities for public access and waterfront recreation in accordance with policies in the Peninsula Community Plan and the tideland trust use restrictions. The visual and physical connections to the waterfront are considered important by the community plan document. The proposed recreation and hotel uses relate to the waterfront and are consistent with public uses for these areas. The nature of the Metropolitan Wastewater Department (MWWD) lab and public safety institute may not be compatible with public uses unless safety precautions (such as fencing or signage) are implemented to protect the public and discourage trespassing. This potential incompatibility would represent a significant impact. In addition, the public safety institute commits an area adjacent to an important waterfront resource that does not relate to or need the resource and is not consistent with public trust lands; therefore, impacts would be significant.

Construction Impacts

Construction impacts associated with implementation activities would include emissions of air pollutants and noise. Construction activities are subject to regulations by the City, including specification of haul routes, limits to construction hours, control of utility disruption, and other controls. These measures would reduce the impact of construction activity to the maximum extent feasible. Short-term air quality and noise impacts resulting from construction are discussed in Sections 4.9 and 4.12, respectively.

4.1.3 Mitigation Measures

The following measures are required to mitigate significant impacts to below a level of significance. Future developments within the NTC San Diego or 430-acre portion of the Project Area shall incorporate or comply with the measures provided below to the satisfaction of the City Environmental Review Manager prior to discretionary approval and issuance of land development permits.

The City Environmental Review Manager, unless otherwise indicated, shall verify that future project plans have incorporated or complied with the following measures:

1. Design facilities to control public access to the public safety institute (through signage, fencing, etc.) to mitigate conflicts associated with the public safety institute operations and adjacent hotel.

2. Implement the measures provided in Section 4.11 to mitigate visual impacts associated with view blockage from the residential area northwest of the Project Area.

3. Regarding the public safety institute's inconsistency with the tidelands trust, the City shall enter into an agreement with the State Lands Commission, which imposes restrictions where none exist in exchange for removal of restrictions where they do exist.

4. Fencing and directional signage shall be used adjacent to the MWWD lab and public safety institute to keep pedestrians away from these uses and the uses shall be designed to discourage trespassing.

5. No later than 90 days after transfer of the NTC San Diego property from the Navy to the City of San Diego, and prior to transfer of the title from the City to another party, the City will execute a limited avigation easement in favor of the Lindbergh Field Airport Operator (currently the SDUPD) for noise impacts at noise contour levels provided in the *Comprehensive Land Use Plan Lindbergh Field* adopted February 1992, as amended April 1994 and approved by SANDAG.

6. In accordance with the AEOZ and California Noise Standards, the City of San Diego Environmental Review Manager shall review noise studies in the noise-impacted areas prior to issuance of building permits to confirm that appropriate noise attenuation measures are proposed. The City Environmental Review Manager shall confirm that noise attenuation measures have been implemented in accordance with California Noise Standards, State Building Code – Title 24 before issuance of a certificate of occupancy.

With regard to less than significant impacts, the following measures are recommended:

7. Implement security measures to prohibit unauthorized entrance into the MCRD.

8. Ensure extension of all safety fences based on reconfiguration or increased use of the golf course or driving range.

4.1.4 Impact after Mitigation

Implementation of mitigation measures 1 through 5 would reduce impacts associated with public safety institute-related safety, visual impacts, tidelands trust restrictions, MWWD lab safety, and incompatible land uses associated with the Lindbergh Field CLUP, to below a level of significance. Additionally, mitigation measures 6 and 7 are recommended for less than significant impacts associated with access to MCRD and safety associated with the driving range.

4.1.5 Cumulative Impacts

It has been determined that a significant, unmitigable land use impact would result from inconsistency with the traffic policy contained in the Peninsula Community Plan/LCP. This impact is unmitigable because of existing land use and building constraints typical of an urban environment. This unmitigable impact is project specific and does not contribute to significant cumulative land use impacts. All other land use impacts can be mitigated to below a level of significance (City of San Diego 1998a).

The proposed cumulative projects are consistent with the efforts of the City, Navy, and the SDUPD to redevelop and enhance the area with compatible uses without creating significant cumulative impacts. Most of the goals and objectives established for each of the projects and associated planning documents (e.g., Peninsula Community Plan/LCP, General Plan, NTC Reuse Plan, and NTC Redevelopment Plan) would be met. Therefore, the Project in conjunction with the cumulative projects would be beneficial to and contribute toward stimulating the redevelopment area with appropriate urban land uses. Cumulative land use impacts would not occur as a result of the development of the Project Area in conjunction with surrounding projects.

4.2 TRANSPORTATION AND CIRCULATION

4.2.1 Existing Conditions

The Project Area and vicinity encompass various roadway segments and intersections that would be affected by the Project. Existing peak hour (the a.m. peak hour is typically defined as the period from 7 a.m. to 9 a.m.; the p.m. peak hour is typically defined as the period from 4 p.m. to 6 p.m.) volumes for roadways and intersections were obtained from the Phase I Traffic Report (Department of the Navy 1995) prepared for NTC San Diego as part of the federal disposal and reuse process.

4.2.1.1 Baseline Condition

The baseline condition analyzed in this section superimposes the traffic generated by NTC San Diego in 1988 (full operation scenario) onto the existing traffic volumes on study area roadway segments and intersections. The year 1988 was selected because it represents a time prior to phased reduction of base operations as a result of the closure decision. As a fully operating military base, 45,000 average daily trips (ADT) were generated.

For the purpose of identifying traffic impacts and transportation improvements in this EIR, two analytical approaches are discussed. The first approach involves calculating the ADT generated by the Project and superimposing those volumes on the baseline volume of 45,000 ADT (i.e., comparing the Project generated traffic to the baseline condition). This approach, referred to in this section as the **incremental impact analysis**, treats the baseline ADT as a credit (referenced in this section as the disposal and reuse credit), thereby acknowledging that under baseline conditions, NTC San Diego contributed ADTs to study area roadways, freeways, and intersections. The second approach involves comparing Project generated traffic to a zero ADT baseline condition. Under this scenario, the aforementioned credit is not recognized. This approach is referred to in this section as the **total Project impact analysis**.

The following subsections describe baseline conditions for offsite and onsite circulation.

Offsite Circulation

Existing (i.e., baseline) daily traffic volume data, existing capacity, and the level of service (LOS) are presented in Table 4.2-1 for surrounding roadway segments. A summary of the average daily traffic (ADT) volumes for primary roadways in the vicinity of the Project Area is provided below and depicted in Figure 4.2-1.

Primary Roadways. Interstate 5 (I-5), an eight-lane freeway running in a north-south direction, is located northeast of the facility. I-5 on-ramps and off-ramps in the vicinity of the Project Area include Sassafras Street (Lindbergh Field off-ramp), India Street, Kettner Boulevard, Rosecrans Street, and Old Town Avenue.

Interstate 8 (I-8), an eight-lane freeway running in an east-west direction, is located to the north of the Project Area. I-8 provides access to the facility via on-ramps and off-ramps located at Rosecrans Street and Sports Arena Boulevard.

Pacific Highway, a six-lane divided roadway, runs in a southeast-northwest direction from downtown to Sea World. This road supports ADT volumes between 8,186 (between Taylor Street and Sea World Drive) and 17,272 (between Laurel Street and Taylor Street).

Midway Drive is a four-lane major roadway, which is divided in most areas with left turn pockets provided at intersecting streets. This arterial extends from Sports Arena Boulevard in the north to Barnett Avenue in the south. The road supports ADT volumes between 28,600 (between Barnett Avenue and Rosecrans Street) and 33,730 (from Wing Street to Kemper Street).

Rosecrans Street (also designated State Route [SR] 209 in certain areas) alternates between a three-lane collector road to a six-lane divided major arterial that serves the Old Town area to the Peninsula community. The road supports ADT volumes from 17,086 (between Talbot Street and Lawrence Court) to 72,952 (from Sports Arena Boulevard to Midway Drive). Barnett Avenue is a four-lane major arterial that serves the Main Gate of the Project Area (i.e., Gate 1); a third eastbound lane is provided between Midway Drive and Pacific Highway. Barnett Avenue provides access to Gate 1 and carries ADT

Table 4.2-1. Project Study Area Roadway Characteristics, Existing Traffic Volumes, and Level of Service

Street	Segment	No. of Thru Lanes in Each Direction	Existing Daily Traffic Volume	Existing Capacity at LOS E[1]	Daily Segment LOS[2]
Bacon St.	**W. Point Loma - Voltaire**	**1**	**7,700**	**8,000**	**E**
	Voltaire - Newport	**1**	**8,100**	**8,000**	**F**
	Newport - Narragansett	1	5,700	8,000	D
Barnett Ave.	Gate 1 - Midway	2	30,908	40,000	D
	Midway - Pacific Hwy	**2**	**51,150**	**45,000**	**F**
Cabrillo Mem. Dr.	Electron - Monument	1	9,200	15,000	C
Camino Del Rio	**Interstate 5 - Kurtz**	**3**	**77,608**	**60,000**	**F**
	Kurtz - Sports Arena	**3**	**66,008**	**60,000**	**F**
Catalina Blvd.	**Voltaire - Narragansett**	**1**	**20,286**	**8,000**	**F**
	Narragansett - Orchard	**1**	**13,786**	**8,000**	**F**
	Orchard - Chatsworth	**1**	**13,786**	**15,000**	**E**
	Chatsworth - Santa Barbara	**1**	**14,286**	**15,000**	**E**
	Santa Barbara - Talbot	**1**	**17,286**	**15,000**	**F**
	Talbot - Wilcox	2	11,986	15,000	D
	Wilcox - Rosecroft	2	11,986	15,000	D
	Rosecroft - Electron	2	11,986	15,000	D
Canon St.	**Rosecrans - Evergreen**	**1**	**12,086**	**8,000**	**F**
	Evergreen - Valemont	**1**	**11,686**	**8,000**	**F**
	Valemont - Catalina	**1**	**11,686**	**8,000**	**F**
Chatsworth Blvd.	Catalina - Garrison	1	6,786	15,000	B
	Garrison - Narragansett	1	11,786	15,000	D
	Narragansett - Nimitz	**1**	**14,872**	**15,000**	**E**
	Nimitz - Voltaire	**1**	**15,872**	**8,000**	**F**
	Voltaire - Lytton	**1**	**15,086**	**15,000**	**F**
Famosa Blvd.	Voltaire - Venido	1	6,700	15,000	B
Hill St.	Catalina - Sunset Cliffs	1	4,700	8,000	C
Kemper St.	Poinsettia - Midway	1	12,300	15,000	D
	Midway - Sports Arena Dr.	1	12,300	15,000	D

Table 4.2-1. Project Study Area Roadway Characteristics, Existing Traffic Volumes, and Level of Service (Continued)

Street	Segment	No. of Thru Lanes in Each Direction	Existing Daily Traffic Volume	Existing Capacity at LOS E[1]	Daily Segment LOS[2]
Laurel St.	**N. Harbor - Pacific Hwy**	**2**	**31,158**	**15,000**	**F**
	Pacific Hwy - Kettner	**2**	**29,686**	**15,000**	**F**
	Kettner - Interstate 5	**2**	**16,886**	**15,000**	**F**
Lytton St.	**Chatsworth - Rosecrans**	**1**	**13,786**	**8,000**	**F**
	Rosecrans - Gate 1	2	29,352	40,000	C
Midway Dr.	Barnett - Rosecrans	2	28,600	40,000	C
	Rosecrans - Wing	2	34,302	40,000	D
	Wing - Kemper	2	33,730	40,000	D
	Kemper - Sports Arena	2	31,100	40,000	D
Narragansett Ave.	Bacon - Sunset Cliffs	1	2,600	8,000	B
	Sunset Cliffs - Santa Barbara	1	3,986	8,000	C
	Santa Barbara - Catalina	1	5,472	8,000	D
	Catalina - Warrington	1	4,658	8,000	C
	Warrington - Chatsworth	1	4,658	15,000	C
Nimitz Blvd.	**Sunset Cliffs - W. Point Loma**	**2**	**43,072**	**40,000**	**F**
	W. Point Loma - Famosa	**2**	**39,544**	**40,000**	**E**
	Famosa - Voltaire	2	23,900	40,000	C
	Voltaire - Chatsworth	2	25,300	40,000	C
	Chatsworth - Rosecrans	2	25,460	40,000	C
	Rosecrans - Scott	2	20,088	40,000	B
	Scott - N. Harbor	2	20,374	40,000	B
N. Harbor Dr.	Rosecrans – Scott	2	11,558	30,000	B
	Scott - Nimitz	2	24,158	40,000	C
	Nimitz - Harbor Island	3	36,116	80,000	B
	Harbor Island - Laurel	**3**	**79,144**	**80,000**	**E**
	Laurel - Grape	3	32,700	50,000	C
	Grape - Ash	2	20,100	40,000	B
Pacific Hwy.	Laurel - Taylor	3	17,272	80,000	A
	Taylor - Sea World Dr.	1	8,186	15,000	C

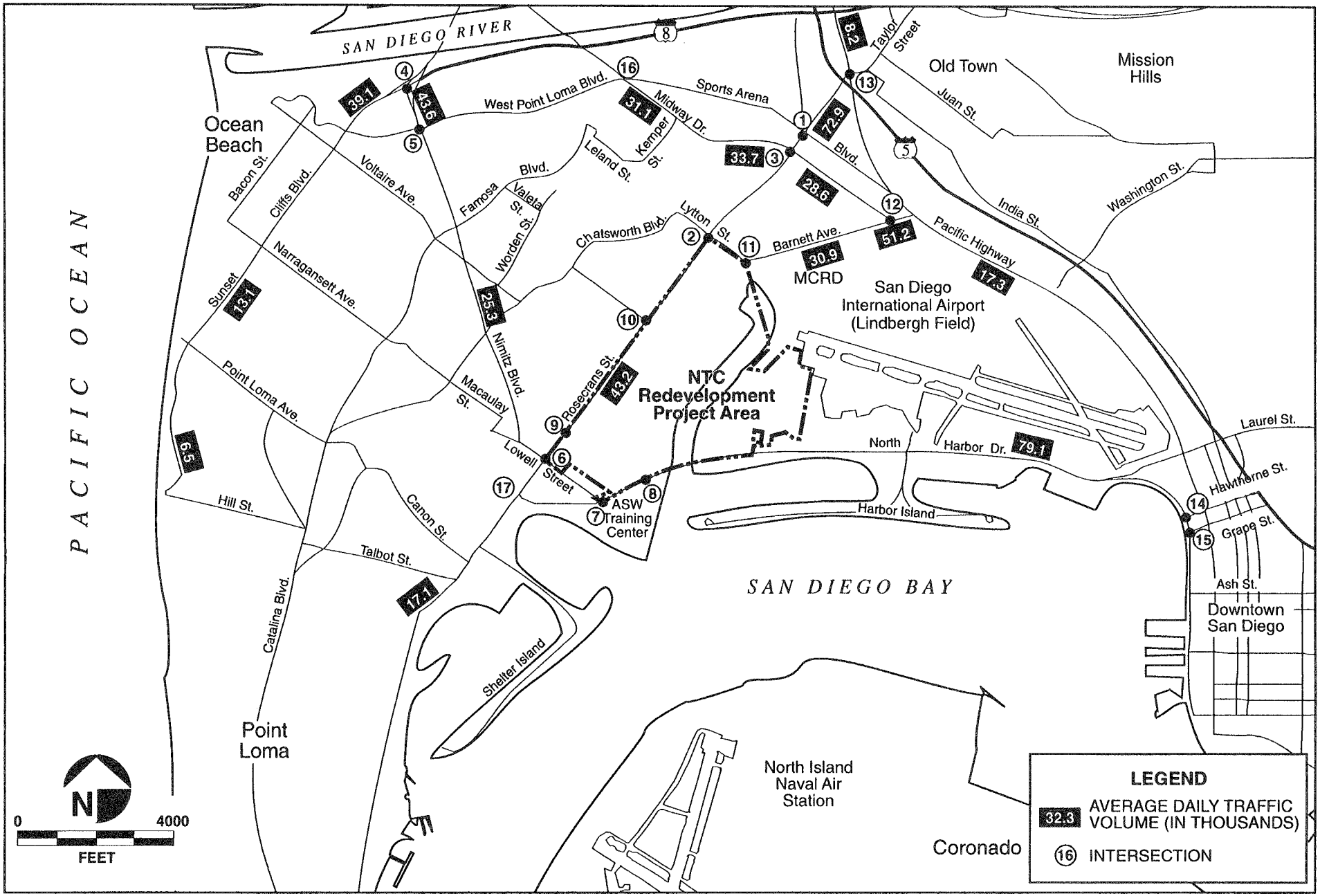
Table 4.2-1. Project Study Area Roadway Characteristics, Existing Traffic Volumes, and Level of Service (Continued)

Street	Segment	No. of Thru Lanes in Each Direction	Existing Daily Traffic Volume	Existing Capacity at LOS E[1]	Daily Segment LOS[2]
Point Loma Ave.	Sunset Cliffs - Froude	1	4,400	15,000	C
	Froude - Santa Barbara	1	4,400	8,000	C
	Santa Barbara - Catalina	1	5,600	15,000	D
	Catalina - Canon	1	3,200	8,000	B
Point Loma Blvd.	Sunset Cliffs - Voltaire	1	Not Available	8,000	Not Available
Rosecrans St.	Pacific Hwy - Kurtz	2	19,286	40,000	B
	Kurtz - Sports Arena	2	18,372	40,000	B
	Sports Arena - Midway	**3**	**72,952**	**50,000**	**F**
	Midway - Lytton	**3**	**56,398**	**50,000**	**F**
	Lytton - Nimitz	**2**	**43,190**	**40,000**	**F**
	Nimitz - N. Harbor	**2**	**41,116**	**40,000**	**F**
	N. Harbor - Byron	2	34,216	40,000	D
	Byron - Canon	2	27,586	40,000	C
	Canon - Talbot	**1**	**17,386**	**15,000**	**F**
	Talbot - Lawrence	**1**	**17,086**	**15,000**	**F**
	Lawrence - Warhead	1	11,386	15,000	D
Santa Barbara St.	Catalina - Point Loma Ave.	1	2,800	8,000	B
Scott St.	**N. Harbor Dr. - Shelter Island**	**2**	**15,200**	**15,000**	**F**
Shelter Island	**West of Scott St.**	**1**	**15,000**	**8,000**	**F**
Sports Arena Blvd.	Pacific Hwy - Rosecrans	1	2,000	8,000	A
	Rosecrans - Dixieline Drwy	3	32,886	50,000	C
	Dixieline Drwy - Kemper	3	32,886	50,000	C
	Kemper - Hancock	3	21,786	50,000	B
	Hancock - Midway	3	21,786	50,000	B
	Midway - Interstate 8	3	39,058	50,000	C

Table 4.2-1. Project Study Area Roadway Characteristics, Existing Traffic Volumes, and Level of Service (Continued)

Street	Segment	No. of Thru Lanes in Each Direction	Existing Daily Traffic Volume	Existing Capacity at LOS E[1]	Daily Segment LOS[2]
Sunset Cliffs Blvd.	Hill - Cordova	1	2,700	8,000	B
	Cordova - Point Loma Ave.	1	6,500	8,000	D
	Point Loma Ave. - Narragansett	**1**	**13,100**	**8,000**	**F**
	Narragansett - Newport	**1**	**16,200**	**8,000**	**F**
	Newport - Voltaire	**1**	**19,300**	**8,000**	**F**
	Voltaire - W. Point Loma	**1**	**21,400**	**8,000**	**F**
	W. Point Loma - Nimitz	**1**	**39,100**	**15,000**	**F**
	Nimitz - Seaworld Dr.	**2**	**38,186**	**40,000**	**F**
Talbot St.	**Rosecrans - Canon**	**1**	**7,100**	**8,000**	**E**
	Canon - Catalina	1	5,400	8,000	D
Taylor St.	Pacific Hwy - San Diego Ave.	2	21,686	40,000	C
	San Diego Ave. - Juan	**2**	**23,786**	**15,000**	**F**
Voltaire St.	Point Loma - Bacon	1	4,400	8,000	C
	Bacon - Cable	**1**	**7,200**	**8,000**	**E**
	Cable - Sunset Cliffs	**1**	**8,700**	**8,000**	**F**
	Sunset Cliffs - Froude	**1**	**11,100**	**8,000**	**F**
	Froude - Wabaska	**1**	**11,386**	**8,000**	**F**
	Wabaska - Sea Colony	**2**	**14,786**	**15,000**	**E**
	Sea Colony - Worden	**1**	**10,886**	**8,000**	**F**
	Worden - Chatsworth	**1**	**13,672**	**8,000**	**F**
W. Point Loma Blvd.	Midway - Chapman	2	25,400	40,000	C
	Chapman - Adrian	2	16,600	40,000	B
	Adrian - Nimitz	2	16,886	40,000	B
	Nimitz - Sunset Cliffs	**1**	**13,986**	**8,000**	**F**
Worden	Kenyon - Valeta	1	5,386	8,000	D

Notes:
[1]Based on City of San Diego published daily traffic volumes thresholds.
[2]LOS = Level of Service.
Source: Department of the Navy 1995.



Primary Offsite Roadways and Average Daily Traffic Volumes

FIGURE 4.2-1

Graphics/EnvAsmt/NTC Redevelopment/NTC Project Location.fh8

volumes ranging from 30,908 (between Gate 1 and Midway Drive) and 51,150 (between Midway Drive and Pacific Highway).

North Harbor Drive alternates between a six-lane divided expressway and four-lane major arterial as it serves Lindbergh Field and downtown. The road provides access to Gate 10A and carries an ADT volume of 79,144 (between Harbor Island and Laurel Street).

Nimitz Boulevard is a four-lane major arterial that runs from Harbor Drive to Sunset Cliffs Boulevard. The road includes a grade-separated interchange at Famosa Boulevard and supports ADT volumes ranging from 25,300 (between Voltaire Street and Chatsworth Boulevard) to 43,072 (between Sunset Cliffs Boulevard and West Point Loma Boulevard).

Sunset Cliffs Boulevard connects the Ocean Beach area (to the northwest) with I-8 and Sea World Drive. The road serves as a four-lane major arterial and two-lane collector roadway in the vicinity of the Project Area and supports ADT volumes ranging from 6,500 (between Cordova Street and Point Loma Avenue) to 39,100 (between West Point Loma Boulevard and Nimitz Boulevard).

Existing Level of Service for Roadway Segments. The roadway system in the vicinity of the Project Area was developed many years ago and traffic volumes have gradually increased over the years as development in the area intensified. Few roadway improvements have been made to surrounding roadways in the past few years. As a result, the area has experienced increased growth in traffic without increases in roadway capacity. Several study area roadway segments currently operate at LOS E or F. Rows in Table 4.2-1 indicating roadway segments currently operating at LOS E or F are highlighted in bold.

Existing Level of Service for Intersections. Seventeen signalized intersections were analyzed for existing conditions (see Figure 4.2-1). The results of the intersection analysis are summarized in Table 4.2-2. Table 4.2-2 shows that six intersections (Lytton Street/Rosecrans Street, Midway Drive/Rosecrans Street, Rosecrans Street/North Harbor Drive, Nimitz Boulevard/Sunset Cliffs Boulevard, Nimitz Boulevard/Rosecrans Street, and Lytton Street/Barnett Avenue/Gate 1) operate at LOS E or F conditions during one or both peak hours.

Table 4.2-2. Summary of Intersection Operations

Intersection	AM Peak Hour Delay[1] (sec/veh)	AM Peak Hour LOS	PM Peak Hour Delay[1] (sec/veh)	PM Peak Hour LOS
1. Rosecrans Street/Sports Arena Boulevard	10.7	B	20.0	C
2. Lytton Street/Rosecrans Street	42.3	E	91.6	F
3. Midway Drive/Rosecrans Street	25.1	D	79.6	F
4. Nimitz Boulevard/Sunset Cliffs Boulevard/I-8[2]				
(a) NB Sunset Cliffs/SB Nimitz	54.6	E	30.7	D
(b) NB Sunset Cliffs/WB Nimitz	14.9	B	15.9	C
(c) Sunset Cliffs/I-8 Off Ramp	34.4	D	189.1	F
5. Nimitz Boulevard/W. Point Loma Boulevard	24.5	C	31.2	D
6. Nimitz Boulevard/Rosecrans Street	24.3	C	107.8	F
7. Nimitz Boulevard/N. Harbor Drive	9.5	B	17.1	C
8. Laning Drive/N. Harbor Drive (Gate 10A)	11.8	B	16.2	C
9. Bainbridge Ct./Rosecrans St./Russell St. (Gate 5 or 6)	9.5	B	11.9	B
10. Rosecrans Street/Roosevelt Road (Gate 3)	8.0	B	20.0	C
11. Lytton Street/Barnett Avenue/Gate 1	32.3	D	46.7	E
12. Barnett Avenue/Midway Drive	6.3	B	9.0	B
13. Pacific Highway/Rosecrans St./Taylor St.	19.1	C	21.2	C
14. Grape Street/N. Harbor Drive	6.6	B	10.0	B
15. Hawthorn Street/N. Harbor Drive	13.1	B	11.8	B
16. Midway Drive/Sports Arena Boulevard/W. Point Loma Boulevard	23.1	C	37.4	D
17. Rosecrans Street/N. Harbor Drive	21.0	C	44.1	E

Notes:
LOS = Level of Service
NB = northbound
SB = southbound
WB = westbound
[1]Average delay per vehicle in seconds.
[2]The Nimitz Boulevard/Sunset Cliffs Boulevard/1-8 off-ramp intersection actually is a series of three signalized intersections.
Source: City of San Diego 1998a.

Transit. Local bus service in the vicinity of the Project Area is provided by the Metropolitan Transit Development Board (MTDB). No transit centers are located at the Project Area. MTDB currently operates two bus routes in the vicinity of the Project Area. Route 35 serves the Project Area from a bus stop at the corner of Rosecrans Street and Lytton Street. Route 28 serves NTC San Diego on Rosecrans Street with bus stops at Nimitz Boulevard, Poe Street, Russell Street, Voltaire Street, Xenophon Street, Zola Street, Dumas Street, Goldsmith Street, Isben Street, and Lytton Street.

4.2.1.2 Onsite Circulation

Evaluation of the onsite circulation system has been documented in the Phase I Traffic Report (Department of the Navy 1995). Onsite roadways are primarily two-lane roads with one travel lane in each direction; the remaining roads are one-way, one-lane streets. All intersections are controlled by stop signs. Many of the onsite roads are in poor condition and in need of repair. The primary roadways located within the Project Area are depicted in Figure 4.2-2. The majority of these roads are approximately 40 feet wide with sidewalks.

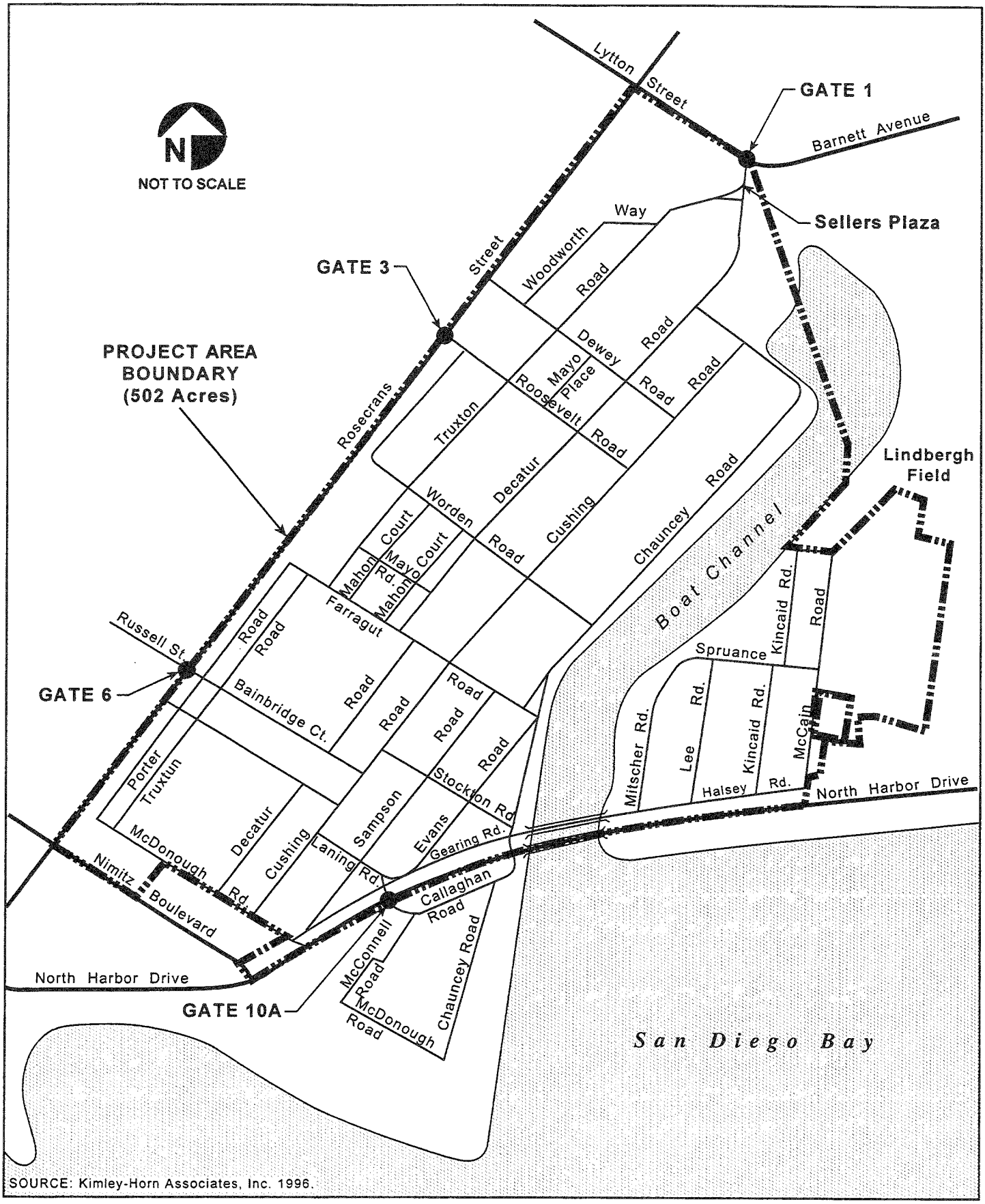
Four gated access points serve the Project Area: Gates 1, 3, 6, and 10A. All intersections at gates are controlled by traffic signals.

Baseline conditions for each gate are described below:

- Gate 1 is located at the Lytton Street/Barnett Avenue intersection. Open 24 hours per day, it received approximately 60 percent of total traffic. In 1988, approximately 28,000 vehicles entered and exited this gate each day.

- Gate 10A is located on North Harbor Drive and serves land transferred to the ASW Training Center. Open 24 hours per day, it received approximately 15 percent of total traffic. In 1988, approximately 6,400 vehicles entered and exited this gate.

- Gates 3 and 6 are open from 5:30 a.m. to 6:00 p.m. to facilitate traffic entering and exiting the base. In 1988, the gates supported two-way daily traffic volumes of 6,400 and 4,200 vehicles, respectively.



SOURCE: Kimley-Horn Associates, Inc. 1996.

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Onsite Roadways and Gates

FIGURE **4.2-2**

Based on the trip counts described above, NTC San Diego generated 45,000 ADT in 1988. This equates to approximately 83 trips per acre for the entire 541-acre NTC property (City of San Diego 1998a). The Navy will retain 111 acres of the site, which are not part of the NTC San Diego disposal process. Therefore, the 430-acre NTC San Diego property, which is proposed for disposal and reuse, generated 35,607 ADT during full operation.

4.2.2 Environmental Impacts

The following transportation and circulation analysis is based on the conclusions presented in the Final Phase II Traffic Report and Congestion Management Program (CMP) Analysis prepared for the Project, as well as subsequent analyses to revise/update data from these studies (Kimley-Horn and Associates, Inc. 1997, 1999). A travel forecast model was developed to evaluate Buildout year traffic conditions. The NTC San Diego Reuse Plan is expected to be implemented over a 40-year period. SANDAG maintains a regional travel forecast model that is typically used for evaluating impacts of large development projects in San Diego County. SANDAG's model was modified to reflect the internal Project Area roadway system, area-wide transportation improvements likely to be constructed by the Buildout year, recent changes to area-wide land uses, and the NTC San Diego Reuse Plan and MFH Development. The traffic study evaluated 101 roadway segments and 39 intersections. The 39 intersections were identified using scoping procedures outlined in the San Diego County implementation of the CMP. A detailed discussion of assumptions, methodology, impacts, and mitigation measures is presented in the Final Phase II Traffic Report (Kimley-Horn and Associates, Inc. 1997) and CMP Analysis (Kimley-Horn and Associates, Inc. 1999). These reports can be obtained from the Agency contact listed in Section 1.0 of this EIR.

4.2.2.1 Threshold for Determining Significance

The City of San Diego's Traffic Impact Study Manual (September 1998) was used to determine appropriate significance criteria for roadway and freeway segments and intersections.

Roadway Segments

The Project's level of significance for traffic impacts on roadway segments is determined by the increase in the volume to capacity (v/c) ratio caused by the addition of Project-related traffic. The significance threshold varies based on the level of service (LOS) of the segment under the "with-Project" condition. A v/c ratio from Project-related traffic which exceeds 0.1 (10%) for LOS A conditions; .06 (6%) for LOS B conditions; .04 (4%) for LOS C conditions; and .02 (2%) for LOS D, E, or F conditions is considered significant.

Freeway Segments

As with roadway segments, the Project's level of significance for traffic impacts is determined by the increase in the v/c ratio caused by the addition of Project traffic. For LOS D, E, or F conditions, the Project's impact is deemed significant if its traffic constitutes more than .01 (1%) of the total volume on the freeway segment.

Intersections

Using the Highway Capacity Manual procedures, significance thresholds for intersections are expressed in terms of average stopped seconds of delay per vehicle. A significant impact would occur at intersections if, during a.m. and p.m. peak hours, the Project's traffic causes:

- additional delay over 10 seconds in LOS A condition;
- additional delay over 6 seconds in LOS B condition;
- additional delay over 4 seconds in LOS C condition; or
- additional delay over 2 seconds in LOS D, E, or F conditions.

The City of San Diego has established a minimum peak hour performance standard of LOS D for intersections located in generally built-out areas such as the Midway and Peninsula communities. Mitigation measures are required in situations where the Project generates a significant impact and the "with Project" peak hour LOS does not attain the performance standard (i.e., it operates at LOS E or F).

In situations where the calculation of intersection delay is not feasible because of over saturated conditions, then a Project's traffic impact is deemed significant if it contributes more than 2 percent of the total peak hour traffic traversing the intersection.

4.2.2.2 Impact Analysis

Under redevelopment of the Project Area, 60,716 average daily trips would be generated as compared to 45,000 trips (baseline condition) when NTC San Diego was an active military facility. Under the incremental impact analysis, this would create a significant impact resulting in additional traffic congestion at 18 offsite roadway segments, 3 onsite roadway segments, 7 freeway segments, 11 offsite intersections, and 2 onsite intersections.

Under the total Project impact analysis, this would create a significant impact resulting in additional traffic congestion at 17 offsite roadway segments, 20 freeway segments, and 3 offsite intersections.

Construction Traffic

Project implementation and associated construction activities would be phased over 40 years. Any construction traffic to the site would be temporary and is expected to be directly routed on major roadways. Therefore, significant impacts are not expected to occur.

Project Trip Generation

The following impact analysis focuses on traffic conditions at Buildout. In order to estimate the traffic generation characteristics of the Project, it was necessary to identify rates that accurately describe each of the proposed land use's trip-making characteristics. In some cases, generation rates were described using similar land uses for which trip generation rates are published. For other land uses, trip generation rates were estimated based on research and assumptions (Kimley-Horn and Associates, Inc. 1997).

Future Traffic Conditions

For purposes of this study, future traffic volumes have three basic components. The first component is the amount of traffic that would be expected if pre-1991 NTC San Diego operations (i.e., full operation) continued into the future. As discussed in Section 4.2.1, total NTC San Diego traffic generation under baseline conditions is 45,000 ADT. The second component is the amount of traffic that would be added over and above the baseline level of 45,000 ADT due to the redevelopment of the Project Area. The final component is the amount of traffic that is generated by new development (cumulative projects). These components were used to identify and evaluate impacts.

Because the Project Area is located within a densely populated urban area with limited freeway access, many roadway segments already operate at poor LOS (defined as E or F) (see Section 4.2.1). This situation is not expected to improve because few options exist to increase the capacity of these roadways without causing other undesirable consequences. For example, widening roadways would involve destruction of urban neighborhoods. Therefore, infeasible measures to improve capacity were not considered.

Roadway Segments

Table 4.2-3 summarizes Project-related impacts for each study area roadway segment under Buildout conditions. Figure 4.2-3 illustrates the Buildout forecasted daily traffic volumes. Of the 101 roadway segments evaluated, 54 would be characterized by congested LOS E and F under Buildout conditions. Of the 54 segments projected to operate at a LOS E or F, 30 segments also operated at poor LOS conditions under the baseline scenario. The Project would contribute a traffic volume of greater than 2 percent to roadway capacity in 11 of the 30 segments that are operating at LOS E or F under baseline and Buildout conditions. These eleven segments include:

1. Barnett (between Midway and Pacific Highway)
2. Camino del Rio (between I-5 and Kurtz)
3. Camino del Rio (between Kurtz and Sports Arena)
4. Chatsworth (between Voltaire and Lytton)
5. Laurel Street (between North Harbor and Pacific Highway)
6. North Harbor Drive (between Harbor Island and Laurel)

Table 4.2-3. NTC Redevelopment Project Significance of Roadway Segment Impacts under Buildout Traffic Conditions

Street	Segment	Incremental Impact Analysis[2]			Total Project Impact Analysis[3]		
		V/C	Change	Significant?	V/C	Change	Significant?
Bacon St.	W. Point Loma - Voltaire	0.40	0.007	No	0.40	0.022	No
	Voltaire - Newport	0.37	0.001	No	0.37	0.004	No
	Newport - Narragansett	0.13	0.000	No	0.13	0.000	No
Barnett Ave.	Gate 1 - Midway	***0.90***	***0.077***	***Yes*** [1]	***0.90***	***0.250***	***Yes*** [1]
	Midway - Pacific Hwy.	***1.04***	***0.064***	***Yes*** [1]	***1.04***	***0.206***	***Yes*** [1]
Camino Del Rio	Interstate 5 - Kurtz	***1.38***	***0.062***	***Yes*** [1]	***1.38***	***0.202***	***Yes*** [1]
	Kurtz - Sports Arena	***1.17***	***0.062***	***Yes*** [1]	***1.17***	***0.202***	***Yes*** [1]
Catalina Blvd.	Voltaire - Narragansett	*2.75*	*0.001*	*No*	*2.75*	*0.005*	*No*
	Narragansett - Orchard	*2.24*	*0.002*	*No*	*2.24*	*0.006*	*No*
	Orchard - Chatsworth	1.07	0.001	No	1.07	0.002	No
	Chatsworth - Santa Barbara	1.07	0.001	No	1.07	0.002	No
	Santa Barbara - Talbot (A)	*1.10*	*0.003*	*No*	*1.10*	*0.010*	*No*
	Talbot - Wilcox	0.56	0.007	No	0.56	0.024	No
	Wilcox - Rosecroft	*1.78*	*0.002*	*No*	*1.78*	*0.007*	*No*
	Rosecroft - Electron	*1.07*	*0.005*	*No*	*1.07*	*0.015*	*No*
Canon St.	Rosecrans - Evergreen	*1.07*	*0.002*	*No*	*1.07*	*0.008*	*No*
	Valemont - Catalina	*1.24*	*0.014*	*No*	***1.24***	***0.045***	***Yes*** [1]
Chatsworth Blvd.	Catalina - Garrison	0.53	0.001	No	0.53	0.002	No
	Garrison - Narragansett	0.86	0.002	No	0.86	0.006	No
	Narragansett - Nimitz	0.85	0.007	No	0.85	0.024	Yes
	Nimitz - Voltaire	0.59	0.009	No	0.59	0.028	No
	Voltaire - Lytton	***1.45***	***0.023***	***Yes*** [1]	***1.45***	***0.075***	***Yes*** [1]
Famosa Blvd.	Voltaire - Valeta	0.73	0.001	No	0.73	0.005	No
Hill St.	Catalina - Sunset Cliffs	0.25	0.003	No	0.25	0.010	No
Kemper St.	Poinsettia- Midway (A)	*0.94*	*0.003*	*No*	*0.94*	*0.011*	*No*
	Midway - Sports Arena (A)	0.39	0.004	No	0.39	0.012	No
Laurel St.	N. Harbor - Pacific Hwy.	***1.39***	***0.021***	***Yes*** [1]	***1.39***	***0.074***	***Yes*** [1]
	Pacific Hwy. - Kettner	0.80	0.007	No	0.80	0.023	Yes
	Kettner - Interstate 5	0.80	0.000	No	0.80	0.000	No
Lytton St.	Chatsworth - Rosecrans	*1.50*	*0.012*	*No*	***1.50***	***0.038***	***Yes*** [1]
	Rosecrans - Gate 1	0.72	0.062	Yes	0.72	0.199	Yes
Midway Dr.	Barnett - Rosecrans	0.67	0.000	No	0.67	0.002	No
	Rosecrans - Wing	***1.15***	***0.026***	***Yes*** [1]	***1.15***	***0.085***	***Yes*** [1]
	Wing - Kemper	*0.97*	*0.018*	*No*	***0.97***	***0.058***	***Yes*** [1]
	Kemper - Sports Arena	*1.03*	*0.017*	*No*	***1.03***	***0.054***	***Yes*** [1]

Table 4.2-3. NTC Redevelopment Project Significance of Roadway Segment Impacts under Buildout Traffic Conditions (Continued)

Street	Segment	Incremental Impact Analysis[2]			Total Project Impact Analysis[3]		
		V/C	Change	Significant?	V/C	Change	Significant?
Narragansett Ave.	Sunset Cliffs - Santa Barbara	***1.19***	***0.023***	***Yes [1]***	***1.19***	***0.076***	***Yes [1]***
Narragansett Ave.	Santa Barbara - Catalina	***1.18***	***0.029***	***Yes [1]***	***1.18***	***0.096***	***Yes [1]***
	Catalina - Warrington	***0.92***	***0.031***	***Yes [1]***	***0.92***	***0.103***	***Yes [1]***
	Warrington - Chatsworth (A)	***0.83***	***0.026***	***Yes [1]***	***0.83***	***0.084***	***Yes [1]***
Nimitz Blvd.	Sunset Cliffs - W. Point Loma	0.57	0.001	No	0.57	0.004	No
	W. Point Loma - Famosa	0.84	0.007	No	0.84	0.022	No
	Voltaire - Chatsworth	0.66	0.009	No	0.66	0.029	No
	Chatsworth - Rosecrans	0.56	0.010	No	0.56	0.033	No
	Rosecrans - Scott	0.47	0.010	No	0.47	0.033	No
	Scott - N. Harbor	0.47	0.019	No	0.47	0.066	Yes
N. Harbor Dr.	Rosecrans – Scott	0.30	0.005	No	0.30	0.013	No
	Scott - Nimitz	0.65	0.011	No	0.65	0.038	No
	Nimitz - Harbor Island	0.60	0.030	No	0.60	0.102	Yes
	Harbor Island - Laurel	***1.55***	***0.026***	***Yes [1]***	***1.55***	***0.092***	***Yes [1]***
	Laurel - Grape	***1.09***	***0.021***	***Yes [1]***	***1.09***	***0.072***	***Yes [1]***
	Grape - Ash	*0.98*	*0.007*	*No*	***0.98***	***0.024***	***Yes [1]***
Pacific Hwy.	Barnett - Taylor	*0.99*	*0.004*	*No*	*0.99*	*0.012*	*No*
	Taylor - Sea World	*1.35*	*0.018*	*No*	***1.35***	***0.059***	***Yes [1]***
Point Loma Ave.	Sunset Cliffs - Froude (A)	0.31	0.002	No	0.31	0.005	No
	Froude - Santa Barbara	0.49	0.003	No	0.49	0.011	No
	Santa Barbara - Catalina (A)	0.39	0.004	No	0.39	0.013	No
	Catalina - Canon	0.49	0.007	No	0.49	0.022	No
Rosecrans St.	Pacific Hwy. - Kurtz	*1.15*	*0.007*	*No*	***1.15***	***0.022***	***Yes [1]***
	Kurtz - Sports Arena	*1.25*	*0.007*	*No*	***1.25***	***0.024***	***Yes [1]***
	Sports Arena - Midway	***1.30***	***0.085***	***Yes [1]***	***1.30***	***0.276***	***Yes [1]***
	Midway - Lytton	***1.29***	***0.112***	***Yes [1]***	***1.29***	***0.362***	***Yes [1]***
	Lytton - Nimitz	***1.39***	***0.143***	***Yes [1]***	***1.39***	***0.464***	***Yes [1]***
	Nimitz - N. Harbor	*1.23*	*0.018*	*No*	***1.23***	***0.059***	***Yes [1]***
	N. Harbor - Byron	*1.00*	*0.010*	*No*	***1.00***	***0.032***	***Yes [1]***
	Canon - Talbot	*1.98*	*0.007*	*No*	***1.98***	***0.021***	***Yes [1]***
	Talbot - Lawrence	*1.67*	*0.006*	*No*	***1.67***	***0.021***	***Yes [1]***
	Lawrence - Warhead	0.52	0.001	No	0.52	0.004	No
Santa Barbara St.	Catalina - Point Loma Ave.	*0.87*	*0.001*	*No*	*0.87*	*0.003*	*No*
Scott St.	N. Harbor Dr. - Shelter Island	***1.86***	***0.028***	***Yes [1]***	***1.86***	***0.093***	***Yes [1]***
Shelter Island	West of Scott St.	*2.63*	*0.018*	*No*	***2.63***	***0.059***	***Yes [1]***

Table 4.2-3. NTC Redevelopment Project Significance of Roadway Segment Impacts under Buildout Traffic Conditions (Continued)

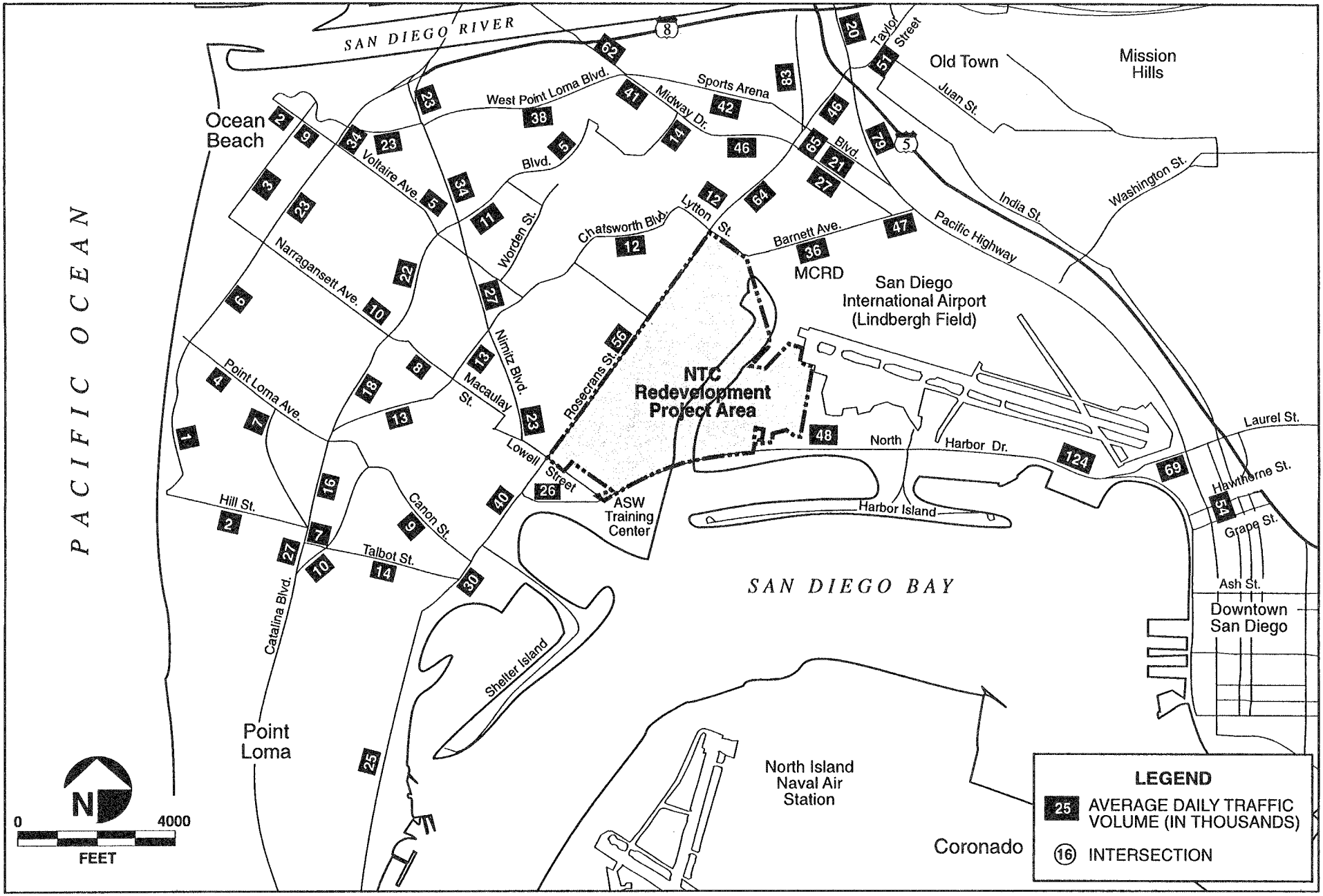
Street	Segment	Incremental Impact Analysis[2]			Total Project Impact Analysis[3]		
		V/C	Change	Significant?	V/C	Change	Significant?
Sports Arena Blvd.	Pacific Hwy. - Rosecrans	*2.62*	*0.001*	*No*	*2.62*	*0.002*	*No*
	Rosecrans - Dixieline Drwy	0.84	0.002	No	0.84	0.006	No
	Dixieline Drwy - Kemper	0.55	0.001	No	0.55	0.003	No
	Kemper - Hancock	0.30	0.001	No	0.30	0.003	No
Sports Arena Blvd.	Hancock - Midway	0.64	0.000	No	0.64	0.000	No
	Midway - Interstate 8	*1.24*	*0.009*	*No*	***1.24***	***0.030***	***Yes*** [1]
Sunset Cliffs Blvd.	Cordova - Point Loma Ave.	0.13	0.000	No	0.13	0.001	No
	Point Loma Ave. - Narragansett	0.76	0.002	No	0.76	0.007	No
	Narragansett – Newport	0.37	0.003	No	0.37	0.011	No
	Newport – Voltaire	*2.87*	*0.002*	*No*	*2.87*	*0.007*	*No*
	Voltaire - W. Point Loma	*4.24*	*0.002*	*No*	*4.24*	*0.006*	*No*
	W. Point Loma - Nimitz	*3.80*	*0.000*	*No*	*3.80*	*0.000*	*No*
	Nimitz - Seaworld Dr.	*1.36*	*0.002*	*No*	*1.36*	*0.006*	*No*
Talbot St.	Rosecrans – Canon	***1.70***	***0.029***	***Yes*** [1]	***1.70***	***0.094***	***Yes*** [1]
	Canon – Catalina	*0.83*	*0.002*	*No*	*0.83*	*0.006*	*No*
Taylor St.	Pacific Hwy. - S.D. Ave.	*1.27*	*0.007*	*No*	***1.27***	***0.022***	***Yes*** [1]
	S.D. Ave. - Juan	*4.24*	*0.013*	*No*	***4.24***	***0.041***	***Yes*** [1]
Voltaire St.	Point Loma - Bacon	0.25	0.003	No	0.25	0.009	No
	Bacon - Cable	0.74	0.004	No	0.74	0.013	No
	Cable - Sunset Cliffs	*1.12*	*0.002*	*No*	*1.12*	*0.007*	*No*
	Sunset Cliffs - Froude	0.74	0.004	No	0.74	0.014	No
	Froude - Wabaska	0.60	0.010	No	0.60	0.032	No
	Wabaska - Sea Colony	0.24	0.007	No	0.24	0.023	No
	Sea Colony - Worden	0.58	0.018	No	0.58	0.057	Yes
	Worden - Chatsworth	0.70	0.020	No	0.70	0.066	Yes
W. Point Loma Blvd.	Midway - Chapman	*0.95*	*0.001*	*No*	*0.95*	*0.002*	*No*
	Chapman -Adrian	0.78	0.000	No	0.78	0.001	No
	Adrian - Nimitz	0.65	0.001	No	0.65	0.003	No
	Nimitz - Sunset Cliffs	*2.85*	*0.016*	*No*	***2.85***	***0.052***	***Yes*** [1]
	Sunset Cliffs - Voltaire	*1.16*	*0.011*	*No*	***1.16***	***0.037***	***Yes*** [1]
Worden	Poinsettia - Valeta	0.61	0.007	No	0.61	0.024	No

Italicized text indicates segment with congested LOS E or F conditions; italicized bold text indicates those congested locations where the Project contributes to a significant impact.

[1] Significant Project impact at location with unacceptable LOS.

[2] The incremental impact analysis compares Project-generated traffic volumes to the baseline condition traffic volumes (referred to as the disposal and reuse credit).

[3] The total Project impact analysis compares Project-generated traffic volumes to a zero ADT baseline condition (i.e., does not account for the disposal and reuse credit).



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Buildout Condition Forecasted Daily Traffic Volumes

FIGURE 4.2-3

Graphics/EnvAsmt/NTC Redevelopment/Year 2015.fh8

7-9. Rosecrans Street (between Sports Arena and Nimitz) (3 segments)
10. Talbot Street (between Rosecrans and Canon)
11. Scott Street (between North Harbor and Shelter Island)

Because these segments were already operating at a poor LOS of E or F under baseline conditions and no mitigation measures are considered feasible (such as roadway widening), impacts would be unmitigable.

Twenty-four segments would degrade from an acceptable LOS under baseline conditions to a poor LOS of E or F under Buildout conditions from regional projected traffic growth. Seven of these segments would exceed the v/c ratio threshold for Project-generated traffic under Buildout conditions resulting in significant Project-generated traffic impacts. These seven segments include:

12. Barnett Avenue (between Gate 1 and Midway Drive)
13. Midway Drive (between Rosecrans Street-Wing Street)
14-17. Narragansett Avenue (between Sunset Cliffs Boulevard and Chatsworth – 4 segments)
18. North Harbor Drive (between Laurel Street and Grape Street)

In summary, under the **incremental impact analysis**, the Project would result in a significant unmitigable impact to a total of 18 roadway segments in the region based on the Project's incremental traffic generation (refer to Table 4.2-3).

Under the **total Project impact analysis**, the following additional roadway segments would be classified as LOS E or F. These impacts would be significant and unmitigable.

19. Canon Street (between Valemont and Catalina)
20. Lytton Street (between Chatsworth and Rosecrans)
21. Midway Drive (between Wing and Kemper)
22. Midway Drive (between Kemper and Sports Arena)
23. North Harbor (between Grape and Ash)
24. Pacific Highway (between Taylor and Sea World Drive)
25. Rosecrans Street (between Pacific Highway and Kurtz)
26. Rosecrans Street (between Kurtz and Sports Arena)

27. Rosecrans Street (between Nimitz and North Harbor)
28. Rosecrans Street (between North Harbor and Byron)
29. Rosecrans Street (between Canon and Talbot)
30. Rosecrans Street (between Talbot and Lawrence)
31. Sports Arena Boulevard (between Midway and I-8)
32. Taylor Street (between Pacific Highway and SD Avenue)
33. Taylor Street (between SD Avenue and Juan)
34. West Point Loma Boulevard (between Nimitz and Sunset Cliffs)
35. West Point Loma Boulevard (between Sunset Cliffs and Voltaire)
36. Shelter Island (west of Scott Street)

Freeway Segments

Nineteen I-5, seven I-8, and six SR-94 freeway segments were analyzed. Table 4.2-4 summarizes the findings of the analysis. As illustrated in Table 4.2-4, all 32 freeway segments are projected to operate at LOS F under Buildout conditions; these segments would operate at LOS F with or without redevelopment of the Project Area. Under the **incremental impact analysis**, the Project would create significant unmitigable impacts at the following locations:

1. I-5 (Pacific Highway to Olive)
2. I-5 (Olive to Hawthorn)
3. I-5 (Hawthorn to Grape)
4. I-5 (Grape to 1st)
5. I-5 (1st to SR-163)
6. I-5 (SR-163 to SR-94)
7. I-8 (Taylor to Hotel Circle)

Under the **total Project impact analysis**, the following additional locations would experience significant unmitigable impacts:

8. I-5 (SR-52 to Mission Bay)
9. I-5 (Mission Bay to Garnet)
10. I-5 (Garnet to Grand)
11. I-5 (Grand to Clairemont)

Table 4.2-4. Significance of Freeway Segment Impacts under Buildout Traffic Conditions

Route	Limits	# Lanes	Incremental Impact Analysis[1] Difference in V/C Ratio	Incremental Impact Analysis[1] Significant Impact? (Yes/No)	Total Project Impact Analysis[2] Difference In V/C Ratio	Total Project Impact Analysis[2] Significant Impact? (Yes/No)
Interstate 5	SR-52 - Mission Bay Dr.	4	0.0067	No	0.0263	Yes
	Mission Bay Dr. - Garnet Ave.	4	0.0064	No	0.0249	Yes
	Garnet Ave. - Grand Ave.	4	0.0065	No	0.0255	Yes
	Grand Ave. - Clairemont Dr.	4	0.0066	No	0.0258	Yes
	Clairemont Dr. - Seaworld Dr.	4	0.0071	No	0.0276	Yes
	Seaworld Dr. - I-8	4	0.0069	No	0.0272	Yes
	I-8 - Old Town Ave.	4	0.0000	No	0.0000	No
	Old Town Ave. - Washington St.	4	0.0006	No	0.0022	No
	Washington St. - Pacific Hwy.	4	0.0007	No	0.0026	No
	Pacific Hwy. - Olive St.	4	0.0121	Yes	0.0475	Yes
	Olive St. - Hawthorn St.	4	0.0126	Yes	0.0494	Yes
	Hawthorn St. - Grape St.	4	0.0152	Yes	0.0595	Yes
	Grape St. - 1st Ave.	4	0.0135	Yes	0.0529	Yes
	1st Ave. - SR-163	5	0.0116	Yes	0.0454	Yes
	SR-163 - SR-94	5	0.0100	Yes	0.0392	Yes
	SR-94 - Imperial Ave.	4	0.0071	No	0.0279	Yes
	Imperial Ave. - Hwy. 75 (Coronado)	4	0.0062	No	0.0244	Yes
	Hwy. 75 - 28th St.	4	0.0059	No	0.0233	Yes
	28th St. - I-15	4	0.0070	No	0.0274	Yes
Interstate 8	Sunset Cliffs Blvd. - Mission Bay Dr./Midway Dr.	5	0.0000	No	0.0000	No
	I-5 - Taylor St.	5	0.0000	No	0.0000	No
	Taylor St. - Hotel Circle	5	0.0104	Yes	0.0408	Yes
	Hotel Circle - SR-163	5	0.0097	No	0.0381	Yes
	SR-163 - Mission Center Rd.	4	0.0065	No	0.0257	Yes
	Mission Center RD - Texas St.	5	0.0054	No	0.0213	Yes
	Texas St. - I-805	4	0.0062	No	0.0241	Yes

Table 4.2-4. Significance of Freeway Segment Impacts under Buildout Traffic Conditions (Continued)

Route	Limits	# Lanes	Incremental Impact Analysis[1] Difference in V/C Ratio	Incremental Impact Analysis[1] Significant Impact? (Yes/No)	Total Project Impact Analysis[2] Difference In V/C Ratio	Total Project Impact Analysis[2] Significant Impact? (Yes/No)
State Route 94	I-5 - 25th St.	4	0.0063	No	0.0246	Yes
	25th St. - 28th St.	4	0.0063	No	0.0246	Yes
	28th St. - Broadway	4	0.0062	No	0.0243	Yes
	Broadway - I-15	4	0.0058	No	0.0227	Yes
	I-15 - Home Ave.	4	0.0041	No	0.0160	Yes
	Home Ave. - I-805	4	0.0042	No	0.0165	Yes

[1] The incremental impact analysis compares Project-generated traffic volumes to the baseline condition traffic volumes (referred to as the disposal and reuse credit).
[2] The total Project impact analysis compares Project-generated traffic volumes to a zero ADT baseline condition (i.e., does not account for the disposal and reuse credit).

12. I-5 (Clairemont to Sea World Drive)
13. I-5 (Sea World Drive to I-8)
14. I-5 (SR-94 to Imperial)
15. I-5 (Imperial to SR-75)
16. I-5 (SR-75 to 28th)
17. I-5 (28th to I-15)
18. I-8 (Hotel Circle to SR-163)
19. I-8 (SR-163 to Mission Center)
20. I-8 (Mission Center to Texas)
21. I-8 (Texas to I-805)
22. SR-94 (I-5 to 25th)
23. SR-94 (25th to 28th)
24. SR-94 (28th to Broadway)
25. SR-94 (Broadway to I-15)
26. SR-94 (I-15 to Home)
27. SR-94 (Home to I-805)

Intersections

As shown in Table 4.2-5, 11 of the 39 offsite intersections analyzed would operate at LOS E or F during the a.m. peak, the p.m. peak, or both peak hours under Buildout conditions with or without the Project. Under the **incremental impact analysis**, three of these intersections (Nimitz Boulevard/West Point Loma Boulevard, Sunset Cliffs Boulevard/Nimitz Boulevard [southbound], and Sunset Cliffs Boulevard/I-8 westbound offramp) would not receive significant contributions (i.e., the Project would not cause an additional delay of 2 seconds or more or would not contribute more than 2 percent of the total peak hour traffic traversing the intersection) from the Project and therefore are not considered significant Project impacts. However, under the **total Project impact analysis**, the Project would result in significant impacts to each of these three intersections. Under the **incremental impact analysis**, eight of the congested offsite intersections would experience significant Project-related traffic impacts. These eight intersections include the following:

- Nimitz Boulevard/Rosecrans Street
- Rosecrans Street/North Harbor Drive

Table 4.2-5. Evaluation of Significance of Project-Related Traffic Impacts, Intersections

	Buildout without Incremental Project				Buildout with Incremental Project							
Signalized Intersections	AM Delay	AM LOS	PM Delay	PM LOS	AM Delay	AM LOS	Change (a)	Significant?	PM Delay	PM LOS	Change (a)	Significant?
Nimitz Blvd./W. Point Loma Blvd.	23.9	C	63.4	F	24.0	C	0.1	No	64.9	*F*	*1.5*	*No*
Nimitz Blvd./Tennyson St.	3.2	A	3.7	A	3.5	A	0.3	No	4.0	A	0.3	No
Nimitz Blvd./Chatsworth Blvd.	9.9	B	20.1	C	11.4	B	1.5	No	20.2	C	0.1	No
Nimitz Blvd./Lowell St.	20.1	C	8.8	B	20.2	C	0.1	No	9.0	B	0.2	No
Nimitz Blvd./Rosecrans St.	33.1	D	*	F	*	*F*	*4.1%*	*Yes*	*	*F*	*3.3%*	*Yes*
Nimitz Blvd./N. Harbor Dr.	13.6	B	18.2	C	13.9	B	0.3	No	19.0	C	0.8	No
Rosecrans St./N. Harbor Dr.	24.5	C	*	F	24.9	C	0.4	No	*	*F*	*8.5%*	*Yes*
Rosecrans St./Bainbridge Ct./Russell St.	13.9	B	*	F	15.4	C	1.5	No	*	*F*	*3.1%*	*Yes*
Rosecrans St./Farragut Rd.	(a)	(a)	(a)	(a)	38.6	D	N/A	N/A	23.3	C	N/A	N/A
Rosecrans St./Roosevelt Rd	*	F	*	F	*	*F*	*9.4%*	*Yes*	*	*F*	*8.5%*	*Yes*
Rosecrans St./Lytton St.	*	F	*	F	*	*F*	*9.9%*	*Yes*	*	*F*	*4.3%*	*Yes*
Rosecrans St./N. Evergreen St.	7.0	B	24.3	C	7.7	B	0.7	No	**28.6**	**D**	**4.3**	**Yes**
Rosecrans St./Midway Dr.	25.1	D	*	F	*	*F*	*11.5%*	*Yes*	*	*F*	*5.5%*	*Yes*
Rosecrans St./Sports Arena Blvd./Camino Del Rio South	31.4	D	*	F	**32.3**	**D**	**1.1**	**No**	*	*F*	*4.5%*	*Yes*
Camino del Rio W./Kurtz St.	5.5	B	15.8	C	8.8	B	3.3	No	16.8	C	1.0	No
Camino del Rio W./Hancock St.	8.6	B	11.0	B	9.1	B	0.5	No	11.2	B	0.2	No
Laning Rd./N. Harbor Dr.	7.3	B	17.0	C	8.3	B	1.0	No	**21.6**	**C**	**4.6**	**Yes**
McCain Rd./N. Harbor Dr.	(a)	(a)	(a)	(a)	4.9	A	N/A	N/A	13.5	B	N/A	N/A
Spanish Landing/Terminal 2/N. Harbor Dr.	7.1	B	15.9	C	10.7	B	3.6	No	16.5	C	0.6	No
Harbor Island Dr./N. Harbor Dr.	22.8	C	38.0	D	23.0	C	0.2	No	39.5	D	1.5	No
Winship Lane/N. Harbor Dr.	5.3	B	8.3	B	5.3	B	0.0	No	8.7	B	0.4	No
Rental Car Access/N. Harbor Dr.	7.0	B	6.2	B	7.8	B	0.8	No	7.1	B	0.9	No
Teledyne Ryan Access/N. Harbor Dr.	2.7	A	4.5	A	3.2	A	0.5	No	5.3	B	0.8	No
Laurel St./N. Harbor Dr.	8.8	B	17.1	C	9.2	B	0.4	No	18.6	C	1.5	No
N. Harbor Dr./Hawthorn St.	12.1	B	16.8	C	12.3	B	0.2	No	17.5	C	0.7	No
N. Harbor Dr./Grape St.	6.8	B	16.7	C	6.9	B	0.1	No	16.8	C	0.1	No
Pacific Hwy./Taylor St./Rosecrans	31.2	D	27.6	D	31.4	D	0.2	No	27.9	D	0.3	No
Pacific Hwy./Transit Center Access	15.9	C	17.5	C	16.9	C	1.0	No	18.6	C	1.1	No
Pacific Hwy./Sassafras St.	28.6	D	14.2	B	28.8	D	0.2	No	14.7	B	0.5	No
Pacific Hwy./Palm St.	4.1	A	9.4	B	5.6	B	1.5	No	10.1	B	0.7	No

Table 4.2-5. Evaluation of Significance of Project-Related Traffic Impacts, Intersections (Continued)

	Buildout without Incremental Project				Buildout with Incremental Project							
Signalized Intersections	**AM Delay**	**AM LOS**	**PM Delay**	**PM LOS**	**AM Delay**	**AM LOS**	**Change (a)**	**Significant?**	**PM Delay**	**PM LOS**	**Change (a)**	**Significant?**
Pacific Hwy./Laurel St.	25.7	D	36.9	D	**31.0**	**D**	**5.3**	**Yes**	**39.1**	**D**	**2.2**	**Yes**
Pacific Hwy./Hawthorn St.	14.6	B	22.6	C	15.1	C	0.5	No	21.9	C	0.0	No
Pacific Hwy./Grape St.	37.1	D	29.4	D	37.7	D	0.6	No	29.8	D	0.4	No
Sunset Cliffs Bl./Nimitz Bl. (southbound)	*	F	*	F	*	*F*	*0.3%*	No (b)	*	*F*	*0.1%*	No (b)
Sunset Cliffs Bl./Nimitz Bl. (northbound)	11.8	B	12.2	B	12.5	B	0.7	No	13.4	B	1.2	No
Sunset Cliffs Bl./I-8 westbound offramp	37.6	D	*	F	37.8	D	0.2	No (b)	*	*F*	*0.2%*	No (b)
Lytton St./Barnett Ave./Gate 1	29.7	D	32.2	D	**34.3**	**D**	**4.6**	**Yes**	***45.3***	***E***	***13.1***	***Yes***
Barnett Ave./Midway Dr.	4.5	A	6.6	B	5.6	B	1.1	No	7.0	B	0.4	No
Midway Dr./W. Point Loma Dr./Sports Arena Bl.	22.2	C	29.9	D	22.7	C	0.5	No	31.2	D	1.3	No

Italicized text indicates intersections with congested LOS E or F conditions; bold text indicates locations where the Project contributes to a significant impact.
(a) Project access driveway.
(b) Additional significant impact when considering total Project traffic generation (i.e., not accounting for the disposal and reuse credit).
*Calculation of delay not feasible due to oversaturated conditions.

- Rosecrans Street/Lytton Street
- Rosecrans Street/Sports Arena Boulevard/Camino Del Rio South
- Rosecrans Street/Midway Drive
- Rosecrans Street/Bainbridge Court/Russell Street
- Rosecrans Street/Roosevelt Road
- Lytton Street/Barnett Avenue/Gate 1

Four of the intersections listed above (Nimitz Boulevard/Rosecrans Street, Rosecrans Street/Bainbridge Court/Russell Street, Rosecrans Street/Roosevelt Road, Rosecrans Street/Lytton Street) can be mitigated to below a level of significance with implementation of improvements (refer to page 4.2-34) to be 100 percent funded by the Project. Three intersections (Rosecrans Street/North Harbor Drive, Rosecrans Street/Midway Drive, Lytton Street/Barnett Avenue/Gate 1) are considered significant and unmitigable. One intersection (Rosecrans Street/Sports Arena Boulevard/Camino Del Rio South) can be mitigated assuming implementation of unfunded Community Plan and unfunded supplemental improvements identified on page 4.2-34. Consistent with the Project's proposed mitigation approach, the Project will not contribute on a fair share basis toward these unfunded improvements. The underlying rational for the Project's mitigation approach is to ensure complete funding of improvements at locations most impacted by Project traffic, rather than contributing on a fair share basis to numerous dispersed locations. Full funding of a subset of the total required mitigation is a preferable approach in that it ensures completion of the improvements nearest the Project Area commensurate with development in the Project Area. Under a fair share funding scenario, the Project would pay for only a part of the total cost of the improvements at all locations, rather than focusing its contribution on the locations most impacted by Project traffic.

In addition to the above, three intersections (Rosecrans Street/North Evergreen Street, Pacific Highway/Laurel Street, Laning Road/North Harbor Drive) that would be significantly impacted by the Project would still operate at an acceptable LOS (i.e., LOS D or better) under Buildout conditions and therefore would not require mitigation.

MFH Development

With respect to the MFH Development, two conditions were noted as potentially adverse internal circulation impacts:

- The Porter Road/Bainbridge Court intersection is too close to the Rosecrans Street/ Bainbridge Court/Gate 6 intersection.

- The Gearing Road/Laning Road intersection is too close to the Laning Road/North Harbor Drive/Gate 10A intersection.

Construction Traffic

During the construction of the MFH Development, increased traffic would result from crews commuting to work, and from trucks importing construction equipment and materials. It is assumed that most construction traffic, especially the truck traffic, would come from and return to I-5 via Barnett Avenue. In order to avoid significant construction traffic impacts to Rosecrans Street, which is currently congested, site access and egress for construction trucks should be at the Lytton Street/Barnett Avenue/Gate 1 entrance.

The impact of construction traffic would result in short-term degraded operations at the Lytton Street/Barnett Avenue/Gate 1 intersection and potentially significant impacts to intersections between Gate 1 and I-5. The impact would be the greatest during the evening peak hours, when the intersections currently are most congested.

4.2.2.3 Project Area Access and Internal Circulation

Roadway Segment Capacity and Internal Traffic Control

A number of improvements are proposed as a part of the redevelopment of the Project Area and were included in the internal circulation evaluation. These improvements are summarized in the following paragraphs.

- *Bainbridge Court* should be widened and realigned to form a connection between existing Gates 10A and 6. The roadway should be 52 feet in width and consist of one travel lane in each direction and a continuous center turn lane. Traffic signal modifications will be required at Gates 10A and 6, and Bainbridge Court should have two outbound travel lanes at each of these locations.

- *Truxtun Road and Decatur Road* should be redesignated as a one-way couplet system between Bainbridge Court and Sellers Plaza (Gate 1). The existing 40-foot pavement sections would remain, with each roadway being restriped to allow two travel lanes and parking on both sides of the roadway. Truxtun Road would carry southbound traffic and Decatur Road would serve northbound traffic. Between Farragut Road and Bainbridge Court, both roadways will need to be realigned to remove the existing off-set in their alignments.

- *McCain Road* should be extended to intersect with North Harbor Drive. It is recommended that this roadway be constructed as a two lane collector street with a continuous left-turn lane (52 feet wide). A traffic signal should be installed at the McCain Road intersection with North Harbor Drive. Additionally, a left-turn pocket from eastbound North Harbor Drive to McCain Road should be constructed.

- *Incremental intersection turn lane improvements* should be incorporated into the Project's access driveways on Rosecrans Street. Alternatively, Rosecrans Street could be widened along the Project frontage to provide a third northbound travel lane. The existing 68-foot-wide roadway should be widened to 80 feet. A total of five Project intersections are proposed on Rosecrans Street. The additional northbound lane would serve as either a right-turn acceleration and deceleration lane or a shared through right-turn lane. The widening would occur within an existing 24- to 30-foot-wide landscaped strip along the Project's frontage. The guard houses at Gate 6 would need to be removed to accomplish this widening.

- *Farragut Road* should be extended to Rosecrans Street and a traffic signal should be installed at this location.

- *Worden Road* should be widened to 27 feet in width and extended to Rosecrans Street. At Rosecrans Street, channelization should be provided to restrict movements to right-turn to/from Worden Road.

- *Dewey Road* should be widened to 27 feet and extended to Rosecrans Street. At Rosecrans Street, channelization should be provided to restrict movements to right-turn to/from Dewey Road.

Evaluation of internal roadway segment capacity with the above-described improvements is illustrated in Table 4.2-6. Three segments would still be characterized by congested LOS E and F conditions, even with the above improvements. These segments include Sellers Plaza (Gate 1), Dewey Road, and Roosevelt Road. However, given the constraints of internal street expansion due to the location of historical structures and other considerations, widening roadways to accommodate forecasted traffic volumes is not feasible. Impacts would be significant and unmitigable.

Intersection Capacity and Signal Warrants

Based on the worst-case analysis conducted for NTC San Diego, it was concluded that signals would be installed at North Harbor Drive/McCain Road and at Rosecrans Street/Farragut Road at the time McCain is extended to North Harbor Drive and Farragut Road is extended to Rosecrans Street. Both of the signalized intersections would operate at LOS C or better during both peak hours. However, at the right-in/right-out only driveways, insufficient gaps would exist for exiting traffic, resulting in congested LOS conditions at the two internal unsignalized intersections (Rosecrans Street/Worden Road and Rosecrans Street/McCain Road) in the afternoon peak hour; therefore, impacts would be significant and unmitigable.

4.2.2.4 Alternative Modes of Travel

Transit Service

With the recent opening of the Old Town Trolley line, bus routes within the region have been redirected to feed into the bus/trolley transfer station (Old Town Transfer Center [OTTC]) at the corner of Taylor Street (Rosecrans Street) and Pacific Highway. The

Table 4.2-6. Summary of Internal Daily Traffic Volumes and Roadway Segment Levels of Service with Proposed Improvements

Street	Roadway Segment	Street Classification	Daily Traffic Volume	Capacity at LOS E	Daily Segment LOS
Bainbridge Ct.	Rosecrans St. – Truxtun Rd.	2 Lane Collector [a]	6,750	15,000	B
	Truxtun Rd. – Decatur Rd.	2 Lane Collector [a]	1,125	15,000	A
	Decatur Rd. – Cushing Rd.	3 Lane Collector [b]	3,375	15,000	A
	Cushing Rd. - North Harbor Dr.	4 Lane Major Arterial	5,800	40,000	A
Cushing Road	Bainbridge Ct. – Farragut Rd.	2 Lane Collector	3,130	8,000	B
	Worden Rd. – Roosevelt Rd.	2 Lane Collector	340	8,000	A
	Roosevelt Rd. – Dewey Rd.	2 Lane Collector	4,500	8,000	C
Decatur Rd.	Bainbridge Ct. – Stocton Rd.	2 Lane Major [c]	1,265	20,000	A
	Farragut Rd. – Worden Rd.	2 Lane Major [c]	1,825	20,000	A
	Worden Rd. – Dewey Rd.	2 Lane Major [c]	2,220	20,000	A
	Dewey Rd. – Chauncey Rd.	2 Lane Major [c]	4,410	20,000	A
	Chauncey Rd. – Truxtun Rd.	2 Lane Major [c]	7,560	20,000	B
Sellers Plaza	Truxtun Rd. – Barnett Ave.	2 Lane Collector	18,270	8,000	F
Dewey Rd.	Rosecrans St. – Decatur Rd.	2 Lane Collector	6,725	8,000	E
Farragut Rd.	Rosecrans St. – Truxtun Rd.	2 Lane Collector [a]	8,165	15,000	C
	Truxtun Rd. – Decatur Rd.	2 Lane Collector	2,250	8,000	A
McCain Rd.	North of N. Harbor Dr.	2 Lane Collector [a]	9,216	15,000	C
Roosevelt Rd.	Rosecrans Ct. – Decatur Rd.	2 Lane Collector [a]	11,000	15,000	D
	Decatur Rd. – Cushing Rd.	2 Lane Collector	7,875	8,000	E
Truxtun Rd.	Bainbridge Ct. – Farragut Rd.	2 Lane Major [c]	1,265	20,000	A
	Farragut Rd. – Worden Rd.	2 Lane Major [c]	2,275	20,000	A
	Worden Rd. – Dewey Rd.	2 Lane Major [c]	4,490	20,000	A
	Dewey Rd. – Chauncey Rd.	2 Lane Major [c]	9,950	20,000	B
	Chauncey Rd. – Decatur Rd.	2 Lane Major [c]	10,710	20,000	B
Worden Rd.	West of Truxtun Rd.	2 Lane Collector	4,725	8,000	C

[a] With continuous left turn lane.
[b] Three lane collector (two westbound lanes, one eastbound lane and a continuous center turn lane).
[c] One way couplet with two lanes. Assumed to have same capacity as half a four-lane major.

route revisions to OTTC are identified in the Old Town LRT Feeder Bus Service Study (November 1992). The OTTC provides the study area with a connection to the regional transit system. The Project Area would have access to the trolley network and the other bus routes near the transit center which have been rerouted to feed into the station. A summary of the route changes to study area bus routes is described in the Phase II Traffic Report (Kimley Horn and Associates, Inc. 1997).

The Metropolitan Transit Development Board indicated that the Project Area would be well served by minor adjustments to existing service provided along North Harbor Drive

and Rosecrans Street. Therefore, redevelopment of the Project Area would not result in significant public transit impacts.

Pedestrian Circulation

Within the Project Area, sidewalks are provided along most roadways, generally on one side of the street. The "campus style" atmosphere of the site provides for a high level of pedestrian activity. While the pedestrian atmosphere on the site is characterized as pedestrian-friendly, the environment within the surrounding area is not as conducive to walking. Within the Midway area, high travel speed, wide streets, long crosswalks, pedestrian prohibitions at some intersection approaches, and large parking lots along the sidewalks contribute to an uncomfortable environment. The lack of comfortable pedestrian connection to the Project Area would result in a less than significant impact.

4.2.3 Mitigation Measures

Mitigation in the form of intersection improvements identified in the February 1997 traffic study can be categorized as follows:

1. Community Plan improvements (unfunded)
2. Supplemental geometric recommendations (unfunded)
3. NTC Redevelopment Project-specific mitigation

Supplemental geometric recommendations were made to identify additional improvements (beyond those in the Community Plan) that would restore peak hour intersection capacity to adequate LOS. It should be noted that the analytical methods or approaches used to determine whether or not congestion is alleviated have been superseded and, in certain cases, the supplemental recommendations will not provide enough capacity to achieve LOS D or better. The third group of improvements, exclusive from items 1 and 2, represent the Project-specific traffic mitigation. These improvements focused on Rosecrans Street and are to be 100 percent Project funded. The rationale for this mitigation approach is to concentrate the Project's contribution toward transportation improvements at the locations most affected by Project-specific traffic, rather than providing incremental fair share contributions to numerous, dispersed locations (refer to

the discussion under "Funding Responsibility" on page 4.2-40 for a more detailed discussion).

The following discussion describes capacity improvements that are required to mitigate Buildout condition traffic impacts. It should be noted that the Project's impacts are defined based on the incremental additional traffic generated by the Project above the disposal and reuse credit or baseline condition. Future developments within the Project Area shall incorporate or comply with the measures provided below to the satisfaction of the City Environmental Review Manager prior to discretionary approval and/or issuance of land development permits. The City Environmental Review Manager shall verify that future development plans have incorporated or complied with the following measures.

4.2.3.1 Offsite Improvements

Roadway Segments

The study area roadway system was developed many years ago and traffic volumes have increased gradually over the years as development in the area intensified. There have been few roadway improvements made to the study area segments in the past few years. As a result, the area has experienced growth in traffic without increases in roadway capacity. Widening of street segments to provide adequate capacity to accommodate existing and future traffic would entail substantial right-of-way acquisition and roadway construction and would alter the community character. Existing development patterns preclude roadway widening and other classification changes. Therefore, in order to provide adequate roadway LOS for Buildout year traffic volumes, substantial investments would be needed to acquire property and expand roadways. This type of mitigation is deemed infeasible and impacts to the roadway segments would be unmitigable. Table 4.2-7 describes the factors that preclude roadway widening for the significantly affected roadway segments in the Project Area.

In order to reduce (but not eliminate) significant impacts to Rosecrans Street segments, it is recommended that Rosecrans Street be widened by 12 feet along the Project frontage to improve flow on this roadway and to increase the capacity of Project access points. This approach is desirable in that it addresses the future congestion on the roadway most impacted by the Project (i.e., Rosecrans Street) without entailing disruptive roadway

Table 4.2-7. Factors Precluding Project Study Area Roadway Widening

Street	Segment	Rationale(s) For Not Widening Roadway		
		Disruption Of Community Character (Residential Property Fronting)	Raw Constraints Preclude Widening (Wait Until Adjacent Property Develops)	Inconsistent With Community Plan[1]
Barnett Ave.	Gate 1 - Midway		●	●
	Midway - Pacific Highway		●	●
Camino Del Rio	Interstate 5 - Kurtz		●	●
	Kurtz - Sports Arena		●	●
Chatsworth Blvd.	Voltaire - Lytton	●		●
Laurel St.	North Harbor - Pacific Hwy.		●	●
Lytton	Rosecrans - Gate 1	●		●
Midway Dr.	Rosecrans - Wing		●	●
Narragansett Ave.	Sunset Cliffs - Santa Barbara	●		●
	Santa Barbara - Catalina	●		●
	Catalina - Warrington	●		●
	Warrington - Chatsworth	●		●
North Harbor Dr.	Harbor Island - Laurel		●	●
	Laurel - Grape		●	●
Rosecrans St.	Sports Arena - Midway		●	●
	Midway - Lytton		●	●
	Lytton - Nimitz		●	●
Talbot St.	Rosecrans - Canon	●		●

[1] Community Plan classifications for all segments except Laurel (North Harbor - Pacific Hwy.) and North Harbor (Laurel - Grape) are from Peninsula Community Plan (7/87). North Harbor and Laurel classifications from Final E/R for Centre City Redevelopment Project (4/92).

widening/construction activities throughout the community. This roadway widening will need to be coordinated with Caltrans. The buildings within the Historic District fronting on Rosecrans Street can be avoided to accomplish this widening. However, traffic impacts would remain significant and unmitigable.

Freeway Segments

The Project generates significant impacts on seven freeway segments under Buildout conditions. The Project does not create the congestion, though it contributes incrementally to it. Freeway impacts are considered significant and unmitigable.

Intersections

Feasible mitigation for intersection impacts focuses on providing adequate peak-hour intersection LOS at impacted locations. The following unfunded mitigation measures would mitigate intersections to an acceptable LOS during Buildout conditions. The classification of the improvement (i.e., Community Plan or Supplemental) is shown in parentheses.

- Nimitz Boulevard/Rosecrans Street
  - Add southbound right and left turning lanes from Rosecrans Street onto Nimitz Boulevard. (Supplemental)
  - Add a northbound left turning lane from Rosecrans Street onto Nimitz Boulevard. (Supplemental)

- Rosecrans Street/Sports Arena Boulevard/Camino Del Rio South
  - Add westbound right and left turning lanes from Sports Arena Boulevard onto Camino Del Rio and Rosecrans Street, respectively. (Supplemental)
  - Restripe the existing eastbound shared through/right turn lane to provide an exclusive through lane. (Supplemental)
  - Add an eastbound left turn lane from Sports Arena Boulevard to Camino Del Rio South. (Community Plan)

- Rosecrans Street/Lytton Street
  - Add an eastbound shared left turn/through lane on Lytton Street. (Supplemental)
  - Add a westbound left turn lane from Lytton Street onto Rosecrans Street. (Supplemental)

- Add a northbound through lane and a southbound through lane on Rosecrans Street. (Community Plan)

- Rosecrans Street/Bainbridge Court/Russell Street
  - Add a northbound right turn lane from Rosecrans to Bainbridge Court (Gate 6) heading eastbound. (Supplemental)
  - Add an eastbound right turn lane and one eastbound shared left turn/through lane at Bainbridge Court (Gate 6). (Supplemental)

- Rosecrans Street/Roosevelt Road
  - Add a southbound left turn lane from Rosecrans Street onto Roosevelt Road (Gate 3), heading west. (Supplemental)

- Sunset Cliffs Boulevard/Nimitz Boulevard (southbound)
  - Add one eastbound through lane. (Supplemental)

- Sunset Cliffs Boulevard/I-8 westbound off ramp
  - Add one westbound left turn lane. (Supplemental)

Impacts at the following intersections cannot be mitigated to below a level of significance:

1) *Rosecrans Street/Midway Drive.* Improvements (i.e., add one eastbound left turn lane [Supplemental], one eastbound right turn lane [Community Plan] and one westbound left turn lane from Midway Drive onto Rosecrans Street and add one northbound right turn lane and one southbound right turn lane from Rosecrans Street onto Lytton Street [Supplemental]) would provide additional capacity, but will not entirely relieve projected congestion. Therefore, Project-related impacts at this intersection would be significant and unmitigable.

2) *Rosecrans Street/North Harbor Drive.* This intersection will have congested LOS F conditions during the p.m. peak hour. Provision of adequate capacity at this location would require substantial right-of-way acquisition. Community impacts associated with roadway widening suggest Project-related impacts at this intersection are significant and unmitigable.

3) *Lytton Street/Barnett Avenue/Gate 1.* Mitigation measures for traffic impacts at this intersection are not feasible because such measures would require alteration

of the historic gate house. Therefore, impacts at this intersection would be significant and unmitigable.

4.2.3.2 Onsite Improvements

Given the constraint of internal street expansion due to the location of historical structures and other considerations, widening internal roadways to accommodate forecasted traffic volumes is not recommended. Although the Project proposes various internal improvements that were considered in the analysis to reduce the traffic impact on internal roadways, these improvements would not reduce impacts to below a level of significance.

4.2.3.3 MFH Development

Near-Term

In the near-term, the MFH Development would cause no degradation of LOS to worse than LOS D, and the delays at intersections operating at LOS D or worse would exceed the 2-second maximum established by the City of San Diego as significance criteria. Thus, no mitigation would be required for near-term traffic impacts.

Long-Term (Buildout Conditions)

The long-term analysis indicates that buildout conditions would result in deterioration of intersection operations at all studied intersections, including a projection of LOS F for the p.m. peak hour at the Rosecrans Street/Bainbridge Court/Russell Street/Gate 6 intersection, which is an access point for the MFH project site. Although the MFH Development would have a small impact on this future condition, it is considered appropriate that mitigation for this impact take the form of contribution to improvements to intersections adjacent to the MFH project site.

Modifications at the Rosecrans Street/Bainbridge Court/Russell Street intersection to improve LOS, when needed in the future, would including widening of Bainbridge Court by 12 feet to provide four lanes, three outbound and one inbound; and widening Rosecrans Street by 12 feet to provide a northbound right-turn lane.

The access analysis indicates a need to widen and extend Bainbridge Court in order to provide adequate access to the MFH project site. The internal circulation analysis demonstrates a need to eliminate intersections which are close to Gates 6 and 10A.

In order to compensate for the potential long-term traffic impacts near the MFH project site (these impacts would not be development-generated); and provide satisfactory access to the military family housing area, the following measures have been included in the project design:

- Bainbridge Court will be built to a two-lane connector with a continuous center turn lane with either a raised or painted median between Rosecrans Street and Cushing Road, and as four-lane roadway from Cushing Road to North Harbor Drive.

- The signal at the Bainbridge Court/Rosecrans/Russell Street intersection will be modified and reactivated.

- The project design will include a reservation of land east of, and adjacent to, Rosecrans Street, from Bainbridge Court to a point 400 feet south. This land reservation will allow for a future 12-foot widening of Rosecrans Street. The widening of Rosecrans Street is not included in the Proposed Action.

- Porter Road will be eliminated or cul-de-sacs will be constructed in order to eliminate the Porter Road/Bainbridge Court intersection.

- As part of the extension of Bainbridge Court, cul-de-sacs will be constructed on Gearing Road, or other appropriate measures will be taken in order to eliminate the Gearing Road/Laning Road intersection.

With the inclusion of these measures, the net long-term traffic impacts would not be significant.

Construction

In order to avoid a potentially significant impact from construction traffic on Rosecrans Street between Lytton Street and Nimitz Boulevard, the following measure will be included in the specifications for construction:

- Construction traffic to and from I-5 will enter and leave the Project Area at Gate 1, which is at the intersection of Lytton Street and Barnett Avenue.

In order to minimize potential adverse traffic impacts at intersections between the MFH project site and I-5, the following measure will be included in the specifications for construction:

- Trucks importing and exporting materials from the MFH project site will not enter or leave the Project Area between 3:30 p.m. and 6:00 p.m., Monday through Friday.

4.2.4 Funding Responsibility

The intersection improvements previously described are needed to adequately accommodate future traffic conditions including Project-generated traffic. However, full funding of these improvements by the Project may not be appropriate since the Project would only contribute a small share of total future traffic. Therefore, it is recommended that the Project's contribution to intersection improvements be apportioned as follows:

The Project would provide full funding for offsite improvements at the Rosecrans Street intersections with Nimitz Boulevard and Lytton Street, and full funding for the widening of Rosecrans Street along the Project frontage. As noted in the internal impacts discussion (Section 4.2.2.3), the additional northbound lane would serve as either a right-turn acceleration and deceleration lane or a shared through right-turn lane. These improvements are being provided in lieu of partial funding (on a fair share basis) for improvements at the following four intersections:

- Rosecrans Street/Midway Drive
- Rosecrans Street/Sports Arena Boulevard/Camino del Rio South
- Sunset Cliffs Boulevard/Nimitz Boulevard (southbound)
- Sunset Cliffs Boulevard/I-8 westbound off ramps

Full funding a subset of the total required cumulative mitigation is a preferable approach in that it ensures completion of the improvements nearest the Project Area commensurate with development within the Project Area. Under a fair share funding scenario, the Project would fund between 7 and 28 percent of the cost of each of the above improvements (refer to Table 5.3-1 of the NTC San Diego Phase II Traffic Report), which would not ensure that these improvements will be constructed.

4.2.5 Impact After Mitigation

The Project would result in a significant impact to 18 offsite roadway segments and 3 onsite roadway segments. Widening of Rosecrans Street by 12 feet along the Project frontage would reduce but not eliminate impacts to Rosecrans Street. Due to factors precluding mitigation such as roadway widening at other affected offsite and onsite roadway segments, these impacts would remain significant and unmitigable. The Project would result in significant unmitigable impacts to 7 freeway segments. Of the 11 offsite intersections that would be significantly impacted by the Project, proposed mitigation would restore acceptable LOS (LOS D or above) and reduce impacts to below a level of significance at four of these intersections (Nimitz Boulevard/Rosecrans Street, Rosecrans Street/Lytton Street, Rosecrans Street/Roosevelt Road, and Rosecrans Street/Bainbridge Court/Russell Street); three intersections (Rosecrans Street/Midway Drive, Lytton Street/Barnett Avenue/Gate 1, and Rosecrans Street/North Harbor Drive,) experience a significant Project impact based on the incremental Project traffic contribution and are significant and unmitigable. Proposed improvements at Rosecrans Street/Midway Drive would not entirely relieve Projected congestion; therefore, impacts would be significant and unmitigable. One intersection (Rosecrans Street/Sports Arena Boulevard/Camino Del Rio South) can be mitigated to below a level of significance with proposed improvements (not to be funded by the Project). The remaining 3 intersections (Rosecrans Street/North Evergreen Street, Laning Road/North Harbor Drive, and Pacific Highway/Laurel Street) would still operate at an acceptable LOS even with Project generated traffic and would not require mitigation.

Impacts to the two impacted onsite intersections (Rosecrans Street/Worden Road and Rosecrans Street/Dewey Road) are unmitigable.

As discussed in previous sections, there are three categories of intersection improvements:

1. Community Plan improvements (unfunded)
2. Supplemental geometric recommendations (unfunded)
3. NTC Redevelopment Project-specific mitigation

Table 4.2-8 summarizes intersection delay and LOS at locations experiencing congested LOS during one or both peak hours under each of the three above-described mitigation scenarios. The first set of columns summarizes Buildout conditions with Project intersection LOS without any improvements at all. The second set of columns presents LOS with unfunded Community Plan improvements only. The third set of columns presents capacity analysis results based on both the unfunded Community Plan improvements and unfunded supplemental geometric improvements. The fourth set of columns presents LOS with the Project-specific mitigation (i.e., the 12-foot widening of the east side of Rosecrans Street plus Community Plan and Supplemental improvements at the Rosecrans Street intersections with Lytton Street and Nimitz Boulevard). As shown in Table 4.2-8, the Project's mitigation will not restore LOS at the locations listed below, together with an indication of whether or not the Project generates a significant impact based on the incremental impact analysis (i.e., accounting for the disposal and reuse credit) or the total Project impact analysis (i.e., not accounting for the disposal and reuse credit).

- Nimitz Boulevard/West Point Loma Boulevard (*incremental*: **not** significant, *total:* significant)
- Rosecrans Street/North Harbor Drive (*incremental:* significant, *total:* significant)
- Rosecrans Street/Midway Drive (*incremental:* significant, *total*: significant)
- Rosecrans Street/Sports Arena Boulevard (*incremental*: significant, *total:* significant)
- Sunset Cliffs Boulevard/Nimitz Boulevard southbound (*incremental:* **not** significant, *total:* significant)

Table 4.2-8. Summary of Intersection LOS under Alternative Mitigation Scenarios - Buildout Traffic Conditions

Signalized Intersections	No Transportation Improvements				With Unfunded Community Plan Improvements (a)				With Unfunded Community Plan IMPs Plus Supplemental Recommendations (b)				With Project-Specific Mitigation Only (c)			
	AM Delay	AM LOS	PM Delay	PM LOS	AM Delay	AM LOS	PM Delay	PM LOS	AM Delay	AM LOS	PM Delay	PM LOS	AM Delay	AM LOS	PM Delay	PM LOS
Nimitz Blvd./W. Point Loma Blvd.	24.0	C	64.9	F	24.0	C	64.9	F	24.0	C	64.9	F	24.0	C	64.9	F
Nimitz Blvd./Rosecrans St.	*	F	*	F	*	F	*	F	**21.4**	**C**	**36.5**	**D**	21.4	C	36.5	D
Rosecrans St./N. Harbor Dr.	24.9	C	*	F	24.9	C	*	F	24.9	C	*	F	24.9	C	*	F
Rosecrans St./Bainbridge Ct./Russell St.	15.4	C	*	F	15.4	C	*	F	**12.1**	**B**	**20.1**	**C**	12.1	B	20.1	C
Rosecrans St./Roosevelt Rd.	*	F	*	F	*	F	*	F	**16.1**	**C**	**39.8**	**D**	16.1	C	39.8	D
Rosecrans St./Lytton St.	*	F	*	F	*	**F**	*	**F**	**22.8**	**C**	**35.7**	**D**	22.8	C	35.7	D
Rosecrans St./Midway Dr.	*	F	*	F	*	**F**	*	**F**	**18.5**	**C**	*	**F**	*	**F**	*	**F**
Rosecrans St./Sports Arena Blvd./Camino Del Rio South	32.3	D	*	F	**26.1**	**D**	*	**F**	**16.0**	**C**	**37.6**	**D**	**32.3**	**D**	*	**F**
Sunset Cliffs Bl./Nimitz Bl. (southbound)	*	F	*	F	*	F	*	F	**53.7**	**E**	**40.0**	**E**	*	**F**	*	**F**
Sunset Cliffs Bl./I-8 westbound off ramp	37.8	D	*	F	37.8	D	*	F	**20.9**	**C**	**58.7**	**E**	**37.8**	**D**	*	**F**
Lytton St./Barnett Ave./ Gate 1	34.3	D	45.3	E	34.3	D	45.3	E	34.3	D	45.3	E	34.3	D	45.3	E

(a) Assumed (unfunded) Community Plan improvements from the February 1997 traffic study. Improvements were assumed at the Rosecrans St. intersections with Lytton St., Midway Dr., and Sports Arena Blvd.

(b) Includes both the unfunded Community Plan improvements, plus supplemental geometric improvements identified in the February 1997 traffic study.

(c) Project sponsored mitigation includes improvements on the west side of Rosecrans St. only, plus all Community Plan and supplemental improvements at Rosecrans St./Nimitz Bl. and Rosecrans St./Lytton St.

Boldface indicates change in delay/LOS as compared to preceding improvements scenario (reading left to right).

- Sunset Cliffs Boulevard/I-8 westbound off ramp (*incremental:* **not** significant, *total:* significant)
- Lytton Street/Barnett Avenue/Gate 1 (*incremental*: significant, *total:* probably significant)

All impacts related to the MFH Development can be mitigated to below a level of significance.

4.2.6 Cumulative Impacts

The traffic study prepared for this Project was based on SANDAG's anticipated traffic conditions for the region. The SANDAG Regional Model uses 2015 as its horizon year. SANDAG's model was modified to reflect the internal Project Area roadway system, area wide transportation improvements likely to be constructed by the Buildout year, recent changes to area wide land uses, and implementation of the Project. Included in the model as cumulative Projects were Midway Center, Kona Kai, and Harbor Island Hotel.

The Kona Kai development on Shelter Island would generate approximately 1,900 ADT. Mitigation measures associated with this development include reconstruction of the north/south roadway between Harbor Island Drive and North Harbor Drive to provide a T-intersection. These improvements have already been implemented and the SANDAG model has been revised accordingly.

Evaluation of roadway segments in the cumulative Project Area indicated LOS E or F conditions on 54 roadway segments with traffic generated from the cumulative Projects and growth in the area. Evaluation of freeway segments in the area indicated that all 32 segments within the Project Area vicinity would be characterized by LOS E or F in the Buildout year. These conditions would occur with or without the Project in the Buildout year. Analysis of peak hour intersection capacity indicated congested peak hour LOS E or F at 11 intersections.

As described in Section 4.2 of this EIR, mitigation measures to reduce significant cumulative traffic impacts on roadway and freeway segments by roadway widening are deemed infeasible due to the land use and historical resources constraints of the

urbanized, built-out area. A significant unmitigable traffic impact would therefore occur on certain segments with or without implementation of the Project.

If redevelopment of the property proceeds as planned, there would be an increase in the amount of employment opportunity in the immediate area. With an increase in jobs it is expected that an increase in the number of people living and working in the same area would occur, thus reducing the commute. This would also improve traffic congestion in the Project Area and vicinity. However, cumulative traffic impacts would be significant and unmitigable.

4.3 CULTURAL RESOURCES

4.3.1 Existing Conditions

4.3.1.1 Cultural History of Region

Thirteen archaeological sites were previously recorded within a 1-mile radius of the Project Area of Potential Effect (APE), but no sites were recorded within the Project APE itself. With the exception of the village of Cosoy near Taylor Street and Morena Boulevard, no evidence of permanent, large-scale occupation has been recorded. Archaeological sites recorded within the region included historic resources in Old Town, prehistoric remains in the Old Town area, and a city dump.

Two prehistoric shell refuse heaps recorded 0.5 mile southwest of the Project Area reflect prehistoric use of the bay edge for shellfish collection and processing. Many other small prehistoric shell refuse heaps were identified in this area during earlier studies. The amount of urbanization in the area suggests that prehistoric activity was substantial and the Project Area was probably used for temporary campsites for marine exploitation and food gathering.

Two studies conducted on NTC San Diego addressed cultural resources not addressed in previous surveys. A study of Cold War era buildings and structures (1945-1989) concluded that no buildings or structures meet any of the criteria for nomination to the National Register of Historic Places (NRHP) for the Cold War period. A Cultural Landscape study found 18 elements eligible for nomination to the NRHP as part of the Historic District. These elements are all physically located within the current boundaries of the Historic District and include the entrance gate, roads, trees, and gardens.

Regional Military Development

Naval activity in the San Diego area dates back to 1846 and the Mexican-American War (1846-1848). Just prior to and during World War I, four military facilities were established in the San Diego area: Naval Air Station North Island (NASNI), Marine Corps Recruit Processing Center, Naval Hospital, and NTC San Diego.

History of the Project Area

The Project Area began as a concept in 1915, when Assistant Secretary of The Navy Franklin D. Roosevelt investigated possible sites for a Naval training station. In 1916, Congress authorized the Navy to purchase 232 acres for use as an advance base, and expeditionary and aviation purposes, and the City conveyed Dutch Flats (which includes approximately 55 acres within the Project Area) to the Navy. Between 1919 and 1921, the Navy acquired an additional 135 acres and 76 acres of adjacent tidelands, and the City of San Diego adopted a resolution to close streets and alleys within the Project Area to public use.

Construction began on the first buildings in March 1921. On June 1, 1923, the Navy officially commissioned Naval Training Station San Diego. Staffed by 10 officers and 50 enlisted personnel, the original facility could accommodate 1,500 recruits for its dual mission of recruit training and instruction of fleet personnel.

Additional lands were annexed by the facility during the 1920s; 64 acres of land and 95 acres of submerged tidelands were transferred from the original Marine Corps Base land grant. Dredging by the Navy provided additional water and land acreage; the facility eventually encompassed 500 acres (436 land acres and 64 water acres). By the end of the 1920s, 57 buildings representing 11 schools occupied 235 acres of land. These structures represent the "Historic Core" of the facility.

Naval Training Station San Diego continued to expand during the 1930s in order to increase its training capabilities. The addition of Camp Lawrence represents the first major expansion of the facility. In 1933, the City conveyed 242 acres of tidelands between the 1912 bulkhead line then in existence in exchange for a 67-acre parcel of Navy property adjacent to Lindbergh Field. Approximately 95 of these 242 acres are within the Project Area. Since conveyance, the pierhead line has been moved seaward resulting in approximately 130 acres being added to the original facility footprint. By the outbreak of World War II, 41 schools had been established or reactivated and the facility supported a peak population of 33,000, of which 25,000 were recruits. An additional 1.52 acres along Rosecrans Street were added to the facility in 1940.

In April 1944, the Secretary of The Navy redesignated Naval Training Station San Diego as NTC San Diego and put the facility under group command led by the Center

Commander and three subordinate entities: Recruit Training Command, Service School Command, and Naval Administrative Command. After World War II, the onsite population decreased substantially (5,800 personnel in 1949) and barracks were converted to classrooms.

From the post-war period to the present, the Naval Training Center has continued to support the nation's defense needs; Naval Administrative Command has provided logistics support for the facility and Recruit Training Command has continued operations. Facility boundaries were further expanded with the completion of Camp Nimitz in 1955.

4.3.1.2 Cultural Resources at the Project Area

Prehistoric and Historic Archaeological Resources

An Historic Property Survey Report for NTC San Diego was prepared in 1995 (SWDIV 1995a, 1995b). The State Historic Preservation Officer (SHPO) provided correspondence approving this report. In addition, an Extended Phase I cultural resources survey was conducted at NTC San Diego. This entailed a walk-over evaluation by a group of qualified archaeologists. The survey revealed the presence of two cultural resource sites (NTC-S-1 and NTC-S-2) and a marine shell scatter that may indicate the presence and potential for prehistoric archaeological resources within the Project APE. Heavy levels of disturbance as a result of previous construction limited the ability to identify prehistoric archaeological resources.

A limited trenching program was conducted in 1996. Nineteen trenches were excavated at locations throughout NTC San Diego that were deemed likely to contain buried deposits. Trench locations were based on prehistoric landform, the 1850 high tide line, historic research, and historic resources inventory data. The trenching program revealed negative results with the exception of a segment of buried asphalt located within the previously established Historic District.

Site NTC-S-1. Two human graves and a single gravestone dating back to 1932 were discovered near the golf course during the walk-over evaluation. The burial site contains the remains of the first Executive Officer of the Naval Training Station, Mr. Edwin Burke Woodworth, and his wife. Due to the integrity and historical significance of the site, Site NTC-S-1 was recommended for eligibility listing on the NRHP under criterion "D."

Site NTC-S-2. Site NTC-S-2, located on Camp Nimitz, is identified as an inactive landfill and occupies approximately 51 acres. The site was originally part of the MCRD but was transferred to NTC San Diego in 1975. The inactive landfill contains wastes that were disposed of between approximately 1950 and 1971. As required by Section 106 of the National Historic Preservation Act (NHPA), the Navy has determined that the landfill is not eligible for the NRHP because it is not of exceptional Cold War era significance. The SHPO concurred with this determination.

Road Section. A section of buried asphalt road runs under Ingram Plaza. This may be a portion of a road that appears on the 1914 United States Geological Survey 15' map, or possibly a portion of a road constructed as part of the original base in the 1920s. An aerial photo taken in 1923 shows no evidence of the road so it is undetermined at this time if the section of road has historic significance or is related to important activities on NTC San Diego. The fill materials that currently cover the road appear to be part of a dredge/fill operation during the period 1933-39 that added approximately 200 acres to NTC San Diego.

Site CA-SDI-14,951. A trash deposit located adjacent to Building 227 at NTC San Diego was discovered during monitoring of an underground storage tank (UST) removal. Testing of the site in accordance with Section 106 of the NHPA resulted in a finding that, although the site was estimated to be 65 years old, the deposit does not meet eligibility criteria for nomination to the NRHP. The SHPO concurred with this determination.

Marine Shell Scatter. A discontinuous marine shell scatter, primarily associated with dredging and filling activities, was identified throughout the facility. Since the scatter is clearly not of prehistoric origin and no prehistoric artifacts were found by the survey, no portion of the scatter was recommended for eligibility in the NRHP.

In addition to sites identified by the survey, the potential for buried archaeological resources at the facility is relatively high. Buildup of sediments and past dredging activities have altered and/or buried most artifact-producing resources.

The presence of buried prehistoric and pre-1900 historic resources would likely be limited to the area north (towards Rosecrans Street) of the 1850 high tide mark as

delineated on Figure 4.1-3. The presence of buried post-1900 historic resources is likely throughout NTC San Diego.

A report summarizing the results of the Extended Phase I cultural resources survey was prepared and submitted to SHPO (SWDIV 1996). The SHPO provided correspondence approving this report.

In addition to NTC San Diego, the MFH Development Area was surveyed for archaeological and historic resources (Department of the Navy 1998). The archaeological surveys did not reveal any resources within the MFH Development Area. Although structures of historical age were identified, none were recommended as eligible for NRHP listing.

Historic Buildings and Structures

Building and Structure Inventory. The inventory of buildings, structures, and cultural landscape elements at NTC San Diego focuses on identifying buildings and structures that reflect the military developments prior to and during World War II. NTC San Diego as a whole represents this period of American military defense and, more specifically, represents the use of the base as a component of the preparedness and defense efforts on the West Coast.

Historical places at NTC San Diego include 152 buildings and structures comprising a wide variety of uses ranging in size from utilitarian barracks to wastewater pump stations. These 152 buildings and structures were evaluated by the Historic Properties Eligibility Study of Cold War Era Buildings and Structures (SWDIV 1995a) for historic and architectural significance as individual structures and also as potential contributors to an Historic District. Specific elements of the study include integrity of setting, alterations, significance of architectural design, and historic use of the structure. The SHPO provided correspondence approving this study.

The Historic District is composed of the original core buildings constructed during the 1920s to early 1930s. These buildings were selected because of their historic significance as the original structures on NTC San Diego. They were also included for their architectural significance as important examples of the Spanish Colonial style of architectural tradition in southern California and the Navy's decision during the 1920s to

create bases that manifested the important architectural themes in the region. The original design plans for the base included a ground plan that organized the main buildings along a pair of symmetrical axes, a reflection of the Beaux Arts school of architectural design. The structures and elements within the Historic District are the design features placed along these axes and serve both as examples of the original architectural intent and as the earliest buildings for base activities. In accordance with the Memorandum of Agreement (MOA), the Navy forwarded the Historic District NRHP nomination form to the Keeper of the NRHP in accordance with 36 CFR § 60.9. The nomination of the Historic District to the NRHP was approved.

NRHP Eligibility Evaluation

The Historic Properties Eligibility Phase II Study of Cold War Era Buildings and Structures (SWDIV 1997b) and the Cultural Landscape Report (SWDIV 1997a) recommended 52 buildings and 18 cultural landscape elements at NTC San Diego as eligible for listing in the NRHP as contributing elements to the Historic District. These resources are listed in Table 4.3-1 and depicted in Figure 4.3-1. In addition, the SHPO provided correspondence approving the Cultural Landscape Report.

Memorandum of Agreement

A Memorandum of Agreement (MOA) has been prepared to address the preservation of historic resources located on NTC San Diego. The MOA is a document that requires protection of historic resources. Specified requirements must be met by the signatories to the MOA. The signatories to the MOA include the Navy, the SHPO, the Advisory Council on Historic Preservation (ACHP), the City of San Diego as the Local Redevelopment Authority, and the Save Our Heritage Organization. The Navy, SHPO, and ACHP invited the San Diego Historical Society, San Diego County Archaeological Society, Viejas Group of Capitan Grande Band of Mission Indians, and the Peninsula Community Planning Group to participate in the consultation as interested parties. The MOA was signed in July 1998.

Table 4.3-1. Structures at the Project Area Eligible for Listing in the NRHP

Building		Construction Date	Map Cell
	Quarters A	1923	O-4
	Quarters B	1923	O-4
	Quarters C	1923	O-5
	Quarters D	1923	O-5
1	Commissary	1923	M-3
2	Bachelor Enlisted Quarters	1923	M-4
3	Bachelor Enlisted Quarters	1923	M-4
4	Bachelor Enlisted Quarters	1923	M-5
5	Bachelor Enlisted Quarters	1923	M-5
6	Medical Administration	1923	N-5
7	Dispensary/Eye Clinic	1923	N-5
8	Office/Storage	1923	L-2
9	CATO Switching Station	1923	M-1
10	Golf Course Clubhouse	1923	M-1
11	Child Care Center	1923	M-1
12	Navy and Marine Relief Society	1923	L-4
14	Bachelor Enlisted Quarters	1923	L-4
15	Bachelor Enlisted Quarters	1923	L-4
16	Bachelor Enlisted Quarters	1923	L-5
17	Bachelor Enlisted Quarters	1923	L-5
18	Bachelor Enlisted Quarters	1923	M-5
19	Bachelor Enlisted Quarters	1923	L-5
20	Gatehouse #1	1924	L-1
21	Pass/Decal Office	1923	M-1
23	Naval Investigative Service	1924	M-3
24	MWR Club	1923	L-1
25	Bachelor Enlisted Quarters	1924	M-5
26	Bachelor Enlisted Quarters	1924	M-4
27	Bachelor Enlisted Quarters	1932	M-8
28	Bachelor Enlisted Quarters	1932	M-8
29	Bachelor Enlisted Quarters	1932	M-7
30	Community Facility Building	1932	M-9
32	Exchange Warehouse	1937	K-2
35	Auditorium	1941	N-6
175	School Building	1941	N-6
176	School Building	1941	N-6
177	Library	1941	N-6
178	Main Retail Store	1942	M-6
193	Enlisted Club	1942	K-5
194	Office Building	1942	L-2
195	Navy Medical Clinic	1942	N-4
198	Gate House #3	1942	O-6
200	HQ Building	1942	L-6
201	South Office Building	1942	L-6
202	North Office Building	1942	L-6
208	North Chapel	1942	M-7
210	Swimming Pool	1942	K-7
430	DE Mockup	1949	G-14
451	Flagpole	1923	K-6

Table 4.3-1. Structures at the Project Area Eligible for Listing in the NRHP (Continued)

Building	Construction Date	Map Cell
453 Gun Platform No. 1	1945	J-6
454 Gun Platform No. 2	1945	J-6
528 Flag Pole	1942	L-6
Bunya-bunya trees (6)	1925	L-M-2
Decatur Road	1922	L-1 to L-9
Dewey Road	1922	J-5 to O-5
Fir Tree/John Paul Jones Ct.	1924	L-4
Gardens/Officers' Quarters	1925	O-3 to O-5
Ingram Plaza	1941	J-6
John Paul Jones Court	1922	L-3 to L-5
Lawrence Court	1922	L-7 to L-8
Luce Court	1941	M-6
Perry Road	1922	L-2 to M-2
Preble Field	1941	I-6
Roosevelt Road	1922	J-7 to O-7
Sail Ho Golf Course[1]	1925	O-1 to O-2
Sellers Plaza	1922	L-1 to M-1
Sims Road	1922	L-3 to M-3
Stanley/Welty Terrace	1926	O-4
Steel Arch/Gate	1932	L-1
Truxtun Road	1922	M-2 to N-6

Note: [1]The burial site near this golf course was recommended for eligibility listing on the NRHP.
Source: SWDIV 1997a, 1997b.

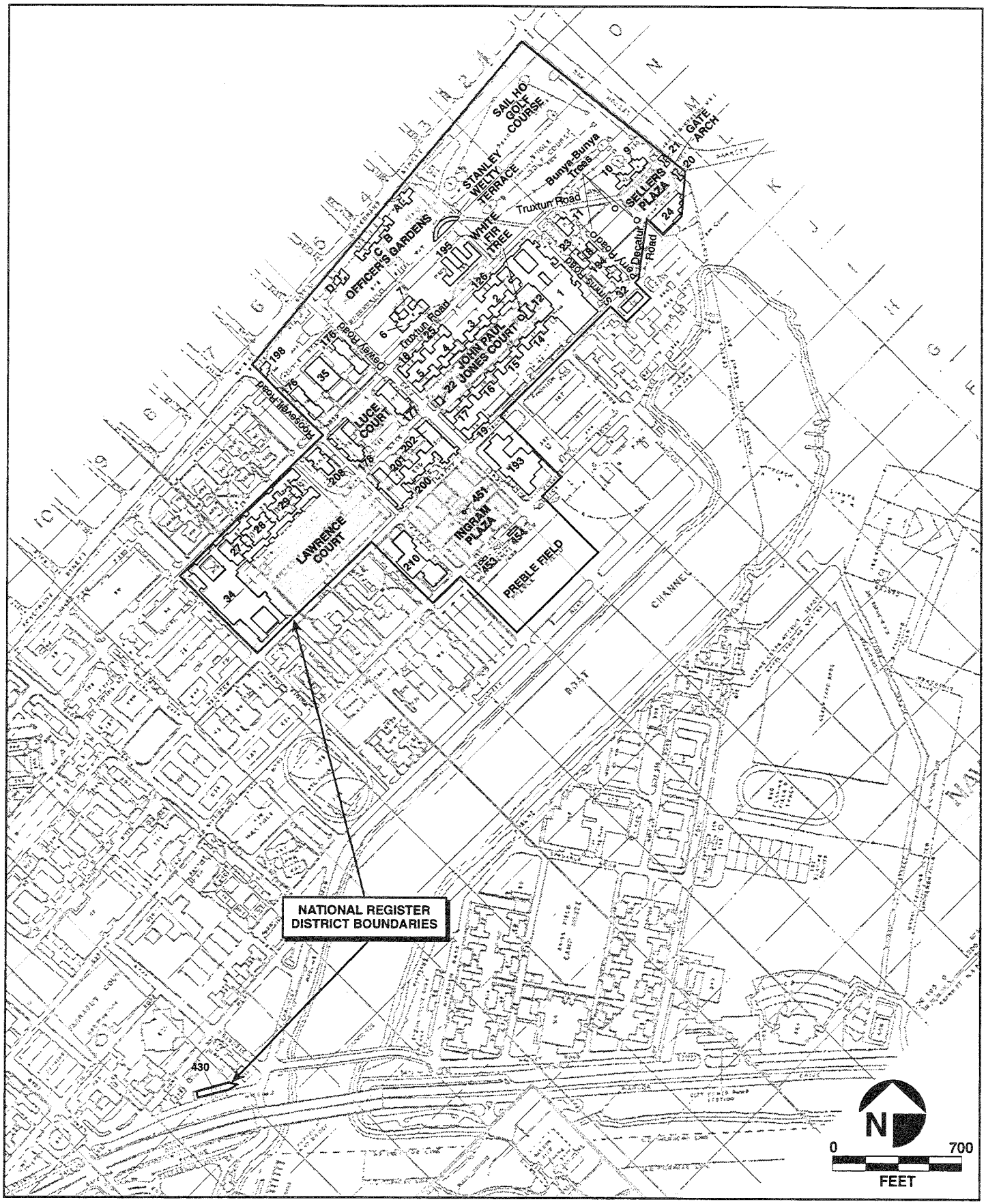
4.3.2 Environmental Impacts

4.3.2.1 Threshold for Determining Significance

California Environmental Quality Act

Under the state of California CEQA guidelines, California Code of Regulations, tit. 14, § 15000 *et seq.*, a proposed project is considered to have a significant effect on the environment if it ...

> ... has the potential to degrade the quality of the environment, curtail the range of the environment, or to achieve short-term, to the disadvantage of long term, environmental goals (Section 21083 (A)).



OGDEN

Historic Resources Determined to be Eligible for Listing in the National Register

FIGURE 4.3-1

Graphics/EnvAsmt/NTC Redevelopment/NTC Historic.fh8

According to Appendix K, Section III of CEQA Guidelines, if ...

> ... a project may affect an archaeological resource, the [lead] agency shall determine whether the effect may be a significant effect on the environment. If the project may cause damage to an important archaeological resource, the project may have a significant effect on the environment.

City of San Diego Resource Protection Ordinance

The City of San Diego adopted an RPO to "protect, preserve, and where damaged, restore the environmentally sensitive lands of San Diego which include wetlands, wetland buffers, floodplains, hillsides, biologically sensitive lands and significant prehistoric and historic resources." The document sets out the guidelines and directives for the preservation of cultural resources within the City of San Diego.

City of San Diego Historic Preservation Element

The City has adopted an Historic Preservation Element as part of its General Plan. This Element describes the current status of cultural resource surveys and location of historic resources, measures, and their limitations to address historic resources, goals of the Plan, and guidelines and recommendations for implementation of the Plan.

4.3.2.2 Impact Analysis

Grave Site (NTC-S-1)

The grave site is located within the Sail Ho golf course, which is proposed for reuse as a golf course; therefore, impacts on the grave site would not occur.

Landfill (NTC-S-2)

The Navy has determined that the inactive landfill is not eligible for the NRHP because it is not of exceptional Cold War-era significance; therefore, impacts would not occur. The SHPO concurred with this determination.

Road Section (no site number)

The road section is located within Ingram Plaza. Ingram Plaza is included as part of the Historic District and would not be affected; therefore, impacts on the road section within Ingram Plaza would not occur.

Historic Trash Deposit (CA-SDI-14,951)

Testing of the site in accordance with Section 106 of the NHPA resulted in a finding that the deposit does not meet eligibility criteria for nomination to the NRHP. Therefore, transfer of the site from federal authority to another agency will not result in an adverse effect to important or eligible cultural resources. The SHPO concurred with this determination.

Preservation of Previously Unevaluated Cultural Resources

A potentially significant impact to undiscovered cultural resources could occur during construction/development of the Project Area.

4.3.3 Mitigation Measures

The following measures are required to mitigate potentially significant impacts to below a level of significance and ensure compliance with the City of San Diego Resource Protection Ordinance. Future developments within the NTC San Diego or 430-acre portion of the Project Area shall incorporate or comply with the measures provided below to the satisfaction of the City Environmental Review Manager prior to discretionary approval or issuance of land development permits. The City Environmental Review Manager shall verify that future project plans have incorporated or complied with the following measures:

1. An archaeological monitor shall be onsite during construction activities involving grading or excavation in areas west of the 1850 mean high tide line; monitoring shall not be required in areas east (bayward) of the 1850 mean high tide line. The monitor shall be empowered to halt construction in and around areas where previously unevaluated cultural materials, either historic or prehistoric, are unearthed until such time that the resource is inspected by a member of the

Society of Professional Archaeologists in consultation with a cultural resource representative of the lead agency responsible for administering the construction/earth moving permit.

2. All original maps, field notes, non-burial-related artifacts, catalog information, and final reports shall be curated at an institution within San Diego County. Qualified institutions are those with proper facilities and staffing for ensuring research access to the collections, consistent with federal standards. If there are no qualified institutions in San Diego County that can accept additional collections, the historical resource consultant shall be responsible for temporary curation until such time as a regional facility becomes available. Arrangements for long-term curation shall be established between future applicants/property owners and the consultant prior to the initiation of the field reconnaissance.

4.3.4 Impact after Mitigation

Implementation of the Project has the potential to impact unknown archaeological resources as a result of future development within the Project Area. Implementation of mitigation measures 1 and 2 will reduce these impacts to below a level of significance.

4.3.5 Cumulative Impacts

Cumulative impacts to archaeological and historic resources would not occur because cultural resources would be protected in accordance with the MOA (i.e., either by retaining the historic structure or implementing appropriate mitigation for impacts to an archaeological site).

4.4 POPULATION, EMPLOYMENT, AND HOUSING

4.4.1 Existing Conditions

4.4.1.1 Population

The population of San Diego County has grown dramatically since 1960—twice as fast as the rest of California and three times faster than the nation as a whole. The county's population was estimated to be 1,861,846 in 1980, increasing by 34 percent to 2,498,016 by 1990. Nearly 65 percent of the population growth in the San Diego region during the 1980s was due to net migration (the difference between the number of people who move into and out of an area). The balance of the population growth was due to natural increase (the difference between the number of births and deaths in a given period). Population of the Project Area housing market area was estimated to be 2,582,500 people in 1994 (City of San Diego 1998a).

San Diego County consists of 18 incorporated cities and numerous unincorporated communities. According to 1990 population figures, 46 percent of the region's total population resides in the City of San Diego. The other incorporated cities constitute approximately 37 percent of the region's residents. The remaining 17 percent of county residents live in unincorporated areas. Table 4.4-1 describes recent and forecasted population growth for the county and its seven Major Statistical Areas (MSAs). An annual growth rate of 1.6 percent is projected for the county as a whole, with an estimated growth rate of 0.95 percent in the Central MSA; this projected growth rate is the lowest of all San Diego County MSAs (SANDAG 1995). Areas of greatest growth tend to be in the northern part of the county. Average annual growth rates in the planning areas in the vicinity of the Project Area are more varied, ranging from below a half percent for the Lindbergh Field, Midway, and Peninsula areas, up to 5.8 percent for the Centre City area (City of San Diego 1998a).

4.4.1.2 Employment

The economy of San Diego County is based primarily on the services, retail trade, government, and military sectors. During the 1980s, job growth rates in the county varied greatly by industry. Finance, insurance, real estate, construction, and services all experienced average annual growth rates of over 6 percent. Industries such as

Table 4.4-1. Estimated Population Growth in San Diego County MSA

Major Statistical Area	1990	2000	2005	2015	Average Annual Growth
Central	595,720	675,195	699,330	756,965	0.95%
North City	569,992	687,571	741,257	820,904	1.42%
South Suburban	261,694	341,153	400,597	475,212	2.31%
East Suburban	429,291	495,214	532,676	607,930	1.38%
North County West	310,194	382,170	415,971	499,597	1.88%
North County East	312,477	400,309	450,393	570,244	2.38%
East County	18,648	22,822	27,030	32,401	2.18%
Regional Totals	**2,498,016**	**3,004,434**	**3,267,254**	**3,763,253**	**1.62%**

Source: SANDAG 1995.

agriculture, manufacturing, government, and the military experienced slower growth rates; however, they too maintained an upward growth trend throughout the period. In the early 1990s, local economic conditions deteriorated, as they did elsewhere during the most recent recession, particularly throughout California. Unemployment in San Diego County reached as high as 7.5 percent in late 1994. During 1995, local conditions stabilized, and in 1996 the local economy surged. In May 1996, the unemployment rate was down to 5.4 percent, largely on the strength of an expansion in small business enterprises (City of San Diego 1998a).

Table 4.4-2 describes the total employment for San Diego County in 1990, and growth projections for 2000, 2005, and 2015. Over this 25-year period, a 30.3 percent increase in regional employment is projected. MSAs with the highest projected employment levels are Central and North City; by 2000, nearly 60 percent of the jobs in San Diego County are anticipated to exist in these two MSAs. The Central MSA is forecast to experience an annual growth rate of 0.49 percent between 1990 and 2015. However, projections for other community plan areas in the vicinity of the Project Area indicate no expected growth or even a slight decrease in employment totals through the year 2005. This situation is due primarily to the anticipated loss of jobs in the manufacturing sector in the downtown area.

Table 4.4-2. Growth in Total Employment within San Diego County MSAs

Major Statistical Area	1990	2000	2005	2015	1990-2015 Average Annual Growth
North City	387,733	401,598	436,453	482,796	0.89%
South Suburban	75,332	86,068	110,327	145,544	2.69%
East Suburban	134,322	141,283	156,958	177,073	1.12%
North County West	137,230	145,775	163,085	190,267	1.33%
North County East	115,787	124,603	145,699	172,082	1.61%
East County	3,408	3,618	4,103	5,037	1.61%
Central	344,453	349,017	363,442	388,595	0.49%
Centre City[1]	69,422	72,743	80,217	93,946	1.24%
Lindbergh Field[1]	17,330	15,230	15,506	16,032	-0.32%
Midway[1]	18,557	18,016	18,647	20,339	0.38%
Peninsula[1]	30,145	29,856	29,951	30,309	0.02%
Total	**1,198,265**	**1,251,962**	**1,380,067**	**1,561,394**	**1.08%**

Note: [1]Community plan areas.
Source: SANDAG 1995.

Table 4.4-3 shows employment by industry for the county in 1990 and forecasts the employment breakdown by industry for 2000, 2005, and 2015. By 2000, the economy of San Diego County is expected to be based primarily on the services, wholesale and retail trade, government, and manufacturing sectors. The industries projected to show the highest annual growth during this period are services and finance, insurance, and real estate. Agriculture and mining is the only job sector with a projected decline in employment.

4.4.1.3 Income

The San Diego region continues to experience income and earnings rates below both statewide and national levels. This trend of low to moderate earnings began in the late 1960s, with the decline in manufacturing sector employment as a proportion of total employment. Also, a higher cost of living reflects a higher level of inflation for the region than that recorded for the state and nation. This trend continued through the 1980s, with real per capita income growth falling to less than 0.5 percent per year, less than one-half the rate recorded at the state level and one-third the level recorded nationally.

Table 4.4-3. Total Civilian Employment by Industry for San Diego County

Industry	1990	2000	2005	2015	Average Annual Growth
San Diego County					
Agriculture and Mining	18,903	17,829	17,746	17,468	-0.32%
Construction	65,335	61,140	76,154	87,448	1.22%
Manufacturing	141,338	143,443	154,795	157,948	0.44%
Transportation, Communications and Utilities	39,398	41,956	46,278	53,973	1.28%
Wholesale and Retail Trade	256,752	266,969	299,431	358,064	1.37%
Finance, Insurance, and Real Estate	75,901	80,774	91,661	109,796	1.51%
Services	312,623	346,386	383,327	448,979	1.46%
Government	177,004	182,454	199,664	216,707	0.82%
Military	111,011	111,011	111,011	111,011	0.00%
Total	**1,198,265**	**1,251,962**	**1,380,067**	**1,561,394**	**1.08%**

Source: SANDAG 1995.

Household income refers to the total annual income of all members of a household before taxes. To be consistent with Census Bureau procedures, incomes are expressed in 1979 dollars for 1980 and 1989 dollars for 1990. Household income information for the Central MSA as of 1990 is provided in Tables 4.4-4 and 4.4-5. Households with incomes between $35,000 and $49,999 make up the largest portion (18 percent) of the City of San Diego, although household income is fairly evenly distributed between $15,000 and $74,999. Household income for the downtown community plan areas is distributed among lower income groups (see Table 4.4-5).

4.4.1.4 Housing

The San Diego County housing stock increased by approximately 255,000 units between 1980 and 1990. In 1990, there were 946,240 housing units within the Project Area and vicinity. According to 1990 census figures, the largest portion of the housing stock was composed of single- family units (56 percent). Multi-family units accounted for 35 percent of the housing stock in the region. The 1989 total of 24,613 new units (a decline of 12 percent from 1988) represented the lowest housing growth rate since 1984. This slowdown may be attributed to a combination of factors including rising interest

Table 4.4-4. Central MSA Income Data (1990) [1]

Income	San Diego County	City of San Diego	Central MSA
Less than $10,000	11%	11%	20%
$10,000-$14,999	7%	8%	16%
$15,000-$24,999	16%	17%	27%
$25,000-$34,999	16%	16%	22%
$35,000-$49,999	19%	18%	15%
$50,000-$74,999	18%	17%	N/A[2]
$75,000-$99,999	7%	7%	N/A[2]
$100,000-$124,999	3%	3%	N/A[2]
$125,000-$149,999	1%	1%	N/A[2]
$150,000 +	2%	2%	N/A[2]
Total	**100%**	**100%**	**100%**

Notes:
N/A – Not Available.
[1]Expressed in 1989 Dollars.
[2]15 percent of Central Major Statistical Area (MSA) households have household income of $50,000 or greater.
Source: SANDAG 1992b, 1991; United States Census 1990.

Table 4.4-5. Income Data for Community Plan Areas

	Community Plan Areas			
Income	**Centre City**	**Midway**	**Peninsula**	**Lindbergh Field**
Less than $10,000	43.5%	23.8%	6.6%	0.0%
$10,000-$14,999	15.8%	17.6%	6.0%	28.8%
$15,000-$24,999	15.3%	32.1%	15.9%	0.0%
$25,000-$34,999	7.1%	14.2%	13.9%	0.0%
$35,000-$49,999	8.6%	8.7%	17.5%	0.0%
$50,000-$74,999	4.6%	2.2%	17.6%	71.2%
$75,000-$99,999	3.1%	1.2%	10.0%	0.0%
$100,000-$124,999	0.6%	0.1%	4.6%	0.0%
$125,000-$149,999	0.3%	0.1%	2.3%	0.0%
$150,000 or more	1.1%	0.0%	5.6%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: SANDAG 1992b.

rates, a softening of the economy, and/or development restrictions imposed by local growth management policies (City of San Diego 1998a).

The total supply of housing in the Project Area and vicinity is summarized in Table 4.4-6. These data were derived from the 1990 census and future projections were updated by SANDAG in 1995. Regional housing stock is projected to increase by 45 percent between 1990 and 2015, to a total of 1,371,971 units. During this time, the vacancy rate for the San Diego region is expected to decrease from 6.2 percent in 1990 to 3.9 percent in 2000 and then remain relatively stable through the year 2015. The number of housing units for the City of San Diego and the Central MSA is expected to increase slightly between 1990 and 2015 (with annual increases of 1.27 and 0.98 percent, respectively). Anticipated growth in the Centre City housing supply is much higher at approximately 5.12 percent annually (City of San Diego 1998a).

Table 4.4-6. Total Housing Units in the Project Area and Vicinity

Area	1990	2000	2005	2015	Increase 1990-2015	Average Annual Change
San Diego County	946,240	1,054,734	1,158,559	1,371,971	425,731	1.50%
City of San Diego	431,722	473,187	513,371	591,437	159,715	1.27%
Central MSA	219,389	233,400	246,176	279,481	60,092	0.98%
Centre City[1]	6,658	10,001	14,169	24,322	17,664	5.12%
Lindbergh Field[1]	79	79	79	79	0	0.00%
Midway[1]	1,433	1,433	1,433	1,433	0	0.00%
Peninsula[1]	16,247	16,542	16,579	16,766	519	0.13%

Note: [1]Community Plan Areas
Source: SANDAG 1995.

4.4.2 Environmental Impacts

4.4.2.1 Threshold for Determining Significance

Each population, employment, and housing issue has its own respective threshold that measures its impact as either beneficial or adverse. Thresholds for each population, employment, and housing issue are as follows:

- *Population.* Impacts are considered to be neither adverse nor beneficial by themselves. However, any population impacts may have ramifications for other environmental issues. The significance of these other impacts is defined in relevant sections of this document.

- *Employment.* Positive changes in employment are beneficial. Any measurable increase in the unemployment rate for San Diego County is adverse.

- *Income.* Positive changes in income are beneficial. Any reduction in total income is adverse.

- *Housing.* Any measurable reduction in vacancy rates is significant for prospective renters and home buyers. Any measurable increase in vacancy rates is adverse to landlords and home sellers. Any measurable increases in prevailing rental rates or home prices are adverse to renters and home buyers, respectively. Any measurable decreases in these rates or prices are adverse to landlords and home sellers, respectively.

4.4.2.2 Impact Analysis

Population

Employment levels on the order of those anticipated from implementation of the Project would not trigger migration to a region with an economy as large as San Diego. If all jobs generated by the Project were available today, they could be filled by less than 25 percent of San Diego County's present-year unemployed labor force. In fact, jobs anticipated to be generated by the Project are not expected for decades into the future and would represent only a small portion of growth forecasts for the area's economy, which is expected to grow at more than 300,000 jobs over just the next 20 years. Moreover, local planners expect baseline population growth at even more rapid rates, which would increase the labor force in the region available to fill any new employment generated by the Project.

The Project also is not likely to initiate any significant redistribution of population within the region. Planned residential units are few compared to existing supplies in the region and represent a fraction of forecasted levels of future housing starts. Therefore, impacts on population would not occur.

Employment

Onsite employment at full build-out is estimated on the basis of factors derived from traffic studies compiled by the Institute of Transportation Engineers (ITE 1991). In most of these studies, trips associated with various land use categories were counted and related to other characteristics of these land uses, including employment levels, square footage, etc. By using these relationships in combination, it is reasonable to relate employment levels of particular land uses to square footage or other measures of size for these land uses. This method was used to produce the estimates of onsite employment, and the specific factors used are listed in Table 4.4-7.

Table 4.4-7. Estimated Employment at Full Build-Out

Land Use Category	Jobs	Sources and Assumptions
Airport	50	San Diego Unified Port District, 1996.
MWWD Lab	75	ITE[1], utilities, .75 jobs/1,000 sf; 100,000 sf
Hotels/Bed and Breakfast	927	ITE, hotel, .90 jobs/room; 1,000 hotel rooms plus 30 Bed and Breakfast
Golf Course	16	ITE, golf course, 1.82 jobs/hole; 9 holes
Safety Institute	50	Campbell, S., 8/7/96 memorandum
Adult Education	1,739	ITE, community college, 0.26 jobs/student; 6,700 students
Office	2,320	ITE, office park, 3.59 jobs/1,000 sf; 504,000 sf + 30,000 sf on golf course + 32,000 sf civic uses + 80,200 sf in west side park area
Retail	328	ITE, specialty retail, 1.82 jobs/1,000 sf; 180,000 sf
Restaurant	552	ITE, restaurant, 7.46 jobs/1,000 sf; 74,000 sf
Museum	29	ITE, (surrogate) library, 0.92 jobs/1,000 sf; 32,000 sf
Total Jobs	**6,086**	

Notes: [1]Derived from Trip Generation, 1991, 5th edition, ITE; factors shown are rounded to 2 decimal places.
sf = square feet

New construction, renovation, and demolition activities contribute to employment opportunities during the development phase of the Project. Over the lifetime of this construction period, it is estimated that 3,771 full-time equivalent (FTE) construction jobs will be generated (Table 4.4-8). Simultaneously, expenditures for construction materials and services and local spending of wages by construction workers will generate a series of secondary economic impacts in the region. Subsequent rounds of economic activity, whereby local firms and their workers respend these earnings, generate new

Table 4.4-8. Regional Economic Impacts

Impact Category	Total Construction[1]	Annual Reuse[2]
Employment[3]		
Direct	3,771	6,086
Secondary	8,543	10,767
Total	**12,314**	**16,853**
Earnings ($ millions)[4]		
Direct	128.2	156.9
Secondary	233.7	285.2
Total	**361.9**	**442.1**

Notes:
[1]Summed over the entire construction period.
[2]After full build-out.
[3]FTE jobs; direct jobs onsite.
[4]Constant 1996 dollars.

rounds of spending, and so on. This process, known as a multiplier effect, would result in a total employment impact far greater than the 3,771 construction jobs. Altogether, an estimated 12,314 FTE jobs would result from construction activities on the site, including 8,543 secondary jobs. These job totals may not be fully realized until decades have passed, and the employment impact in any given year would be much smaller.

By contrast, the annual employment associated with the Project at full build-out is estimated to total 16,853 FTE jobs. This amount includes a multiplier effect of 10,767 secondary jobs, and an estimated 6,086 direct, onsite positions (Table 4.4-7). Land use categories most responsible for these direct jobs are office (2,320 jobs), education (1,739), and lodging facilities (927). Impacts on employment would be beneficial.

Income

Construction-related earnings associated with the Project would total an estimated $362 million (all monetary figures are in constant 1996 dollars unless otherwise indicated), including $128 million in direct construction earnings and $234 million in earnings related to secondary employment (Table 4.4-8). This sum would accrue in unspecified annual amounts over the entire period of construction.

Direct, onsite jobs would earn a total of $157 million per year after the Project reaches full build-out. In addition to these direct earnings, there would be $285 million annually in secondary earnings, owing to the multiplier effects of the regional economy. Total earnings impacts would be $442 million a year, the sum of these two sources. Therefore, impacts on income would be beneficial

Housing

Housing supply would be increased by the 500 MFH units and 350 market rate units by the Project. This increase is slight compared to the total supply of housing in San Diego. Because almost half of the City's housing is located in the Central MSA of San Diego, the Project would not substantially increase the supply of housing in the local area. Therefore, a small beneficial impact on the supply of housing would occur.

The slight increase in housing supply and no increase in housing demand associated with the Project is not expected to measurably affect either the area's vacancy rates or its housing prices and rental rates by the interplay of these fundamental economic factors. Moreover, no components of the Project appear likely to raise or lower local housing prices by their proximity to existing neighborhoods and land uses. Characteristics of the MFH and market-rate housing units proposed at NTC are being planned to be compatible with and blend into the existing neighborhoods. Therefore, impacts on the demand for housing would not occur.

4.4.3 Mitigation Measures

Implementation of the Project would not result in significant impacts to population, housing, and employment; therefore, no mitigation measures are required.

4.4.4 Impact after Mitigation

No significant impact to population, employment, and housing would occur.

4.4.5 Cumulative Impacts

No significant cumulative impacts to population, employment, and housing would occur as a result of implementation of the Project. Beneficial cumulative impacts would occur

with implementation of the Project and related projects, including economic growth, and increases in employment and personal income as a result of the creation of new jobs. Housing opportunities associated with cumulative projects would result in an improvement in the area's housing shortfall.

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4.5 INFRASTRUCTURE AND UTILITIES

4.5.1 Existing Conditions

Considering the length of the planning horizon for the Project (i.e., 40-year build-out), it is necessary to establish a "future baseline" scenario that corresponds to potential utility services in the Project Area and vicinity at the time potential impacts would be realized. This scenario assumes that the Navy will retain the following facilities: Structure 617 (Microwave Tower), Building 564 (Fleet Intelligence Training Center), Building 600 (Consolidated Area Telephone System Exchange Building), Building 624 (medical/dental clinic), cogeneration plant, and ASW Training Center and its parking area. In addition, existing conditions will assume continued services to all transferred facilities, as well as continued operation of the onsite cogeneration plant under ownership of the Navy (City of San Diego 1998a).

4.5.1.1 Potable Water Supply

San Diego's primary water resources include the Colorado River and the California Aqueduct system; water supply from these sources is imported by the San Diego County Water Authority. Four major aqueducts channel water from the north into a series of reservoirs and local treatment plants in the San Diego area. Water is distributed locally by various public and private agencies.

The Project Area receives its potable water under contract from the City of San Diego. Water is distributed from eight metered locations through a looped system at consumption ranges from 0.33 million gallons per day (mgd) in the winter months to 1.67 mgd in the summer months. The system consists of cast iron lines from 4 inches to 8 inches in diameter. Previous utility studies conducted indicate that the system has adequate pressure and capacity for normal use and fire flow.

The surrounding area receives water from the City of San Diego via a 24-inch diameter transmission line located along West Point Loma Boulevard. This is supplemented by a 16-inch cast iron main located along Midway Drive.

Standard water demand rates for residential uses are 150 gallons per capita/day, 5,000 gallons/day per net acre for commercial use, and 6,250 gallons/day per net acre for industrial uses.

The "extended baseline" scenario assumes the following water system changes will be instituted following closure:

- Water service will remain at buildings retained by the Navy (including medical/dental clinic).
- ASW would require a reconnection to the City of San Diego water line located within Harbor Drive.
- The onsite cogeneration plant would require a new connection to the City of San Diego water line.

4.5.1.2 Wastewater Treatment and Disposal

Approximately 0.82 mgd of wastewater from NTC San Diego was generated during normal operations as a military base. This quantity is based on standard effluent generation rates of 80 gallons/capita/day. Wastewater from the Project Area is treated at the City of San Diego Sewage Treatment Plant in Point Loma. The plant provides primary treatment and currently treats and discharges an average of 170 mgd into the Pacific Ocean 2 miles west of Point Loma. The plant is the primary treatment center for the City of San Diego and operates near capacity under normal conditions. The City is currently evaluating the expansion of the plant from 170 mgd to approximately 240 mgd; these improvements are expected to occur within the next 5 to 10 years.

The Project Area is served by a 96-inch sewer main that runs north-south through the Midway District and operates at a capacity of 100 mgd. The City has recently implemented a two-phase improvement plan to upgrade this portion of the sewer system. The North Metro interceptor increased service capacity to 169 mgd; the New Metro Interceptor extended the existing sewer main to Pump Station 2 at Harbor Drive and increased capacity to 300 mgd.

Wastewater from the Project Area is collected onsite and discharged under contract to the City of San Diego sewer system. Sewer lines at the facility are owned and maintained by either the City or the Navy. City-owned lines include 27- to 30-inch diameter pipes as

well as 8-inch diameter interceptor pipes. Navy-owned sewer lines range in size from 6 to 8 inches and serve as a collector system, connecting to City interceptor lines at various locations. Sewer lines on Camp Nimitz range in size from 6 to 18 inches in diameter. No meters are located on Navy lines; sewer generation is based on water consumption at the Project Area. According to the Utility Baseline Survey, the sewer system is in good condition with adequate capacity.

Upon closure of NTC San Diego, certain facilities would remain with the Navy that would require the continued provision of sewer service. Such facilities include the ASW Training Center, Buildings 564 and 600, Structure 617, and the cogeneration plant (Building 566) located on McCain Road.

4.5.1.3 Stormwater Drainage

Stormwater drainage is managed through a network of drains ranging from 18 to 66 inches in diameter and a 7-foot-wide concrete flume, all of which ultimately discharge into the boat channel. Connector pipes (10 to 18 inches in diameter) and catch basins intercept surface flows and direct them into the main system. Most components of the 40-year-old system are deteriorated and include plugged and broken pipes.

4.5.1.4 Electricity

Electrical power is supplied to the City of San Diego by San Diego Gas and Electric (SDG&E). Electrical service is provided by two SDG&E substations and overhead lines. Existing service to the surrounding area is considered to be adequate to meet the current needs of the community. The Project Area receives electricity from two 12-kilovolt SDG&E distribution lines and a 12-kilovolt tie-line from the onsite cogeneration plant. The SDG&E lines originate from Navy Switching Station "A" and MacDonough Road; the cogeneration plant supplies power from a 23.8-megawatt gas turbine. The electrical distribution system was rebuilt and upgraded in 1986.

4.5.1.5 Natural Gas

SDG&E provides gas service from a regulator station and network of pipes. This system is considered adequate to meet the current needs of the area. The Project Area receives gas service from SDG&E through one capped and four active lines varying in size from

0.75 to 4 inches. These lines are fed by a high-pressure (60 pounds per square inch) gas main located at Rosecrans Street. Buildings 546, 600, ASW, and the cogeneration plant have separate connections to SDG&E service and are metered independently of other buildings.

4.5.1.6 Solid Waste Management

Non-hazardous waste generated by the Project Area is transported to the Miramar Landfill, a City of San Diego sanitary landfill that has been operating on 1,423 acres at MCAS Miramar. Waste reduction and recycling programs implemented by the City of San Diego Environmental Services Department (ESD) are expected to extend the life of the landfill to approximately the year 2011. As of July 31, 1997, the total remaining capacity of the Miramar Landfill was estimated to be approximately 31 million cubic yards. The availability of a new landfill cannot be determined at this time. In addition, the ESD offers services and programs other than landfill disposal, including refuse collection, curbside greens and recyclables collection, other recycling programs, household hazardous waste collection, and waste disposal (City of San Diego 1998a).

During normal operating conditions at NTC San Diego, non-hazardous solid waste was generated by various uses such as training and housing recruits and enlisted personnel and support services such as medical and dental services, storage, and maintenance. Based on the 1989:1995 population ratio and documented solid waste generated at NTC San Diego during fiscal year 1995, it was determined that NTC San Diego generated approximately 15,040 tons of solid waste per year during normal operations as a military base.

4.5.1.7 Steam Production and Distribution

The cogeneration plant located at Building 566 is owned and operated by Fleet Intelligence Training Center Pacific and produces electricity and high-pressure steam at a capacity of 23.8 megawatts. Steam is used by the Navy and MCRD for heating and is distributed through aboveground and underground lines. The direct line to the Project Area is comprised of a 10-inch diameter aboveground line and pressure-reducing valve. Although this system is operable, approximately one-third of the distribution line is in a deteriorated state. As a result, leakage causes inefficient heat distribution and high heating costs. In order to repair the distribution lines, proper removal of asbestos-

containing materials (ACM) will be required. This system is considered to be in adequate condition.

4.5.1.8 Telephone System

The Naval Consolidated Area Telephone System provides telephone service to the Project Area. This system is supplemented by residential and contractor line service from Pacific Bell. Much of the existing telephone system was installed in 1987–1988 and is in good condition.

4.5.2 Environmental Impacts

4.5.2.1 Threshold for Determining Significance

Interruption or disruption of utility services could occur as a result of physical displacement and subsequent relocation of public utility infrastructure during Project implementation. Such impacts would be considered significant if the result would be a direct long-term service interruption or permanent disruption of essential public utilities. In addition, a significant impact would occur if an increase in demand for utility service is beyond the capacity of the utility provider.

4.5.2.2 Impact Analysis

Potable Water Supply

Potable water demand resulting from the redevelopment of the Project Area is estimated to be 1.43 mgd (City of San Diego 1998a; Department of the Navy 1998). Water demand was estimated using the figures presented in Table 4.5-1.

Table 4.5-1. Water Demand

Land Use	Gallons/Day
Residential	150 gallons/capita/day
Fully Landscaped Park	4,000 gallons/net-acre/day
Commercial and Institutional	5,000 gallons/net-acre/day
Industrial	6,250 gallons/net-acre/day

Note: Net acre equals 80 percent of the gross acres or (0.80) times (gross acre).
Source: City of San Diego 1998a.

Although there would be a decrease in water demand at build-out compared to historical demand from a fully operating military base (which is approximately 1.6 mgd during the winter months), the City Water Utilities Department has expressed concern about the age and material of pipes that exist onsite. It is anticipated that the City of San Diego would take over the ultimate ownership, operation, and maintenance of the water system. The internal system does not include separate meters for each individual building. Therefore, parcelization of the property would entail installation of meters and related system modification. This would not result in a long-term service interruption or permanent disruption of service and, therefore, would not result in a significant impact. In addition, it is anticipated that most of the water lines would need to be relocated to accommodate new buildings so the buildings are not located above existing lines. Any redevelopment of the site would have to comply with the City's policy, which requires replacement of utilities with lines made of approved materials and relocation of water lines so they are not beneath structures or buildings. In addition, prior to the approval of any improvement plans proposed by a private developer, a water study must be prepared per City of San Diego Design Guide Standards. The study must analyze the subject implementation activity's proposed water system as well as the adequacy and capacity of the existing water facilities that would serve the implementation activity (City of San Diego 1998a).

City policies also require that any connection with the potential to allow back flow into the City's potable water system must be corrected prior to connection to the City's water line. Cross connections at the Project Area have the potential to allow back flow into the City's system and, therefore, must be corrected. The new land owner would be responsible for correcting these cross connections (City of San Diego 1998a).

Based on existing surrounding water infrastructure capacity, the City Water Utilities Department estimates that rehabilitation, relocation, and subsequent demand of the potable water system could be accommodated, and disruption of service to existing service areas would not occur. Therefore, impacts to the potable water supply or distribution system would not occur (City of San Diego 1998a).

Wastewater Treatment and Disposal

Estimated wastewater generation is presented below. These quantities are based on standard sewage effluent generation rates of 80 gallons/capita/day. The population figures in Table 4.5-2 were used to determine non-residential population per acre (capita).

Table 4.5-2. Non-Residential Land Use

Land Use	Equivalent Population (Population/Net Acre)
Schools/Public	31.2
Offices	38.2
Commercial/Hotels	43.7
Industrial	62.5

Source: City of San Diego 1998a.

The Project would result in the generation of an estimated 1.0 mgd of wastewater. As such, there would be an increase in wastewater generation compared to the 0.82-mgd generation during normal operations (City of San Diego 1998a; Department of the Navy 1998). The City of San Diego will take over the ultimate ownership, maintenance, and operation of the sewer system. The City may desire certain corrective actions, including relocation of sewer lines that are located beneath buildings and correction of any connections with storm drains. It is expected that the City (or private land owner) will be responsible for compliance as a condition of property lease or transfer. Similar to the potable water system, the City Water Utilities Department has expressed concern about the age and material of the sewer pipes that exist onsite. Any redevelopment of the site would have to comply with the City's policy to replace dated utilities with lines made of approved materials and relocate sewer lines so that they are not beneath structures or buildings. In addition, prior to the approval of any improvement plans proposed by a private developer, a sewer study must be prepared per City of San Diego Design Guide Standards. The study must analyze the implementation activity's proposed sewer system as well as the adequacy and capacity of the existing sewer facilities that would serve it. This study may be conducted in conjunction with the water study described previously (City of San Diego 1998a).

Sewage capacity for the area is 300 mgd. In addition, the Point Loma Wastewater Treatment Plant has plans to expand its capacity by an additional 240 mgd within the next 5 to 10 years. Therefore, the incremental generation of wastewater from the Project Area would not result in the need to expand the wastewater treatment and disposal system. Interruption to existing service areas would not occur as a result of rehabilitation or replacement of sewer lines onsite. Therefore, impacts on the wastewater treatment and disposal system would not occur (City of San Diego 1998a).

Stormwater Drainage

The City of San Diego Storm Drain Section does not anticipate a negative impact to existing capacity of the storm drain system either onsite or in the surrounding area as a result of redevelopment of the Project Area. Once detailed plans for individual parcels have been prepared, certain corrective actions may be required. Corrective actions may include relocation of storm drains located beneath buildings and removal of any storm drains connected to the sewers and redirection of the stormwater flows to the storm drains. In addition, the City or private individual parcel developers would be required to meet standard level of service requirements and all stormwater management regulations for water quality and peak runoff rates. Rehabilitation or replacement would not result in a long-term service interruption or permanent disruption of service to the surrounding community (City of San Diego 1998a). Therefore, impacts on the storm drain system would not occur.

Electricity

There are portions of the Project Area which, because of previous uses such as barracks, may be below the power demand of civilian uses. In these cases, the distribution system would need to be either reinforced or replaced. Other areas that have had uses similar to civilian activities, such as office or classrooms, have a distribution system that could serve without major modification (City of San Diego 1998a).

SDG&E has indicated that the existing infrastructure of substations and utility lines in the surrounding area would provide adequate service to proposed implementation activities. In addition, it is not expected that the surrounding community would experience disruption in their service as a result of redevelopment of the Project Area (City of San Diego 1998a; Department of the Navy 1998).

Ultimate ownership of the electrical system onsite is contingent upon the use of the Project Area (i.e., single versus multiple property owners) and whether or not users would need to be individually billed for electricity. The proposed hotels are expected to have the highest demand for electricity compared to each of the other implementation activities. However, SDG&E has indicated that the provision of electricity to individual parcel owners could be accomplished easily (City of San Diego 1998a). Therefore, impacts on electric utilities would not occur.

Gas

The gas system only serves a small portion of the Project Area and would need to be expanded. SDG&E does not anticipate any difficulty supplying service for the redevelopment of the property. The offsite infrastructure is capable of supporting a high gas demand. Existing infrastructure capacity for gas services is adequate to serve the estimated usage of the Project. Connection to the service provider for gas could be accomplished (City of San Diego 1998a; Department of the Navy 1998). Therefore, impacts on the gas system would not occur.

The existing onsite gas facilities for the MFH site would need to be replaced by a new distribution system to adequately service the proposed housing. SDG&E would design, construct, and maintain gas facilities for the site if an access easement is granted to SDG&E. SDG&E could also supply gas facilities to the site within a dedicated public right-of-way. All construction, maintenance, and financing would be the responsibility of the Navy if access is not granted to SDG&E (Department of the Navy 1998).

Solid Waste Management

Demolition of buildings onsite would result in an increase in the amount of waste disposed at the Miramar Landfill. Depending on the material and age of the buildings proposed for demolition, as much as 80 percent of the material could be recycled. Because there is a local and regional demand for recycled construction material, it is assumed that, when possible, material from demolition activities would be recycled. Therefore, it is anticipated that demolition of buildings onsite would not significantly impact the landfill capacity.

Table 4.5-3 presents the City of San Diego's solid waste generation rates that are applicable to the Project.

Table 4.5-3. City of San Diego Waste Generation Rates

Land Use	Amount
Residential	Tons/Dwelling Unit/Year
Single Family	2.0
Multi-Family	1.2
Commercial/Industrial	Tons/Square Foot/Year
General Retail	0.0028
Hotels/Motels	0.0045
Office	0.0017
Manufacturing	0.0059
Transportation	0.0085
Education	0.0013
Unclassified Services	0.0042

Based on the generation rates presented in Table 4.5-3, the Project would generate 9,994 tons per year of solid waste compared to the generation rate of 15,040 tons per year during normal military base operating conditions. The decrease of solid waste would increase the anticipated service life of the Miramar Landfill. Therefore, redevelopment of the Project Area would not affect the City's development of disposal capacity or exacerbate the need for additional landfill space (City of San Diego 1998a). Therefore, impacts would be less than significant.

California law now requires a 50 percent reduction in the disposal of solid wastes by the year 2000 to be accomplished through composting, recycling, and reducing the generation of solid wastes. It is assumed that as part of the City's maintenance of the Project Area, a portion of waste generated onsite would be recycled. This would reduce the amount of waste that requires disposal in the City landfill (City of San Diego 1998a).

Steam Production and Distribution

The cogeneration plant onsite is served by water, sewer, and gas services and distributes power and steam. The steam lines pass through the Project Area. The cogeneration plant would be retained by the Navy to provide service to ASW Training Center and MCRD, while distribution lines located on the Project Area would be transferred to the City as a "disclosable" item; therefore, necessary repairs to the distribution lines would be the

City's responsibility. Water, sewer, and gas services must continue to be supplied to the cogeneration plant. Impacts associated with continued use of the cogeneration plant would not occur.

Telephone System

Once NTC San Diego property is transferred to the City of San Diego, the telephone system would need to be upgraded and/or replaced to allow Pacific Bell to provide service. Details of the telecommunications system would be finalized between representatives from the City of San Diego, the Navy, and Pacific Bell. Any expenditure for trunk lines, switching stations, or other upgrades or services would be borne by the utility provider and funded with the revenue generated by the service. Pacific Bell has indicated that the capacity of existing offsite telecommunication infrastructure is regularly monitored and capacity could be increased with no disruption of surrounding service areas (City of San Diego 1998a). Therefore, telephone system impacts would not occur.

4.5.3 Mitigation Measures

Implementation of the Project would not result in significant infrastructure and utilities impacts; therefore, no mitigation measures are required.

4.5.4 Impact after Mitigation

No significant impact to infrastructure and utilities would occur.

4.5.5 Cumulative Impacts

The cumulative demand placed on public infrastructure and utilities would not result in an adverse increase in service capacities since implementation of the Project would not encourage growth in an area that is not already serviced. Redevelopment of the Project Area in conjunction with the implementation of cumulative projects would only result in an incremental increase in demand for infrastructure and utilities that would be accommodated by local service providers. Therefore, cumulative impacts from implementation of the Project would not occur.

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4.6 BIOLOGICAL RESOURCES

4.6.1 Existing Conditions

A warm climate and cool coastal waters provide a benign and productive environment for marine mammals, waterbirds, fish, and aquatic invertebrates in San Diego Bay, which is the largest coastal bay in southern California. The San Diego Bay has a highly modified estuarine ecosystem and human dredging activities have eliminated most marshlands and other shallow tidal habitats from the northern half of the bay.

The bay is still a significant interface between terrestrial and marine habitats; water depth (intertidal, subtidal, deep water), substrate composition, salinity, and shoreline features (natural versus developed) are important features influencing animal species composition and abundance (City of San Diego 1998a).

Biological resources consist of plant communities and wildlife habitats located in the Project Area. In addition, San Diego Bay, to some extent, would be influenced by the Project.

4.6.1.1 Terrestrial Biology

Vegetation Communities

The Project Area is located primarily on highly disturbed land. Naturalized open space (e.g., wetlands) comprises 81.5 acres of the Project Area and includes the following habitats: ruderal, freshwater marsh, disturbed ephemeral wetland, subtidal estuarine open water habitats, and rocky shoreline (Figure 4.6-1). These habitats have been altered by human activities (City of San Diego 1998a).

Ruderal Habitat. Ruderal habitat comprises approximately 43 acres of the Project Area and includes a 10-acre area that formerly served as a nesting area for the federal and state endangered California least tern; an offsite location within San Diego Bay to accommodate the California least tern was agreed upon by the SDUPD and USFWS. The habitat supports annual or introduced species such as garland chrysanthemum *(Chrysanthemum coronarium)*, slender-leafed iceplant *(Mesembryanthemum nodiflorum)*,

and spurrey *(Spergula arvensis)*. The California horned lark *(Eremophila alpestris actia)*, a state species of special concern, is known to use this area.

Freshwater Marsh. Two small seasonal freshwater marsh areas totaling 0.3 acre have been created by human activity in the northern area of Camp Nimitz. The habitat supports southern cattail *(Typha domengensis)*, umbrella plant *(Cyperus alternifolius)*, and rabbitfoot grass *(Polypogon monspeliensis)*.

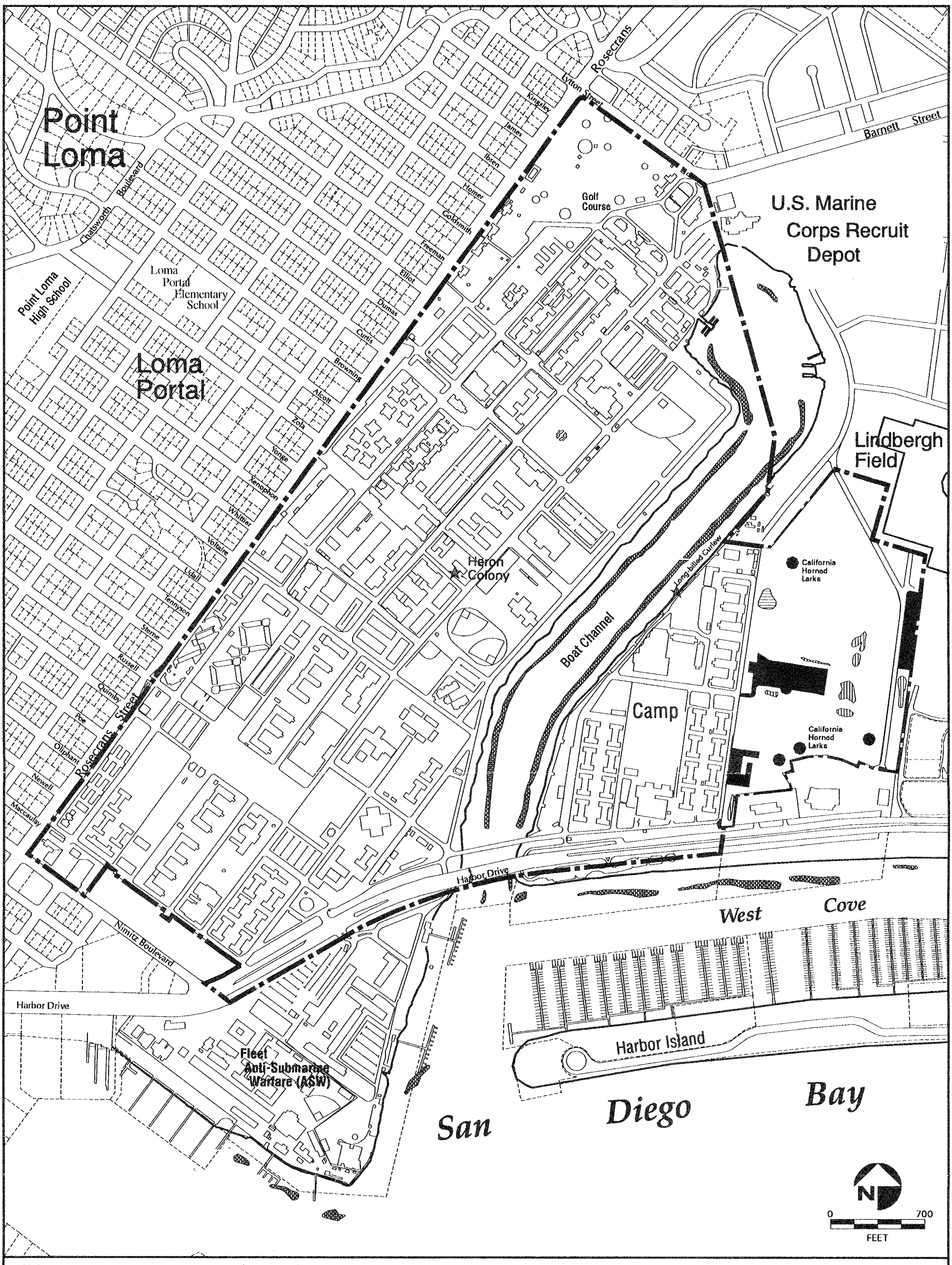
Disturbed Ephemeral Wetland. An area 1.18 acres in size to the southeast of the ruderal habitat is characterized as a disturbed ephemeral wetland; common vegetation includes umbrella plant, rabbitfoot grass, *Tamarix* spp., grass poly (*Lythrum hyssopifolia*), and pickleweed (*Salicornia virginica*).

Subtidal Estuarine Open Water. Subtidal estuarine open water comprises 52.7 acres of the boat channel and includes mud and sand flats, subtidal zones, and artificial deep water. This habitat also includes approximately 6.7 acres of eelgrass, which is typically distributed along both sides of the boat channel in underwater beds above 10 feet in depth. Other types of vegetation are largely absent from the banks of the boat channel; these open mud and sand areas are frequently used by birds for roosting and foraging. The deep-water portion of the habitat is maintained by dredging; this area provides safe supports for submerged plants, schooling fish, and bottom-dwelling invertebrates that are food sources for birds.

Rocky Shoreline. Rocky shoreline has become a common terrestrial habitat since "rip-rap" materials are used along the entire length of the boat channel for protective measures. This material has a steep profile and does not easily support vegetation; however, features of the rocks and other artificial elements (such as pilings or docks) provide roosting sites for various birds.

4.6.1.2 Sensitive Biological Resources

Sensitive terrestrial species that have been detected in the Project Area are listed in Table 4.6-1. Priority species are those that are federally or state listed, proposed species, and federal candidate species that are listed as category one. Other sensitive species include all federal candidate species that are listed as category two. Sensitive plant communities are those that are considered rare within a region, support sensitive plant or



Habitat

- Freshwater Marsh
- Disturbed Wetland
- Ruderal Habitat
- Developed

Sensitive Species

- Eelgrass

Base Map Legend

- Project Area Boundary
- Road Rights-of-Way*
- Parcels*

Sources: Eelgrass data from San Diego Bay Eelgrass Habitat Database, Southwest Division; Habitat and species data from field surveys conducted August 1994.

OGDEN

Biological Resources at the Project Area

FIGURE 4.6-1

/net/tonga/hawaii/ntc/plots/figures/bio_2.aml

10/18/99

Table 4.6-1. Sensitive Species Detected at the Project Area

Scientific Name	Common Name	Federal Status[1]	State Status[2]
Ardea herodias	great blue heron	---	SC (rookery)
Casmerodius albus	great egret	---	CDF Sensitive (rookery)
Eremophila alpestris actia	California horned lark	---	SC
Falco peregrinus anatum	American peregrine falcon	FD	SE
Gavia inmer	common loon	---	SC
Numenius americanus	long-billed curlew	---	SC
Pandion haliaetus	osprey	---	SC (nesting)
Pelecanus occidentalis californicus	California brown pelican	FE	SE
Phalacrocorax auritus	double-crested cormorant	---	SC
Sterna antillarum browni	California least tern	FE	SE
Sterna elegans	elegant tern	---	SC

Notes: [1]Federal Status Codes:
FD = Federally delisted
FE = Federally listed, endangered
[2]State Status Codes:
CDF – California Department of Fire/Forestry
SC = Species of special concern
SE = State-listed, endangered.
Source: Ogden 1995a, 1994; USFWS 1999; CDFG 1998.

animal species, or are protected by state or federal agencies. The California Natural Diversity Database has designated certain plant communities as rare; these communities are given highest priority for protection by state resource agencies (City of San Diego 1998a); however, these communities have no regulatory status under the federal Endangered Species Act unless occupied by a listed species or designated as critical habitat. The occurrence of sensitive species in non-sensitive habitats increases the value of those habitats. No sensitive terrestrial plant species were detected in the Project Area. Due to the high levels of disturbance in naturalized terrestrial habitats, sensitive plants are not expected to occur.

Sensitive wildlife species were identified by several water-based and land-based surveys. Bird surveys were conducted by Ogden during December 1993 and 1994 in conjunction with a Navy-commissioned waterbird study of the central bay, and two general land surveys were conducted by Ogden on 25 August 1994 and 22 June 1995. These studies identified approximately 14,000 birds, most of which were ducks, American coot, and bufflehead. A total of 11 species detected in the Project Area during the surveys are

currently considered sensitive by federal and state agencies; these include 2 federal- and 3 state listed endangered species, 1 federally de-listed species, 6 state species of special concern, and 1 California Department of Fire/Forestry (CDF) sensitive species. Federally listed sensitive species are described below.

Pelecanus occidentalis californicus
California brown pelican
USFWS: Endangered
CDFG: Endangered

California brown pelicans are found primarily in estuarine, marine subtidal, and marine pelagic waters, especially within 12 miles of shore, but regularly up to 100 miles from shore. Nesting colonies occur on the Channel Islands and on the Coronado Islands. Pelicans are common along the coast throughout the year. The brown pelican requires rocky cliffs, jetties, sandy beaches, or mudflats for roosting and open water for foraging. Its primary food in southern California is northern anchovy and it also feeds on crustaceans, carrion, and other fish. The brown pelican population declined in the 1960s due to the introduction of pesticides such as DDT into the food chain. Current threats include oil spills and entanglement in fishing tackle. The brown pelican is very common in North San Diego Bay; they were observed roosting on structures such as piers, light poles, and buoys throughout North San Diego Bay, including the boat channel (City of San Diego 1998a).

Sterna antillarum browni
California least tern
USFWS: Endangered
CDFG: Endangered (nesting colonies)

California least terns breed from San Francisco Bay south to Baja California. In San Diego County, this species is a fairly common summer resident from early April to the end of September. Wintering areas are along the Pacific coast of South America. This small migratory tern nests colonially on undisturbed, sparsely vegetated, flat areas with loose, sandy substrate adjacent to open water foraging areas. Human disturbance has displaced the California least tern from much of its traditional nesting habitat. Few undisturbed beach nesting areas remain and California least terns are now found in varied habitats ranging from mudflats to airports. Breeding California least terns begin nesting

in mid-May and June. California least terns abandon the nesting colonies by mid-August and migrate south by mid-September. California least terns exhibit a tenacity to the colony site where they first breed successfully. Prey includes northern anchovy, topsmelt, killifish, mosquitofish, shiner, surfperch, and mudflat gobys. The California least tern is known to breed in San Diego Bay during the summer months. The Navy formerly maintained a 10-acre California least tern nesting colony and 15-acre buffer zone on Camp Nimitz. The California least tern colony supported 13 pairs of California least tern in 1994, 5 pairs in 1995, and 0 pairs in 1996. California least terns are also known to feed in the boat channel to a limited extent. In addition, 18 California least terns were observed and recorded forging in the boat channel during the 1993 and 1994 surveys (City of San Diego 1998a).

In addition to federally listed sensitive animal species, several state listed sensitive species are known to occur in the vicinity of the Project Area: American peregrine falcon (*Falco peregrinus anatum*), common loon (*Gavia inmer*), double-crested cormorant (*Phalacrocorax auritus*), long-billed cerlew (*Numenius americanus*), great blue heron (*Ardea herodias*), osprey (*Pandion haliaetus*), Elegant tern (*Sterna elegans*), and California horned lark (*Eremophila alpestrisactia*). Additionally, the great egret (*Casmerodius albus*) is a CDF sensitive species. An active nesting colony of approximately 20 to 30 herons was detected in three large rusty-leaf fig trees *(Ficus rubiginosa)* on the west side of a fast-food restaurant at the corner of Worden and Cushing Roads.

4.6.1.3 Marine Biology

The marine environment of the Project Area is comprised of the boat channel, which bisects the facility in a north-south direction. The channel measures approximately 4,922 feet long by 558 feet wide at an average centerpoint depth of 15 feet. As a result of shoaling (i.e., sediment movements), the boat channel entrance to the Bay may be shallow (City of San Diego 1998a). The Harbor Island basin and Bay entrance are located to the south of the facility. Water depth in the northern Bay ranges from 20 feet in the marinas to 48 feet in the navigational channel, and the bottom is comprised of soft mud. Sediments vary considerably with location and are often interspersed with hard substrate (usually associated with the shoreline, piers, or mooring buoys). The shoreline is generally stabilized with rock rip-rap.

The extent of flushing through tidal exchange is the most important factor affecting the biota of a bay or inlet. Limited tidal exchange affects levels of salinity, oxygen, nutrients, temperature, and pollutants and causes stress to biota. The physical characteristics of the boat channel (i.e., long and thin configuration with shallow sill) suggests that little tidal flushing occurs. Elevated levels of contaminants such as tributyltin and copper have been observed in the water of North San Diego Bay (City of San Diego 1998a) and may be present in the boat channel. Contaminants are also known to occur in hard and soft substrates of the Bay and boat channel, which include rocks, sandstone, and unconsolidated sediment such as sand or mud.

Organisms inhabiting hard substrate may be permanently attached (e.g., barnacles, mussels, and algae), be motile but able to cling tightly to the substrate surface (e.g., limpets), or use the crevasses among the rocks as refuge (i.e., fish and lobsters). This biota associated with soft substrates may live beneath the surface (infauna including marine worms, crustaceans, and mollusks), live on the surface (epibiota including crustaceans, mollusks, and echinoderms), or grow from it by means of some type of attachment system (e.g., eelgrass or algae). Some sediments of North San Diego Bay are contaminated, particularly those deposited by storm drain outfalls. A number of storm drains empty into the boat channel from a number of non-point sources; these drains may have deposited contaminated sediments (City of San Diego 1998a).

4.6.1.4 Marine Vegetation Communities

Approximately 2.76 acres of eelgrass are present within the boat channel at depths of minus 2 feet to minus 12 feet near mean lower low water. Eelgrass is considered a sensitive habitat due to its use by small schooling fish such as anchovies, topsmelt, and pipefish. This habitat is protected by Section 404 of the Clean Water Act. Alteration of this habitat by activities such as dredging and filling is regulated by the United States Army Corps of Engineers (ACOE) and would be evaluated by the National Marine Fisheries Service, USFWS, and CDFG. This vegetation community provides shelter and food for a variety of organisms, including algae, invertebrates, fish, and birds. Additionally, eelgrass is a foraging habitat for waterbirds, particularly terns. In conjunction with commensal bacteria, eelgrass beds can "fix" atmospheric nitrogen, which may enhance productivity of other organisms such as macroalgae and phytoplankton (City of San Diego 1998a).

Invertebrates

North San Diego Bay has a variety of invertebrate communities represented by numerous species, primarily fouling, soft-bottom epibiota, and soft-bottom infauna (City of San Diego 1998a). The fouling community is dominated by sponges, coelenterates, bryozoans, polychaete worms, crustaceans, mollusks, and tunicates that occur on concrete and wooden pier pilings in the northern Bay (Ford *et al.* 1975). Epibiota and infauna are dominated by polychaete worms, crustaceans, and mollusks. Various large invertebrates, including the California spiny lobster, are known to occur within eelgrass beds and structural elements (City of San Diego 1998a).

Fish

North San Diego Bay supports a wide variety of fish, including black croaker, the California halibut, diamond turbot, and three species of bass (kelp, barred sand, and spotted sand bass) (City of San Diego 1998a). It is likely that the vertebrate biota of the boat channel resembles that of the north end of the Bay, particularly in the eelgrass meadows.

4.6.2 Environmental Impacts

4.6.2.1 Threshold for Determining Significance

In general, the primary criteria for determining significance are the sensitivity ratings assigned to certain biological resources by the federal and state resource agencies (e.g., ACOE, USFWS, California Department of Fish and Game [CDFG]), the regional sensitivity of the resource, local significance criteria (City of San Diego Significance Determination Guidelines), and the degree to which the resource may be affected.

Sensitive biological resources are categorized into high, moderate, and lower sensitivity ratings. As discussed above, significance thresholds are based in large part on the current regulatory status of the resource. Therefore, by grouping resources with equivalent or similar regulatory status, significance criteria can be established that apply to all resources within a group. For example, most impacts on high sensitivity groups (e.g., wetlands, federally and state listed species) are considered significant, while a determination of significance for impacts on the moderate (e.g., non-sensitive natural habitats, state species

of concern) and lower sensitivity groups (e.g., locally sensitive species) will be more dependent on site-specific factors (e.g., population size, habitat quality), and the magnitude and nature of the impacts (e.g., temporary versus permanent). Specific significance thresholds are defined in the following analysis of vegetation communities and sensitive plants and animals.

Sensitive Habitats

Wetlands. Wetland habitat at the Project Area includes freshwater marsh, disturbed ephemeral wetlands, and subtidal estuarine open water habitat types. The disturbed ephemeral wetlands are considered Urban Drainages by the City of San Diego's Significance Determination Guidelines, since they were created by urban runoff and are not natural. Subtidal estuarine open water comprises 52.7 acres of the boat channel and includes mud and sand flats, subtidal zones, and artificial deep water. Wetland habitat is considered a sensitive and declining resource by several regulatory agencies, including the USFWS and CDFG. The ACOE also exerts jurisdiction over "waters of the United States," which includes vegetated wetlands and unvegetated drainages. ACOE policies of "no net loss" of wetland habitat require that impacts to wetlands be mitigated by in-kind creation of wetland habitat at a ratio typically greater than 1:1. In accordance with ACOE policies, most direct and indirect impacts on wetland habitat and unvegetated waters of the United States are considered significant. The City's Significance Determination Guidelines do not consider urban drainages to be significant biological resources unless they provide substantial habitat value to native species or if the drainage acts as a wildlife corridor.

Non-Sensitive Habitats

Developed Land. The Project Area is comprised primarily of highly disturbed and developed lands. Developed lands and disturbed habitat have little, if any, native vegetation and do not generally support any sensitive biological resources. Therefore, impacts on this habitat are generally considered less than significant.

Rocky Shoreline. Sections of rocky shoreline occurring along the boat channel are primarily man-made structures (rip-rap) that function as erosion control structures. Despite their man-made origin, these segments of the boat channel support some biological values, primarily by providing roosting and foraging habitat for waterbirds.

Sensitive Plant and Animal Species

Federally and State Listed Species, Species Proposed for Listing, and Federal Candidate Species. Because of their overall rarity and conservation status, any direct or indirect impact on these species that substantially reduces the likelihood of maintaining a sustainable habitat would be significant.

State Species of Concern. In determining impacts and levels of significance, factors considered for the less sensitive species were evaluated for each species individually. These factors include relative population size (if known), expected population density, overall distribution and abundance within the local area and surrounding region, and projected direct and indirect impacts on suitable habitat. In general, some loss of suitable habitat for less sensitive species can occur without the impact being considered significant. A determination of whether a habitat is important or essential is based in part on whether the species is expected to breed in that habitat and on the distribution and relative abundance of the species within the habitat. If a project substantially alters or negatively affects essential habitat or an important population of a less sensitive species, the impact is considered significant.

Definition of Impact Type

The Project could result in two types of impacts: direct impacts and indirect impacts. Direct impacts may be short term or long term, occurring where biological resources are altered or lost during the course of Project implementation and operation. Examples of direct impacts include grading or brushing of vegetation, filling drainages, and loss of wildlife foraging or nesting areas. Direct impacts are defined by the expected grading limits. This impact analysis is based on the worst-case scenario, which assumes that all biological resources within the area expected to be graded would be lost.

Indirect impacts occur when project-related activities affect biological resources in a manner other than a direct loss of the resource. Noise, lighting, erosion, siltation, substantial reduction in water quality, dust, and increased human activity in or directly adjacent to sensitive habitat areas are examples of potential indirect impacts. Indirect impacts resulting from the proximity of construction and operation generally are considered to affect habitats and species within 200 feet of the development edge.

Several studies have documented the reduction in habitat function and value due to edge effects that can be detected within 200 feet from the edge of intensely utilized development.

4.6.2.2 Impact Analysis

With respect to potential impacts to federally listed threatened and endangered species, the Navy has consulted with the USFWS regarding the need for a Biological Assessment (BA) under Section 7 of the Endangered Species Act. The USFWS has concurred with the Navy's position that disposal of the property would not result in a "may effect" to the California least tern. Therefore, only an informal consultation was required and the preparation of a BA was determined not to be necessary.

The following analysis of impacts applies to construction and operations associated with redevelopment of the Project Area. Potentially affected biological resources include sensitive habitats, as well as plant and animal species.

Terrestrial Environment

Direct and indirect impacts on the terrestrial environment of the Project Area would primarily be associated with disruption or displacement of foraging, breeding, and roosting habitat of waterbird species as a result of development, as described below.

Impacts on Waterbird Species

Human Disturbance of Roosting and Foraging Habitat. The boat channel has been documented as a valuable resource area for various species of waterbirds. Nearly 14,000 waterbirds were cumulatively recorded during 48 surveys in 1994. The primary activity of these birds using the boat channel and shoreline was foraging and roosting. Relative to other areas of North San Diego Bay, the boat channel is categorized as having very high waterbird use (City of San Diego 1998a). This high use is likely because the channel is a sheltered area during poor weather conditions and under Navy operations is restricted to minimal human access (military personnel only).

Redevelopment of the Project Area would allow for substantially increased human access to the channel and shoreline during construction and implementation of proposed land

uses. Construction of proposed land uses adjacent to the channel may include hotel facilities (up to 1,000 rooms), recreational facilities, an MWWD lab, a public safety institute, and public trails along the channel. Construction activities would result in a significant impact to waterbird species.

Numerous studies have indicated that several waterbird species, such as ducks and shorebirds, are highly sensitive to moderate to high levels of human presence/activity (City of San Diego 1998a). Increased human presence along the channel would likely deter certain waterbird species from using the channel when humans are present. The species likely to be most affected are ducks (the most common species using the channel), bufflehead, grebes, foraging herons, cormorants, shorebirds, and brown pelican. These species account for the majority (88 percent) of the individuals recorded using the channel.

Roosting and foraging habitats are a limiting resource for many waterbird species in north San Diego Bay due to the developed condition and intense human use of this portion of the bay. Although the boat channel would not be directly impacted by redevelopment, the indirect effects of the adjacent land uses and increased human presence would substantially reduce the biological value of the channel for the dominant waterbird species known to use the channel. However, the Port District and the Navy have initiated a baywide Natural Resources Management Planning Program that would address indirect and cumulative impacts to waterbird habitats in the San Diego Bay. The program would evaluate and determine the accuracy of all existing data that has been collected for San Diego Bay. The program would also provide management recommendations to protect the natural resources of San Diego Bay on both Port District and Navy tidelands properties. Although the program was not conceived with the redevelopment of the Project Area in mind, the Project Area would benefit from this ongoing program because the program would address impacts to and management of waterbirds that use the boat channel and San Diego Bay adjacent to the Project Area. The Project would need to address indirect and cumulative impacts consistent with the Natural Resource Management Planning Program and CEQA requirements when detailed development plans are available. Until these plans are available, it is assumed that indirect impacts from the redevelopment of the Project Area would be potentially significant.

Loss of Heron Breeding and Roosting Trees. Three large ornamental trees at the corner of Worden and Cushing Roads support a nesting colony of great blue heron and black-

crowned night heron. Nesting herons are considered a sensitive resource by the resource agencies. The retention of the nesting trees is not specifically mentioned in the NTC Redevelopment Plan. Under the full build-out scenario, the trees would not be conserved and the heron nesting colony would be displaced. Loss of the heron colony would result in a significant impact.

Wetland Habitat. Three small areas within Camp Nimitz support wetland vegetation due to runoff from adjacent existing facilities onto ruderal (i.e., disturbed) habitat. This wetland vegetation (totaling 1.48 acres) would be lost under redevelopment. The loss of a minor amount of wetland vegetation is covered under the Clean Water Act, as Nationwide Permit program (Nationwide Permit 18b - Minor Discharges or Nationwide Permit 38 - Cleanup of Hazardous and Toxic Waste). The impact to wetlands would not be significant for the following reasons: 1) the habitat is a small area; 2) the habitat is located within ruderal areas of a developed area; 3) the habitat was artificially created and is maintained by runoff from adjacent facilities; and 4) the habitat does not provide biological value.

Marine Environment

Direct and indirect impacts on the marine environment of the Project Area would primarily be associated with boat channel habitats, most notably eelgrass habitat. Temporary indirect impacts would result from construction activities. These impacts are detailed below.

Runoff. The major long-term impact on the marine environment would be from runoff. With respect to irrigated parkland and landscaping, the potential introduction of nutrients, pesticides, and herbicides into the boat channel exists. With respect to rainfall runoff, impacts may include increased runoff from paved areas that may carry hydrocarbon pollutants into the boat channel. Both rain and irrigation runoff have the potential to carry contaminants from the redevelopment area into the boat channel and to change the physiochemical nature of the boat channel. Nutrients from fertilizers have the potential to produce plankton blooms, which may change the food-chain dynamics of the boat channel. Contaminants carried by runoff may be incorporated by the biota, incorporated into the sediment of the channel bottom, suspended in the water column, or flushed out of the channel into North San Diego Bay. The introduction of freshwater into the channel may change the salinity profile of the channel. It is unknown how long natural tidal

the channel into North San Diego Bay. The introduction of freshwater into the channel may change the salinity profile of the channel. It is unknown how long natural tidal flushing would return the channel to its ambient state either in terms of salinity profile or pollutant load. Flushing is limited due to the silt at the entrance to the channel and the channel may act as a contaminant sink. It is not known how changes in the physiochemical nature of the boat channel would affect the density and distribution of eelgrass beds. Changes in the nature of runoff in terms of volume and chemical constituents would result in a significant impact on eelgrass beds.

The present state of development of the western portion of the Project Area is similar to the proposed land uses: the amount of runoff draining into the boat channel would be similar to the volume now draining the Project Area. With respect to recreational/golf course uses, this implementation activity would result in potentially significant impacts to the boat channel as a result of fertilizer, pesticide, and herbicide contaminants.

The area designated for airport expansion would be paved for tarmac and/or car parking lots. Leaking fuel or engine oil from aircraft or ground vehicles may produce hydrocarbon pollution in the boat channel by way of storm drains. This contamination may be of a seasonal nature since it is primarily dependent on the rainfall observed for a discrete area. This runoff impact would be considered significant.

4.6.3 Mitigation Measures

The following measures are required to mitigate potentially significant impacts to below a level of significance and ensure compliance with the City of San Diego Resource Protection Ordinance. Future developments within the NTC San Diego or 430-acre portion of Project Area shall incorporate or comply with the measures provided below to the satisfaction of the City Environmental Review Manager prior to discretionary approval or issuance of land development permits. The City Environmental Review Manager shall verify that future project plans have incorporated or complied with the following measures:

Terrestrial Environment

1. Regarding waterbird (waterfowl, shore, and wading birds) foraging and roosting habitats, ensure that future developments are consistent with the Natural Resources Management Planning Program and CEQA requirements.

2. Construction activities adjacent to heron nest and roost trees and foraging areas of waterbirds that utilize the boat channel may have a significant impact. To mitigate this impact, construction noise adjacent to breeding, roosting, and foraging areas of birds shall be kept to a minimum particularly during the breeding season. Specific requirements for herons are provided below under number 3.

3. The 3 ornamental trees at the corner of Worden and Cushing Roads used by nesting herons shall be retained and no less than a 100-foot-wide construction buffer shall be provided during the heron breeding season (January 15 through July 15) to ensure that construction noise and activities do not result in herons avoiding utilization of nest trees or abandoning their nests or young. Appropriate buffers shall be determined by a biologist familiar with the life history and nesting requirements of herons on a case-by-case basis.

Marine Environment

The following mitigation measures shall be implemented by the acquiring entities:

4. Sediment runoff and erosion control shall be contained on construction sites using best management practices (also see mitigation measures for significant water quality impacts provided in Section 4.8).

5. Design runoff drainages to empty into areas of San Diego Bay where greater tidal flushing exists.

6. Prevent surface water contamination from fuel spills or storm water runoff originating on paved surfaces from entering natural drainage features. Conduct operations with the potential for fuel spilling, such as fueling and defueling, within concrete-bermed areas that drain into oil-water separators. Remove fuels

from the separators for disposal and divert any water to a suitable treatment structure.

7. During storm events, divert first-flush runoff washloads (the first half inch of precipitation) from all paved surfaces to soakway basins, or other suitable treatment structures, prior to release into the Bay. These structures allow for relatively rapid infiltration of storm water runoff prior to discharge into natural channels. Treatment structures include unlined drainage channels; grassy swales along roads, parking lots, and storm drain channels; infiltration ditches and trenches; and constructed wetlands.

8. Ensure that all discharges to natural drainages comply with the Clean Water Act, as amended. It should be noted that these standards shall be implemented by the SDUPD and shall be fully supported by the FAA.

9. For Section 404 permitting, follow to the fullest extent possible, the procedure set forth in the MOA between the Department of Transportation (DOT) and Department of the Army on permit processing, effective January 18, 1983.

10. Locate all hazardous materials and hazardous waste storage areas within appropriately designed containment structures.

11. Prepare an Oil and Hazardous Substances Spill Contingency Plan and Spill Prevention, Control, and Countermeasures Plan to provide specific measures to be implemented in the event of a spill. Maintain an appropriate spill response capability in accordance with the plans.

4.6.4 Impact after Mitigation

Implementation of the mitigation measures described above will reduce impacts to below a level of significance.

4.6.5 Cumulative Impacts

The primary criteria for determining significance of impacts to biological resources are the sensitivity ratings assigned to certain biological resources by federal and state

resource agencies, the regional sensitivity of the resource, local significance criteria, and the degree to which the resource may be affected. Based on these criteria, it was determined that certain biological resource impacts would occur. However, mitigation measures provided in Section 4.6.3 would mitigate all impacts to biological resources to below a level of significance and would result in compliance with the criteria set forth by federal, state, and local agencies.

Although the boat channel and San Diego Bay may not be directly impacted by the redevelopment of the Project Area or the development of cumulative projects, an indirect adverse cumulative impact may occur to waterbird species. The indirect effects of the adjacent land uses and increased human presence would reduce the biological value for the dominant waterbird species known to use the waters. This cumulative impact would be mitigated through the development and implementation of a baywide Natural Resource Management Planning Program. This program would provide management recommendations to protect the natural resources of San Diego Bay on both SDUPD and Navy tidelands properties. Because the plan would address cumulative impacts to and management of waterbird habitat in the area, cumulative impacts would not occur.

A significant cumulative impact may occur indirectly to North San Diego Bay as a result of changes in the nature of runoff in terms of volume and constituents. Mitigation measures such as containing sediment runoff and erosion control on construction sites using appropriate engineering methods would be implemented and would mitigate impacts to below a level of significance. The cumulative projects should also design runoff drainages to empty into areas of San Diego Bay with greater tidal flushing, such as West Harbor Island Marine area.

4.7 GEOLOGY AND SOILS

4.7.1 Existing Conditions

4.7.1.1 Geomorphic and Geologic Setting

Geomorphic Setting

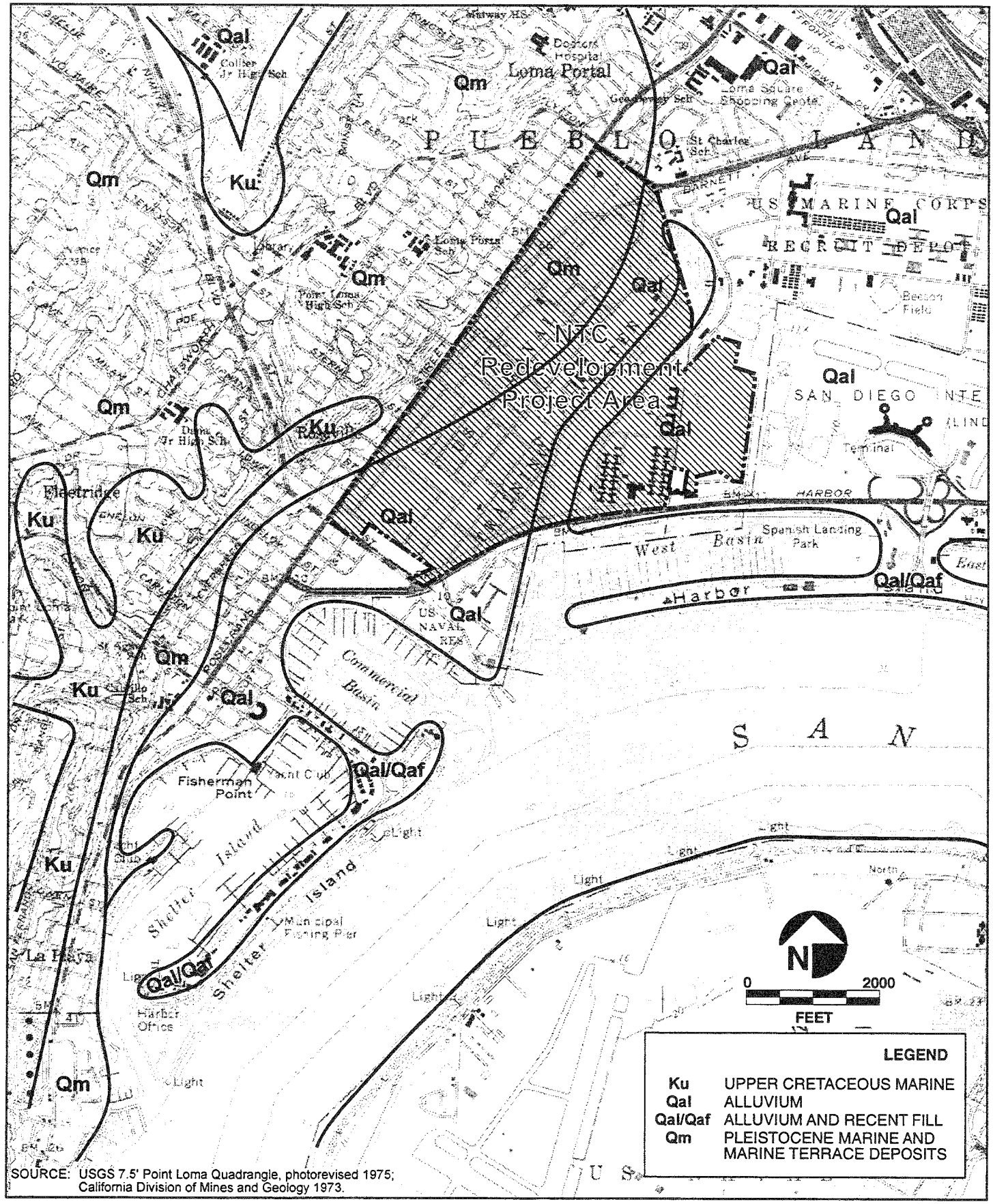
The Project Area is located in the coastal plain area of the Pacific Ocean, which consists of relatively flat plains and fill areas. The Point Loma Ridge to the west of the facility is the most prominent feature within the Project Area with an elevation of 400 feet above mean sea level (msl); the area east of Lindbergh Field is characterized by hills and flat mesas cut by canyons.

The Project Area is bisected by the boat channel; the surface of each portion generally slopes from the northwest to the southeast and south, draining primarily into San Diego Bay. Elevations range from approximately 61 feet above msl near the northwest corner to 7 feet msl at the boat channel.

Geologic Setting

The following discussion of the geologic setting is based primarily on published geologic maps and data pertinent to the Project Area. Figure 4.7-1 depicts the approximate locations of the geologic units underlying the Project Area and the adjacent communities. The Project Area is located within the Coastal Plains physiographic province, which includes recent alluvium, Quaternary marine deposits, and marine terrace deposits. The recent alluvium is composed of recent river and stream deposits, filled land, salt ponds, and delta deposits. Quaternary marine deposits include sandstone, siltstone, and conglomerate formations. These two geological features are represented on the Project Area by artificial fill and by outcroppings of the Bay Point Formation (City of San Diego 1998a).

The bayside portion of the Project Area is located on fill and hydraulic fill, which are comprised primarily of dredging spoils from the Bay and varies in thickness from 8 to 20 feet. The fill material consists of sand, clayey sand, silty sand, silt, sandy silt, and gravel. Beneath the fill are natural estuarine bay deposits consisting of silty to clayey sands,



SOURCE: USGS 7.5' Point Loma Quadrangle, photorevised 1975; California Division of Mines and Geology 1973.

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Geologic Map of the Project Area

FIGURE

4.7-1

Graphics\ENVIR.ASS'MT (ENV)\NTC Redevelopment\Geology Map.Fh8

clayey silt, sandy silt, sandy to silty clays, and sand. The thickness of these deposits varies between 1 foot at the northern sailboat marina and approximately 12 feet at the boat channel bridge (City of San Diego 1998a).

The bay deposits are underlain by the Bay Point Formation, which is comprised of marine, poorly consolidated, fine- to medium-grained sandstone. The formation is also found at the surface along the northwest boundary of the facility; fossils of mollusks, foraminifera, and ostracods indicate that it is a brackish water estuarine deposit from the late Pleistocene Age (City of San Diego 1998a).

Little is known about subsurface geology deeper than the Bay Point Formation in San Diego Bay. In other areas of the region, it is believed that the Lindavista Formation projects beneath San Diego Bay and that the San Diego Formation also extends beneath the Bay underneath the Lindavista Formation. The Lindavista Formation is an upper Pleistocene marine and nonmarine deposit of light gray and reddish tan sandstone, siltstone, and conglomerate. The San Diego Formation is an upper Pliocene marine sedimentary rock formation of gray friable sandstone and conglomerate. Both of these formations are also found on the surface, with areas of the Lindavista Formation found both west of NTC and to the northeast and east of Lindbergh Field, and areas of the older San Diego Formation being exposed in canyons east of Lindbergh Field. Beneath these deposits is the upper Cretaceous Cabrillo Formation consisting of sandstone, interbedded sandstone and mudstone, and conglomerate. The Cabrillo Formation is also found at the surface on the Point Loma Peninsula (City of San Diego 1998a).

4.7.1.2 Seismicity

The California Division of Mines and Geology (CDMG) classifies faults as either active or potentially active. A fault that has exhibited surface displacement within the Holocene Epoch (the last 11,000 years) is defined as active by the CDMG. The CDMG suggests that this definition be used to evaluate faults located within a 60-mile radius of a project site. A fault that has exhibited surface displacement during the Pleistocene Epoch (which began about 1.6 million years ago and ended about 11,000 years ago) is defined as potentially active.

The Project Area is located in a highly active seismic region. No faults exist on the property, but several north-south trending faults are located to the west and east. Several

of the faults and fault zones in the vicinity of the Project Area are considered to be active by the CDMG, and Alquist-Priolo Special Study Zones (A-P zones) have been established for the majority of these faults and fault zones. A-P zones are zoned areas established along and parallel to the traces of active faults. The delineation of A-P zones on topographic maps is the responsibility of the CDMG. The purpose of the A-P zones is to prohibit the location of structures on the traces of active faults, thereby mitigating potential damage due to fault surface rupture. Major faults in the vicinity of the Project Area are shown in Figure 4.7-2. Table 4.7-1 presents the distances and seismic parameters for regional and local active fault zones capable of affecting the site in terms of ground shaking.

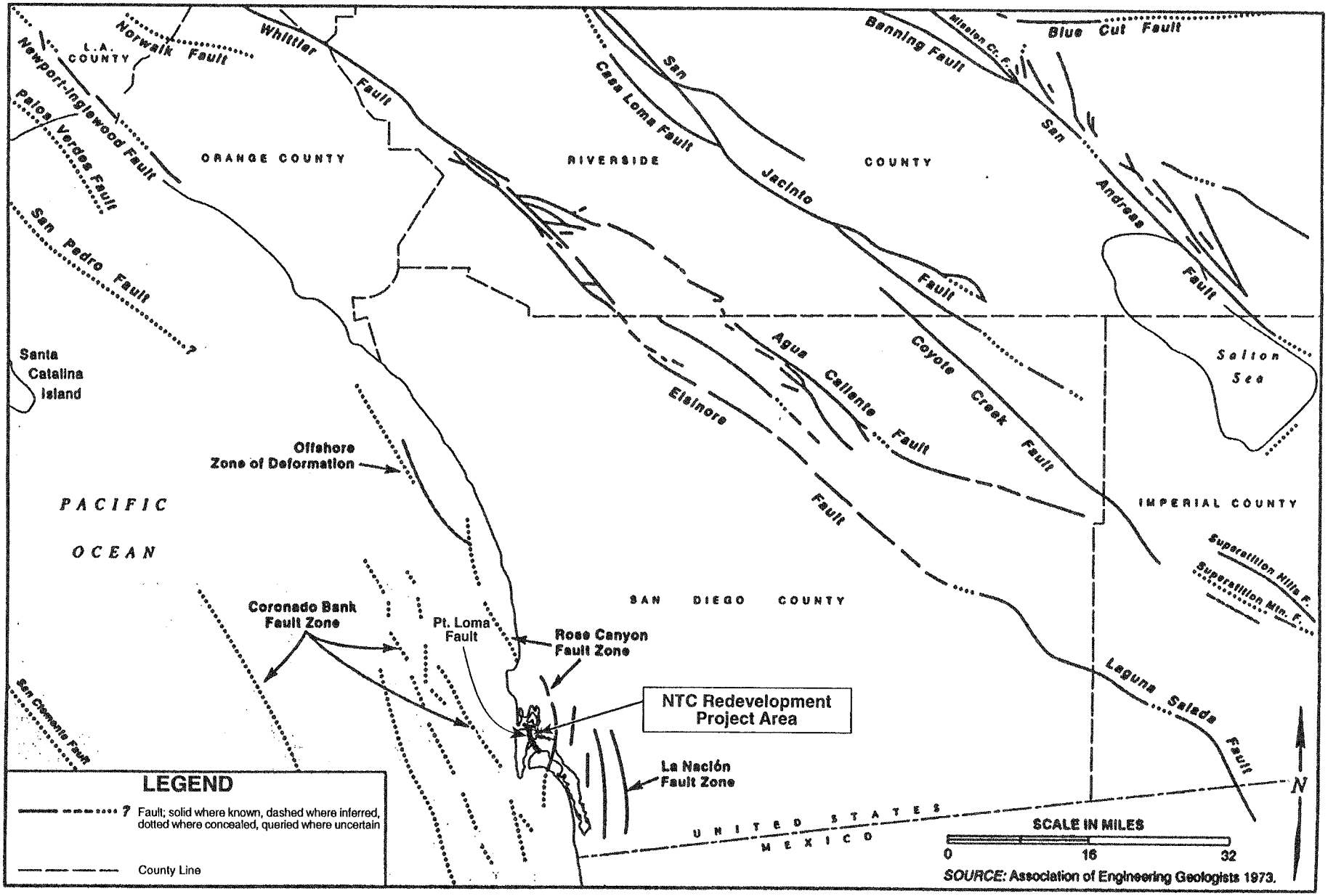
The most significant probable seismic event likely to affect the Project Area would occur on the Rose Canyon Fault, located approximately 2 miles east of the Project Area. The nearest Alquist-Priolo Special Studies Zone is on the Rose Canyon Fault (City of San Diego 1998a).

The Project Area is located in Zone IV in the Uniform Building Code Seismic Zone Map of the United States. Seismic Zone IV is identified as likely to sustain damage due to major seismic events, and design inputs for construction of new facilities are required to minimize damage. The corresponding Modified Mercalli earthquake intensity designations, which qualify earthquake intensities in terms of potential effects on people and structures, are also provided in Table 4.7-1. Because no known active faults are known to underlie the Project Area, the risk of surface rupture due to fault displacement is considered low (City of San Diego 1998a).

4.7.1.3 Geologic Hazards

Ground Acceleration and Ground Shaking

Ground acceleration is an estimation of the peak bedrock or ground motion associated with a specific earthquake event. It is expressed in terms of "g" forces, where "g" equals the acceleration due to gravity. Acceleration can be measured directly from seismic events or calculated from magnitude and fault distance data. The seismic hazard most likely to be detrimental to the study area is ground shaking resulting from a large earthquake generated on either a major regional or local fault. Large earthquakes along more extensive faults (e.g., the San Andreas fault zone) can produce ground accelerations



4.7-5

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Regional Fault Map

FIGURE 4.7-2

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Table 4.7-1. Seismic Parameters for Major Active Faults within 60 Miles of the Project Area

Fault	Distance from Fault to Study Area[1] (miles)	Maximum Credible Earthquake[2] (Richter Magnitude)	Estimated Acceleration (g) Peak Horizontal Ground[3]	Estimated Acceleration (g) Repeatable High Ground[4]	Modified Mercalli Intensity[5]
Whittier-Elsinore	41	7.5	0.18	0.18	X-XI
San Andreas (creep section)	60	7.0	0.05	0.05	IX-X
Coronado Bank	14	6.75	0.31	0.20	IX-X
Rose Canyon	2	7.0	0.68	0.44	IX-X

Note: Repeatable high ground acceleration values are generally given as 65 percent of peak ground acceleration values for sites within 20+ miles of an earthquake epicenter and approach 100 percent at greater distances.
Sources: [1]Jennings 1995; [2]After Greensfelder 1974; [3]Seed and Idriss 1982; [4]Ploessel and Slosson 1974; [5]U.S. Geological Survey 1980.

with longer wavelengths and durations than smaller faults, even though the latter structures may be closer and thus generate greater peak acceleration values. Both the wavelength, amplitude, and duration of seismic shaking can contribute to the destructive potential of individual earthquake events.

Table 4.7-1 lists the calculated ground acceleration parameters pertaining to known major active faults within a 60-mile radius of the site, which have the potential to cause significant ground shaking. Based on the data in Table 4.7-1, the most significant seismic event likely to affect the study area would be associated with an earthquake of Richter magnitude 7.0 along the Rose Canyon Fault. The estimated peak ground acceleration that could be produced by such an event would be 0.68g. Such an event would likely generate Modified Mercalli intensities of IX to X, potentially resulting in a variety of adverse effects on structures and facilities.

An additional potential concern involves the concept of repeatable high ground acceleration (RHGA) on the Project Area. Evaluation of RHGA, which is generally used for project design purposes, involves consideration of the full extent of ground acceleration values and durations (as opposed to a single high peak). The basic rationale of RHGA is that a single peak of intense motion (peak acceleration) may contribute less to cumulative damage potential than several cycles of less intense shaking. Generally, RHGA is given as 65 percent of peak acceleration values for areas within 20+ miles of an earthquake epicenter and approaches 100 percent at greater distances based on the more

rapid attenuation of peak bedrock acceleration. The estimated RHGA for the Project Area is 0.44g (City of San Diego 1998a).

Ground Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to earthquake-generated seismic waves and generally occurs along faults. The Project Area is not known to be directly underlain by active or potentially active faults; therefore, no potential hazard due to ground surface rupture exists.

Liquefaction

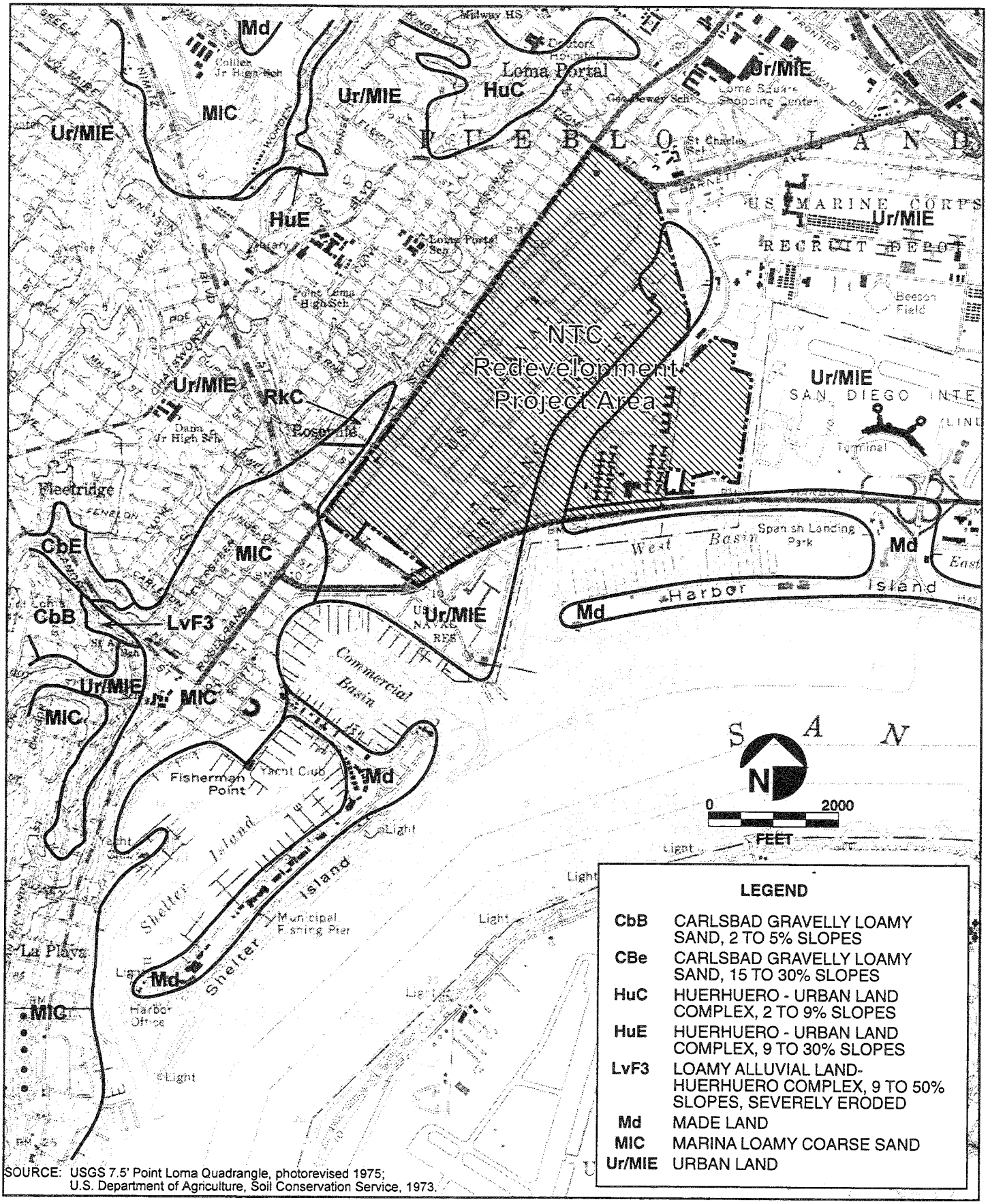
The highest elevation at the Project Area occurs on the northwestern portion of the property at an elevation of 61 feet above msl. The topography slopes over a short distance south to an elevation of approximately 20 feet above msl and then slopes more gradually towards San Diego Bay to an elevation of approximately 10 feet above msl. Groundwater occurs beneath the Project Area at approximately 7 to 10 feet below ground surface. Soils within the groundwater table are considered susceptible to liquefaction during strong seismic shaking because of the high water table and the presence of granular material in the hydraulic fill and bay deposits (City of San Diego 1998a).

Landslides

No landslides or landslide-related features are known to directly underlie the Project Area; therefore, no potential hazard from landslide activity exists.

4.7.1.4 Soils

The soil associations were surveyed and mapped by the Soil Conservation Service (SCS) in 1973. The Project Area and immediate vicinity (Figure 4.7-3) is located on artificial fill from dredging spoils; therefore, the Project Area, Lindbergh Field, ASW Training Center, and Midway community are designated as Urban Land by SCS. The Huerhuero-Stockpen association and the Marina-Chesterton association comprise the primary natural soil types in the area.



LEGEND

CbB	CARLSBAD GRAVELLY LOAMY SAND, 2 TO 5% SLOPES
CBe	CARLSBAD GRAVELLY LOAMY SAND, 15 TO 30% SLOPES
HuC	HUERHUERO - URBAN LAND COMPLEX, 2 TO 9% SLOPES
HuE	HUERHUERO - URBAN LAND COMPLEX, 9 TO 30% SLOPES
LvF3	LOAMY ALLUVIAL LAND-HUERHUERO COMPLEX, 9 TO 50% SLOPES, SEVERELY ERODED
Md	MADE LAND
MIC	MARINA LOAMY COARSE SAND
Ur/MIE	URBAN LAND

SOURCE: USGS 7.5' Point Loma Quadrangle, photorevised 1975;
U.S. Department of Agriculture, Soil Conservation Service, 1973.

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Soil Associations within Project Area and Vicinity

FIGURE **4.7-3**

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Soils of the Huerhuero-Stockpen association develop on marine terraces between sea level and 400 feet msl at slopes ranging from 0 to 9 percent. Soils in this association are moderately well-drained loams to gravely clay loams that have a subsoil of clay or gravely clay. The Marina-Chesterton association consists of somewhat excessively drained to moderately well drained loamy coarse sands and fine sandy loams with a subsoil of sandy clay over hard pan. The association includes soils of the Reiff series and Marina series, which are derived from wind-worked, weakly consolidated sands, and occur on broad, rolling ridges parallel to the coast. Both soils occur in areas of 2 to 9 percent slope and present slight to moderate erosion hazard. Reiff soils are well-drained, very deep fine sandy loams formed in alluvium derived from granitic rock between 200 and 1,900 feet msl. Marina soils are somewhat excessively drained, very deep, loamy coarse sands derived from eolian sands between sea level and 300 feet msl (City of San Diego 1998a).

Shelter Island and Harbor Island to the south and southeast, respectively, of the facility are characterized as Made Land, which is an artificial level surface that has been filled with excavated and transported soils; paving material; and material dredged from lagoons, bays, and harbors. Studies conducted at two construction sites at NTC have found that sulfates in underlying soils were corrosive to ferrous metals and deleterious to concrete (City of San Diego 1998a).

4.7.1.5 Mineral Resources

Due to high levels of disturbance to soils, the Project Area is not considered to be underlain by significant mineral resources. Soils of the Marina series are considered suitable sources of sand for construction; however, these areas are completely urbanized (City of San Diego 1998a).

4.7.1.6 Paleontological Resources

The Project Area is located primarily on fill and hydraulic fill, which are dredging spoils composed of sand, silt, and gravel alluvium. The alluvium deposits are of recent age and poor consolidation with low paleontological potential. Quaternary marine deposits beneath the fill layers are comprised of predominately marine, poorly consolidated and fine to medium-grained sandstone containing fossils of mollusks, foraminifera, and

ostracods. These deposits are considered to have low paleontological value (City of San Diego 1998a).

4.7.2 Environmental Impacts

4.7.2.1 Threshold for Determining Significance

Impacts associated with faulting, ground acceleration, and ground shaking associated with earthquakes are evaluated based on distance to known fault zones as well as the seismic characteristic of fault zones (e.g., potential earthquake magnitudes, fault length, depth, etc.).

With regard to soils, soils that possess a moderate to severe potential for erosion and liquefaction and a medium to high expansion potential could result in significant impacts on a proposed action. In addition, soils that are prone to sliding (due to the presence of weaker strata such as fractural clays) could result in significant impacts on the Project.

The significance of mineral resources is determined by the type, distribution, occurrence, and economic potential. Evaluation of impacts is based upon the significance of a mineral deposit relative to the known and expected reserves of this mineral on a local, state, national, and worldwide basis.

Impacts on paleontological resources are identified by classifying the scientific importance of the resource, as well as the type and extent of disturbance anticipated by the proposed action. In general, paleontological resources are considered significant if they are rare, unique, or have scientific value (i.e., can yield information important in understanding the past). A rare or unique resource is unlikely to occur or possess a characteristic that is uncommon (i.e., not previously discovered or particularly well preserved). Scientific value of a resource is based on age, assemblage association, geological setting, type, rarity, and condition of preservation. The evolution of species, environmental conditions, species migration, and habitat diversity may be investigated using well-preserved fossils of several species within a single geological stratum. In addition, paleontological resources may be significant when associated with another resource that can contribute to our knowledge about adaptations of early human inhabitants in North America. Paleontological resources are significantly affected if their characteristics are altered. Therefore, potential impacts include the destruction or

deterioration of the resource, or the removal of the resource from its natural environment without proper cataloging.

4.7.2.2 Impact Analysis

Geologic Hazards

Ground Acceleration and Ground Shaking. The Project Area is located in a highly active seismic region. The Rose Canyon Fault is located within 2 miles of the Project Area. Movement along this fault is capable of causing major damage and destruction from ground acceleration and associated ground shaking; therefore, impacts from ground acceleration and associated ground shaking would be significant.

Ground Rupture. The Project Area is not directly underlain by any known faults; therefore, impacts associated with ground rupture would not occur.

Liquefaction. The near-surface soils (artificial fill) that underlie the Project Area are poorly consolidated and possess a moderate to high potential for liquefaction. Groundwater dominantly occurs in the soils from shallow depths, approximately 7 to 10 feet below ground surface. Due to the potential for soil liquefaction in these areas, impacts would be significant.

Landslides. No landslides or landslide-related features have been mapped or are known to occur in the Project Area; therefore, impacts due to landslides would not occur.

Soil-Related Hazards

Impacts on local soils would primarily result from construction activities associated with the Project such as grading, excavating, demolition of buildings, and possible recontouring of ground-surface soils. These activities would alter soil profiles and local topography. The soils identified on the Project Area are artificial fill, which possesses a moderate to severe erosion potential; therefore, impacts would be significant. Considering the low soil expansion potential, impacts associated with soil expansion would not occur. In addition, based on the previous soil studies conducted at the Project Area, soils underlying portions of the Project Area may be corrosive; therefore, impacts would be significant.

Mineral Resources

The Project Area is not underlain by viable economic mineral resources (e.g., sand and gravel, limestone, or oil and gas). In addition, the use of sand and gravel resources for construction of new facilities and roadways would not be expected to appreciably reduce availability of these resources within the San Diego region; therefore, impacts on mineral resources would not occur.

Paleontological Resources

The Project Area is primarily underlain by quaternary hydraulic fill and marine deposits. The fill material is comprised of dredging spoils (i.e., sand, silt, and gravel alluvium) with low paleontological value; quaternary marine deposits beneath the fill layers are comprised predominantly of marine fine- to medium-grained sandstone containing fossils of mollusks, foraminifera, and ostracods (City of San Diego 1998a). These underlying geologic materials are considered to have low paleontological value; therefore, impacts would not occur.

4.7.3 Mitigation Measures

The following measures are required to reduce impacts to below a level of significance. Implementation activities within the NTC San Diego or 430-acre portion of the Project Area shall incorporate or comply with the measures provided below to the satisfaction of the City Environmental Review Manager prior to discretionary approval and/or issuance of land development permits. The City Environmental Review Manager and the SDUPD shall verify that future development plans have incorporated or complied with the measures listed below.

4.7.3.1 Geologic Hazards

Ground Acceleration/Ground Shaking

1. Design and construct Project facilities in accordance with the Uniform Building Code (UBC) and state-of-the-art seismic design specifications of the Structural Engineering Association of California for buildings in Seismic Zone IV.

Liquefaction

2. Remove soils that are potentially liquefiable and replace with properly compacted fill soils in accordance with the recommendations provided in the site-specific geotechnical documentation prepared for the Project.

4.7.3.2 Soil-Related Hazards

3. Prior to construction, prepare a soil erosion plan to be incorporated into the design, construction, and demolition permitting process. The plan shall include a detailed strategy for minimizing impacts to the Project Area.

4. Provide protective covering such as mulch, straw, or plastic netting, on exposed graded areas.

5. Use sandbags or desilting basins as diverting techniques to reduce water erosion of partially graded streets, parking areas, or graded pads.

6. Where possible, maintain a buffer strip of vegetation between the Project Area and the boat channel and the adjoining portion of San Diego Bay to filter sediments transported by surface waters.

7. Revegetate open areas as soon as practical upon completion of grading with seeded wood-based mulch.

8. Perform corrosivity testing on soils, as appropriate, prior to project construction. Should soils be determined to be corrosive, either replace the soils or treat in-place soils as appropriate.

The effectiveness and cost of the above soil erosion control measures would depend on wind, rain, soil type, and type of material used to reduce erosion. For construction near housing or creeks, the most effective measures include the use of buffer strips. Buffer strips generally consist of planted grasses and trees. For steeper slopes, or partially graded areas, the use of sandbags or desilting basins has proven to be an effective measure in reducing erosion. Effective measures for reducing soil erosion on level areas not near critical resources could include limiting the amount of area disturbed and length

of time the barren area is exposed. Reducing soil erosion would benefit hydrologic and biological resources by minimizing turbidity in surface waters and potential wetlands.

4.7.4 Impact after Mitigation

Implementation of the mitigation measures described above will reduce impacts to below a level of significance.

4.7.5 Cumulative Impacts

Significance criteria for geology and soils impacts are based on potential for damage caused by seismic or geologic hazards. Redevelopment of the property and development of other projects would be affected to varying degrees by geologic and soil-related hazards. However, both geologic and soil-related hazards are site-specific. Appropriate best management practices (e.g., erosion reduction measures) and incorporation of state-of-the-art seismic measures into design and construction of the developments would be implemented to reduce impacts to below a level of significance. Therefore, the Project, in conjunction with cumulative projects, would not result in significant cumulative impacts on geology and soils.