Draft Environmental Assessment for the Complete or Partial Closure of Defense Fuel Support Point San Pedro, California

August 2015

Prepared for:
Navy Region Southwest and the Defense Logistics Agency

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DRAFT
ENVIRONMENTAL ASSESSMENT
FOR THE COMPLETE OR PARTIAL CLOSURE OF
DEFENSE FUEL SUPPORT POINT SAN PEDRO, CALIFORNIA

TITLE PAGE

Lead Agency for the Environmental Assessment:	United States Department of the Navy, Navy Region Southwest
Title of Proposed Action:	Complete or Partial Closure of Defense Fuel Support Point San Pedro, California
Affected Region:	San Pedro, Los Angeles County, California
Designation:	Environmental Assessment

The United States Department of the Navy (Navy) prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 and other applicable laws. This EA presents analyses of the potential environmental impacts resulting from the complete or partial closure of the Defense Fuel Support Point (DFSP) San Pedro, California.

The Navy and the Defense Logistics Agency propose to completely or partially close DFSP San Pedro. Under this proposal, the existing Defense Logistics Agency and Navy Host Tenant Real Estate Agreement would be terminated and the fuel facility infrastructure, or a portion of the infrastructure, would be physically disconnected and closed in place, abandoned in place, dismantled, and/or demolished, depending on the alternative selected. Naval Weapons Station Seal Beach would continue as the Class I property owner of DFSP San Pedro. This EA does not evaluate property disposal issues such as potential reuse of the site by the Navy or others. Four action alternatives (Alternatives 1, 2, 3, and 4) and the No Action Alternative are analyzed in this EA. This EA provides a detailed analysis of the Proposed Action's potential environmental effects on the following resource areas: biological resources, geological resources, water resources, transportation, air quality, noise, hazardous materials and wastes, cultural resources, and visual resources.

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EXECUTIVE SUMMARY

The United States Department of the Navy (Navy) prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 and other applicable laws. This EA presents analyses of the potential environmental impacts resulting from the complete or partial closure of the Defense Fuel Support Point (DFSP) San Pedro, California. The project is needed to address aging infrastructure and to limit environmental risk.

This EA is a concise public document containing a full analysis of the potential environmental effects of the Proposed Action. The purpose of this EA is to comply with NEPA by providing sufficient data to determine whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact.

The Navy owns DFSP San Pedro. DFSP San Pedro is a Special Area assigned to Naval Weapons Station (NAVWPNSTA) Seal Beach. Operation of DFSP San Pedro is currently the responsibility of the Defense Logistics Agency (DLA). DLA has been a tenant to the Navy at DFSP San Pedro since 1980.

The purpose of the Proposed Action is to completely or partially close the DFSP San Pedro fuel facility in order to achieve efficiencies in receiving, storing, and distributing fuel to Department of Defense facilities. The DFSP San Pedro fuel facility includes the Main Terminal, the Marine Terminal, and off-site pipelines. This EA does not evaluate property disposal issues such as potential reuse of the site by the Navy or others.

The Navy and the DLA propose to completely or partially close DFSP San Pedro. Under this proposal, the existing DLA and Navy Host Tenant Real Estate Agreement would be terminated and the fuel facility infrastructure, or a portion of the infrastructure, would be physically disconnected and closed in place, abandoned in place, dismantled, and/or demolished, depending on the alternative selected. NAVWPNSTA Seal Beach would continue as the Class I property owner of DFSP San Pedro.

Four action alternatives (Alternatives 1, 2, 3, and 4) and the No Action Alternative are analyzed in this EA (Table ES-1). Under Alternative 1, complete closure with partial demolition would occur. Under Alternative 2, complete closure with minimal demolition would occur. Under Alternative 3, complete closure with complete demolition would occur. Under Alternative 4, partial closure with minimal demolition would occur. Under the No Action Alternative, the current temporary closure status of DFSP San Pedro would be reversed, and it is presumed that full operations would eventually resume.

This EA provides a detailed analysis of the Proposed Action's potential environmental effects on the following resource areas: biological resources, geological resources, water resources, transportation, air quality, noise, hazardous materials and wastes, cultural resources, and visual resources. Table ES-2 summarizes the potential environmental consequences associated with implementation of the alternatives.

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Table ES-1. Summary Comparison of Alternatives		ALTERNATIVES[1]				
		Alternative 1: Complete Closure with Partial Demolition ***See Figures 2-1 and 2-2***	**Alternative 2: Complete Closure with Minimal Demolition** ***See Figure 2-3***	**Alternative 3: Complete Closure with Complete Demolition** ***See Figure 2-4***	**Alternative 4: Partial Closure with Minimal Demolition** ***See Figure 2-5***	**No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations**
Fuel Facility Status		Closed	Closed	Closed	Partial operation	Full operation
Main Terminal	***ASTs***	Demolished and removed	Isolated/secured and marked Out-of-Service	Demolished and removed	Reopened and reconnected to pipelines	Reopened and reconnected to pipelines
	USTs	Filled with an inert solid and abandoned in place	Filled with an inert solid and abandoned in place	Excavated, demolished, and removed	Concrete USTs filled with an inert solid and abandoned in place Steel USTs reopened and placed into operation, repaired, and upgraded as needed (see Section 2.2.2.4)	Repaired and reopened
	On-Site Pipelines and Valve Pits	Aboveground pipelines demolished and removed Underground pipelines permanently disconnected and plugged and/or filled with an inert solid and abandoned in place, except for approximately 9,600 linear feet of underground pipeline that would be demolished and removed All valve pits demolished and removed	Aboveground and underground pipelines permanently disconnected and plugged and/or filled with an inert solid and abandoned in place, except for approximately 9,600 linear feet of underground pipeline that would be demolished and removed 25 valve pits demolished and removed 2	Aboveground and underground pipelines excavated, demolished, and removed All valve pits demolished and removed	Concrete UST pipelines: permanently disconnected and plugged and/or filled with an inert solid and abandoned in place, except for approximately 9,600 linear feet of underground pipeline that would be demolished and removed Steel USTs reopened, repaired, and upgraded as needed, to be placed back into operation 25 valve pits demolished[2] and removed	Reconnect all valves to pipelines and reopen for use
	Office Buildings	Placed in a long-term caretaker condition	Placed in a long-term caretaker condition	Placed in a long-term caretaker condition	Used	Used
	Support Structures	Pump stations/ houses and warehouses demolished and removed	Pump stations/ houses, truck fill stands, and warehouses secured	Demolished and removed	Reopened and used	Reopened and used
	Utilities	Shut-off and secured to closed infrastructure	Shut-off and secured to closed infrastructure	Shut-off and secured to closed infrastructure	Shut-off and secured to closed infrastructure; retain service to open infrastructure	In service
Marine Terminal/ Pier 12		ASTs demolished and removed Buildings, equipment, Marine Terminal operations building, and pipelines demolished and removed Pier 12 to remain	No demolition ASTs isolated/secured and marked Out-of-Service All fuel equipment and buildings secured Pier 12 to remain	ASTs demolished and removed Buildings, equipment, Marine Terminal building, and pipelines demolished and removed Pier 12 to remain	Certain ASTs reopened and reconnected to pipelines Fuel equipment and Pier 12 reopened and placed into operation	ASTs reopened and reconnected to pipelines Fuel equipment and Pier 12 reopened and placed into operation
Off-Site Pipelines		Aboveground segments demolished and removed Underground segments plugged and/or filled with an inert solid and abandoned in place	Aboveground segments demolished and removed Underground segments plugged and/or filled with an inert solid and abandoned in place	Aboveground segments demolished and removed Underground segments plugged and/or filled with an inert solid and abandoned in place	Off-site pipelines servicing the Main Terminal and the Marine Terminal would be reopened and used Remaining aboveground segments demolished and removed Remaining underground segments plugged and/or filled with an inert solid and abandoned in place	Placed in service
Estimated Duration for Completion		4 years	3 years	4 years	3 years	3 years

Notes: [1] The native plant nursery, ball fields, and LAPD shooting range are not part of any alternatives analyzed in this EA.
[2] The 25 valve pits are 1, 59, 60, 62, 64, 65, 67, 68, 69, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 86, and 106.
AST = aboveground storage tank; UST= underground storage tank.

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Table ES-2. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Biological Resources					
Impact Summary	No Significant Impact. Direct temporary impacts to approximately **25 acres of vegetation and land cover types** at the Main Terminal. This would affect **0.27 acres of potentially occupied Palos Verdes blue butterfly (PVB) habitat**, approximately 1 percent of the total PVB habitat mapped on the Main Terminal, and **0.45 acres of potentially occupied California gnatcatcher (CAGN) habitat**, approximately 0.8 percent of the total CAGN habitat at the Main Terminal. Approximately **19 acres of potential habitat for Migratory Bird Treaty Act (MBTA) species** would be affected. Temporary indirect impacts through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the Integrated Natural Resources Management Plan (INRMP).	No Significant Impact. Direct temporary impacts would occur to approximately **16 acres of vegetation and land cover types** at the Main Terminal. This would affect **0.18 acres of potentially occupied PVB habitat**, approximately 0.6 percent of the total PVB habitat mapped on the Main Terminal, and approximately **0.09 acres of potentially occupied CAGN habitat**, approximately 0.16 percent of the total CAGN habitat at the Main Terminal. Approximately **15 acres of potential habitat for MBTA species** would be affected. Temporary indirect impacts would occur through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the INRMP.	Significant Impact. Direct temporary impacts to approximately **93 acres of vegetation and land cover types** at the Main Terminal. This would affect **2.95 acres of potentially occupied PVB habitat**, approximately 10.4 percent of the total PVB habitat mapped on the Main Terminal, and **6.45 acres of potentially occupied CAGN habitat**, approximately 11.4 percent of the total CAGN habitat at the Main Terminal. Approximately **85 acres of potential habitat for MBTA species** would be affected. Temporary indirect impacts would occur through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the INRMP.	No Significant Impact. Direct temporary impacts to approximately **16 acres of vegetation and land cover types** at the Main Terminal. This would affect **0.18 acres of potentially occupied PVB habitat**, approximately 0.6 percent of the total PVB habitat mapped on the Main Terminal, and approximately **0.09 acres of potentially occupied CAGN habitat**, approximately 0.16 percent of the total CAGN habitat at the Main Terminal. Approximately **15 acres of potential habitat for MBTA species** would be affected. Temporary indirect impacts would occur through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the INRMP.	No Significant Impact. No direct impacts to biological resources would occur. Indirect temporary impacts associated with repair activities would occur. Resumption of full operations would comply with avoidance and minimization measures previously developed through consultation with U.S. Fish and Wildlife Services. Biological resources would continue to be managed in accordance with the INRMP.

Table ES-2. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Geological Resources					
Impact Summary	No Significant Impact. Surface disturbance and grading would occur. Through implementation of engineering measures and erosion controls, increased risk for landslides and erosion would be minimized. No or negligible impacts would occur to mineral resources, bedrock, or soils. No impact to topography would occur if the concrete or foamcrete options are chosen for underground storage tank (UST) fill. If the soil backfill option is chosen for filling the USTs, a minor change in topography in the Operational Area would occur. Post-closure, no increased risk of earthquake damage, or their resulting hazards.	No Significant Impact. Minimal surface disturbance and minor grading would occur but to a lesser extent than Alternative 1. Impacts to topography associated with various option of fill for the USTs would be same as described for Alternative 1. Post-closure impacts would be similar to those described for Alternative 1.	Significant Impact. A greater area of ground disturbance would occur as compared to Alternative 1. No impact to bedrock or increase in earthquake-related hazards. Potential for landslides and erosion, especially on steep hillsides and ravines would be minimized with the implementation of impact avoidance and minimization measures. Moderate changes in topography would occur. Post-closure impacts would be similar to those described for Alternative 1.	No Significant Impact. Impacts would be similar to those described for Alternative 2. Impacts to topography associated with various option of fill for the USTs would be same as described for Alternative 1. Partial operations would not affect geological resources.	No Significant Impact. Activities associated with repair/reversal would cause minimal surface disturbance and grading and would have similar impacts as described for Alternative 1. Resumption of full operations would not affect geological resources.

Table ES-2. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Water Resources					
Impact Summary	No Significant Impact. No direct impacts to surface waters or floodplains. Negligible impacts to groundwater resources. Implementation of and adherence to the project-specific construction Stormwater Pollution Prevention Plan (SWPPP) and associated Best Management Practices (BMPs) would minimize the potential for pollutants to enter receiving waters at the Main Terminal and Marine Terminal during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities.	No Significant Impact. Closure and demolition impacts and post-closure procedures would be similar to those described for Alternative 1 except a smaller area would be subject to ground-disturbing activity.	No Significant Impact. Closure and demolition impacts and post-closure procedures would be similar to those described for Alternative 1 except that complete demolition would result in more ground disturbance and hence increased potential for erosion and encountering groundwater; however, potential minimized by adherence to the SWPPPs.	No Significant Impact. Closure and demolition impacts and partial post-closure procedures would be similar to those described for Alternative 2 except a smaller area would be subject to ground-disturbing activity. Partial operations conducted in compliance with new SWPPPs and associated BMPs prepared for the Main and Marine Terminals.	No Significant Impact. No direct impacts to surface waters, groundwater, or floodplain modifications would occur. Operations would adhere to applicable Main Terminal and Marine Terminal SWPPPs and associated BMPs. If an organization other than DLA assumes responsibility for operations, the new organization must submit for coverage under the applicable stormwater permit and prepare a new SWPPP.
Transportation					
Impact Summary	No Significant Impact. Temporary increase in daily trips (311), of which a majority would occur during non-peak hours. No unacceptable operating conditions during peak traffic periods.	No Significant Impact. Temporary increase in daily trips (232 trips), of which a majority would occur during non-peak hours. No unacceptable operating conditions during peak traffic periods.	No Significant Impact. More daily trips (358 trips total) as compared to Alternatives 1 and 2 but would not result in unacceptable operating conditions during peak traffic periods.	No Significant Impact. Temporary increase in daily trips (220), of which a majority would occur during non-peak hours. During partial operations, negligible increase of 36	No Significant Impact. Temporary increases in daily trips (70) during proposed repair/reversal activities. During full operations, negligible increase of 75 daily trips during peak

Table ES-2. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
	Post-closure, negligible amount of trips.	Post-closure, negligible amount of trips.	Post-closure, negligible amount of trips.	daily trips during peak hours.	hours.
Air Quality					
Impact Summary	<u>No Significant Impact.</u> Temporary increase in dust. Alternative 1 would not exceed *de minimis* levels; a Clean Air Act (CAA) Conformity Determination would not be required. Post-closure negligible air quality impacts.	<u>No Significant Impact.</u> Temporary increase in dust. Alternative 2 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Post-closure negligible air quality impacts.	<u>No Significant Impact.</u> Temporary increase in dust. Alternative 3 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Post-closure negligible air quality impacts.	<u>No Significant Impact.</u> Temporary increase in dust. Alternative 4 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before initiating partial operations.	<u>No Significant Impact.</u> The No Action Alternative would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before initiating full operations.
Noise					
Impact Summary	<u>No Significant Impact.</u> Temporary and incremental noise from demolition near residential and commercial areas. Noise levels at identified sensitive receptors would not be noticeably distinct from the existing noise environment. Post-closure, no operational noise. Periodic trip noise would be negligible.	<u>No Significant Impact.</u> Temporary and incremental noise from demolition would occur but in a smaller and topography-shielded area, away from residential and commercial areas. Noise levels at identified sensitive receptors would not be noticeably distinct from the existing noise environment. Post-closure, no operational noise. Periodic trip noise would be negligible.	<u>No Significant Impact.</u> Increased in localized noise throughout the Main Terminal from equipment and vehicles. Given the scale and scope of proposed demolition activities, noise would likely be noticeable to surrounding receptors at times. Post-closure, no operational noise. Periodic trip noise would be negligible.	<u>No Significant Impact.</u> Temporary and localized noise from demolition activities as well as localized noise during repair and activation activities. Noise levels at identified sensitive receptors would not be noticeably distinct from the existing noise environment. Noise from partial operations would be less than historical levels and indistinct.	<u>No Significant Impact.</u> Repair activities would generate noise levels at identified sensitive receptors that would not be noticeably distinct from the existing noise environment. Noise from operations would be consistent with historical levels and the surrounding noise environment.

Table ES-2. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Hazardous Materials and Wastes					
Impact Summary	No Significant Impact. Infrastructure closed, demolished, and/or abandoned in accordance with applicable regulations. Proposed demolition activities could encounter petroleum associated with existing Navy Installation Restoration Program (IRP) sites and/or DLA restoration sites, or aboveground remediation equipment and/or occur in proximity to subsurface wells. Post-closure, no potential for inadvertent petroleum or hazardous waste releases would occur as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue.	No Significant Impact. Infrastructure closure and abandonment impacts would be similar to those described for Alternative 1. Because a smaller and localized area of demolition would occur, there would be less ground disturbance and less potential to encounter contaminated soil. Post-closure impacts would be similar as described for Alternative 1.	No Significant Impact. Infrastructure would be closed and demolished in accordance with applicable regulations. The nature of the impacts would be similar, but the extent of impacts would be greater than those described for Alternative 1. Notably, based on the large size of the USTs, demolition of underground infrastructure would include removal and temporary stockpiling of relatively large quantities of potentially contaminated soil to expose the pipelines and USTs for removal. In addition, contaminated soil may be present beneath the removed USTs and pipelines. Post-closure impacts would be similar to those described for Alternative 1.	No Significant Impact. Infrastructure would be closed, demolished, and/or abandoned in accordance with applicable regulations. Proposed demolition could encounter product associated with existing Navy IRP sites and/or DLA restoration sites. Under partial operations, existing plans would be followed to minimize potential for inadvertent release. On-going site assessments and remediation activities would continue.	No Significant Impact. Existing infrastructure would be repaired and reactivated in accordance with applicable regulations. Under operations, existing plans would be followed to minimize potential for inadvertent release. On-going site assessments and remediation activities would continue.

Table ES-2. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Cultural Resources					
Impact Summary	No Significant Impact. No impact to known National Register of Historic Places (NRHP) or NRHP-eligible cultural resources or historic resources. Post-closure, adherence with the DFSP San Pedro Integrated Cultural Resources Management Plan would continue.	No Significant Impact. Impacts would be as presented for Alternative 1.	No Significant Impact. Impacts would be as presented for Alternative 1.	No Significant Impact. Impacts would be as presented for Alternative 1.	No Significant Impact. Impacts would be as presented for Alternative 1.
Visual Resources					
Impact Summary	No Significant Impact. Temporary and transitory negative impacts from demolition and abandonment activities. Post-closure, beneficial impacts from replacement of high visual structures (i.e., aboveground storage tanks (ASTs) and buildings) with low-profile vegetation and at-grade surfaces.	No Significant Impact. Closure and post-closure impacts to visual resources would be similar as those described for Alternative 1. However, demolition and abandonment activities would be less than Alternative 1 (ASTs at the Main Terminal would still be visible) and would require less equipment and vehicles on-site.	No Significant Impact. Closure and post-closure activities would be similar to those described for Alternative 1.	No Significant Impact. Proposed demolition and repair activities would result in temporary and transitory negative impacts to the visual environment. Visual impacts associated with resumption of partial operations would be visually consistent with the historical and regional activities at a reduced level compared to historic operations.	No Significant Impact. Proposed repair activities would result in temporary and transitory negative impacts to the visual environment. Visual impacts associated with resumption of full operations would be visually consistent with the historical and regional activities.

Notes: AST = aboveground storage tank; BMPs = Best Management Practices; CAA = Clean Air Act; CAGN = coastal California gnatcatcher; INRMP = Integrated Natural Resources Management Plan; IRP = Installation Restoration Program; MBTA = Migratory Bird Treaty Act; NRHP = National Register of Historic Places; PVB = Palos Verdes blue butterfly; SWPPP = Stormwater Pollution Prevention Plan.

LIST OF ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing building material
APE	Area of Potential Effect
AST	aboveground storage tank
BA	Biological Assessment
bgs	below ground surface
BMP	Best Management Practice
BO	Biological Opinion
BP	Before Present
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAGN	coastal California gnatcatcher
CalEEMod	California Emissions Estimator Model
CalIPC	California Invasive Plant Council
CalOSHA	California Department of Occupational Safety and Health Administration
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Fish and Wildlife Department
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CH_4	methane
CLT	California least tern
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibel
DFM	Diesel Fuel Marine
DFSP	Defense Fuel Support Point
DLA	Defense Logistics Agency
DoD	Department of Defense
DoN	Department of the Navy
DOSH	Division of Occupational Safety and Health
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
°F	Fahrenheit
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
GIS	geographic information systems
HAP	Hazardous Air Pollutant
HWCL	Hazardous Waste Control Law
I	Interstate
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IR	Installation Restoration
IRP	Installation Restoration Program
JP	Jet Propellant
LAPD	Los Angeles Police Department
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
$\mu g/m^3$	micrograms per cubic meter
msl	feet above mean sea level
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAVFAC SW	Naval Facilities Engineering Command Southwest
NAVWPNSTA	Naval Weapons Station
Navy	U.S. Department of the Navy
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NSR	New Source Review
O_3	ozone
OHWM	ordinary high water mark
OMES	Operation, Maintenance, Environmental, and Safety
OSHA	Occupational Safety and Health Administration
OU	operable units
Pb	lead
PCBs	polychlorinated biphenyls
$PM_{2.5}$	fine particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	suspended particulate matter less than or equal to 10 microns in diameter
ppm	parts per million
PVB	Palos Verdes blue butterfly

RBC	risk-based concentrations
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR	State Route
SVOC	semi-volatile organic compound
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TPH	total petroleum hydrocarbons
UFC	Unified Facilities Criteria
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
UST	underground storage tank
VOC	volatile organic compound

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ENVIRONMENTAL ASSESSMENT
FOR THE COMPLETE OR PARTIAL CLOSURE OF
DEFENSE FUEL SUPPORT POINT SAN PEDRO, CALIFORNIA

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CHAPTER 1
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION/BACKGROUND

The United States (U.S.) Department of the Navy (Navy) prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969 and other applicable laws. This EA presents analyses of the potential environmental impacts resulting from the complete or partial closure of the Defense Fuel Support Point (DFSP) San Pedro, Los Angeles County, California (CA) fuel facility. This EA is a concise public document containing a full analysis of the potential environmental effects of the proposed action and alternatives. The purpose of this EA is to comply with NEPA by providing sufficient data to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact.

This EA does not evaluate property disposal issues such as potential reuse of the site by the Navy or others. In addition, no changes are proposed with respect to the native plant nursery, the ball fields, or the Los Angeles Police Department (LAPD) shooting range; these areas would remain in their current condition.

1.2 DEFENSE FUEL SUPPORT POINT SAN PEDRO

The Navy owns DFSP San Pedro. DFSP San Pedro is a Special Area assigned to Naval Weapons Station (NAVWPNSTA) Seal Beach (Figure 1-1). Operation of DFSP San Pedro is currently the responsibility of the Defense Logistics Agency (DLA). DLA uses DFSP San Pedro in accordance with a Host Tenant Real Estate Agreement established with the Navy (Naval Facilities Engineering Command Southwest [NAVFAC SW] 2012). DLA has been a tenant to the Navy at DFSP San Pedro since 1980. As of May 2014, DLA placed DFSP San Pedro in a temporary closure status. Temporary closure places the facility in a status where it can be re-opened or permanently closed depending on future mission requirements.

1.2.1 PROJECT LOCATION

The term "fuel facility" used in this EA refers to the three components of DFSP San Pedro:

1. the Main Terminal;
2. the Marine Terminal; and
3. off-site pipelines associated with DFSP San Pedro.

Figure 1-1 presents the regional location of the DFSP San Pedro fuel facility. Pipelines connect the Main Terminal to the Marine Terminal (Figure 1-2). The Main Terminal covers approximately 331 acres (134 hectares) and is located at 3171 North Gaffey Street, San Pedro, CA (Figure 1-3). The Main Terminal consists of Operations, Leased, Listed Species Management, and Habitat Opportunity Areas (Figure 1-3).

The Operations Area is the area where fuel facility operations previously took place. This area contains storage tanks, pipelines, valve pits and vaults, fire suppression systems, a truck loading rack, and operational/administration buildings. Also included in the Operations Area are parking lots, roadways, native plant nursery, utilities, and perimeter fencing.

The Leased Areas are managed by NAVWPNSTA Seal Beach. These areas include the shooting range leased to the LAPD and ball fields leased to community softball organizations.

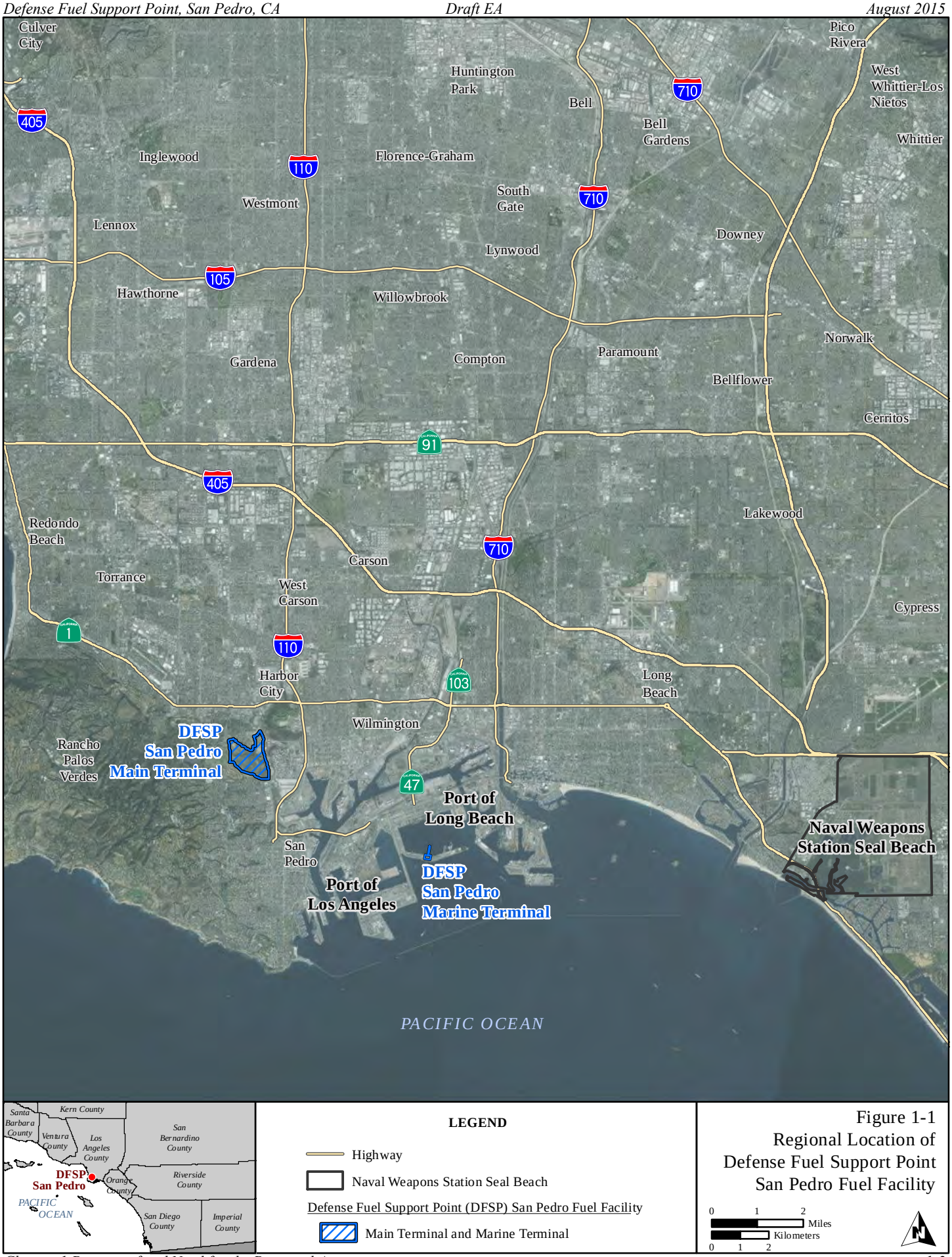

Figure 1-1
Regional Location of
Defense Fuel Support Point
San Pedro Fuel Facility

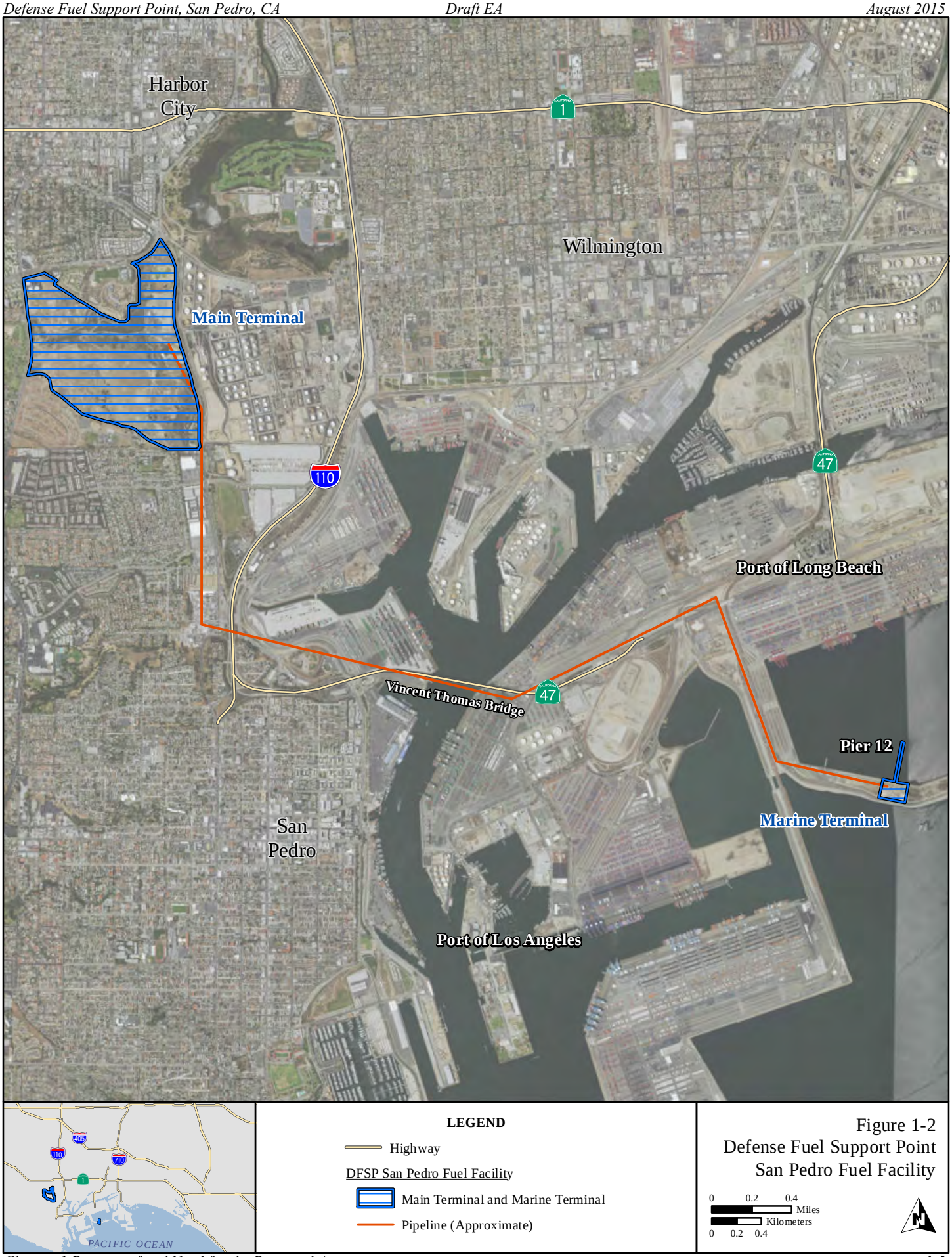

Figure 1-2
Defense Fuel Support Point
San Pedro Fuel Facility

Figure 1-3
Existing Features within the Main Terminal Project Area

The Listed Species Management Areas provide natural resource benefits and are not subject to significant operations impacts on a regular basis. The Habitat Opportunity Areas are areas of the facility not routinely accessed for operation support purposes.

The Marine Terminal (Pier 12) covers approximately 9 acres (3.6 hectares) (including the Pier) and is located at 3500 Nimitz Road, Long Beach, CA, within the Port of Long Beach (Figure 1-4).

The nine off-site pipelines associated with DFSP San Pedro and included as part of the project area extend for approximately 46 miles (74 kilometers) through public rights-of-way within Los Angeles County. These include the Long Beach Pipelines (three pipelines in total), the Norwalk pipeline, the R pipeline, the G pipeline, the surge pipeline, the 10-inch government pipeline, and the multi-product pipeline (Figure 1-5). Collectively, all of these pipelines run underground except for three short aboveground segments totaling approximately 690 feet (210 meters) (Table 1-1).

Table 1-1. DFSP San Pedro Off-Site Pipelines

Off-Site Pipeline Name[1]	Total Length	Portion Aboveground
Long Beach Pipeline (Main Terminal to Pier 12) – JP-5	27,456 feet (8,368 meters)	40 feet (12 meters)
Long Beach Pipeline (Main Terminal to Pier 12) – JP-8	27,456 feet (8,368 meters)	40 feet (12 meters)
Long Beach Pipeline (Main Terminal to Pier 12) – DFM	27,456 feet (8,368 meters)	40 feet (12 meters)
Norwalk Pipeline (Dominquez Channel to Norwalk)	84,321 feet (25,701 meters)	230 feet (70 meters)
R Pipeline	18,016 feet (5,491 meters)	20 feet (6 meters)
G Pipeline	5,280 feet (1,609 meters)	0
Surge Pipeline	3,700 feet (1,128 meters)	20 feet (6 meters)
10-inch Government Pipeline	47,430 feet (14,567 meters)	300 feet (91 meters)
Multi-Product Pipeline	3,600 feet (1,097 meters)	0
Totals	**46.3 miles (74.5 kilometers)**	**690 feet (210 meters)**

Note: [1] Color of row corresponds to color of pipelines presented on Figure 1-5.
DFM = Diesel Fuel Marine; JP = Jet Propellant.

1.2.2 MISSION

The DLA provides worldwide logistics support for the missions of the Military Departments and the Unified Combatant Commands under conditions of peace and war. It also provides logistics support to other Department of Defense (DoD) Components and certain federal agencies, foreign governments, international organizations, and others, as authorized.

The mission of DFSP San Pedro has historically been to receive, store, and distribute fuel to DoD facilities in support of Navy, Air Force, Army, Marine Corps, and Air National Guard missions. The fuel facility consists of storage tanks, pipelines, pump houses, loading racks and miscellaneous infrastructure. Prior to the temporary closure, fuel was received via pipelines and barges, and stored in underground and aboveground storage tanks. Fuel was then distributed by truck and pipeline to regional military facilities. DFSP San Pedro is entirely dedicated to fuel storage and delivery; no other military training or testing activities occur on-site (DLA 2008).

Figure 1-4
Existing Features within the
Marine Terminal
Project Area

Figure 1-5
Defense Fuel Support Point
San Pedro
Off-Site Pipelines

1.2.3 HISTORY

The DFSP San Pedro fuel facility was established in 1942, after the Japanese attack on Pearl Harbor. San Pedro was selected to house a bulk fuel depot because of its proximity to port and refinery centers. Following construction in 1942, the fuel facility operated under the authority of the Navy until 1980 when operational responsibilities were transferred to the DLA. In 1988, DFSP San Pedro was expanded through the development of Pier 12 and adjacent marine facilities at Los Angeles Harbor's Terminal Island facility (refer to Figure 1-4). A contractor currently maintains the fuel facility.

Historically, DFSP San Pedro received, stored, and delivered Diesel Fuel Marine (DFM) (F-76), Jet Propellant (JP)-5, and JP-8. F-76 arrived at the Main Terminal from Exxon-Mobil via pipeline. Fuel was also received from tankers at the Marine Terminal (Pier 12). The received fuels were then stored in aboveground storage tanks (ASTs) and underground storage tanks (USTs) at DFSP San Pedro. Prior to the temporary closure, DFSP San Pedro supplied fuel to its customers by truck and pipeline (DLA 2013a).

A comprehensive review of the DLA energy supply chains identified potential efficiencies in the Los Angeles Basin. It was determined that the regional mission could be met by existing fueling facilities already in use at Point Loma and Kinder Morgan contractor-owned contractor-operated facilities located in Carson, CA. The DLA conducted an analysis of the potential environmental impacts of temporary closure. The DLA determined that the temporary closure of DFSP San Pedro and use of other fuel facilities would not result in a significant impact to the environment (DLA 2013a).

In June 2014, the DLA completed the inventory drawdown of fuel (F-76, JP-5, and JP-8) and placed the fuel facility into a temporary closure status. As part of the temporary closure, the ASTs and USTs were cleaned and isolated/secured, and the pipelines, both on-site and off-site, were cleaned and isolated/secured. No demolition occurred as part of the temporary closure. DLA's temporary closure permit from the Certified Unified Program Agency (CUPA) was recently extended until May 2016 for all the USTs and pipelines at the facility, except for two USTs. The temporary closure permit for these two USTs expires in December 2015.

1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to completely or partially close the DFSP San Pedro fuel facility in order to achieve efficiencies in receiving, storing, and distributing fuel to DoD facilities. The DFSP San Pedro fuel facility includes the Main Terminal, the Marine Terminal, and off-site pipelines. The project is needed to address aging infrastructure and to limit environmental risk.

1.4 DECISION TO BE MADE

The decision to be made as a result of the analysis in this EA is to determine if an EIS needs to be prepared. An EIS would need to be prepared if it is determined that the alternative ultimately selected for implementation would have significant impacts to the human or natural environment. Should an EIS be deemed unnecessary based on the analysis of environmental impacts for the selected alternative as documented in this EA, a Finding of No Significant Impact would be issued by the Navy.

1.5 SCOPE OF ANALYSIS

1.5.1 RESOURCES ANALYZED IN DETAIL

As described and evaluated in Chapter 3, this EA analyzes the following resource areas in detail:

- Biological Resources
- Geological Resources
- Water Resources
- Transportation
- Air Quality
- Noise
- Hazardous Materials and Wastes
- Cultural Resources
- Visual Resources

1.5.2 RESOURCES NOT ANALYZED IN DETAIL

In accordance with NEPA and Council on Environmental Quality (CEQ) regulations, this EA focuses the description of the affected environment only on those resource areas potentially subject to impacts. This EA does not evaluate the following resource areas in detail because it is unlikely that impacts to the following resources would occur, or because any impacts that may occur would be minor (i.e., less than significant) as supported by the provided rationale.

Land Use. DFSP San Pedro is an industrial facility that receives, stores, transfers, and delivers fuel. The current land use is industrial. There would be no change in land use designation from implementation of the alternatives. At this time, the Navy has no plans for disposal or reuse of DFSP San Pedro. Therefore, impacts to land use from implementation of the alternatives are unlikely to occur.

Public Health and Safety. Implementation of any of the alternatives would occur within the boundaries of the DFSP San Pedro fuel facility, an area with restricted public access. On-going remediation activities would not be impacted. Following closure, the facility would continue to be fenced and controlled. Under the Alternative 4 and the No Action Alternative, all rules and regulations governing safety, access, hazardous materials, and hazardous wastes would continue to be followed, to include measures to minimize safety and environmental health risks. There would be no change to the availability of community emergency response services (i.e., police, fire, paramedics). Therefore, impacts to public health and safety from implementation of the alternatives are unlikely to occur.

Socioeconomics. Currently, there are approximately 15 jobs associated with the temporary closure at DFSP San Pedro. Implementation of any of the alternatives would have a minimal and temporary positive effect on the local economy due to the hiring of civilian contractors for demolition and/or repair/resumption of operation activities. Implementation of Alternatives 1, 2, or 3 would eliminate the 15 jobs associated with the temporary closure. Implementation of Alternative 4 would generate a need for approximately 15 jobs. Under the No Action Alternative, there would be a need for approximately 30 jobs at DFSP San Pedro. The proposed demolition and/or repair activities as described for the alternatives would have no demonstrable long-term economic or socioeconomic effect on the surrounding community. Demolition and/or repair activities would not attract a long-term worker population to the project vicinity nor affect the need for housing in the area. There would be no changes in the neighborhood make-up or demographic characteristics. Therefore, implementation of the alternatives would result in no significant impact to socioeconomic resources.

Utilities and Services. The temporary closure of DFSP San Pedro has reduced demand for utility and services. Implementation of the alternatives would not involve the construction of new facilities, or an increase in personnel that would place an additional demand on electricity, potable water, sanitary sewer, or communications services. Proposed activities would not affect regional utility transmission/distribution services as utilities and services do not cross through the property to other areas. Therefore, impacts to utilities and services from implementation of the alternatives are unlikely to occur.

Environmental Justice. Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires federal agencies to consider any potential disproportionally high and adverse human health and environmental impacts to minority and low-income populations. DFSP San Pedro straddles industrial and residential/commercial areas. Based on most recent census data, the minority population of San Pedro is greater than 50 percent, while less than 50 percent of the population is considered low income (U.S. Census Bureau 2010). Under all alternatives, there would be no change to land use at DFSP San Pedro; no new land use activities that might potentially impact surrounding populations would be introduced. Demolition-related truck traffic entering and leaving DFSP San Pedro would follow local haul routes and restrictions. The alternatives would not create a large amount of additional traffic in the area that would affect local communities over the long-term. Therefore, disproportionate effects on low- income or minority populations from implementation of the alternatives are unlikely to occur.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, helps ensure that federal agencies' policies, programs, activities, and standards address environmental health and safety risks to children. The Proposed Action would occur on government property, where access is controlled. A housing area is located to the north of the Main Terminal; a fence separates the Main Terminal from the housing area. Rolling Hills Preparatory School is located behind the housing area. Under the Proposed Action, standard job site safety measures would be implemented, which include securing equipment, materials, and vehicles, and neutralizing safety hazards during construction. The fuel facility would continue to be fenced to minimize the potential for unauthorized access. Under all alternatives, no new land use activities than might potentially impact children would be introduced. Therefore, there would be no disproportionate impact to the health and safety of children from implementation of the alternatives.

1.6 INTERGOVERNMENTAL COORDINATION

1.6.1 AGENCY CONSULTATIONS

Table 1-2 presents the anticipated consultations and any permits/approvals potentially required for the Proposed Action.

Table 1-2. Consultations and Permits/Approvals for the Proposed Action

Agency	Consultation/Coordination	Current Status
U.S. Fish and Wildlife Service	Section 7 of the Endangered Species Act	Pending
State Historic Preservation Officer	Section 106 of the National Historic Preservation Act	Pending
California Coastal Commission	Coastal Zone Management Act	Pending
Certified Unified Program Agency	Unified Facility Program Permit Application[1]	Pending
Regional Water Quality Control Board	Active case files	Pending

Notes: [1] This is a consolidated permit application to the Los Angeles Fire Department, Bureau of Fire Prevention, and the Public Safety Technical Section, Data Management Unit. Within the project area, the Los Angeles Fire Department is the CUPA.

1.7 PUBLIC/AGENCY PARTICIPATION

As part of scoping for this EA, the Navy and the DLA solicited input from federal and state agencies, local governments and the public. The public scoping process was initiated with the publication of a public scoping meeting notice in two local newspapers: The Los Angeles Times and the Daily Breeze on February 27, 28, and March 1, 2015. The public scoping meeting was held on Wednesday, March 18, 2015, at the Crowne Plaza Los Angeles Harbor Hotel from 6 P.M. to 8 P.M. The 15-day public scoping comment period began on March 18 and ended on April 3. Thirty-seven persons attended the public meeting and 19 written comments were received during the public scoping comment period. Table 1-3 summarizes comments received during the public scoping period. The comments received were from a combination of individuals and representatives of local organizations or agencies.

Table 1-3. Summary of Public Scoping Comments Received

Comment Category	Types of Comments	Comment Response/ EA Location
Alternatives	Supports partial closure, with continued operation, to keep local residents employed.	See Section 2.2.2.4 and subsequent analysis of Alternative 4 in Chapter 3, Environmental Consequences.
	Supports complete closure and removal of existing structures.	See Section 2.2.2.3 and subsequent analysis of Alternative 3 in Chapter 3, Environmental Consequences.
	Address possible future uses under all alternatives.	This is outside the scope of this project.
	Offered additional alternative to explore removal of structures based on the immediate effect their removal will have on habitat.	See Section 2.3.2.
Project Details	Clarify that abandoned tanks will be filled with inert material in Alternatives 1 and 2.	See Sections 2.2.2.1 and 2.2.2.2.
	Define the terms "caretaker condition" and "as is."	See Section 2.2.2.1.
	Clarify quantities of earth movement, construction equipment routing, and air/noise/hazmat exposure during (de)construction events.	See Chapter 3, Environmental Consequences.
	Address a clear and concise plan for project end goal.	This is outside the scope of this project.
	Identify and clarify what infrastructure is planned for upgrade.	See Sections 2.2.2.4 and 2.2.2.5.
California Environmental Quality Act (CEQA)	Why is project not being analyzed under CEQA for impacts outside of project area?	This is a federal project; CEQA does not apply.
Land Use	Navy retains baseball fields and turns land over for open space, with local plant species, and public use by taxpayers.	This is outside the scope of this project.
	Meet with large-scale developers to assess the alternatives future economic and utility value.	This is outside the scope of this project.
	No new development on project site.	This is outside the scope of this project.
	Requests that the native plant nursery be left in place and operational.	There are no planned changes to the native plant nursery with the project.
	Requests that the native plant nursery be put on the list of "not part of proposed action" with the ball fields and shooting range.	There are no planned changes to the native plant nursery with the project.

Comment Category	Types of Comments	Comment Response/ EA Location
Public Involvement Process	Public review period should be extended to 30-60 days.	The Navy will announce the availability for review of the Public Draft EA.
	More community meetings.	This is outside the scope of this project.
Environmental	A full EIS should be required before any alternative is selected.	An EA is the appropriate level of NEPA documentation at this stage.
	An EA is only appropriate in determining the future of operations, not environmental impact.	Comment noted.
	Address land contamination as a result of the sites previous uses, and mitigation efforts.	See Section 3.7.
	A detailed environmental assessment of (de)construction processes and their effects on biological resources.	See Section 3.1.
	The pier will contaminate the Long Beach Harbor.	See Section 3.3.
	Requests a finding of "significant environmental impact" allowing for an EIS.	An EA is appropriate to determine the environmental impacts from future operational or closure options.
	The public has insufficient information about infrastructure 'cleaning' and abandonment processes.	See Section 2.2.2.
Environmental Aesthetics	Fund grooming services of existing trees and shrubs planted by local homeowners association.	This is outside the scope of this project.
Biological Resources	Concerned with the welfare of local wildlife affected by any demolition or new construction.	See Section 3.1.
	Address impacts of any changes in native plant nursery operations.	There are no planned changes to the native plant nursery with the project.
	Full biological inventory of the Main Terminal and Marine Terminal.	See Section 3.1.
Cultural	Identify and protect any historical structures.	See Section 3.8.

CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

CEQ regulations for implementing the procedural provisions of NEPA establish a number of policies for federal agencies, including "using the NEPA process to identify and assess the reasonable alternatives to the Proposed Action that will avoid or minimize adverse effects of these actions on the quality of the human environment" (40 Code of Federal Regulations [CFR] 1500.2 [e]). This EA also considers input received from the public, stakeholder groups, agencies, and local governments during the public scoping period (Appendix A).

This EA only carries forward for detailed analysis those alternatives that could meet the purpose of and need for how to close or partially operate the facility as defined in Section 1.3, and could or might meet the reasonable alternative screening factors listed in Section 2.1. Reasonable alternatives include those that are practical or feasible from a technical and economic standpoint.

At this time, the Navy has no plans for disposal or reuse of DFSP San Pedro. Because the property may be needed in support of potential future Navy or DoD needs (which are currently unknown), this EA does not evaluate property disposal issues such as potential reuse of the site by the Navy or others.

This EA does not analyze any potential remediation/clean-up activities at DFSP San Pedro, as the requirement to conduct such activities exists independent of the consideration of the alternatives discussed in the EA. Such remediation/clean-up activities are in fact presently on-going at a number of sites at DFSP San Pedro, and this EA acknowledges the possibility that further clean-up activities could become necessary based on conditions discovered during implementation of any of alternatives analyzed herein.

In addition, no changes are proposed with respect to the native plant nursery, the ball fields, or the LAPD shooting range as part of this project; these areas would remain in their current condition. Furthermore, Pier 12 would not be demolished under any of the alternatives considered in this EA.

2.1 REASONABLE ALTERNATIVE SCREENING FACTORS

The screening factors used to develop the reasonable range of alternatives are as follows:

1. The alternative would result in the complete or partial closure of the DFSP San Pedro fuel facility.
2. The alternative would generate significant cost savings for DoD operations.
3. The alternative would not result in a change in land ownership or land use.
4. The alternative would minimize impacts to the environment.[1]
5. The alternative would meet CUPA requirements, in accordance with Unified Facilities Criteria[2] (UFC) 3-460-01.

[1] As demonstrated later in this EA, Alternative 3 would result in the greatest impacts to the environment; however, Alternative 3 is retained for analysis in accordance with CUPA requirements that necessitate the analysis of a complete removal alternative.

[2] The DoD initiated the UFC program to unify all technical criteria and standards pertaining to planning, design, construction, and operation and maintenance of real property facilities.

2.2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.2.1 PROPOSED ACTION

Under the Proposed Action, the Navy and the DLA propose to completely or partially close DFSP San Pedro. Under this proposal, the existing DLA and Navy Host Tenant Real Estate Agreement would be terminated and the fuel facility infrastructure, or a portion of the infrastructure, would be physically disconnected and closed in place, abandoned in place, dismantled, and/or demolished, depending on the alternative selected. NAVWPNSTA Seal Beach would continue as the Class I property owner of DFSP San Pedro.

Four action alternatives (Alternatives 1, 2, 3, and 4) have been identified as meeting the reasonable alternative screening factors. The following sections provide descriptions of the action alternatives. Section 2.2.2.5 presents the No Action Alternative.

2.2.2 ALTERNATIVES

The alternatives analyzed in this EA include:

- Alternative 1: Complete Closure with Partial Demolition
- Alternative 2: Complete Closure with Minimal Demolition
- Alternative 3: Complete Closure with Complete Demolition
- Alternative 4: Partial Closure with Minimal Demolition
- No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations at DFSP San Pedro

Under Alternatives 1, 2, and 3, DFSP San Pedro would be closed; however, the level of demolition would vary under each alternative. Under Alternative 4, only a portion of DFSP San Pedro would be closed and partial operations would resume; however, unneeded infrastructure would be closed with minimal demolition. Table 2-1 presents the main elements of Alternatives 1, 2, 3, 4, and the No Action Alternative.

Table 2-1. Summary Comparison of Alternatives			ALTERNATIVES[1]				
			Alternative 1: Complete Closure with Partial Demolition ***See Figures 2-1 and 2-2***	**Alternative 2: Complete Closure with Minimal Demolition** ***See Figure 2-3***	**Alternative 3: Complete Closure with Complete Demolition** ***See Figure 2-4***	**Alternative 4: Partial Closure with Minimal Demolition** ***See Figure 2-5***	**No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations**
ALTERNATIVE ELEMENTS	**Fuel Facility Status**		Closed	Closed	Closed	Partial operation	Full operation
	Main Terminal	***ASTs***	Demolished and removed	Isolated/secured and marked Out-of-Service	Demolished and removed	Reopened and reconnected to pipelines	Reopened and reconnected to pipelines
		USTs	Filled with an inert solid and abandoned in place	Filled with an inert solid and abandoned in place	Excavated, demolished, and removed	Concrete USTs filled with an inert solid and abandoned in place Steel USTs reopened and placed into operation, repaired, and upgraded as needed (see Section 2.2.2.4)	Repaired and reopened
		On-Site Pipelines and Valve Pits	Aboveground pipelines demolished and removed Underground pipelines permanently disconnected and plugged and/or filled with an inert solid and abandoned in place, except for approximately 9,600 linear feet of underground pipeline that would be demolished and removed All valve pits demolished and removed	Aboveground and underground pipelines permanently disconnected and plugged and/or filled with an inert solid and abandoned in place, except for approximately 9,600 linear feet of underground pipeline that would be demolished and removed 25 valve pits demolished and removed [2]	Aboveground and underground pipelines excavated, demolished, and removed All valve pits demolished and removed	Concrete UST pipelines: permanently disconnected and plugged and/or filled with an inert solid and abandoned in place, except for approximately 9,600 linear feet of underground pipeline that would be demolished and removed Steel USTs reopened, repaired, and upgraded as needed, to be placed back into operation 25 valve pits demolished[2] and removed	Reconnect all valves to pipelines and reopen for use
		Office Buildings	Placed in a long-term caretaker condition	Placed in a long-term caretaker condition	Placed in a long-term caretaker condition	Used	Used
		Support Structures	Pump stations/ houses and warehouses demolished and removed	Pump stations/ houses, truck fill stands, and warehouses secured	Demolished and removed	Reopened and used	Reopened and used
		Utilities	Shut-off and secured to closed infrastructure	Shut-off and secured to closed infrastructure	Shut-off and secured to closed infrastructure	Shut-off and secured to closed infrastructure; retain service to open infrastructure	In service
	Marine Terminal/ Pier 12		ASTs demolished and removed Buildings, equipment, Marine Terminal operations building, and pipelines demolished and removed Pier 12 to remain	No demolition ASTs isolated/secured and marked Out-of-Service All fuel equipment and buildings secured Pier 12 to remain	ASTs demolished and removed Buildings, equipment, Marine Terminal building, and pipelines demolished and removed Pier 12 to remain	Certain ASTs reopened and reconnected to pipelines Fuel equipment and Pier 12 reopened and placed into operation	ASTs reopened and reconnected to pipelines Fuel equipment and Pier 12 reopened and placed into operation
	Off-Site Pipelines		Aboveground segments demolished and removed Underground segments plugged and/or filled with an inert solid and abandoned in place	Aboveground segments demolished and removed Underground segments plugged and/or filled with an inert solid and abandoned in place	Aboveground segments demolished and removed Underground segments plugged and/or filled with an inert solid and abandoned in place	Off-site pipelines servicing the Main Terminal and the Marine Terminal would be reopened and used Remaining aboveground segments demolished and removed Remaining underground segments plugged and/or filled with an inert solid and abandoned in place	Placed in service
	Estimated Duration for Completion		4 years	3 years	4 years	3 years	3 years

Notes: [1] The native plant nursery, ball fields, and LAPD shooting range are not part of any alternatives analyzed in this EA.
[2] The 25 valve pits are 1, 59, 60, 62, 64, 65, 67, 68, 69, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 86, and 106.
AST = aboveground storage tank; UST= underground storage tank.

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2.2.2.1 Alternative 1: Complete Closure with Partial Demolition

Under Alternative 1, the DFSP Main Terminal, Marine Terminal, and off-site pipelines would be closed in accordance with UFC 3-460-01[3]. As depicted on Figure 2-1 (Main Terminal actions only), the following actions would occur under Alternative 1:

1. All buildings, equipment, and on-site pipelines at the Marine Terminal would be demolished; however, Pier 12 would not be demolished (Figure 2-2).
2. All ASTs would be demolished at both the Main and Marine Terminals. The ASTs would be recycled for scrap metal.
3. All USTs would be filled with an inert solid and abandoned in place.
4. On-site aboveground pipelines would be demolished.
5. On-site underground pipelines would be permanently disconnected and plugged and/or filled with an inert solid and abandoned in place[4]; however, approximately 9,600 linear feet of on-site underground pipeline within the Operations Area would be demolished (excavated and removed). After removal, the excavated area would be filled using on-site soils; no fill would be trucked in from off-site[5]. The excavated area would then be compacted to engineering standards and graded to approximate existing slope contours.
6. All valve pits, pump stations/houses, and all warehouses would be demolished.
7. The underground segments of the off-site pipelines (refer to Figure 1-5) would be plugged and/or filled with an inert solid and abandoned in place. The aboveground segments of the off-site pipelines would be demolished (refer to Table 1-1).
8. All office and administrative buildings at the Main Terminal would be placed in long-term caretaker condition[6].
9. Utilities at the Main Terminal would be shut-off and secured; utilities for non-project elements (e.g., ball fields) would not be affected.
10. A Closure Plan[7] would be prepared to describe the work that would be performed and environmental closure commitments. Soil and groundwater contamination has been found during the temporary closure process. A follow-on site investigation and restoration project has been initiated. Cleanup methods and standards would be negotiated with the CUPA, Regional Water Quality Control Board (RWQCB), and other regulatory agencies (e.g., the U.S. Fish and Wildlife Service [USFWS]), as applicable.

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3 UFC 3-460-01, *Design: Petroleum Fuel Facilities*, provides guidance on the rehabilitation, deactivation, or closure of fueling facilities. Chapter 14 lists the closure requirements for closing a fueling facility (DoD 2013).

4 An abandoned pipeline means a pipeline or pipeline segment which has been purged, sealed, and disconnected from an operating system but will not have basic federal maintenance and inspection activities performed.

5 The amount of on-site soil that would be used to fill the USTs under the soil fill option would be approximately 10,400 cubic yards. The soil would be taken from areas above and immediately adjacent to the USTs.

6 For this project, a caretaker condition implies maintaining the structure as needed so that it does not deteriorate on its own. Openings would be locked and secured and utilities would be turned off.

7 A Closure Plan is a plan that describes procedures for terminating the storage of hazardous materials and/or hazardous wastes in a storage facility in a manner that: (1) Eliminates or minimizes the need for further maintenance; (2) Eliminates or minimizes any threat to public health, safety and the environment from residual hazardous materials or hazardous wastes in the facility; and (3) Demonstrates that the hazardous materials and/or hazardous wastes that were stored in the facility would be removed, disposed, neutralized, or reused in an appropriate manner (CUPA Chapter 8.20).

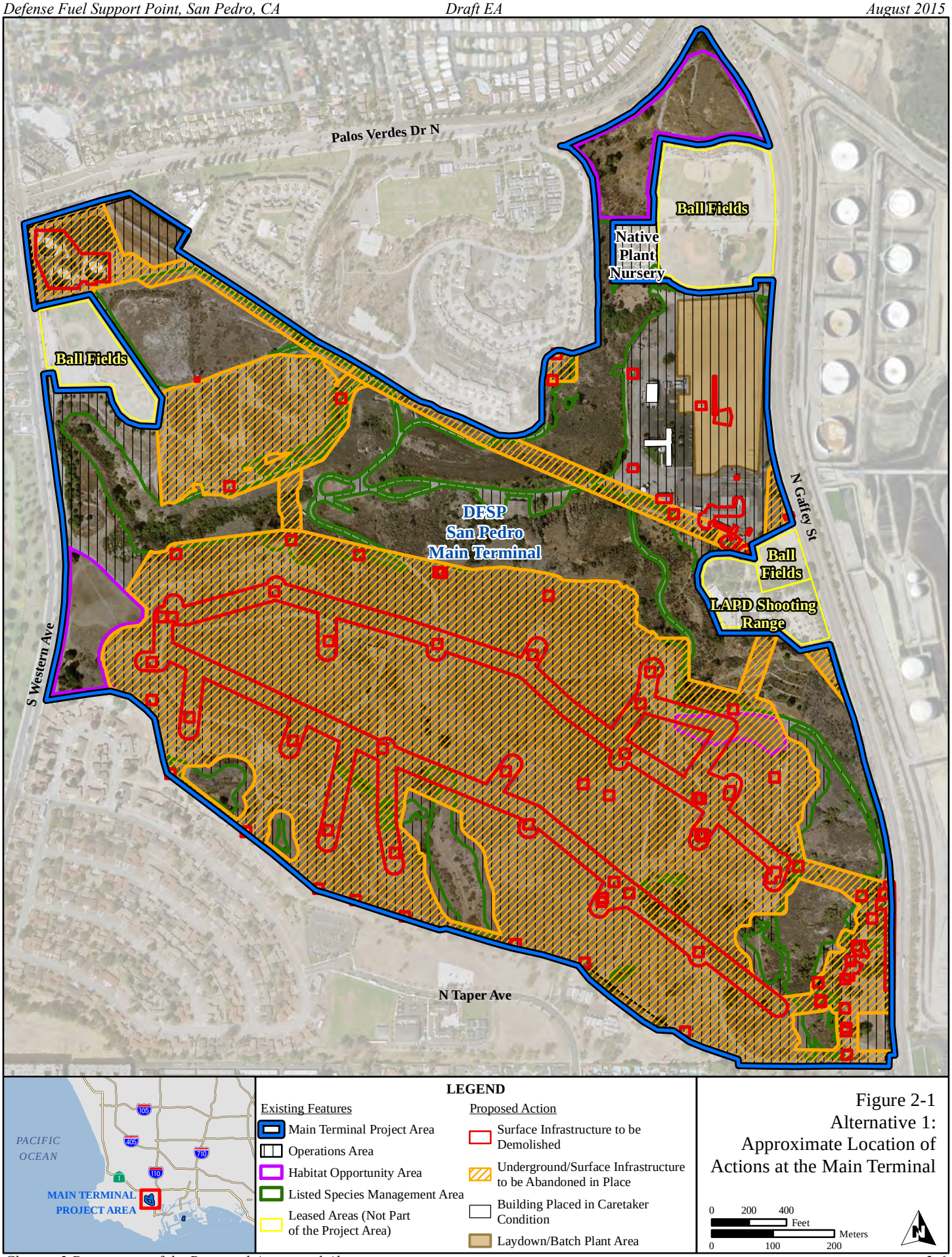

Figure 2-1
Alternative 1:
Approximate Location of Actions at the Main Terminal

Figure 2-2
Alternative 1:
Approximate Location of
Actions at the Marine Terminal

Soil, concrete, or foamcrete (i.e., a mixture of water, sand, cement, and air) would be used to fill the USTs. If filled with soil, the soil on top of the USTs would first be removed and stockpiled nearby, then the tops of the USTs would be removed, and the stockpiled soil and other soil in the immediate vicinity would then be pushed into the UST shells. The volume of fill dirt needed for Alternative 1 would be approximately 273,200 cubic yards. Soil needed to fill the empty USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats.

If it is determined that concrete or foamcrete would be used, concrete or foamcrete would be injected into the USTs and no excavation or removal of the top of the USTs would occur. A batch plant[8] may be temporarily erected at the Main Terminal to mix the concrete or foamcrete.

Multiple injection points would be used from existing access points to fill the on- and off-site pipelines with inert material and/or plug the pipelines. As described in Section 1.2.3, the ASTs and USTs were cleaned and isolated/secured, and the pipelines, both on-site and off-site, were cleaned and isolated/secured as part of temporary closure. No additional cleaning would be needed.

Disturbed and excavated sites would be stabilized using best management practices (BMPs) for erosion and sediment control. The BMPs would be implemented in compliance with the anticipated Construction General Permit, to include complying with inspection and monitoring requirements. The sites would then be revegetated consistent with the DFSP Integrated Natural Resources Management Plan (INRMP) (NAVWPNSTA Seal Beach 2014). Plant materials would not include any invasive species listed by the California Invasive Plant Council (CalIPC).

If Alternative 1 is selected, proposed closure and demolition activities would begin in calendar year 2016 and last approximately 4 years.

2.2.2.2 Alternative 2: Complete Closure with Minimal Demolition

Under Alternative 2, the DFSP San Pedro Main Terminal, Marine Terminal, and off-site pipelines would be closed in accordance with UFC 3-460-01; however, comparatively much less demolition would occur under Alternative 2 than under Alternative 1. As depicted on Figure 2-3, the following actions would occur under Alternative 2:

1. At the Marine Terminal (Pier 12), all fuel equipment would be secured and marked Out-of-Service; no demolition would occur.
2. All ASTs at the terminals would be isolated/secured and marked Out-of-Service; no demolition of ASTs would occur.
3. All USTs would be filled with an inert solid and abandoned in place.
4. On-site aboveground and underground pipelines would be permanently disconnected and plugged and/or filled with an inert solid and abandoned in place; however, approximately 9,600 linear feet of on-site underground pipeline and 25 valve pits within the Operations Area would be demolished (excavated and removed). After removal, the excavated area would be filled using on-site soils; no fill would be trucked in from off-site. The excavated area would then be compacted to engineering standards and graded to approximate existing slope contours.

[8] A batch plant is a machine that combines the materials used to create concrete or foamcrete.

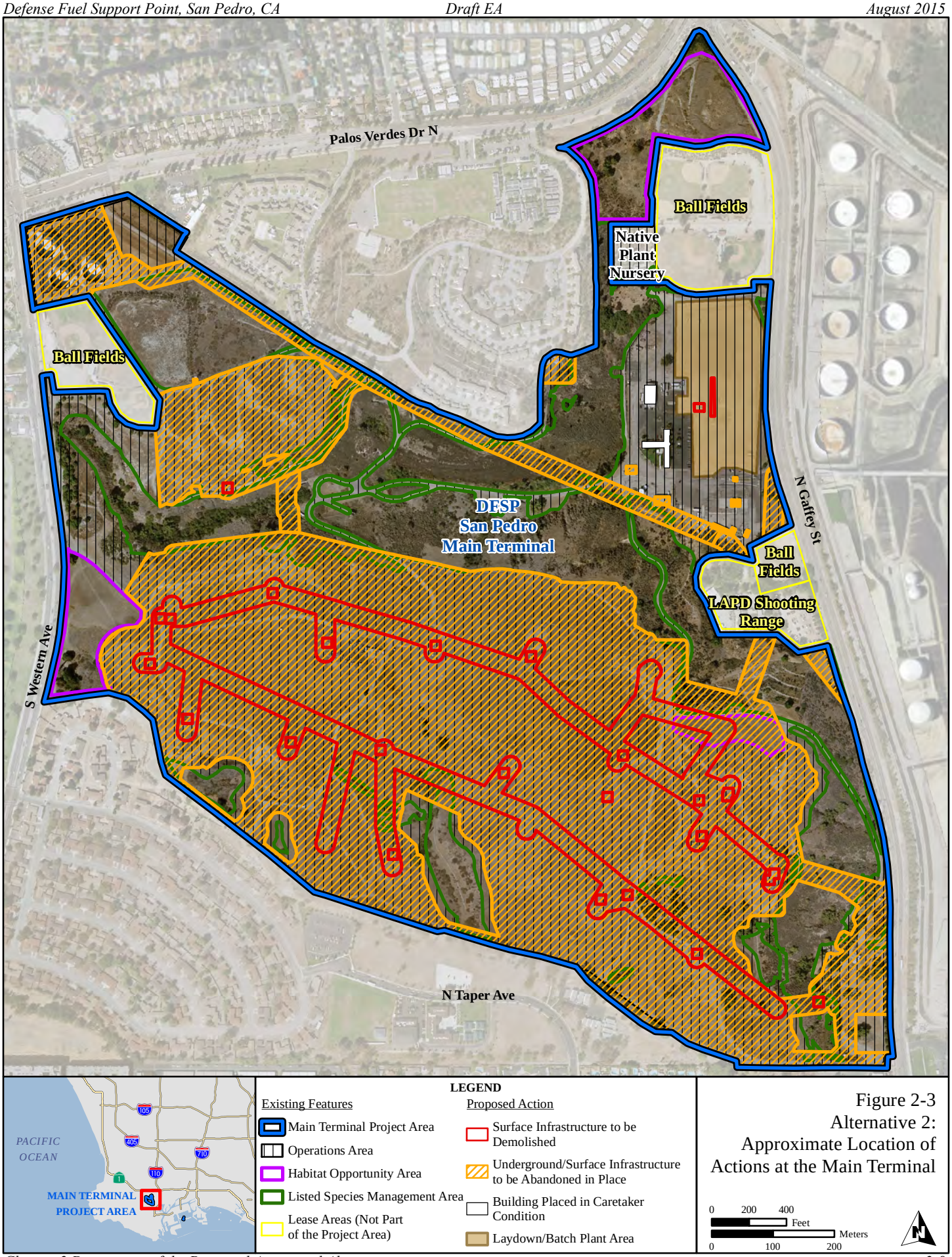

Figure 2-3
Alternative 2:
Approximate Location of Actions at the Main Terminal

5. The underground segments of the off-site pipelines (refer to Figure 1-5) would be plugged and/or filled with an inert solid and abandoned in place. The aboveground segments of the off-site pipelines would be demolished (refer to Table 1-1).
6. Miscellaneous infrastructure would be secured (not demolished).
7. All office and administrative buildings would be vacated and placed in a long-term caretaker condition.
8. Utilities at the Main Terminal would be shut-off and secured; utilities for non-project elements (e.g., ball fields) would not be affected.
9. A Closure Plan would be prepared to describe the work that would be performed and environmental commitments. Soil and groundwater contamination has been found during the temporary closure process. A follow-on site investigation and restoration project has been initiated. Cleanup methods and standards would be negotiated with the CUPA, the RWQCB, and other regulatory agencies (e.g., the USFWS), as applicable.

Soil, concrete, or foamcrete would be used to fill the USTs. If filled with soil, the soil on top of the USTs would first be removed and stockpiled nearby, then the tops of the USTs would be removed, and the stockpiled soil and other soil in the immediate vicinity would then be pushed into the UST shells. The volume of fill dirt needed for Alternative 2 would be approximately 273,200 cubic yards. Soil needed to fill the empty USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats.

If it is determined that concrete or foamcrete would be used, concrete or foamcrete would be injected into the USTs and no excavation or removal of the top of the USTs would occur. A batch plant may be temporarily erected at the Main Terminal to mix the concrete or foamcrete.

Multiple injection points would be used from existing access points to fill the on- and off-site pipelines with inert material and/or plug the pipelines. As described in Section 1.2.3, the ASTs and USTs were cleaned and isolated/secured, and the pipelines, both on-site and off-site, were cleaned and isolated/secured as part of temporary closure. No additional cleaning would be needed.

Disturbed and excavated sites would be stabilized using BMPs for erosion and sediment control. The BMPs would be implemented in compliance with the anticipated Construction General Permit, to include complying with inspection and monitoring requirements. The sites would then be revegetated consistent with the DFSP INRMP (NAVWPNSTA Seal Beach 2014). Plant materials would not include any invasive species listed by the CalIPC. If Alternative 2 is selected, proposed closure and demolition activities would begin in calendar year 2016 and last approximately 3 years.

2.2.2.3 Alternative 3: Complete Closure with Complete Demolition

Under Alternative 3 all DFSP San Pedro fuel facility ASTs, USTs, pipelines, pump houses, loading racks, vaults, etc. at the Main Terminal would be demolished and removed or abandoned in place (Figure 2-4). The existing office buildings, as well as Pier 12, would not be demolished. Support structures would be demolished. This complete demolition alternative reflects current CUPA regulations pertaining to USTs.

Under Alternative 3, the on-site underground pipelines would be excavated and demolished. Because off-site pipelines extend well beyond the property boundaries and run underground throughout the local area (refer to Figure 1-5), demolition would not be feasible; therefore, they would be plugged and/or filled with an inert solid and abandoned in place. However, the aboveground segments of the off-site pipelines would be demolished (refer to Table 1-1).

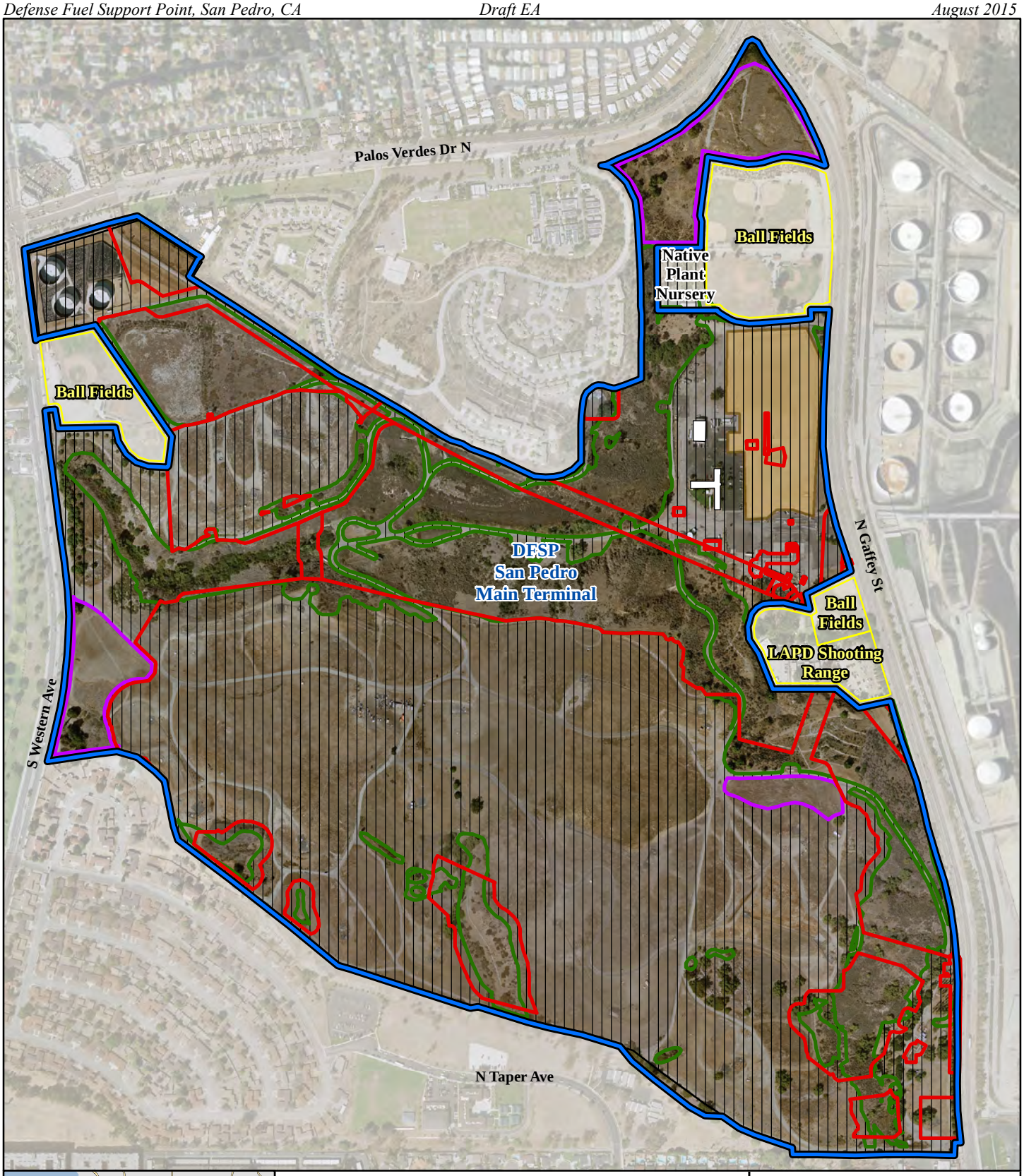

Figure 2-4
Alternative 3:
Approximate Location of Actions at the Main Terminal

Miscellaneous infrastructure such as pump stations/houses, truck fill stands, utilities, etc., would also be demolished. As described in Section 1.2.3, the ASTs and USTs were cleaned and isolated/secured, and the pipelines, both on-site and off-site, were cleaned and isolated/secured as part of temporary closure. No additional cleaning would be needed. Disturbed and excavated sites would be stabilized using BMPs for erosion and sediment control. The BMPs would be implemented in compliance with the anticipated Construction General Permit, to include complying with inspection and monitoring requirements. The sites would then be revegetated consistent with the DFSP INRMP (NAVWPNSTA Seal Beach 2014). Plant materials would not include any invasive species listed by the CalIPC.

A Closure Plan would be prepared to describe the work that would be performed and environmental commitments. Soil and groundwater contamination has been found during the temporary closure process. A follow-on site investigation and restoration project has been initiated. Cleanup methods and standards would be negotiated with the CUPA, the RWQCB, and other regulatory agencies (e.g., the USFWS), as applicable. Implementation of Alternative 3 would be subject to obtaining all pertinent regulatory approvals. If Alternative 3 is selected, proposed closure and demolition activities would begin in calendar year 2016 and last for approximately 4 years.

2.2.2.4 Alternative 4: Partial Closure with Minimal Demolition

Under Alternative 4, a portion of the Main Terminal would be permanently closed and a portion would be taken out of temporary closure status and placed into operation by the Navy (Figure 2-5). Operations would be approximately one-third of historical pre-temporary closure levels. The Marine Terminal would be taken out of temporary closure status and placed into operation. Some of the off-site pipelines would be placed back into service and others would be abandoned in place. The following actions would occur as part of Alternative 4 to support partial operation:

1. The Marine Terminal (Pier 12) would be reopened and placed into operation.
2. Certain ASTs at the Main and Marine Terminals would be reopened and placed into operation.
3. The concrete USTs would be filled with an inert solid and abandoned in place. The on-site pipelines associated with the concrete USTs would be permanently disconnected and plugged and/or filled with an inert solid and abandoned in place. Approximately 9,600 linear feet of underground pipeline and 25 valve pits within the Operations Area would be demolished (excavated and removed). After removal, the excavated area would be filled using on-site soils; no fill would be trucked in from off-site. The excavated area would then be compacted to engineering standards and graded to approximate existing slope contours.
4. The steel USTs and their associated on-site pipelines that have been cleaned, secured, and placed in temporary closure status would be reopened and placed into operation.
5. Some of the previously active off-site pipelines would be reopened. These include the Long Beach JP-5 and JP-8 pipelines between the Main Terminal and the Marine Terminal, and the 10-inch Government pipeline (refer to Figure 1-5).
6. The remaining aboveground segments of the off-site pipelines not reopened would be demolished (refer to Table 1-1). The remaining underground segments of the off-site pipelines not reopened (refer to Figure 1-5) would be plugged and/or filled with an inert solid and abandoned in place.
7. Miscellaneous infrastructure such as the pump stations/houses and truck fill stands would be reopened to support partial operations.
8. Office and administrative buildings and utilities would be reopened for operation.
9. Utilities to the demolished infrastructure would be shut-off and secured.

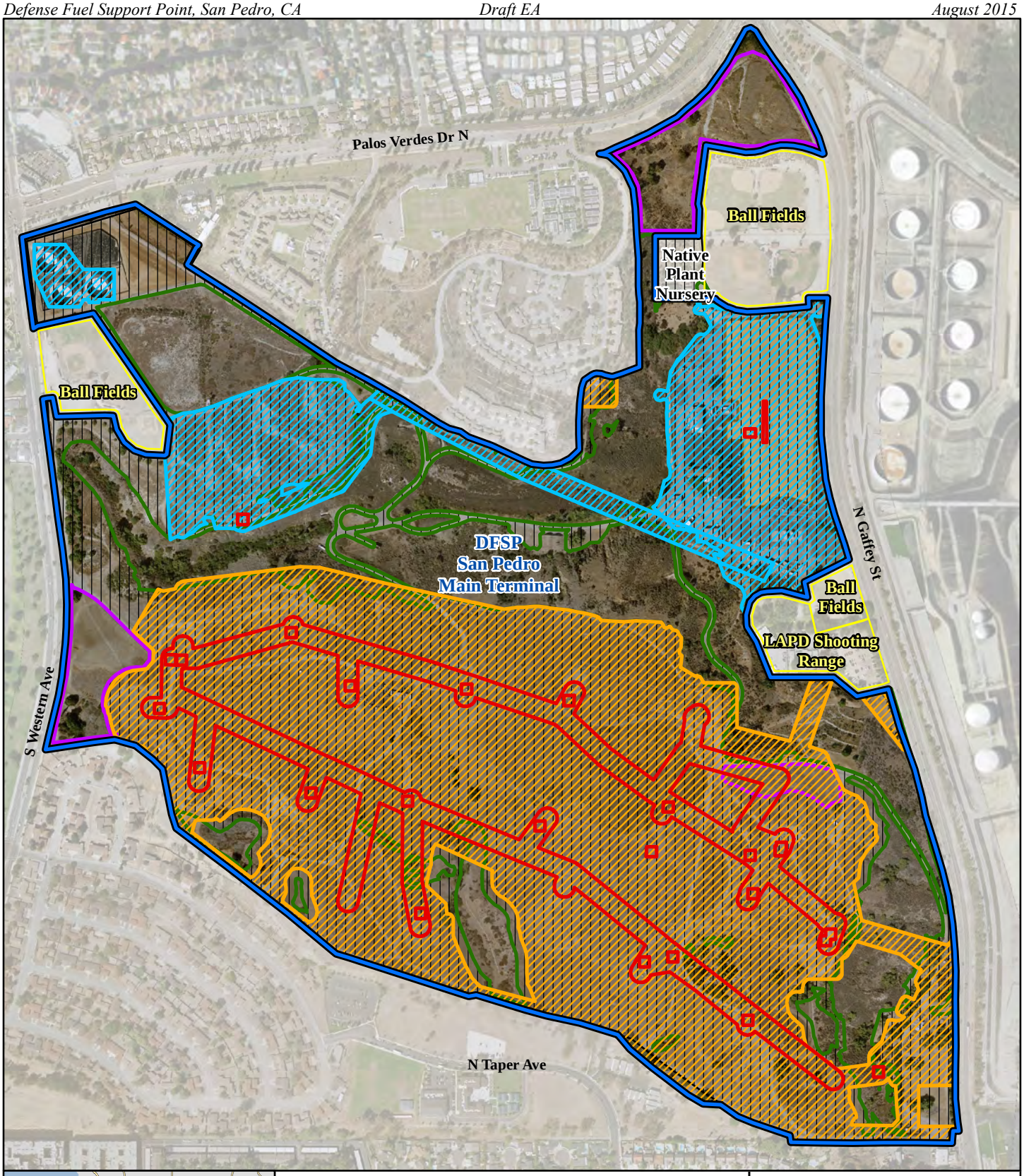

Figure 2-5
Alternative 4:
Approximate Location of Actions at the Main Terminal

10. A Closure Plan would be prepared to describe the work that would be performed and environmental commitments. Soil and groundwater contamination has been found during the temporary closure process. A follow-on site investigation and restoration project has been initiated. Cleanup methods and standards would be negotiated with the CUPA, the RWQCB, and other regulatory agencies (e.g., the USFWS), as applicable.

Soil, concrete, or foamcrete would be used to fill the concrete USTs. If filled with soil, the soil on top of the USTs would first be removed and stockpiled nearby, then the tops of the USTs would be removed, and the stockpiled soil and other soil in the immediate vicinity would then be pushed into the UST shells. The volume of fill dirt needed for Alternative 4 would be approximately 210,800 cubic yards. Soil needed to fill the empty USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats. If it is determined that concrete or foamcrete would be used, a batch plant may be temporarily erected at the Main Terminal.

In those areas subject to excavation/demolition, the sites would be revegetated consistent with the DFSP INRMP (NAVWPNSTA Seal Beach 2014). Plant materials would not include any invasive species listed by the CalIPC. Multiple injection points would be used from existing access points to fill the on- and off-site pipelines with inert material and/or plug the pipelines. If Alternative 4 is selected, proposed temporary closure reversal from Out-of-Service to active status, and demolition activities would begin in calendar year 2016 and last for approximately 3 years.

Reversing the temporary closure to active status would consist of reconnecting tanks and pipelines; reinstalling tank level controls; reinstalling meters; and removing all tag-outs used for securing the facility. Repairs required to return the fuel facility to partial operations (at one-third historical pre-temporary closure levels) could include, but would not be limited to, the following:

- Installing new coatings on three tanks.
- Repairing a hole in the floor of one tank.
- Repairing a leak in the roof of one tank.
- Assessing and repairing the roof on three tanks.
- Retrofitting or replacing a tank as a containment structure.
- Upgrading Pier 12 to Marine Oil Terminal Engineering and Maintenance Standards.
- Evaluating fill and return lines between valve pits and tanks for buried flanges (four of the six steel USTs), and replacing any remaining flanges with welded sections.
- Rerouting pressure relief valves from discharge points into containment structures to self-contain AST or low-pressure system return (at both Pier 12 and Main Terminal).
- Performing fire suppression system repairs and upgrades at Pier 12 and Main Terminal.
- Upgrading the back-up generator and related electrical system at Pier 12.
- Renovating or replacing the oil/water separator at the Main Terminal.
- Repairing the coatings on fill/return lines from the valve pits to the steel USTs.
- Completing electrical, ventilation, and plumbing work for testing support and sample storage at the Main Terminal Sample Management Building.
- Repairing the leak detection system to include the communication system.
- Repairing the Pier 12 boat crane or installing an alternate method for boat launching.
- Repairing the Pier 12 crane lift system.
- Providing secondary containment and protection for exposed piping at the Main Terminal.

2.2.2.5 No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations at DFSP San Pedro

The fuel facilities at DFSP San Pedro are currently in a state of temporary closure for regulatory purposes. Temporary closure, therefore, represents the baseline condition from which to assess the potential environmental impacts of the alternatives. The affected environment discussion for each resource area in Chapter 3 reflects current conditions – that is, under temporary closure[9]. However, under applicable legal authority, the facilities cannot permanently or indefinitely remain in a temporary closure status, but must instead either achieve permanent regulatory closure or be returned to operational status.

Therefore, while selection of the No Action Alternative would initially leave the DFSP San Pedro facilities in their current temporary closure status, it is assumed for purposes of this analysis that, in the event of such implementation, timely action would be taken to restore operational status. Accordingly, this EA does not analyze the continuation of temporary closure condition for "no action," but instead analyzes the reasonably foreseeable environmental impacts associated with a presumed eventual return to operational status[10]. It is assumed that the type and level of restored operations would be approximately the same as existed at DFSP San Pedro before temporary closure. In the instance where a choice of "no action" by an agency would result in predictable actions by others, the consequence of the "no action" alternative should be included in the analysis (CEQ 1981). This situation applies for the No Action Alternative included in this EA; therefore, the consequences of the predictable actions are analyzed.

Under the No Action Alternative, the resumption of operations would require substantial government investment to modernize the DFSP San Pedro fuel facilities, as the DFSP San Pedro fuel facilities are in need of major renovation/replacement, repair, and extensive maintenance to meet regulatory requirements. The restoration of operations under the No Action Alternative would require needed repairs to bring the facility back into operation (Figure 2-6). Under the No Action Alternative, the actions taken to achieve temporary closure status would be reversed, and it is presumed that full operations would eventually resume, subject to obtaining regulatory approval. Repairs required to return the fuel facility to service would include, but would not be limited to the same list of bulleted actions presented under Alternative 4 (refer to Section 2.2.2.4).

If soil or groundwater contamination is found, a follow-on site investigation and restoration project would be initiated. Cleanup would be negotiated with the CUPA, the RWQCB, and other regulatory agencies (e.g., the USFWS), as applicable. If the No Action Alternative is selected, proposed temporary closure reversal to active status would begin in calendar year 2016. It would take approximately 3 years to complete all repairs and return the facility to active status.

2.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

Each potential alternative identified in this section was eliminated from further consideration because the Navy and DLA determined, using the selection factors, that either they were not economically or technically practical or feasible and/or they did not substantially meet the purpose of, and need for the Proposed Action.

[9] DLA has previously prepared NEPA compliance documentation (DLA 2013a) that assessed the impacts associated with placing the facility in temporary closure status. Therefore, the discussion of the affected environment in this EA is a discussion of a condition, temporary closure, which has been previously analyzed.

[10] Title 23 California Code of Regulations, Article 7, Section 2671.

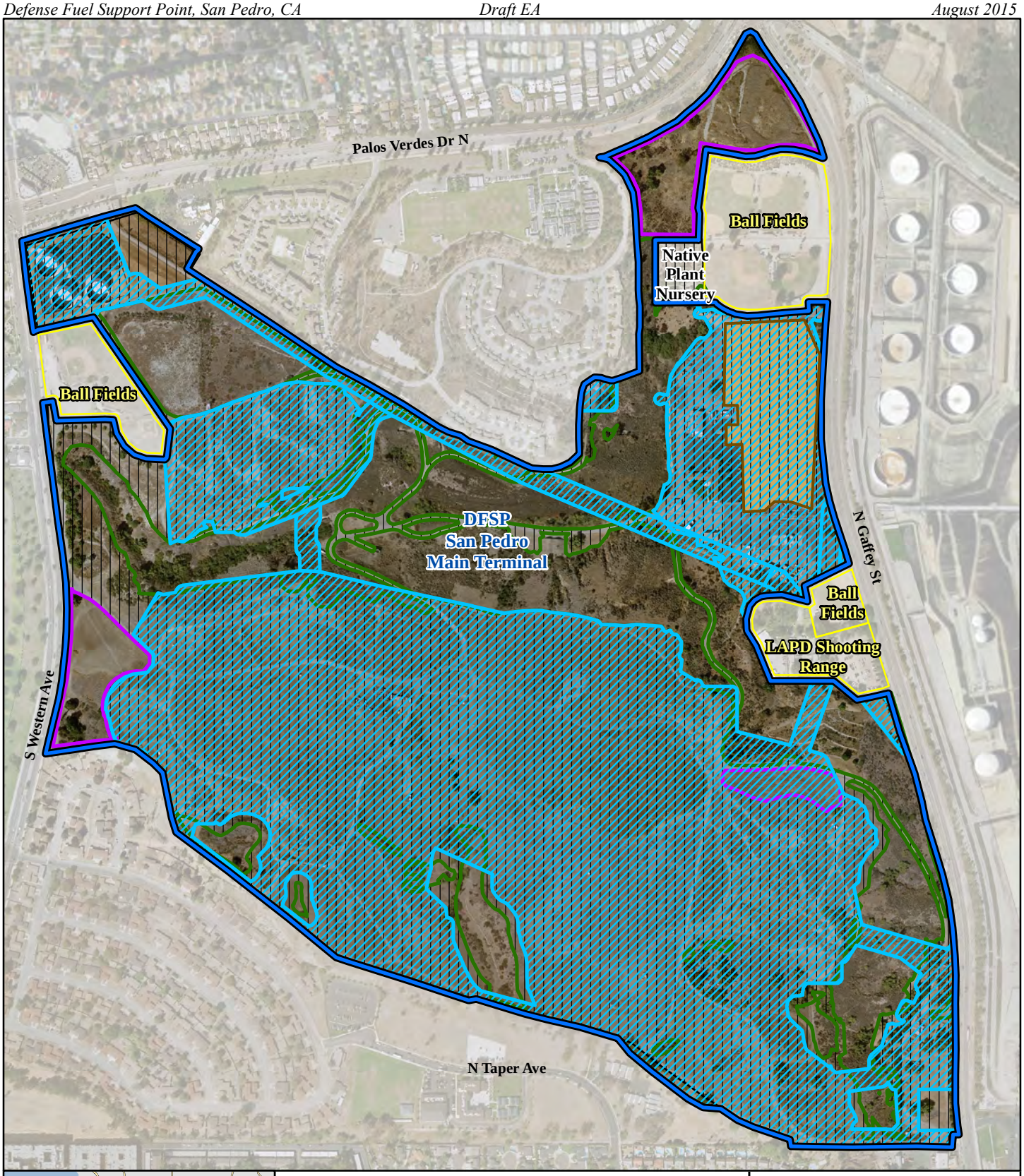

Figure 2-6
No Action Alternative: Approximate Location of Actions at the Main Terminal

2.3.1 EXTEND TEMPORARY CLOSURE INDEFINITELY

DFSP San Pedro is currently in temporary closure status in accordance with Title 23 California Code of Regulations (CCR), Article 7, Section 2671. This law does not allow the facility to remain indefinitely in a temporary closure status. Therefore, apart from noting that DFSP San Pedro would initially remain in a temporary closure status under the No Action Alternative (see Section 2.2.2.5), the Navy has eliminated the indefinite temporary closure status alternative from detailed analysis in this EA, because this potential alternative would not meet the screening factors presented in Section 2.1.

2.3.2 INCREMENTAL APPROACH TO REMOVAL

Another potential alternative was suggested during public scoping: an alternative that would analyze the impacts of implementing the proposed demolition activities incrementally. The suggested alternative would analyze the risks associated with removing as many of the tanks and pipelines as feasible if studies indicate that removal could be done effectively without impact to habitat areas or protected species.

The Navy considered this alternative, but ultimately decided not to carry it forward for analysis in the EA. The Navy believes the intent of the incremental alternative would be satisfied with the implementation of any of the currently proposed action alternatives, subject to the agency coordination efforts discussed below. The action alternatives presented in this EA analyze a range of closure and removal options that collectively provide a measure of flexibility for implementing the Proposed Action in a deliberate manner. Furthermore, as noted for each alternative, ultimate agency coordination would dictate the extent and methods of implementing the Proposed Action. The Closure Plan would be developed in coordination with CUPA, the RWQCB, and the USFWS. Impact avoidance and minimization measures to protect habitat and special status species would be a part of the Closure Plan. Therefore, the Navy has eliminated the incremental approach to removal alternative from detailed analysis in this EA because this suggested alternative would be essentially accomplished through implementation of any of the existing action alternatives.

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CHAPTER 3
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environmental conditions and potential environmental consequences for the following resource areas analyzed in detail: biological resources, geological resources, water resources, transportation, air quality, noise, hazardous materials and wastes, cultural resources, and visual resources. The analysis presented in each resource area environmental consequence section reflects the implementation of the impact avoidance and minimization measures identified for each alternative, as applicable. Section 3.10 provides a summary of potential impacts to each resource area from each alternative. Within Section 3.10, Table 3.10-1 provides a summary of environmental consequences to each resource area from implementation of the alternatives.

Appendix B summarizes the potential impacts to biological resources under each alternative (Table B-1) and the impact avoidance and minimization measures (Table B-2) that would be implemented as part of each alternative, for all resource areas, as identified.

3.1 BIOLOGICAL RESOURCES

The following section describes vegetation, general wildlife species, and special status species within the Region of Influence (ROI) and provides analyses of the potential effects on these resources from the alternatives. For biological resources, the ROI is the project area.

3.1.1 DEFINITION OF RESOURCE

For the purposes of this EA, biological resources include plant communities, plant species, wildlife species, habitat linkages, and special status communities and species that may be affected by implementation of the alternatives. These resources are divided into three major categories: plant communities, wildlife and wildlife habitat, and special status species. Wetlands and other waters of the U.S. are addressed in Section 3.3.

- *Plant communities* include all existing terrestrial plant communities and species, with the exception of special status plant species.
- *Wildlife and Wildlife Habitat* includes all animals with the exception of those identified as special status species. Wildlife includes the characteristic animal species such as mammals, invertebrates, fish, amphibians, reptiles, and birds that occur in the ROI. Also included in this category are birds protected under the Migratory Bird Treaty Act (MBTA) and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*.
- *Special status species* include species that are federally listed as threatened or endangered, proposed for listing as threatened or endangered, or are candidates for such listing under the federal Endangered Species Act (ESA); bald and golden eagles (protected by the Bald and Golden Eagle Protection Act); and other species considered sensitive by California Department of Fish and Wildlife (CDFW), and California Native Plant Society and managed under the DFSP San Pedro INRMP. Sensitive habitats include those that support endangered, threatened, or sensitive species and, therefore, are important to the conservation of these species.

The following data sources were consulted/developed to support the analysis presented in this chapter:

- DFSP San Pedro INRMP (NAVWPNSTA Seal Beach 2014).
- DFSP San Pedro geographic information systems (GIS resource database) (NAVWPNSTA Seal Beach 2015). Current GIS habitat data provided in 2015 by NAVWPNSTA Seal Beach were used for all calculations of biological resources acreages, including vegetation and endangered species habitats.
- Biological Opinion (BO) for Routine Maintenance Operations, Defense Fuel Support Point San Pedro, Los Angeles County, California (USFWS 2010a); 2014 Biological Assessment (BA) DFSP San Pedro Routine Operations and Maintenance Activities (DLA 2014); and 2015 BA DFSP San Pedro Proposed Complete or Partial Closure (in preparation).
- Additional relevant information and technical reports; Palos Verdes blue butterfly (*Glaucopsyche lygdamus paloverdesensis*) (PVB) survey data (Longcore, pers. comm. 2015; Longcore and Osborne 2015; Johnson et al. 2013, 2008; Longcore and Osborne 2012).
- Coastal California gnatcatcher (*Polioptila californica californica*) (CAGN) survey data (ICF International 2011, Cardno 2015).

3.1.2 AFFECTED ENVIRONMENT

The project consists of a Main Terminal, located in San Pedro (refer to Figure 1-3), a Marine Terminal (refer to Figure 1-4), located in the West Basin, Pier T area of Long Beach Harbor, and off-site interconnecting pipelines (refer to Figure 1-5).

3.1.2.1 Vegetation

Main Terminal

Vegetation community descriptions presented in the DFSP San Pedro INRMP (NAVWPNSTA Seal Beach 2014), which are based on vegetation mapping efforts conducted in 1996 and subsequent updates, were used to describe plant communities within the ROI. Scientific nomenclature for plants follows *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). Below is a brief description of the plant communities within the project area.

The Main Terminal consists of Operations, Leased, Listed Species Management, and Habitat Opportunity Areas, which are managed differently (Figure 1-3). The Operations Area is the area where fuel facility operations previously took place. This area contains storage tanks, pipelines, valve pits and vaults, fire suppression systems, a truck loading rack, and operational/administration buildings.

The Leased Areas are managed by NAVWPNSTA Seal Beach. These areas include the shooting range leased to the LAPD and ball fields leased to community softball organizations. The Listed Species Management Areas provide natural resource benefits and are not subject to significant operations impacts on a regular basis. The Listed Species Management Area includes potentially occupied PVB, and CAGN habitat. The Habitat Opportunity Areas are areas of the facility not routinely accessed for operation support purposes.

Over 90 percent of the Operations Area, which covers 208 acres, consists of non-native grasslands and developed land types that have little resource value for non-grassland species because a large portion of the area is routinely mowed for fire abatement around active fuel tanks (DLA 2014). An additional 24 acres are leased as ball fields and a police shooting range. These acres also have little natural resource value and are outside of the project area. In addition, a native plant nursery owned by the government and operated under contract by the Palos Verdes Peninsula Land Conservancy, which grows locally sourced

plant species, is located near the administration portion of the Main Terminal. It is also excluded from this assessment because its operation would not be affected.

The remaining approximately 101 acres provide natural resource benefits and are not subject to significant operations impacts on a regular basis (USFWS 2010a; DLA 2014). These are referred to as Listed Species Management Areas/Habitat Opportunity Areas and are the focus of most biological surveys and resource management activities at the Main Terminal site. Specifically, the 2014 BA (DLA 2014) identifies the Listed Species Management Areas as "areas that provide natural resource benefits and are not subject to significant operations impacts on a regular basis" and Habitat Opportunity Areas as "areas of the facility not routinely accessed for operation support purposes." Hereafter in this assessment, the Listed Species Management Areas (84 acres) and Habitat Opportunity Areas (17 acres) will be collectively referenced as "Habitat Areas."

Plant communities of DFSP San Pedro primarily consist of non-native grasslands (approximately 70 percent of the non-developed area) with patches of native coastal sage scrub, oak woodlands, and riparian corridors, as well as groves of eucalyptus and other non-native trees.

Table 3.1-1 and Figure 3.1-1 present the plant communities and other land cover types within DFSP San Pedro Main Terminal. The acreages and land use types used throughout the biological analysis are based on current (2015) GIS data provided by NAVWPNSTA Seal Beach.

Table 3.1-1. Existing Plant Communities and Land Cover Types within the Main Terminal Project Area

Vegetation and Land Cover Types	Habitat Area		Operations Area		Site Total
	Acres	% of Total	Acres	% of Total	Acres
Bare	0.20	12.9%	1.36	87.1%	1.56
Coastal sage scrub	34.39	92.9%	2.62	7.1%	37.01
Developed	1.34	4.9%	25.77	95.1%	27.11
Eucalyptus groves	0.74	30.4%	1.69	69.6%	2.42
Needlegrass grasslands	0.07	29.9%	0.15	70.1%	0.22
Non-native grasslands	38.86	19.5%	160.37	80.5%	199.23
Non-native vegetation	7.78	67.4%	3.76	32.6%	11.53
Oak woodlands	0.09	6.7%	1.26	93.3%	1.35
Other non-native woodlands	3.23	47.0%	3.63	53.0%	6.86
Pond	0.05	100.0%	0.00	0.0%	0.05
Roads and developed area	0.67	27.7%	1.76	72.3%	2.43
Sparse coastal sage scrub	4.71	91.6%	0.43	8.4%	5.14
Sparse sandy scrub	3.75	99.3%	0.02	0.7%	3.77
Undetermined plant community	0.40	8.5%	4.34	91.5%	4.75
Willow riparian scrub	4.54	85.4%	0.77	14.6%	5.31
Totals	**100.82**	**32.6%**	**207.95**	**67.4%**	**308.76**[1]

Notes: [1] Does not include approximately 24 acres of leased areas (ball fields and shooting range), which are not a part of this project.

Non-Native Grasslands

Non-native grasslands are the dominant vegetation type on the Main Terminal. These grasslands contain primarily non-native annual grasses (e.g., bromes [*Bromus* spp.] and wild oats [*Avena* spp.]), although some native needlegrasses (*Stipa* spp.) are present (NAVWPNSTA Seal Beach 2014). Several non-native (often invasive) annual herbs are common, including: Italian thistle (*Carduus pycnocephalus*), tocalote (*Centaurea melitensis*), broadleaf and redstem filaree (*Erodium* spp.), hedypnois (*Hedypnois cretica*), summer mustard (*Hirschfeldia incana*), bur clover (*Medicago polymorpha*), sourclover (*Melilotus* spp.), wild radish (*Raphanus sativus*), and milk thistle (*Silybum marianum*) (NAVWPNSTA Seal Beach 2014).

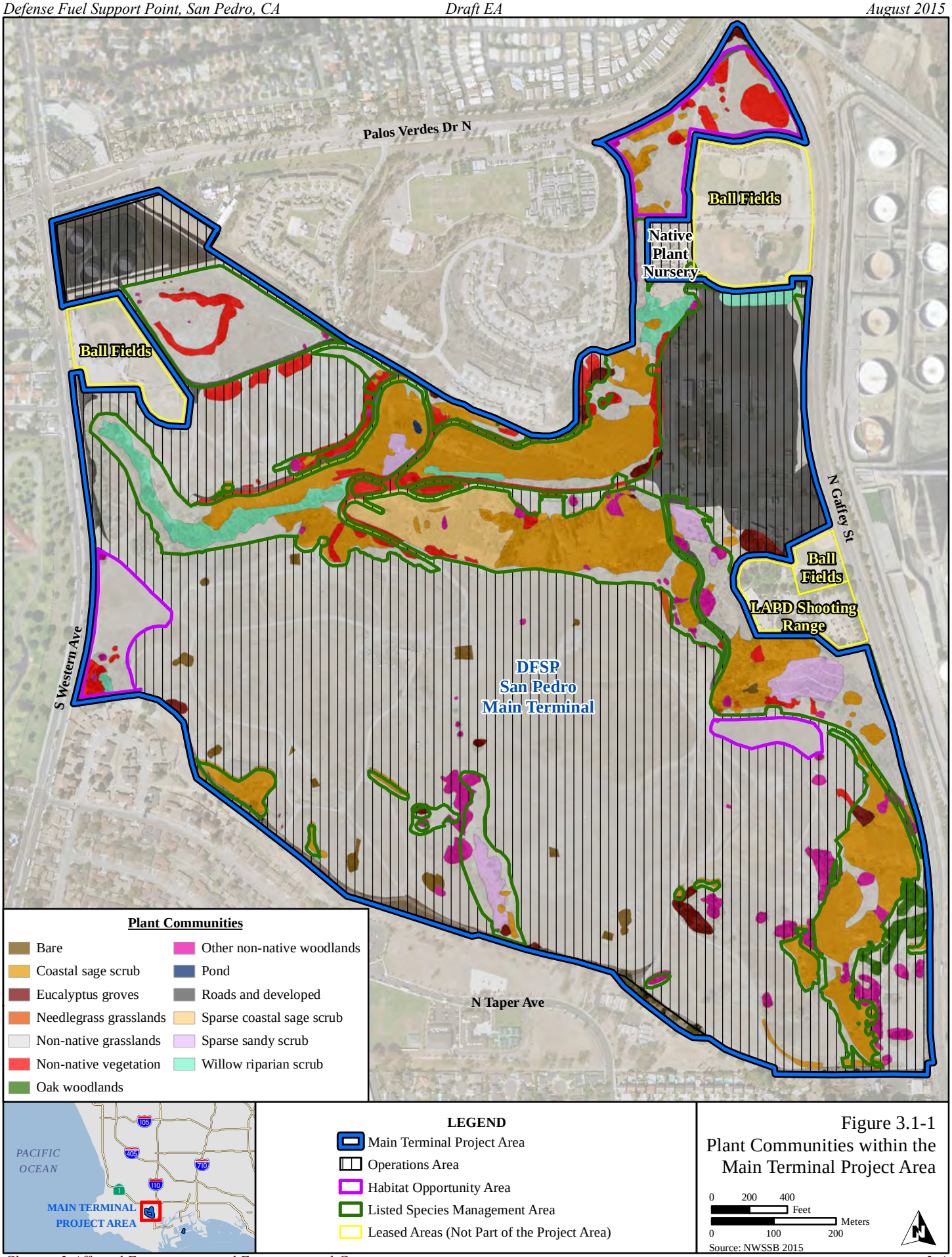


Figure 3.1-1
Plant Communities within the Main Terminal Project Area

Native herb species occurring in this community include beach bur *(Ambrosia chamissonis*), annual bursage (*Ambrosia artemisiifolia*), western ragweed (*Ambrosia* spp.), narrowleaf milkweed (*Asclepias fascicularis*), horseweed (*Conyza canadensis*), fascicled tarplant (*Deinandra fasciculata*), dove weed (*Eremocarpus setigerus*), telegraph weed (*Heterotheca grandiflora*), and Spanish lotus (*Acmispon americanus* var. *americanus*).

Non-native grasslands may also support some coastal sage scrub species, and in some areas encompass small patches of true coastal sage scrub, which are important corridors for birds or butterflies, wildlife and native seed sources. PVB host plants deerweed (*Acmispon glaber*) and coast locoweed (*Astragalus trichopodus lonchus*) are scattered throughout the grasslands. The majority of grassland on the Main Terminal is mowed for fire control and weed abatement.

Coastal Sage Scrub

The coastal sage scrub vegetation community is characterized by low-growing shrubs. California sagebrush (*Artemisia californica*) is dominant, and California bush sunflower (*Encelia californica*), coyote bush (*Baccharis pilularis*), California buckwheat (*Eriogonum fasciculatum*), brittlebush (*Encelia farinosa*), and black sage (*Salvia mellifera*) are co-dominant or subdominant in areas. Some portion of coastal sage scrub also supports coast prickly pear (*Opuntia littoralis*), purple sage (*Salvia leucophylla*), toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), and sugar bush (*Rhus ovata*). Other species present include lemonade berry (*Rhus integrifolia*), thickbracted goldenbush (*Ericameria palmeri* var. *pachylepis*), Mexican elderberry (*Sambucus nigra*), bedstraw (*Galium angustifolium* ssp. *angustifolium*), sawtooth goldenbush (*Hazardia squarrosa*), giant wildrye (*Elymus condensatus*), sticky bush monkeyflower (*Mimulus* sp.), and coastal cholla (*Opuntia prolifera*). Native annual and perennial herb and grass species that are common in the understory are California croton (*Croton californicus var. californicus*), coyote melon (*Cucurbita foetidissima*), long-stemmed buckwheat (*Eriogonum elongatum*), green everlasting (*Pseudognaphalium californicum*), cudweed-aster (*Corethrogyne filaginifolia*), and foothill and purple needlegrass (*Stipa lepida* and *S. pulchra*, respectively).

PVB host plants deerweed and coast locoweed occur in this habitat type, but less frequently. Escaped ornamental species are often observed such as sea fig and hottentot fig (*Carpobrotus* spp.), occur as thick mats within the shrublands (NAVWPNSTA Seal Beach 2014).

Sparse Sandy Scrub

Sparse sandy scrub community contains seral or fringe coastal sage scrub components such as croton and deerweed. This community tends to be on a sandy substrates and steep grassland slopes. Since no one species dominates these areas, they cannot be readily assigned to a more conventional vegetation community. They are identified as a separate mapping unit because they offer favorable habitat restoration sites for PVB.

Coast Live Oak Woodlands

Coast live oak woodlands covers are dominated by coast live oak (*Quercus agrifolia*), occasionally with other non-native tree species, such as pepper trees (*Schinus* spp.). Toyon, laurel sumac, and lemonade berry are occasional throughout the woodlands. Understory species are generally composed of non-native grasses and forbs, although some natives may also occur.

Willow Riparian Scrub

Riparian vegetation consists of an assemblage of willows (Goodding's black willow [*Salix gooddingii*], red willow [*S. laevigata*], and arroyo willow [*S.lasiolepis*]), coyote bush, and other species. Willow riparian scrub is associated with natural drainage features within the area.

Eucalyptus Woodland/Groves

The eucalyptus groves are dominated by gum trees (*Eucalyptus* spp.). The understory of these woodlands is generally sparse, composed of non-native grasses and forbs and some native shrubs.

Other Non-Native Woodlands

Non-native woodlands cover approximately 3.7 acres (1.5 hectares). These areas are dominated by non-native trees such as Peruvian pepper tree (*Schinus molle*), Brazilian pepper tree (*S. terebenthifolia*), and acacias (*Acacia* spp.). The understory is generally sparse, composed of non-native grasses and forbs and some native shrubs.

Undetermined Plant Community

This category applies to a narrow strip along the western and southern boundaries of the site totaling 4.75 acres (1.9 hectares) that was not included in the vegetation mapping.

Other Land Cover Types

Landscaping is considered an "other land cover types" and occurs in areas around the buildings, ball fields, and the entry to the Main Terminal. The category includes native, and non-native plant species. Landscaped areas of the Main Terminal constitute less than 0.1 acre (0.04 hectare) located around the administration buildings. Plants incidentally observed in landscaped areas include magnolia (*Magnolia* sp.), eucalyptus (*Eucalyptus* sp.), daylily (*Hemerocallis* sp.), Joshua tree (*Yucca brevifolia*), quince (*Chaenomeles* sp.), stone crop (*Sedum* sp.), oleander (*Nerium oleander*), loquat (*Eriobotrya japonica*), California fan palm (*Washingtonia filifera*), king palm (*Archontophoenix cunninghamiana*), juniper (*Juniperus* sp.), jade plant (*Crassula argentea*), orchid tree (*Bauhinia* sp.), and Brazilian pepper tree (NAVWPNSTA Seal Beach 2014).

Marine Terminal and Off-site Pipelines

The Marine Terminal in the Port of Long Beach consists of developed lands with buildings, paved roads, and container storage areas. Adjacent undeveloped lands are highly disturbed. No natural or sensitive plant communities are present at the Marine Terminal. Similarly, the off-site pipelines go through developed areas with little habitat value, typically along roads, and are almost entirely underground. The short segments of off-site pipeline that are aboveground consist of developed areas (pipe, steel, and concrete features); no plant communities occur.

3.1.2.2 Non-Native Invasive Plant Species

Non-native invasive plant species generally are those species listed by the 2006 CalIPC inventory, but they also include any species that can invade natural or restoration areas and replace or preclude the establishment of native or other more desirable species. Invasive, non-native plant species known to occur at the Main Terminal and/or have the potential to occur on the off-site pipelines and the marine terminal include, but are not limited to, giant reed (*Arundo donax*), Peruvian pepper tree (*Schinus molle*), hottentot fig or iceplant (*Carpobrotus edulis*), castor bean (*Ricinus communis)*, and pampas grass (*Cortaderia selloana)*. Invasive species management by DLA/Navy includes maintenance of an updated list of species of concern, monitoring, and control by physical removal or cutting using hand tools, mowing, and

treatment with herbicide (NAVWPNSTA Seal Beach 2014). The Main Terminal is vulnerable to non-native species from seed sources located in nearby residential areas, as are portions of the off-site pipelines and Marine Terminal where soil is exposed.

3.1.2.3 Wildlife and Wildlife Habitat

Main Terminal

A complete list of wildlife species documented on the Palos Verdes Peninsula is included in the INRMP; the list consists of 62 species of birds, 10 mammals, 7 reptiles and amphibians, and 83 invertebrates (NAVWPNSTA Seal Beach 2014). Most wildlife species present at the Main Terminal are species commonly found in and near urban areas, such as house finch (*Carpodacus mexicanus*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), American kestrel (*Falco sparverious*), great horned owl (*Bubo virginianus*), and red-tailed hawk (*Buteo jamaicensis*). Nesting by neotropical migratory birds has not been well-documented. Small mammals include opossum, desert cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), house mouse (*Mus musculus*), black rat (*Rattus rattus*), and striped skunk (*Mephitis mephitis*). Larger mammals such as raccoon (*Procyon lotor*), coyote (*Canis latrans*), feral dogs, and cats are also present.

Off-site Pipelines

Wildlife use of developed and undeveloped disturbed areas that are traversed by off-site pipelines within the Ports of Los Angeles and Long Beach is dominated by common species that are adapted to human-disturbed landscapes. These include various insects, native lizards, a variety of resident and migratory birds, and native and non-native small mammals. A number of terrestrial and marine-associated birds may occur on the piers, wharfs, structures, developed lands, and waters of the ports. The most commonly observed upland species within the West Basin area during the 2007-2008 harbor-wide surveys included the non-native, rock pigeon (*Columba livia*) and, to a lesser extent, American crow (*Corvus brachyrhynchos*), common raven (*C. corax*), European starling, and house finch. Upland species occur in low abundances in the survey area and are adapted to urban and disturbed habitats.

Marine Terminal

Marine-associated birds may occur on piers, wharfs, other structures, and waters within the Port complex. The most commonly observed species within the West Basin area are Brandt's cormorant (*Phalacrocorax penicillatus*), mew gull (*Larus canus*), western gull (*L. occidentalis*), surf scoter (*Melanitta perspicillata*), and western grebe (*Aechmophorus occidentalis*) (SAIC 2010). Upland species present at the Marine Terminal and adjacent disturbed areas are similar to those described above for off-site pipelines.

3.1.2.4 Special Status Species

Federally Listed Species

No federally listed plant species are known to occur within the project area, including the Main Terminal, off-site pipelines, or Marine Terminal. Federally listed wildlife species that are known or have the potential to occur within the project area as described below and listed in Table 3.1-2. Critical habitat, as defined under the ESA, has not been designated on DFSP San Pedro.

***Main Terminal*.** Two animal species federally listed under the ESA as threatened or endangered occur at the Main Terminal: the PVB (*Glaucopsyche lygdamus palosverdesensis*) and the CAGN (*Polioptila californica californica*). These species are discussed below. The southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo (*Vireo bellii pusillus*) have the potential to move

through the Main Terminal as transients during migration. Both are associated with riparian habitats. Neither is expected to be more than a transient during migration.

Off-site Pipelines. No listed plant or wildlife species are known or expected to occur along the off-site pipelines.

Marine Terminal. The endangered California least tern (*Sternula antillarum browni*) (CLT) could forage in waters near Pier 12, which is part of the Marine Terminal. This species is discussed below.

Table 3.1-2. Federally Listed Threatened and Endangered Species Known to Occur or Potentially Occurring at DFSP San Pedro

Species	Status	Habitat/ Occurrence in Project Area
Main Terminal Site		
PVB *Glaucopsyche lygdamus palosverdesensis*	FE	This species is known to occur on DFSP San Pedro Main Terminal associated with its larval food plants, with estimates ranging from 35 – 214 individuals since the population's discovery in 1994 through 2013 (Johnson et al. 2013; Longcore and Osborne 2015). No adult individuals were observed in 2014 or 2015 (Longcore and Osborne 2015; Longcore, pers. comm. 2015); however, the species may exist on the site as pupae in diapause. The Main Terminal supports the only remaining natural population of the species. The other extant populations have relied on introduction of captive bred individuals originating from DFSP San Pedro.
CAGN *Polioptila californica californica*	FT/ CSSC	CAGNs are present in coastal sage scrub on DFSP San Pedro Main Terminal. CAGNs have been observed in the project vicinity in 1993, 1994, 1995, 2011, and during recent surveys in 2015.
Southwestern willow flycatcher *Empidonax traillii extimus*	FE/SE	This species nests in dense riparian vegetation associated with streams, rivers, lakes, springs, and other watercourses and wetlands. Willow flycatchers (*E. trallii*) were observed on DFSP San Pedro in 1997 but these were thought to be non-breeding migratory transients belonging to the state-listed subspecies. Because of its small size and isolation, the riparian habitat at DFSP San Pedro Main Terminal is probably unsuitable for nesting by this species.
Least Bell's vireo *Vireo bellii pusillus*	FE/SE	This bird occurs in riparian habitats, scrub, and thickets in coastal southern California. It typically breeds in willow riparian forest supporting a dense, shrubby understory of mulefat (*Baccharis salicifolius*) and other mesic species. Breeds 15 March – 31 August, prefers to nest in a dense shrub layer between 2 to 10 feet from the ground. Least Bell's vireo has not been observed on DFSP San Pedro. Because of its small size and isolation, the riparian habitat at DFSP San Pedro is probably unsuitable for nesting by this species.
Marine Terminal Site		
CLT *Sternula antillarum browni*	FE/SE/FP	This bird nests at Pier 400 in Los Angeles Harbor (approximately 2 miles from the Marine Terminal and Pier 12); it forages on fish in open waters, and is migratory and present April-August.

Status:
Federal Status (determined by USFWS):
FE Federally Listed Endangered
FT Federally Listed Threatened
CH Critical Habitat
California State Status (determined by CDFW):
SE California State-Listed Endangered
CSSC California Species of Special Concern
ST California State Listed Threatened
FP California Fully Protected

Palos Verdes Blue Butterfly

The PVB was listed as endangered and critical habitat was designated on July 2, 1980 (USFWS 1980) because all known populations were small, limited in range, and threatened by urban development and/or weed control practices. A Recovery Plan was finalized in 1984 (USFWS 1984), and the most recent 5-year review was completed in 2014 (USFWS 2014). Critical habitat has been designated on the Palos Verdes Peninsula; however, critical habitat did not include DFSP San Pedro because the PVB population

on DFSP San Pedro was not discovered until 1994, after critical habitat had been designated. The critical habitat for this species has not been revised since the original designation. A complete description of the regulatory and natural history for this species can be found in the *Federal Register* (45 Federal Register 129 44939; USFWS 1980) and www.ecos.fws.gov.

Figure 3.1-2 shows the location of potential PVB habitat within habitat areas at the Main Terminal and the locations of transects that have been repeatedly sampled over the years to monitor the population. The PVB was discovered on DFSP San Pedro in 1994, and it was the only known population in existence from 1994 - 1999. In 1994, a captive breeding program was established using the population on DFSP San Pedro as the genetic source, and the species has been repeatedly reintroduced to nearby historic locations as well as on DFSP San Pedro. Captive and wild butterfly populations are considered essential to the existence of this species. Surveys on DFSP San Pedro have been conducted annually since 1994. The population size has fluctuated dramatically from year to year (Table 3.1-3). In 1994, estimates were at 69, in 2003, the population was estimated at 30 adults, and in 2004, the number of individuals increased to 282 adults (NAVWPNSTA Seal Beach 2014). In 2012, the PVB population was estimated at 148 adults, and in 2013 numbers decreased to 35 individuals; the second lowest since monitoring started (Longcore and Osborne 2015). No adult PVB were detected during surveys in 2014 and 2015 and estimated adult populations were zero; however, the butterflies may survive on site because the mature larvae drop off the plants and burrow into the litter and become pupae, which are believed to be capable of multi-year diapause before emerging as adults (NAVWPNSTA Seal Beach 2014).

Table 3.1-3. Estimated PVB Population Size by Year at DFSP San Pedro Main Terminal (1994-2015)

Year	Estimated Population	Year	Estimated Population
1994	69	2005	204
1995	105	2006	219
1996	247	2007	211
1997	109	2008	45
1998	199	2009	214
1999	209	2010	47
2000	132	2011	53
2001	139	2012	148
2002	243	2013	35
2003	30	2014	0
2004	282	2015	0

Sources: Longcore and Osborne 2015; Longcore pers. comm. 2015.

The recent decline in PVB numbers has been attributed to a number of factors, including the (1) severe, nearly unprecedented drought over the past 4 years, and (2) the gradual maturation of vegetation with associated declines of the two major food plants, which are relatively short-lived subshrubs that tend to proliferate after certain types of disturbance and gradually die out as the vegetation matures. Dramatic decreases in deerweed cover have been documented over most of the site, including both designated Operations and Habitat Areas over the periods 2006-2014 and 2012-2014. The total cover of deerweed in 2014 was approximately 14 percent of that present in 2006 (Osborne 2015).

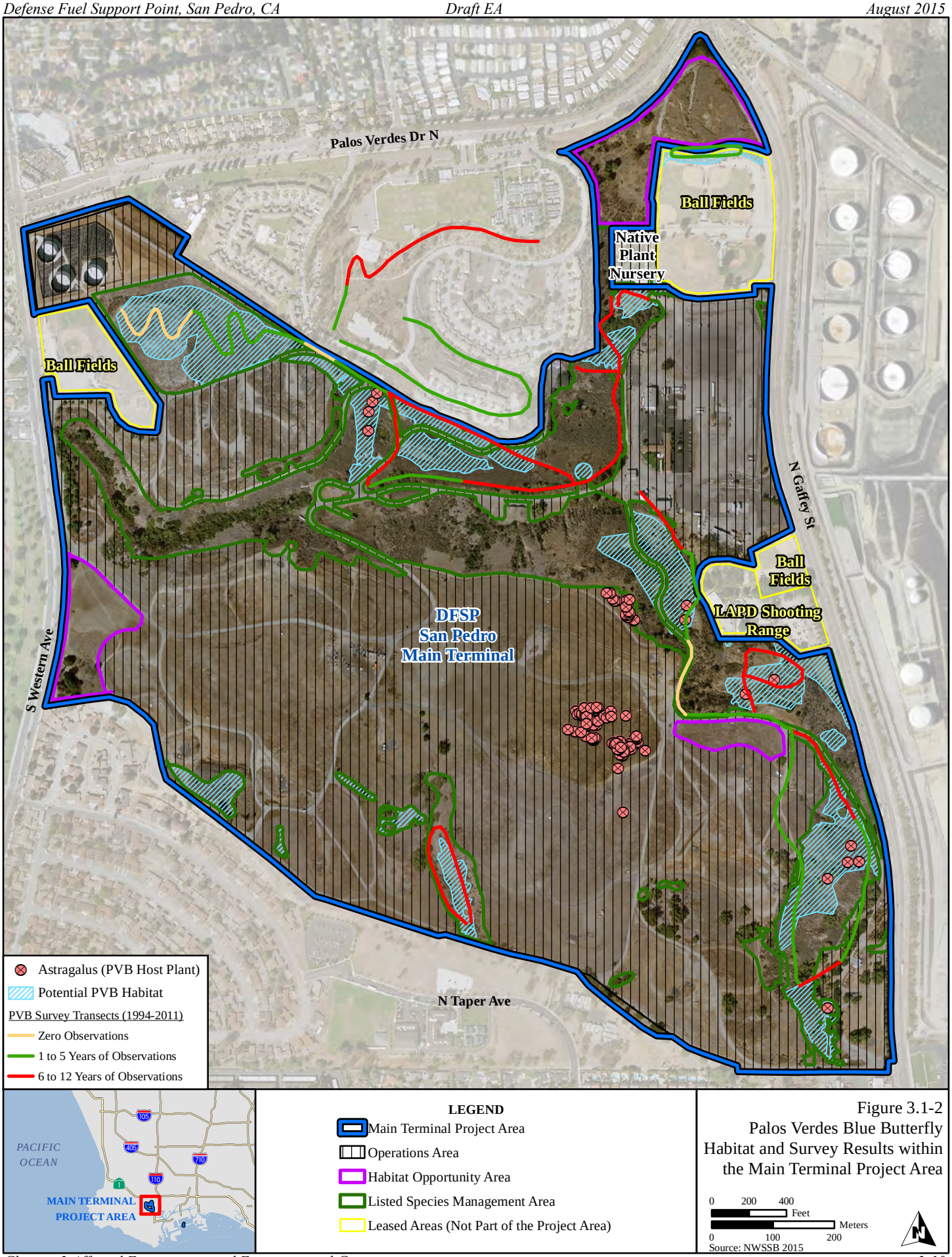


Figure 3.1-2
Palos Verdes Blue Butterfly Habitat and Survey Results within the Main Terminal Project Area

Habitat for this species is related mainly to presence of food plants. At the Main Terminal, the PVB occurs primarily in open coastal sage scrub that includes coast locoweed and deerweed. Larvae feed primarily on deerweed and coast locoweed, which naturally occur on site and are found in revegetated coastal sage scrub habitat (Johnson et al. 2013). The larvae feed through the spring and seem to prefer the micro-crevasses in the litter beneath its deerweed and locoweed food plants (DFSP 2014). During the last two larval stages, the larvae appear to form an important association with native carpenter ants in the genus *Camponotus* and sometimes the exotic Argentine ant (*Linepithema humile*). At DFSP San Pedro, the PVB usually begins to emerge from its pupal case (i.e., eclosion) in late January through early March, depending upon weather conditions.

Based on GIS data provided by NAVWPNSTA Seal Beach in 2015, approximately 28.32 acres of PVB habitat occurs at the Main Terminal. The majority of occupied PVB habitat at the Main Terminal is along the northern portion of the installation, although potential habitat and host plants occur throughout the installation. As shown on Figure 3.1-2, essentially all occupied PVB habitat is within designated Listed Species Management/Habitat Opportunity Areas.

The 2010 BO (USFWS 2010a) specifies that disturbance of suitable PVB habitat related to operations and maintenance activities at DFSP San Pedro shall not exceed 0.5 acre (0.2 hectare) in any 1-year period, and no more than 1 acre (0.4 hectare) will be impacted over any 3-year period. The 2010 BO was prepared to address operations and maintenance during the (at the time) full operational status of DFSP San Pedro.

Coastal California Gnatcatcher

The CAGN was federally listed as threatened on March 30, 1993 in response to habitat loss and degradation from development, fragmentation, invasive weed establishment, and brood parasitism[11] by brown-headed cowbirds (*Molothrus ater*) *(*USFWS 1993, 2010a). The completed federal listing and detailed information on the CAGN regulatory history, range, life history, habitat, and abundance can be found in Federal Register 58(59):16742 and 65(206):63680-63743 (USFWS 1993, 2000). Occupied CAGN habitat occurs on DFSP San Pedro within Listed Species Management/Habitat Opportunity Areas (Figure 3.1-3); however, CAGN habitat areas on DFSP San Pedro are not included in the critical habitat designation. The 2007 CAGN critical habitat designation excluded DFSP because "the habitat on and around DFSP does not currently have the spatial configuration and quantity of the PCEs [primary constituent elements] essential to the conservation of the species." (USFWS 2007; Federal Register 72:72010-72213).

CAGNs have been known to occupy DFSP San Pedro Main Terminal since surveys began in 1993. Subsequent surveys were conducted in 1997, 2003, 2011, and 2015 (DFSP 2014, Cardno 2015). Over the years, the number of breeding CAGN pairs observed on DFSP San Pedro has fluctuated. As many as five breeding pairs have been documented, but in some years, including 1997, there was no evidence of breeding (DFSP 2014). Based on observations during the 2015 surveys, the DFSP San Pedro population appears to consist of "at least three pairs of nesting CAGNs"… "but likely four to seven pairs occur at the Main Terminal." The higher estimate assumes that some adult females were not identified during surveys due to the often quiet and elusive behavior of CAGN females when they are nesting.

[11] The brown-headed cowbird is a brood parasite species that lays its eggs in the existing nests of other species, in this case the CAGN, thereby shifting the responsibility to raise the young to the host species. Brood parasitism can result in nest abandonment and other adverse responses.

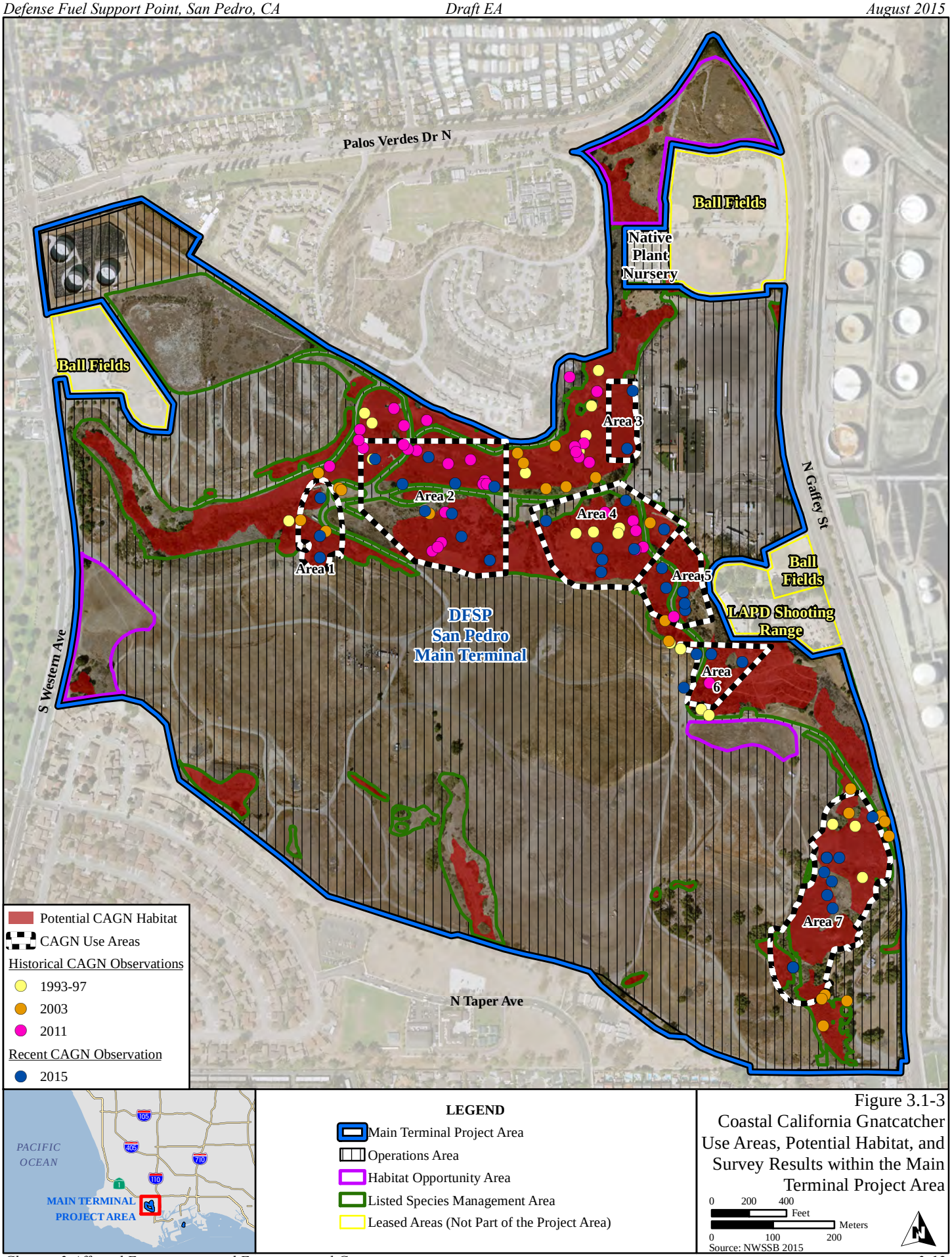


Figure 3.1-3
Coastal California Gnatcatcher Use Areas, Potential Habitat, and Survey Results within the Main Terminal Project Area

Based on 2015 GIS habitat data, potential CAGN habitat covers 56.85 acres. The 2010 BO (USFWS 2010a) specifies that disturbance of suitable CAGN habitat related to operations and maintenance activities at DFSP San Pedro shall not exceed 0.5 acre (0.2 hectare) in any 1-year period, and no more than 1 acre (0.4 hectare) will be impacted over any 3-year period.

California Least Tern

The CLT has nested for several years at Pier 400 in the Port of Los Angeles, located more than 2 miles from the Marine Terminal. It forages in open waters within San Pedro Bay and the Ports of Los Angeles and Long Beach, primarily adjacent to the nest site and in shallow water habitats. CLTs were observed in low numbers foraging in the West Basin in 2008 (SAIC 2010).

Other Special Status Species

In addition to the federally listed endangered or threatened species described above, six special status plant species are known to occur or have the potential to occur in the project area (Table 3.1-4). Documented locations of three of these species, Peirson's morning glory (*Calystegia peirsonii*), Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), and Southern California black walnut (*Juglans californica*), on the Main Terminal site are shown on Figure 3.1-4. In addition, several special status animal species known to occur or having the potential to occur within DFSP San Pedro Main Terminal or at the Marine Terminal are listed in Table 3.1-5.

Bald and golden eagles are not known to occur in the ROI and are not discussed further.

Migratory Bird Treaty Act Species

The MBTA is an international agreement among the United States, Canada, and Mexico that protects designated species of birds. Specifically, the MBTA controls the taking of these birds, their nests, eggs, parts, or products. Virtually all native birds are protected under the MBTA, with only a few exceptions, such as the California quail. A complete list of all species of all migratory birds protected by the MBTA is in the *Federal Register* (50 CFR 10.13). EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, directs federal agencies to take actions to further implement the MBTA. Whereas the MBTA protects individual migratory birds, the Memorandum of Understanding that was developed under EO 13186 between DoD and USFWS (2014) is intended to promote the conservation of migratory bird populations and their habitats.

Table 3.1-4. Special Status Plant Species
Known to Occur or Potentially Occur at DFSP San Pedro

Species	California Rare Plant Rank (CRPR)	Habitat/Occurrence in Project Footprint
Main Terminal		
Peirson's morning glory *Calystegia peirsonii*	4.2	Peirson's morning glory is a perennial herb that is rhizomatous and occurs in coastal sage scrub, chaparral, and foothill woodlands on rocky slopes at elevations that range from 3,280 to 6,561 feet. This species is known to intergrade with *C. longipes*, *C. macrostegia* and *C. occidentalis* subsp. *occidentalis*. It blooms during May-June. Peirson's morning glory was reported in the early 1990s and is known to occur in the Main Terminal (Figure 3.1-4).
Southern tarplant *Centromadia parryi* ssp *australis*	1B.1	An annual herb that occurs in grasslands, salt marshes, vernal pools, and coastal sage scrub communities. This species occurs at elevations below 656 feet and blooms May through November. Southern tarplant has not recently been documented on DFSP San Pedro but it has been recorded in the past and suitable habitat is present throughout the installation and to the northeast.
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	1B.1	Kellogg's horkelia is a perennial herb that occurs in coastal sage scrub, coastal sand hills, and old dunes at elevations below 656 feet. This species blooms February through July and has been recorded in the Main Terminal (Figure 3.1-4).
Southern California black walnut *Juglans californica*	4.2	A deciduous large shrub or tree occurring in chaparral, cismontane woodland, and coastal scrub communities on hillsides and alluvial soils. This species is endemic to cismontane southern California. Resprouting after fires produces a shrubby growth form. Southern California black walnut occurs in a few localized areas in the eastern portion of the Main Terminal in the transition between coastal sage scrub and grassland (Figure 3.1-4).
Coulter goldfields *Lasthenia glabrata* ssp. *coulteri*	1B.1	An annual herb that occurs in alkali sink, coastal salt marsh, playas and vernal-pools. This species occurs at elevations below 3,280 feet and blooms February through June. Coulter's goldfields has not been documented at the Main Terminal, but has been recorded in the vicinity to the northeast.
Mud nama *Nama stenocarpum*	2.2	An annual or perennial herb that occurs in intermittently wet areas in freshwater wetlands and wetland-riparian habitats. This species occurs at elevations below 2,657 feet and blooms January through July. Mud nama has not been documented at the Main Terminal, but has been recorded in the vicinity to the northeast.

California Rare Plant Rank (CRPR) Lists and Threat Ranks:
List 1B: Plants rare, threatened, or endangered in California and elsewhere.
List 2: Plants rare, threatened, or endangered in California but more common elsewhere.
List 3: Plant about which we need more information- (A review list).
List 4: Plants of limited distribution (A watch list).
CRPR Threat Ranks:
0.1-Seriously threatened in California
0.2-Fairly threatened in California
0.3-Not very threatened in California
The CRPR lists and threat ranks are combined to give an overall CRPR ranking listed in the table above. For example, a CRPR ranking of 1B.1 identifies a species that is rare, threatened, or endangered in California and elsewhere and is considered "seriously threatened in California," a ranking of 4.2 identifies a plant of limited distribution that is considered fairly threatened in California.

Sources: Baldwin et al. 2012; NAVWPNSTA Seal Beach 2014; CalFlora 2015; CDFW 2015; CNPS 2015.

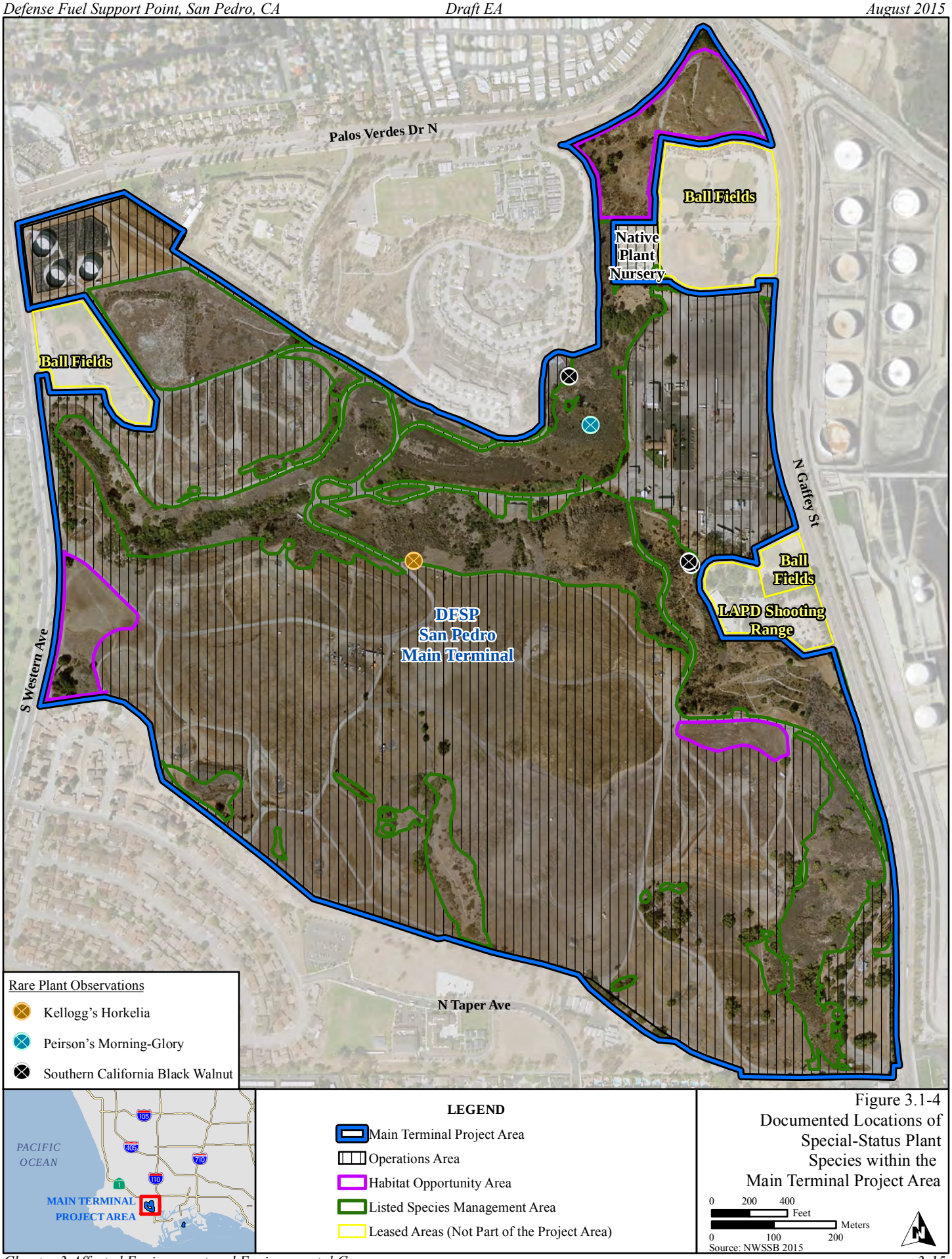


Figure 3.1-4
Documented Locations of Special-Status Plant Species within the Main Terminal Project Area

Table 3.1-5. Special Status Animal Species
Known to Occur or Potentially Occurring at DFSP San Pedro

Species	Status Federal/State	Habitat/Occurrence in Project Footprint
Main Terminal		
Burrowing owl *Athene cunicularia*	--/CSSC	Distributed throughout most of California in grasslands, shrub-steppes grasslands, savannas, and open areas such as agricultural lands or vacant lots near human habitation. Burrows are usually in areas with a low, open cover that can provide good horizontal visibility. Nests are in abandoned burrows, such as those dug by prairie dogs, ground squirrels, foxes and woodchucks. Nesting begins in spring, burrows are used for breeding, nesting and brooding. The burrowing owl is a winter visitor in Los Angeles Harbor.
Coastal cactus wren *Campylorhynchus brunneicapillus*	--/CSSC	Occurs in thickets of chollas or prickly pear cacti tall enough to support nests. Current and historic (circa 1944) year-round range in California is restricted to disjunct patches on the westward draining coastal slope of Orange and San Diego counties. Coastal cactus wren breeds on the Palos Verdes Peninsula. In 1993, a single adult was heard on DFSP San Pedro; however, no breeding pairs have been documented. The closest breeding pair is 3 miles south-southwest of the project area.
Loggerhead shrike *Lanius ludovicianus*	--/CSSC	May also occur on the main terminal site – see entry under Marine Terminal Site.
Marine Terminal		
Brant goose *Branta bernicla*	--/CSSC	Migrant; a few were observed in Port of Long Beach waters in 2008.
Vaux's swift *Chaetura vauxi*	--/CSSC	Widespread migrant (aerial only); no nesting documented in the Ports of Long Beach or Los Angeles.
American peregrine falcon *Falco peregrinus anatum*	Delisted/FP	Resident peregrine falcons are known to nest or rest on bridges within the Ports of Long Beach and Los Angeles, and forage on birds throughout the harbor complex. The nearest nesting location is the Gerald Desmond Bridge, which is located more than 2 miles (3.2 kilometers) from the Marine Terminal.
Common loon *Gavia immer*	--/CSSC	Occasional winter visitor; no nesting documented in the Ports of Long Beach or Los Angeles.
Loggerhead shrike *Lanius ludovicianus*	--/CSSC	Loggerhead shrike occur in the Ports of Long Beach and Los Angeles, primarily on riprap or dock/piling habitat in the Inner Harbor; forages on birds; and is suspected of nesting on Pier 400 in 2011. Loggerhead shrike more generally occurs in grasslands and open habitat with scattered shrubs and trees. This species has been noted on DFSP San Pedro and has the potential to occur on the main terminal or along the off-site pipelines.
California brown pelican *Pelecanus occidentalis californicus*	Delisted/FP	Roosts/rests on breakwaters, other structures, water; forages on fish in open waters of the Ports of Long Beach and Los Angeles. Pelicans may be observed resting or foraging in the West Basin (SAIC 2010); the nearest nesting colonies are on west Anacapa and Santa Barbara islands.
Black skimmer *Rynchops niger*	--/CSSC	Nests at Pier 400 in Los Angeles Harbor; forages over water; present all year.

Status:
Federal Status (determined by USFWS):
FE Federally Listed Endangered
FT Federally Listed Threatened
CH Critical Habitat

California State Status (determined by CDFW):
SE California State-Listed Endangered
ST California State Listed Threatened
CSSC California Species of Special Concern
FP California Fully Protected

Sources: SAIC 2010; NAVWPNSTA Seal Beach 2014; CDFW 2015.

3.1.3 ENVIRONMENTAL CONSEQUENCES

The definitions of the four types of impacts to biological resources are described below.

- *Direct Impact.* Any alteration, disturbance, or destruction of biological resources (specifically through vegetation/habitat removal or injury or mortality to animals) that would result from project-related activities and occur at the same time and place as the action is considered a direct effect.
- *Indirect Impact.* Indirect impacts are impacts that are caused by, or would result from, a proposed project and may be later in time, but are still reasonably certain to occur.
- *Temporary Impact.* Any impacts to biological resources that are considered reversible can be viewed as temporary. Examples include the generation of fugitive dust during demolition or the removal of plant communities for demolition activities and subsequent revegetation of the affected area. Short-term temporary impacts generally have a duration of 5 years or less; long-term temporary impacts generally have a duration longer than 5 years (e.g., recovery of a woodland habitat).
- *Permanent Impact.* Any impacts that result in the irreversible removal of biological resources are considered permanent. Examples include paving a road through an area containing biological resources.

The potential significance of impacts on a biological resource for purposes of this EA is based on:

- Unmitigated long-term and/or substantial impact to individuals or habitats of federally listed species or other species of concern.
- Destruction of occupied nests or harm to individuals of bird species that are protected under the MBTA.

The following impact analysis reflects the actual location and extent of the infrastructure affected by the alternatives; the figures in Chapter 2 use polygons to envelop the general location infrastructure. Due to operational security concerns, specific locations are not depicted. However, using GIS, the specific locations and associated adjacent areas subject to temporary impacts have been used for this impact assessment; thus, impacts when quantified, may be greater or less than those illustrated on figures, which depict potential general areas of impact. The following assumptions were used in quantifying impacts to habitat types under all alternatives:

- The demolition and removal of ASTs and USTs assumed a 135-foot (41-meter) wide buffer area subject to temporary impacts.
- The demolition and removal of pipelines, valve boxes, and valve pits assumed a 25-foot (8-meter) wide buffer area subject to temporary impacts.
- The demolition and removal of pump stations/houses and buildings assumed no buffer area because these features are aboveground and located in developed areas; thus, no temporary impacts would occur.
- The excavation, demolition, and removal of underground infrastructure (e.g., pipelines and USTs [under certain alternatives]) would result in temporary impacts because the affected area would be replanted with a native species seed mix in the Operations Area and would be restored as habitat for PVB or CAGN in Listed Species Management/Habitat Opportunity Areas.

- The in-place abandonment of infrastructure (e.g., pipelines and USTs [under certain alternatives]) would be accomplished using existing portals; no temporary or permanent impacts to surface cover types would occur.
- The aboveground segments of the off-site pipelines subject to demolition are located in developed areas with no unique biological resources.

Note that alternative demolition/removal methods may be used that would result in reduced areas of temporary impact compared to the buffer areas identified as part of the assumptions above.

The analysis for each alternative that follows assumes successful implementation of the impact avoidance and minimization measures listed at the end of this section. Additional measures, or refinement of the presented draft measures (see Appendix B), may occur as a result of on-going consultation with the USFWS. The final measures reflecting the outcome of regulatory consultation will be included in the Final EA.

Appendix B summarizes the potential impacts to biological resources under each alternative (Table B-1) and the impact avoidance and minimization measures (Table B-2) that would be implemented as part of each alternative for biological resources.

3.1.3.1 Alternative 1

Plant Communities

Under Alternative 1, temporary impacts to approximately 25 acres of vegetation and land cover types (Table 3.1-6; Figure 3.1-5) would occur. The majority of these impacts would be in the Operations Area, principally affecting non-native grasslands (15.9 acres), which are regularly mowed, thus limiting their habitat value. Approximately 1.26 acres in habitat areas would be affected (Table 3.1-6). Permanent impacts on vegetation would be negligible. Following demolition, disturbed areas would be restored in accordance with a Revegetation Plan (the Revegetation Plan would be consistent with the DFSP INRMP).

Indirect, long-term, adverse impacts to plant communities could occur as a result of the establishment of invasive plants. Invasive plants decrease the overall quality of habitat by out-competing native species, contributing to reduced diversity and structure, and reduced habitat functions and values. The potential for establishment of invasive plants would be minimized through implementation of impact avoidance and minimization measures (see Appendix B), including invasive weed control (e.g., hand removal, mechanical, and herbicide control) in areas reseeded/replanted until the native vegetation is established.

The presented impact assessment acreages assume that the USTs would be abandoned in place by filling them with an inert substance (foamcrete or concrete) that is introduced to the tanks through existing conduits so that there would be little or no surface disturbance associated with their abandonment. If the USTs were to be filled with soil, an option under Alternatives 1, 2, and 4, however, there would be considerable surface disturbance. The soil overlying the USTs would need to be excavated and the tank tops removed. The excavated soil would be temporarily stockpiled adjacent to the hole for use as backfill. Soil needed to fill the empty USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats. This option would result in extensive surface disturbance within the Operations Area. Reestablishment of vegetation would be more challenging on both the excavated areas (because of mixing of the soil profiles) as well as areas from which soil was obtained for backfill (because upper soil layers have been removed).

Table 3.1-6. Estimated Temporary Impacts to Vegetation and Land Cover Types at the Main Terminal under Alternative 1

Vegetation and Land Cover Types	Habitat Area		Operations Area		Site Total
	Acres	% of Total	Acres	% of Total	Acres
Bare	0.00	0.0%	0.21	13.2%	1.56
Coastal sage scrub	0.16	0.4%	0.12	0.3%	37.01
Developed	0.11	0.4%	5.13	18.9%	27.11
Eucalyptus groves	0.02	0.7%	0.66	27.3%	2.42
Needlegrass grasslands	0.00	0.5%	0.00	1.1%	0.22
Non-native grasslands	0.70	0.4%	15.86	8.0%	199.23
Non-native vegetation	0.01	0.1%	0.15	1.3%	11.53
Oak woodlands	0.00	0.1%	0.25	18.4%	1.35
Other non-native woodlands	0.15	2.2%	0.35	5.1%	6.86
Pond	0.00	0.0%	0.00	0.0%	0.05
Roads	0.03	1.2%	0.21	8.5%	2.43
Sparse coastal sage scrub	0.00	0.0%	0.00	0.0%	5.14
Sparse sandy scrub	0.08	2.0%	0.00	0.0%	3.77
Undetermined plant community	0.00	0.0%	0.41	8.6%	4.75
Willow riparian scrub	0.00	0.0%	0.00	0.0%	5.31
Totals	**1.26**	**0.4%**	**23.33**	**7.6%**	**308.76**

Notes: Column totals were computed on unrounded numbers and thus may differ slightly from the sum of the rounded numbers above them. The individual values in the columns were rounded to increase readability.

Wildlife and Wildlife Habitat

Following demolition, disturbed areas of vegetation that provide habitat for sensitive wildlife species would be restored according to a Revegetation Plan. Demolition activities could also result in the direct loss of common, less-mobile wildlife species, such as lizards and rodents. However, implementation of the impact avoidance and minimization measures (see Appendix B) would reduce impacts, and the numbers of individuals that could be lost would be inconsequential to populations present at the Main Terminal.

Indirect, temporary, adverse impacts to wildlife species would occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances. Temporary disturbances due to noise associated with clearing vegetation, as well as an increase in the general activity and human presence could mask bird vocalizations, invoke stress in birds and reduce breeding success, and cause common bird and wildlife species to avoid the work area during demolition periods. Because the adjacent lands primarily consist of developed areas, the common species in the vicinity of the project area have adapted to on-going human activity and elevated noise associated with humans.

Special Status Species

Impact assessments are provided below for federally listed endangered or threatened species known or having the potential to occur in the project area, including PVB, CAGN, and California least tern. The Navy currently is preparing a BA under the ESA for submittal to USFWS, and the Navy will consult with the USFWS regarding project effects on these species. Figure 3.1-6 shows the spatial relationship between surface disturbance associated with Alternative 1 and special status species occurrences at the Main Terminal.

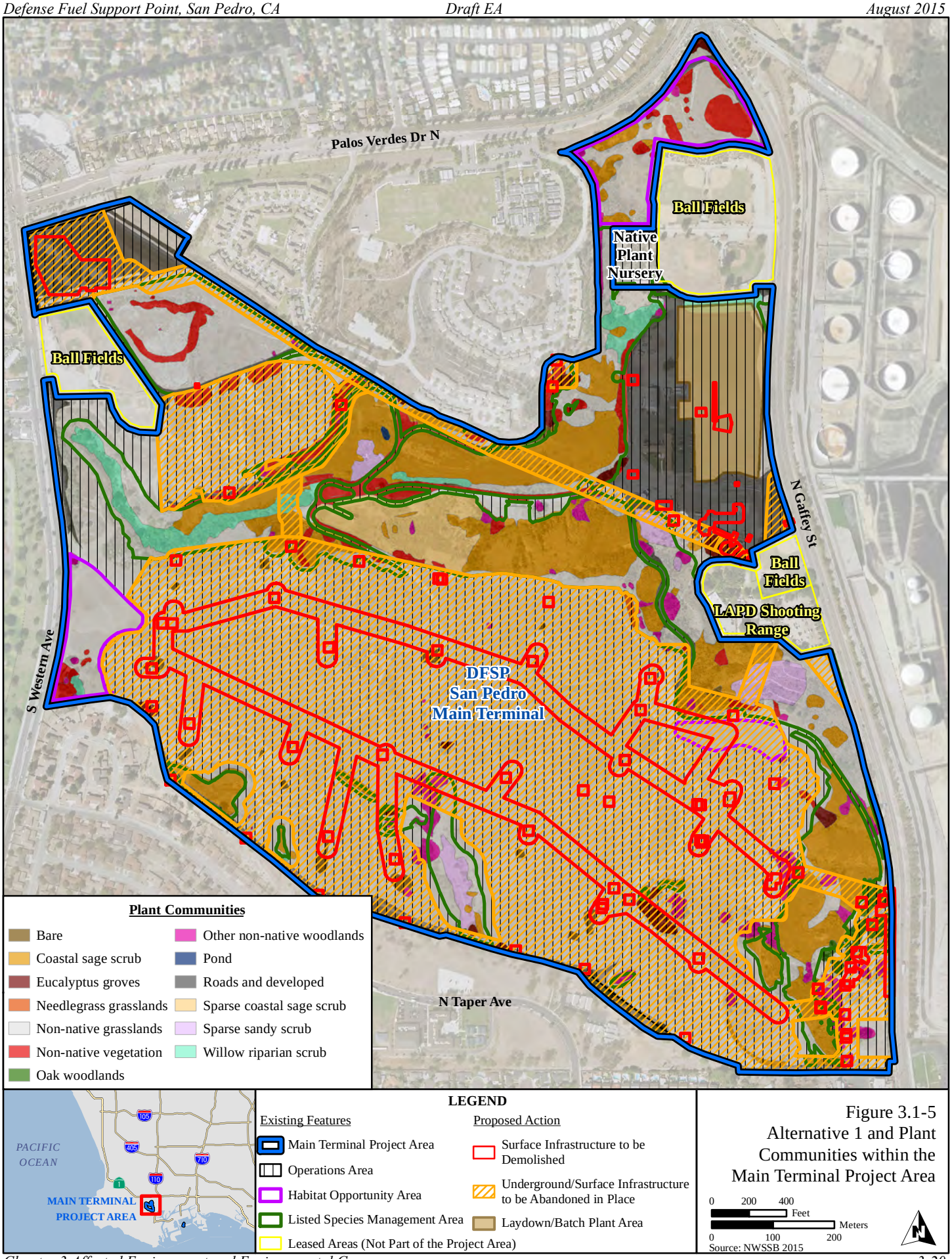


Figure 3.1-5
Alternative 1 and Plant Communities within the Main Terminal Project Area

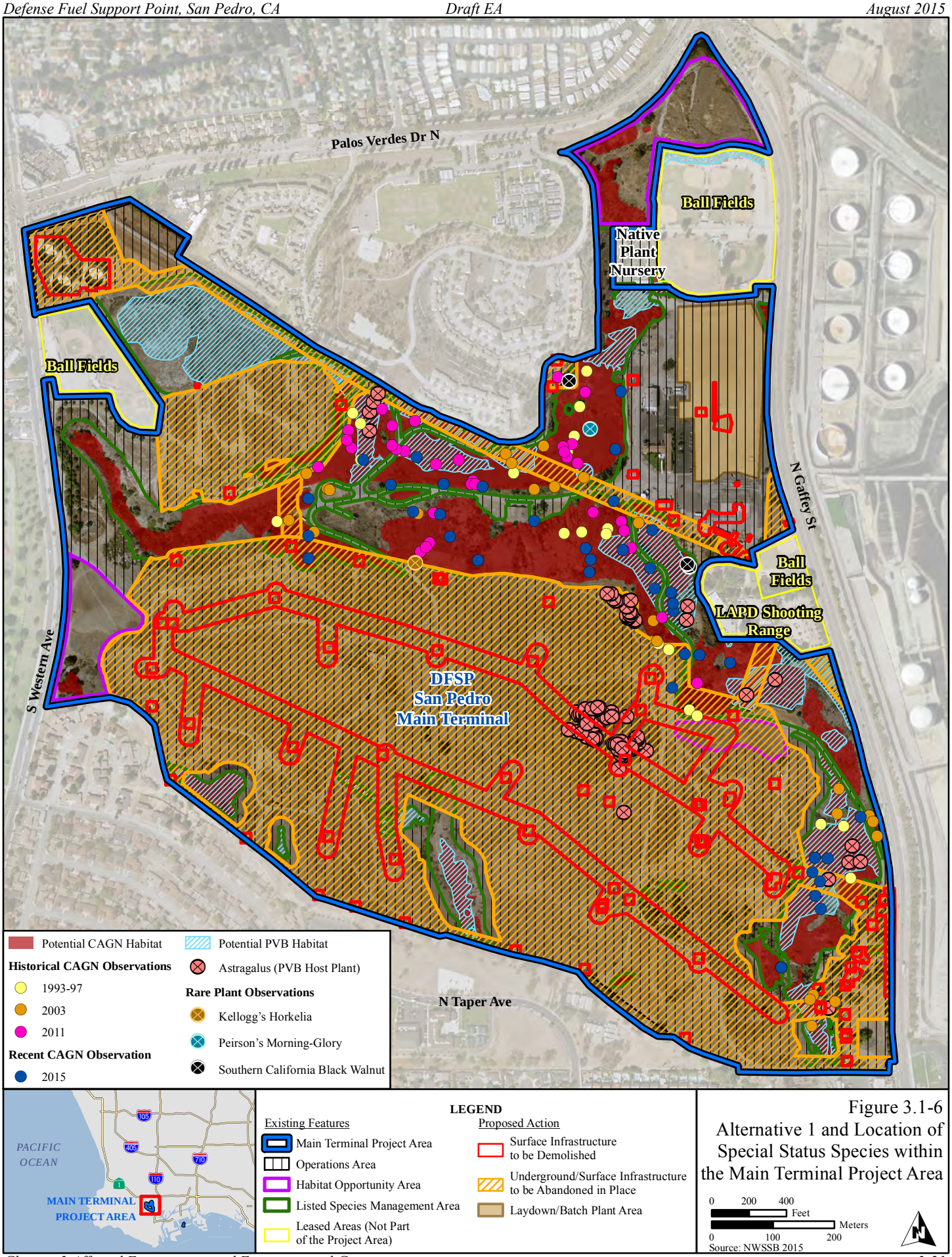


Figure 3.1-6
Alternative 1 and Location of Special Status Species within the Main Terminal Project Area

Palos Verdes Blue Butterfly

Alternative 1 would result in direct temporary impacts to 0.27 acre of potentially occupied PVB habitat, representing approximately 1 percent of the total PVB habitat occurring at the Main Terminal. For comparison, this acreage of PVB habitat potentially disturbed by the project would be less than the annual threshold value for suitable PVB habitat that could be disturbed by operations and maintenance activities at the Main Terminal, as specified in the 2010 BO. This habitat would be unavailable until it has been restored following demolition activities. No PVB habitat would be permanently impacted. Following demolition activities, disturbed occupied habitat would be restored in place. The key food plants for PVB can be reestablished within 3 years or less, depending on conditions. Implementation of impact avoidance and minimization measures listed in Appendix B would minimize or avoid impacts to PVB eggs, larvae, and adults within the potentially occupied habitat. In addition, given the small amount of PVB habitat that would be disturbed, PVB individuals would be expected to utilize suitable habitat onsite away from human activity associated with the project.

Removal of occupied habitat during flight season could result in mortality or reduced reproductive rates of individual PVB. The potential for impacts to individuals due to demolition activities and direct removal of potentially occupied habitat could be avoided by removing vegetation outside of the flight season (February 15 to May 31) for this species. However, the potential exists for demolition activities in PVB habitat outside the flight season to cause injury or mortality to pupae in diapause, which are typically in the soil under or near food plants. Habitat impacted by demolition activities would be restored following project activities according to a Revegetation Plan. In addition, a Project Biologist would monitor all mowing/grubbing, and/or removal of potentially suitable or occupied habitat during project activities.

Coastal California Gnatcatcher

Alternative 1 would result in direct temporary impacts to 0.45 acre of potentially occupied CAGN habitat, which is approximately 0.8 percent of the total CAGN habitat at the Main Terminal. For comparison, this acreage of CAGN habitat potentially disturbed by the project would be less than the annual threshold value for suitable CAGN habitat that could be disturbed by operations and maintenance activities at the Main Terminal, as specified in the 2010 BO. This habitat would be unavailable until it has been restored following demolition activities, which would take several years. Given the small fraction of suitable habitat that would be disturbed, pairs and individuals would be expected to utilize suitable habitat onsite away from human activity associated with the project.

Removal of occupied habitat during nesting season could result in reduced nesting success. The potential for temporary impacts to nesting due to demolition activities and direct removal of potentially occupied habitat could be avoided by removing vegetation outside of the nesting season (February 15 to August 31) for this species. Habitat impacted by demolition activities would be restored following demolition according to a Revegetation Plan (discussed in Appendix B). In addition, a Project Biologist would monitor all grading, mowing, and/or removal of potentially suitable or occupied habitat during demolition activities.

Indirect temporary impacts to CAGN may occur within suitable and/or occupied habitat due to an increase in noise, dust, and increased human activity during demolition. Proposed demolition activities could affect the behavior of CAGNs located in the project vicinity by masking calls, causing stress, or disturbing food gathering or nesting activities. However, the project area and the nearest observations of CAGNs are subject to noise associated with general industrial use. Additional temporary noise associated with demolition activities would be within normally occurring levels associated with routine maintenance and operations activities at DFSP San Pedro (e.g., fence, pipeline, fuel-storage tank, and road repair/maintenance; electrical system upgrades). The potential effects on CAGN of noise and nighttime lighting associated with possible earthmoving and demolition activities occurring during hours of darkness are unknown but possibly adverse. Potential indirect temporary impacts to CAGN resulting from demolition activities would be minimized though implementation of the impact avoidance and minimization measures (see Appendix B).

Other Special Status Species

Implementation of Alternative 1 at the Main Terminal Site would not affect known distributions of sensitive plant species because no infrastructure coincides with occurrences of these species.

Migratory Bird Treaty Act Species

Alternative 1 would temporarily disturb up to approximately 19 acres of potential habitat (non-native grassland) for MBTA species at the Main Terminal[12]. Following demolition, disturbed areas of vegetation would be restored. Due to the small proportion of the site that would be disturbed, MBTA species would be expected to utilize suitable habitat away from project activities during the demolition period and during restoration. However, construction or demolition activities during breeding season could cause nest failure of nearby nesting birds but this potential could be minimized by implementation of impact avoidance and minimization measures (see Appendix B).

Indirect temporary impacts to MBTA species may occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances in the Main Terminal. Impacts to MBTA species would be similar to those described above for general bird species and for CAGN. The potential for demolition activities to adversely modify behavior of MBTA species is unlikely, particularly because of the temporary nature of the activity and the proximity to human activity. Furthermore, whenever possible, habitat-clearing activities would be timed to avoid the nesting season. Implementation of impact avoidance and minimization measures below would minimize the potential for impacts to migratory bird species and indirect temporary impacts to populations of migratory birds, including Species of Concern listed under the MBTA. In addition, a Revegetation Plan would be implemented.

Marine Terminal and Interconnecting Pipelines

Although the endangered CLT could fly by or forage in the vicinity of Pier 12, it is unlikely to be affected by closure and demolition activities which would be localized and similar to other on-going activities in the industrialized area of the harbor complex. There would be no in-water demolition activities and the pier itself would not be removed. The Marine Terminal is over 2 miles from CLT nest area on the end of Pier 400. Similarly, other special status species, including black skimmer, loggerhead shrike, California brown pelican, and American peregrine falcon, would be unlikely to be affected by the activity at the Marine Terminal for similar reasons. Listed and sensitive species are unlikely to occur along the

[12] MBTA habitat includes all vegetated land cover types listed in tables (excludes bare, developed, and roads categories).

interconnecting pipeline routes because they pass through heavily developed, mostly industrial or commercial areas that provide little or no habitat for sensitive native species. Thus, Alternative 1 would not affect sensitive species at these project locations.

Post-closure

Following closure, revegetation to be conducted in accordance with a Revegetation Plan and habitat succession would gradually occur allowing recovery of vegetation and habitat from adverse impacts caused by project activities. Post-closure operations would reflect the outcome of ESA consultation with USFWS to include continuation of captive breeding and release of PVB, operation of the nursery, monitoring of PVB, and revegetation activities as described in the impact avoidance and minimization measures. Environmental cleanup activities may also occur. In addition, biological resources would continue to be managed in accordance with the DFSP San Pedro INRMP (NAVWPNSTA Seal Beach 2014).

Impact Avoidance and Minimization Measures

Impact avoidance and minimization measures associated with biological resources are listed in Appendix B. These measures incorporate a number of species-specific measures to minimize the potential for take of PVB and CAGN, and to minimize or rectify project effects on their habitat. In drafting these measures, the Navy has drawn upon existing PVB and CAGN management-related measures set forth in the 2010 BO for DFSP San Pedro (FWS-LA-08B0606-08F0704; USFWS 2010a) which it believes would be appropriate to continue utilizing following the proposed closure of the facility. The measures identified in Appendix B may be revised as a result of consultation with the USFWS.

Summary

With the successful implementation of the impact avoidance and minimization measures, direct temporary adverse impacts to biological resources under Alternative 1 would occur to approximately 25 acres of vegetation and land cover types. Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances. Alternative 1 would temporarily disturb 0.27 acre of potentially occupied PVB habitat, which is approximately 1 percent of the total PVB habitat at the Main Terminal, and 0.45 acre of potentially occupied CAGN habitat, which is approximately 0.8 percent of the total CAGN habitat at the Main Terminal. Alternative 1 would temporarily disturb up to 19 acres of potential habitat for MBTA species

Following closure, no impacts to biological resources would occur, as no operations would occur other than on-going monitoring of natural resources, maintenance, and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Therefore, with implementation of impact avoidance and minimization measures proposed, implementation of Alternative 1 would result in no significant impact to biological resources.

3.1.3.2 Alternative 2

Plant Communities

Under Alternative 2, temporary impacts to approximately 16 acres of vegetation and land cover types would occur (Table 3.1-7; Figure 3.1-7). The majority of the impact (approximately 14 acres) would be to non-native grasslands in the Operations Area, which are regularly mowed. Permanent impacts on vegetation would be negligible. Temporary direct (removal of habitat) and indirect (invasive species) impacts due to demolition activities would be similar to those discussed for Alternative 1 but would affect less acreage (16 acres compared to 25 acres for Alternative 1). If the option of filling the USTs with soil rather than foamcrete or concrete, then the disturbance would be much more extensive in the Operations

Area . Soil needed to fill the empty USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats.

Table 3.1-7. Estimated Temporary Impacts to Vegetation and Land Cover Types under Alternative 2 at the Main Terminal

Vegetation and Land Cover Types	Habitat Area		Operations Area		Site Total
	Acres	% of Total	Acres	% of Total	Acres
Bare	0.00	0.0%	0.21	13.2%	1.56
Coastal sage scrub	0.06	0.2%	0.03	0.1%	37.01
Developed	0.00	0.0%	0.38	1.4%	27.11
Eucalyptus groves	0.02	0.7%	0.37	15.4%	2.42
Needlegrass grasslands	0.00	0.5%	0.00	1.1%	0.22
Non-native grasslands	0.53	0.3%	14.09	7.1%	199.23
Non-native vegetation	0.00	0.0%	0.02	0.2%	11.53
Oak woodlands	0.00	0.0%	0.00	0.0%	1.35
Other non-native woodlands	0.13	1.8%	0.10	1.5%	6.86
Pond	0.00	0.0%	0.00	0.0%	0.05
Roads	0.00	0.0%	0.02	0.7%	2.43
Sparse coastal sage scrub	0.00	0.0%	0.00	0.0%	5.14
Sparse sandy scrub	0.00	0.0%	0.00	0.0%	3.77
Undetermined plant community	0.00	0.0%	0.00	0.0%	4.75
Willow riparian scrub	0.00	0.0%	0.00	0.0%	5.31
Totals	**0.74**	**0.2%**	**15.22**	**4.9%**	**308.76**

Wildlife and Wildlife Habitat

Alternative 2 would result in similar direct temporary impacts to wildlife habitat as described in Alternative 1. Following demolition, disturbed areas of vegetation that provide habitat for sensitive wildlife species would be restored according to the Revegetation Plan.

Special Status Species

Figure 3.1-8 shows the locations of project surface disturbance and the distribution of federally listed and other sensitive species documented at the Main Terminal.

Palos Verdes Blue Butterfly

Alternative 2 would result in direct temporary impacts to approximately 0.18 acre of potentially occupied PVB habitat in the Listed Species Management/Habitat Opportunity Area, which represents approximately 0.6 percent of the total PVB habitat at the Main Terminal. This habitat would be unavailable until it has been restored following demolition activities. The key food plants for PVB can generally be reestablished within 3 years or less, depending on conditions. Temporary direct (loss of habitat) and indirect (disturbance due to increased noise, dust, and human activity) impacts due to demolition would be similar to, but slightly less than, those discussed for Alternative 1 because demolition activities would remove less habitat.

Given the small amount of area that would be disturbed, individuals would be expected to utilize suitable habitat onsite away from human activity associated with the project. Following demolition, disturbed occupied habitat would be restored in place. Implementation of impact avoidance and minimization measures (see Appendix B) would minimize or avoid impacts to PVB eggs, larvae, and adults within the potentially occupied habitat.

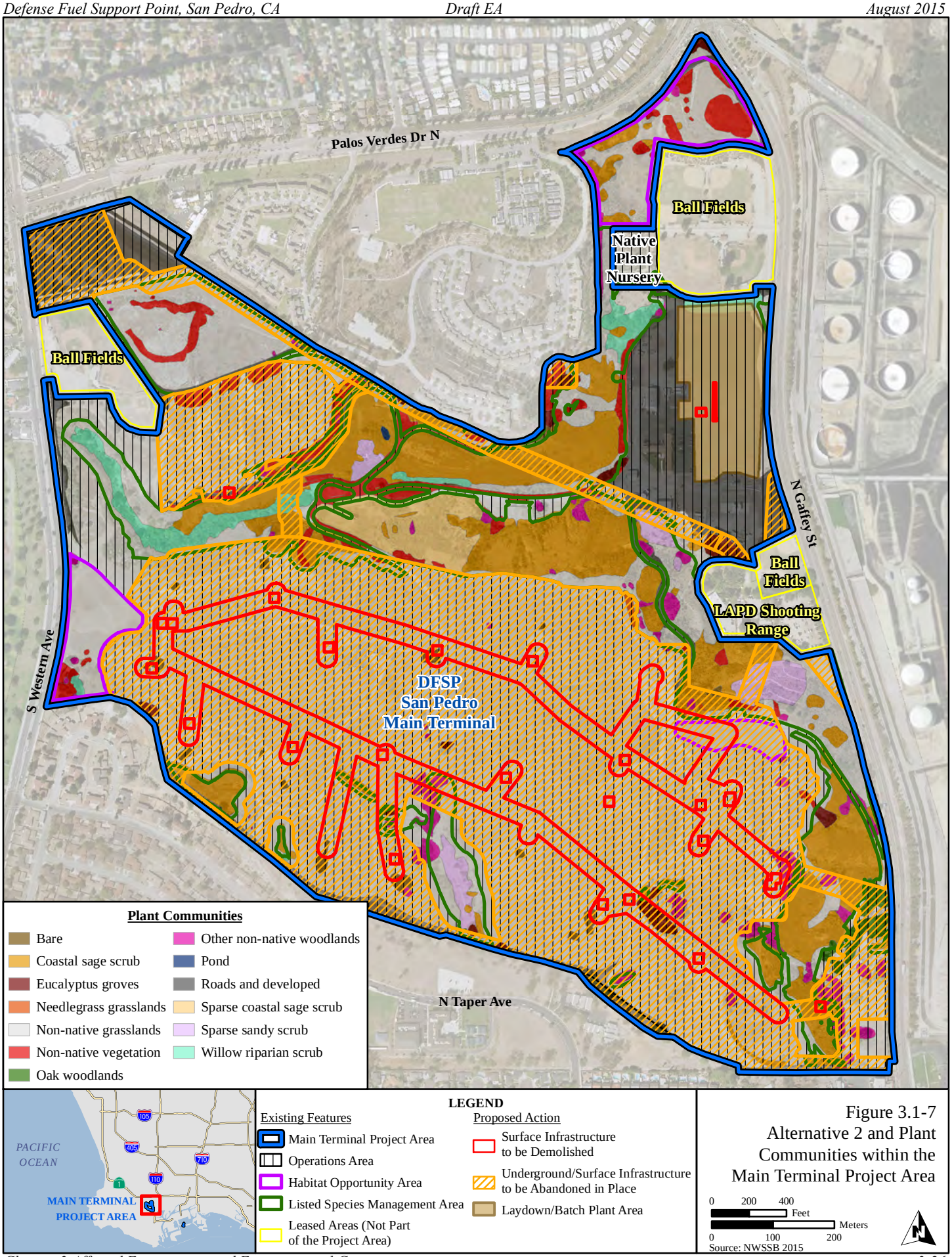


Figure 3.1-7
Alternative 2 and Plant Communities within the Main Terminal Project Area

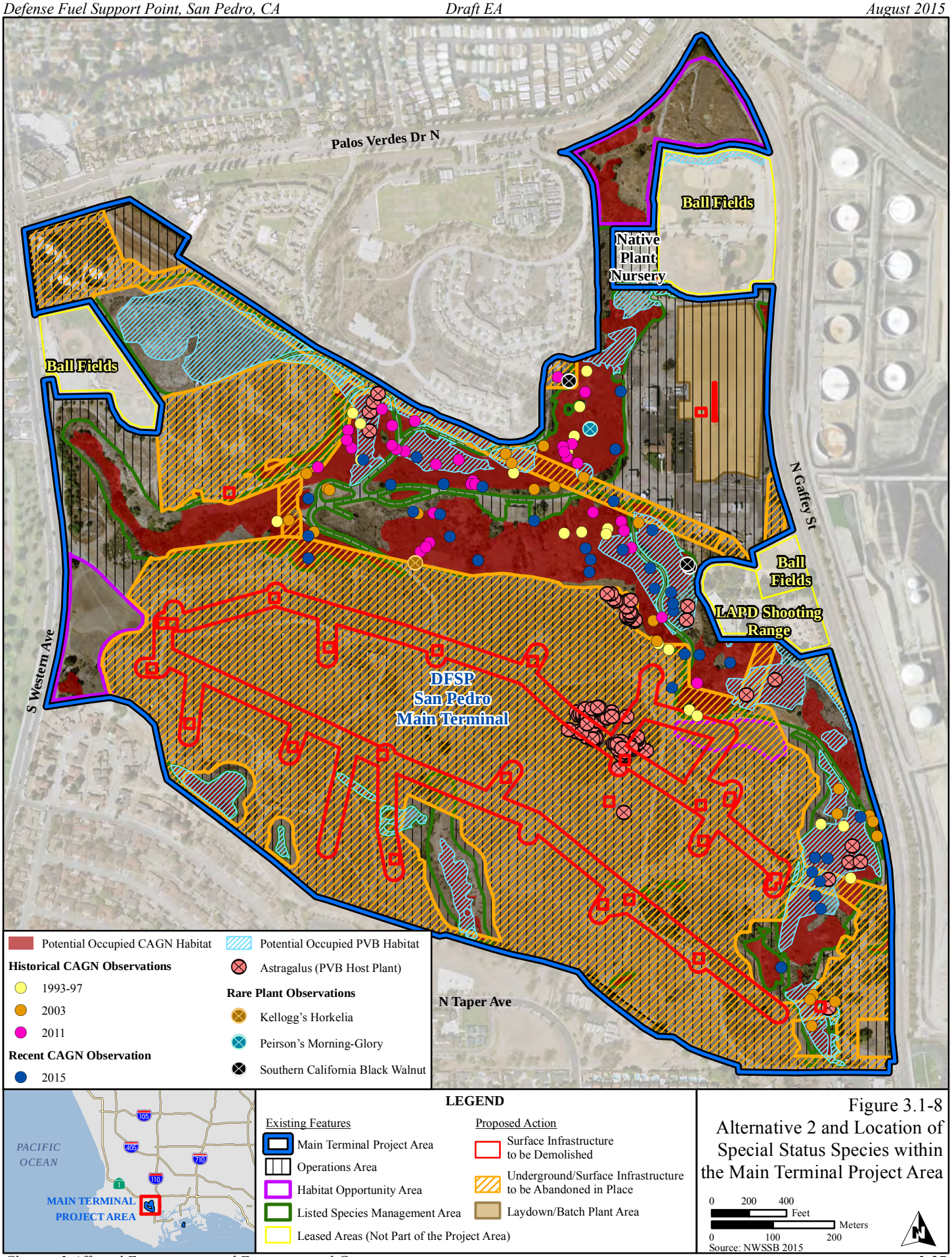


Figure 3.1-8
Alternative 2 and Location of Special Status Species within the Main Terminal Project Area

Coastal California Gnatcatcher

Alternative 2 would result in direct temporary impacts to 0.09 acre of potentially occupied CAGN habitat, which represents approximately 0.16 percent of the total CAGN habitat at the Main Terminal. This habitat would be unavailable until it has been restored following demolition activities, which would take several years. Temporary direct (loss of habitat) and indirect (disturbance due to increased noise, dust, and human activity) impacts due to demolition would be similar to but slightly less than those discussed for Alternative 1 because demolition activities would remove less habitat. In addition, given the small amount of area that would be disturbed and the large amount of suitable habitat outside the project area, pairs and individuals would be expected to utilize suitable habitat onsite away from human activity associated with the project.

Other Special Status Species

Implementation of Alternative 2 at the Main Terminal Site would not affect known locations of sensitive plant species.

Migratory Bird Treaty Act Species

Alternative 2 would result in temporary impacts to approximately 15 acres of suitable habitat (mostly non-native grassland) for MBTA species. These impacts would be similar to, but somewhat less than, Alternative 1 because demolition activities would remove less habitat.

Marine Terminal and Interconnecting Pipelines

Although the endangered CLT could fly by or forage in the vicinity of Pier 12, it is unlikely to be affected by closure and demolition activities which would be localized and similar to other, on-going activities in the industrialized area of the harbor complex. The Marine Terminal is over 2 miles from the CLT nest area on the end of Pier 400. Similarly, other special status species, including black skimmer, loggerhead shrike, California brown pelican, and American peregrine falcon would be unlikely to be affected by the activity at the Marine Terminal for similar reasons. Listed and sensitive species are unlikely to occur along the interconnecting pipeline routes because they pass through heavily developed mostly industrial or commercial areas that provide little or no habitat for sensitive native species.

Post-closure

Following closure, revegetation to be conducted in accordance with a Revegetation Plan and habitat succession would gradually occur, allowing recovery of vegetation and habitat from adverse impacts caused by the demolition and closure activities. Post-closure operations would reflect the outcome of ESA consultation with USFWS to include continuation of captive breeding and release of PVB, operation of the nursery, monitoring of PVB, and revegetation activities as described in the impact avoidance and minimization measures. Environmental cleanup activities may also occur. In addition, biological resources would continue to be managed in accordance with the DFSP San Pedro INRMP.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 2.

Summary

Direct temporary impacts to biological resources under Alternative 2 would occur to approximately 16 acres of vegetation and land cover types, 15 acres of which are in the Operations Area. Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise, or other

demolition-related disturbances. Alternative 2 would temporarily disturb 0.18 acre of potentially occupied PVB habitat, representing approximately 0.6 percent of the total PVB habitat on the Main Terminal, and 0.09 acre of potentially occupied CAGN habitat, representing approximately 0.16 percent of the total CAGN habitat on the Main Terminal. Alternative 2 would temporarily impact up to 15 acres of potential habitat for MBTA species.

Following closure, no impacts to biological resources would occur, because no operations would occur other than on-going monitoring and maintenance and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Therefore, with implementation of impact avoidance and minimization measures proposed, implementation of Alternative 2 would result in no significant impact to biological resources.

3.1.3.3 Alternative 3

Plant Communities

Under Alternative 3, temporary impacts to approximately 93 acres of vegetation and land cover types (Table 3.1-8; Figure 3.1-9) would occur; of this, 83.5 acres would be in the Operations Area, which are regularly mowed. The bulk of this impact would be to non-native grasslands (approximately 72 acres, over 68 of which are in the Operations Area). Permanent impacts on vegetation would be negligible. Temporary direct (removal of habitat) and indirect (invasive species) adverse impacts due to demolition activities would be similar in nature to those discussed for Alternative 1, however these impacts would cause greater disturbance to soils and vegetation and occur over a substantially greater portion of the site. The extensive excavation and earthmoving associated with removal of USTs, pipelines, and other buried infrastructure under Alternative 3 would alter onsite drainage and soil moisture patterns and would affect the distribution of vegetation after closure. Temporary indirect impacts associated with invasive species impacts would be much greater than Alternatives 1 and 2 because full demolition would affect much more extensive areas, likely take longer, and activities would occur at the site over a longer duration of time.

Wildlife and Wildlife Habitat

Temporary indirect impacts associated with disturbance due to noise, dust, and human activity would be substantially greater than Alternatives 1 or 2 because full demolition would cover a much more extensive area and occur over a longer period of time. Following demolition, disturbed areas of vegetation that provide habitat for sensitive wildlife species would be restored according to the Revegetation Plan (discussed in Appendix B). Demolition activities associated with closure of the Main Terminal would result in the direct loss of common, less-mobile wildlife species such as lizards and rodents.

Table 3.1-8. Estimated Temporary Impacts to Vegetation and Land Cover Types under Alternative 3 at the Main Terminal

Vegetation and Land Cover Types	Habitat Area		Operations Area		Site Total
	Acres	% of Total	Acres	% of Total	Acres
Bare	0.01	0.8%	1.15	73.6%	1.56
Coastal sage scrub	3.41	9.2%	0.99	2.7%	37.01
Developed	0.13	0.5%	5.70	21.0%	27.11
Eucalyptus groves	0.09	3.7%	1.01	41.6%	2.42
Needlegrass grasslands	0.00	0.7%	0.00	1.1%	0.22
Non-native grasslands	3.55	1.8%	68.55	34.4%	199.23
Non-native vegetation	0.85	7.3%	1.44	12.5%	11.53
Oak woodlands	0.01	0.8%	0.58	43.0%	1.35
Other non-native woodlands	0.43	6.2%	1.20	17.5%	6.86
Pond	0.00	0.0%	0.00	0.0%	0.05
Roads	0.20	8.4%	0.60	24.6%	2.43
Sparse coastal sage scrub	0.00	0.0%	0.00	0.0%	5.14
Sparse sandy scrub	0.39	10.3%	0.00	0.0%	3.77
Undetermined plant community	0.06	1.2%	2.29	48.3%	4.75
Willow riparian scrub	0.11	2.1%	0.00	0.0%	5.31
Totals	**9.24**	**3.0%**	**83.50**	**27.0%**	**308.76**

Special Status Species

Figure 3.1-10 shows the locations of project surface disturbance and the distribution of federally listed and other sensitive species documented at the Main Terminal.

Palos Verdes Blue Butterfly

Alternative 3 would result in direct temporary impacts to 2.95 acres of potentially occupied PVB habitat, representing approximately 10.4 percent of the total PVB habitat at the Main Terminal. For comparison, this acreage of PVB habitat potentially disturbed by the project would be greater than the annual and the 3-year threshold values for suitable PVB habitat that could be disturbed by operations and maintenance activities at the Main Terminal, as specified in the 2010 BO. This habitat would be unavailable until it has been restored following demolition activities. The key food plants for PVB can normally be reestablished within 3 years or less, but reestablishment may take 4 years or longer due to the profound soil disturbance associated with this alternative. Temporary direct (loss of habitat) and indirect (disturbance due to increased noise, dust, and human activity) impacts due to demolition would be similar in nature but considerably greater in magnitude, extent, and duration than those discussed for Alternative 1 because demolition activities would remove substantially more habitat. PVB individuals would be expected to utilize suitable habitat away from demolition sites to the extent that it is available during the demolition period.

Following demolition, disturbed occupied habitat would be restored in place as required in the Revegetation Plan.

Implementation of impact avoidance and minimization measures (see Appendix B) would minimize or avoid impacts to PVB eggs, larvae, and adults within the potentially occupied habitat; nevertheless, there would be a substantially greater potential for take of PVB eggs, larvae, pupae, or adults than for the other alternatives.

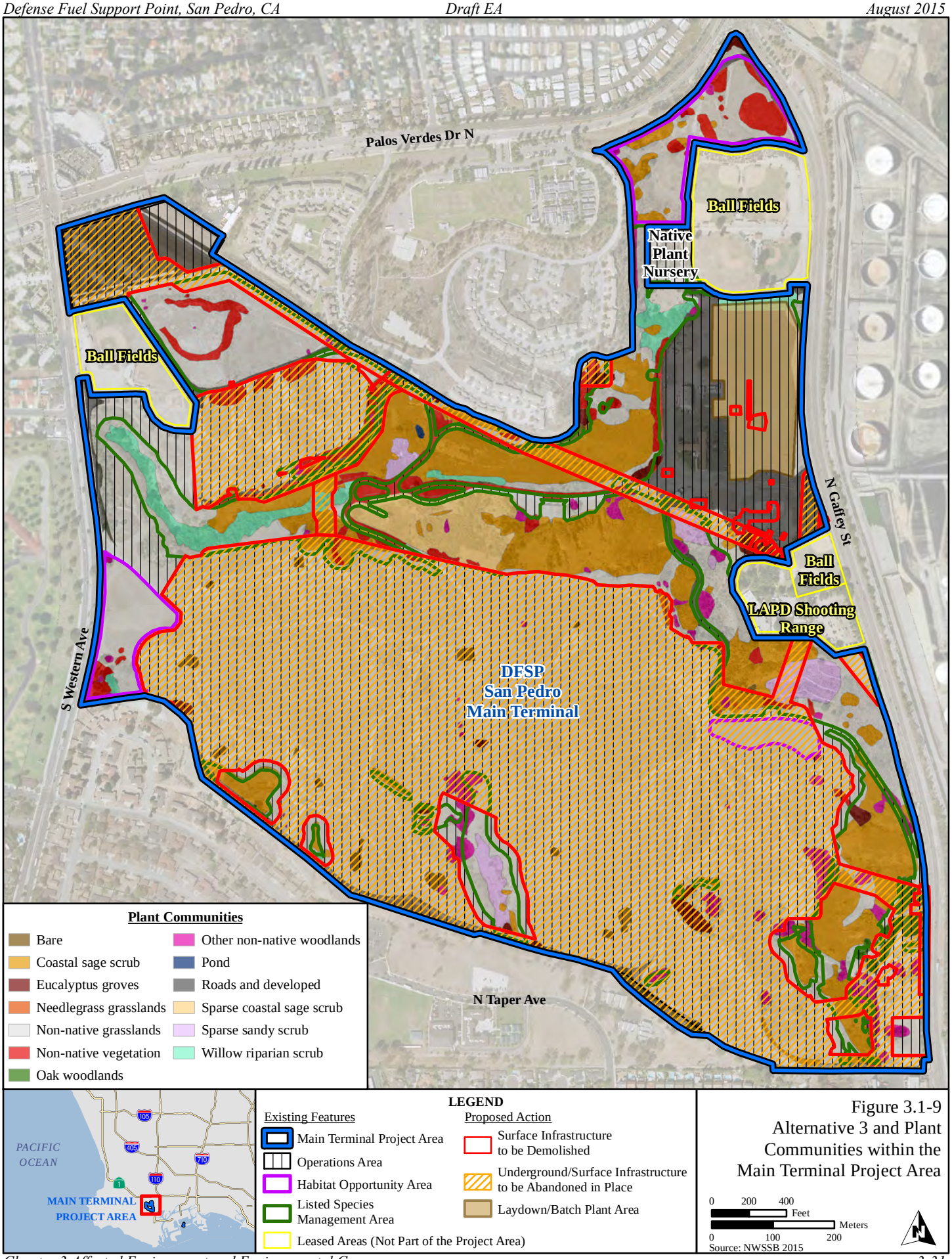


Figure 3.1-9
Alternative 3 and Plant Communities within the Main Terminal Project Area

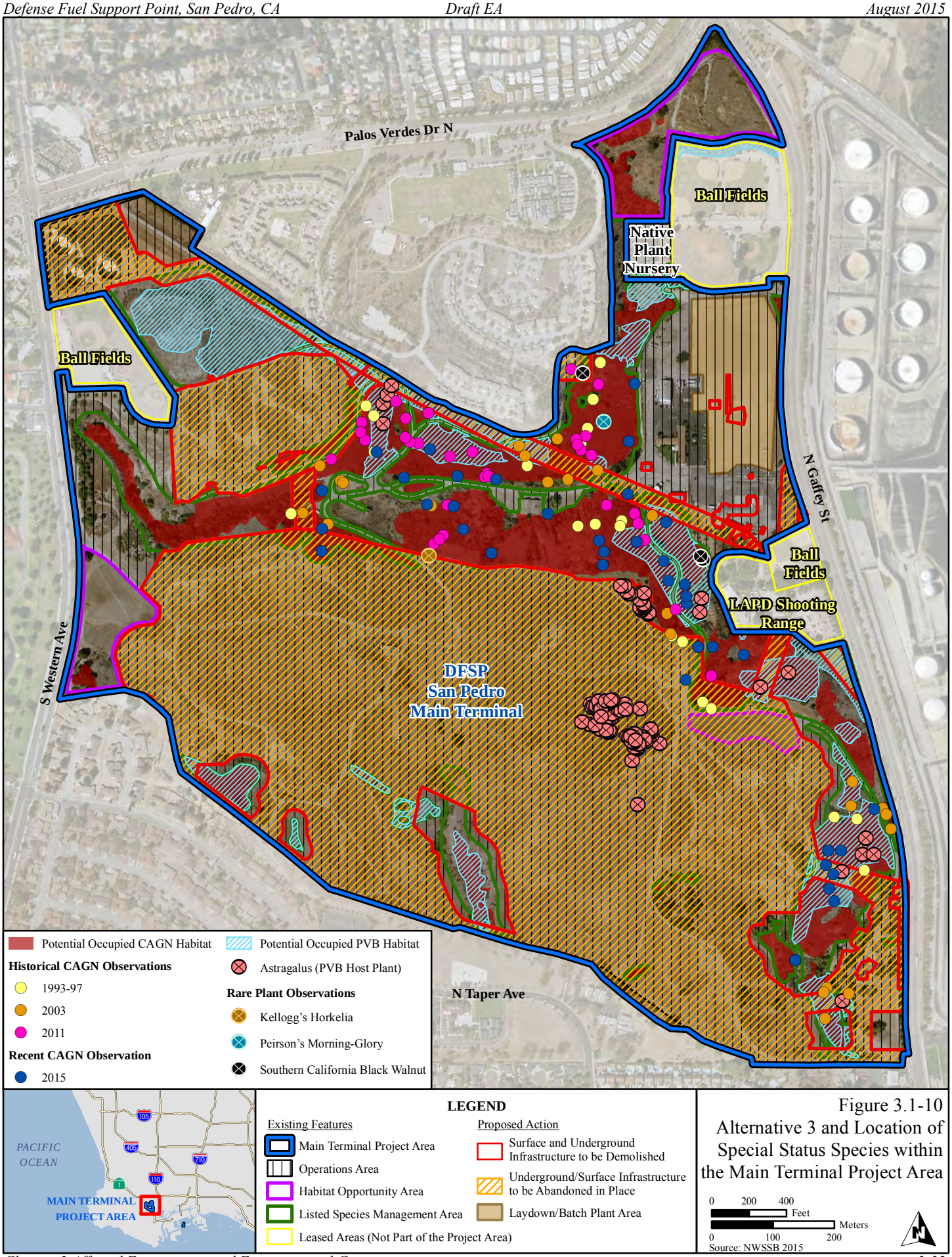


Figure 3.1-10
Alternative 3 and Location of Special Status Species within the Main Terminal Project Area

Coastal California Gnatcatcher

Alternative 3 would result in direct temporary impacts to 6.45 acres of potentially occupied CAGN habitat, representing 11.4 percent of the total CAGN habitat at the Main Terminal. For comparison, this acreage of CAGN habitat potentially disturbed by the project would be greater than the annual and the 3-year threshold values for suitable CAGN habitat that could be disturbed by operations and maintenance activities at the Main Terminal, as specified in the 2010 BO. This habitat would be unavailable until it has been restored following demolition activities, which would take several years. Temporary direct (loss of habitat) and indirect (disturbance due to increased noise, dust, and human activity) impacts due to demolition would be similar to but substantially greater in extent and duration than those discussed for Alternatives 1 and 2 because demolition activities would remove considerably more habitat. Pairs and individuals would be expected to utilize suitable habitat that lies farther from demolition sites to the extent that it is available during the demolition period. Following demolition, disturbed occupied habitat would be restored in place. Due to the more extensive habitat disturbance, the potential for injury or mortality of CAGN individuals, despite the implementation of impact avoidance and minimization measures (see Appendix B), is greater for Alternative 3 than for the other alternatives.

Other Special Status Species

Implementation of Alternative 3 at the Main Terminal has the potential to remove or damage one of the three Southern California black walnut trees observed at the site.

Migratory Bird Treaty Act Species

Alternative 3 would result in temporary impacts to MBTA species by impacting approximately 85 acres of habitat (non-native grassland and other vegetation types in both the Operations Area and in the Listed Species Management and Habitat Opportunity Areas, excluding roads, bare areas, and developed areas (refer to Table 3.1-8). The type of impacts would be similar in nature to those described for Alternative 1; however, the magnitude of the impacts would be substantially greater because of the substantially greater spatial extent of the activities. Temporary impacts associated with dust and noise would occur for a longer duration of time and over a substantially more extensive area than for Alternative 1 because of the increase in demolition activity.

Marine Terminal and Interconnecting Pipelines

Although the endangered CLT could fly by or forage in the vicinity of the Marine Terminal, it is unlikely to be affected by closure and demolition activities, which would be localized and similar to other, on-going activities in the industrialized area of the harbor complex. The Marine Terminal is over 2 miles from the CLT nest area on the end of Pier 400. Similarly, other special status species, including black skimmer, loggerhead shrike, California brown pelican, and American peregrine falcon would be unlikely to be affected by the activity at the Marine Terminal for similar reasons. Listed and sensitive species are unlikely to occur along the interconnecting pipeline routes because they pass through heavily developed mostly industrial or commercial areas that provide little or no habitat for sensitive native species.

Post-closure

Following closure, revegetation to be conducted in accordance with the Revegetation Plan (discussed in Appendix B) and habitat succession would gradually occur, allowing recovery of vegetation and habitat from adverse impacts caused by the demolition and closure activities. Post-closure operations would reflect the outcome of ESA consultation with USFWS to include continuation of captive breeding and release of PVB, operation of the nursery, monitoring of PVB, and revegetation activities as described in

the impact avoidance and minimization measures. Environmental cleanup activities may also occur. In addition, biological resources would continue to be managed in accordance with the INRMP.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 3. Because of the greater spatial scope and duration of the project activities, it may be more difficult to successfully implement these impact minimization measures.

Summary

Direct temporary impacts to biological resources under Alternative 3 would occur to approximately 93 acres of vegetation and land cover types, approximately 83.5 acres of which would be in the Operations Area. The bulk of this impact would be to non-native grasslands (approximately 72 acres, over 68 of which are in the Operations Area). Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances. Alternative 3 would temporarily disturb 2.95 acres of potentially occupied PVB habitat, representing 10.4 percent of the PVB Habitat at the Main Terminal, and 6.45 acres of potentially occupied CAGN habitat, representing approximately 11.4 percent of the total CAGN habitat at the Main Terminal. Due to the more extensive habitat disturbance, the potential for injury or mortality to PVB and CAGN individuals, despite the implementation of impact avoidance and minimization measures (see Appendix B), is greater for Alternative 3 than for the other alternatives. In particular, given that the PVB only occurs at the Main Terminal, impacts from Alternative 3 to PVB habitat at the Main Terminal may have a more dramatic effect on the survival of this species than those associated with the other project alternatives. Alternative 3 also has the potential to impact one of the three southern California black walnut trees on the site, and would temporarily impact up to 85 acres of potential habitat for MBTA species.

Following closure, no impacts to biological resources would occur, as no operations would occur other than on-going monitoring and maintenance and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Even with implementation of proposed impact avoidance and minimization measures, Alternative 3 is still likely to result in a significant impact to biological resources. Therefore, implementation of Alternative 3 would result in a significant impact to biological resources.

3.1.3.4 Alternative 4

Reversing the temporary closure activities at the Main Terminal, Marine Terminal and off-site pipelines under Alternative 4 would consist of reconnecting tanks and pipelines; reinstalling tank level controls; reinstalling meters; and removing all tag-outs used for securing the facility. Minimal demolition would also occur under Alternative 4.

Plant Communities

Under Alternative 4, temporary impacts to approximately 16 acres would occur (Table 3.1-9, Figure 3.1-11). The bulk of this impact would be to non-native grasslands in the Operations Area, where there is regular mowing. The impact to non-native grasslands would affect approximately 7 percent of the non-native grasslands on the site. Permanent impacts on vegetation would be negligible. Quantitatively, the habitat acreage affected at the Main Terminal would be the same as Alternative 2. Temporary direct (removal of habitat) and indirect (invasive species) impacts due to demolition activities would be similar to those discussed for Alternative 1 but would affect less acreage (16 acres compared to 25 acres for Alternative 1). Soil needed to fill the empty USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral

drainages. The excavation of fill dirt would not affect PVB or CAGN habitats. Alternative 4 would differ from Alternatives 1 and 2 with respect to disturbance associated with the soil option because 6 USTs in the northwestern part of the site would continue to be used and therefore would not be backfilled with soil, reducing the surface disturbance associated with obtaining adequate volume of backfill.

Table 3.1-9. Estimated Temporary Impacts to Vegetation and Land Cover Types under Alternative 4 at the Main Terminal

Vegetation and Land Cover Types	Habitat Area		Operations Area		Site Total
	Acres	% of Total	Acres	% of Total	Acres
Bare	0.00	0.0%	0.21	13.2%	1.56
Coastal sage scrub	0.06	0.2%	0.03	0.1%	37.01
Developed	0.00	0.0%	0.38	1.4%	27.11
Eucalyptus groves	0.02	0.7%	0.37	15.4%	2.42
Needlegrass grasslands	0.00	0.5%	0.00	1.1%	0.22
Non-native grasslands	0.53	0.3%	14.09	7.1%	199.23
Non-native vegetation	0.00	0.0%	0.02	0.2%	11.53
Oak woodlands	0.00	0.0%	0%	0.0%	1.35
Other non-native woodlands	0.13	1.8%	0.10	1.5%	6.86
Pond	0.00	0.0%	0%	0.0%	0.05
Roads	0.00	0.0%	0.02	0.7%	2.43
Sparse coastal sage scrub	0.00	0.0%	0%	0.0%	5.14
Sparse sandy scrub	0.00	0.0%	0%	0.0%	3.77
Undetermined plant community	0.00	0.0%	0%	0.0%	4.75
Willow riparian scrub	0.00	0.0%	0%	0.0%	5.31
Totals	**0.74**		**15.22**		**308.76**

Special Status Species

Figure 3.1-12 shows the locations of project surface disturbance under Alternative 4 and the distribution of federally listed and other sensitive species documented at the Main Terminal.

Palos Verdes Blue Butterfly

Alternative 4 would result in direct temporary impacts to 0.18 acre of potentially occupied PVB habitat, representing approximately 0.6 percent of the total PVB habitat at the Main Terminal. This habitat would be unavailable until it has been restored following project activities. The key food plants for PVB can be reestablished within 3 years or less, depending on conditions. Temporary direct (loss of habitat) and indirect (disturbance due to increased noise, dust, and human activity) impacts due to demolition would be similar to but slightly less than those discussed for Alternative 1 because demolition activities would remove less habitat. In addition, given the small amount of area that would be disturbed, individuals would be expected to utilize suitable habitat onsite away from human activity associated with the project. Following demolition, disturbed occupied habitat would be restored in place. Implementation of impact avoidance and minimization measures (see Appendix B) would minimize or avoid impacts to PVB eggs, larvae, and adults within the potentially occupied habitat.

Coastal California Gnatcatcher

Alternative 4 would result in direct temporary impacts to 0.09 acre of potentially occupied CAGN habitat, representing approximately 0.16 percent of the total CAGN habitat on the Main Terminal. This habitat would be unavailable until it has been restored following demolition activities, which would take several years. Temporary direct (loss of habitat) and indirect (disturbance due to increased noise, dust, and human

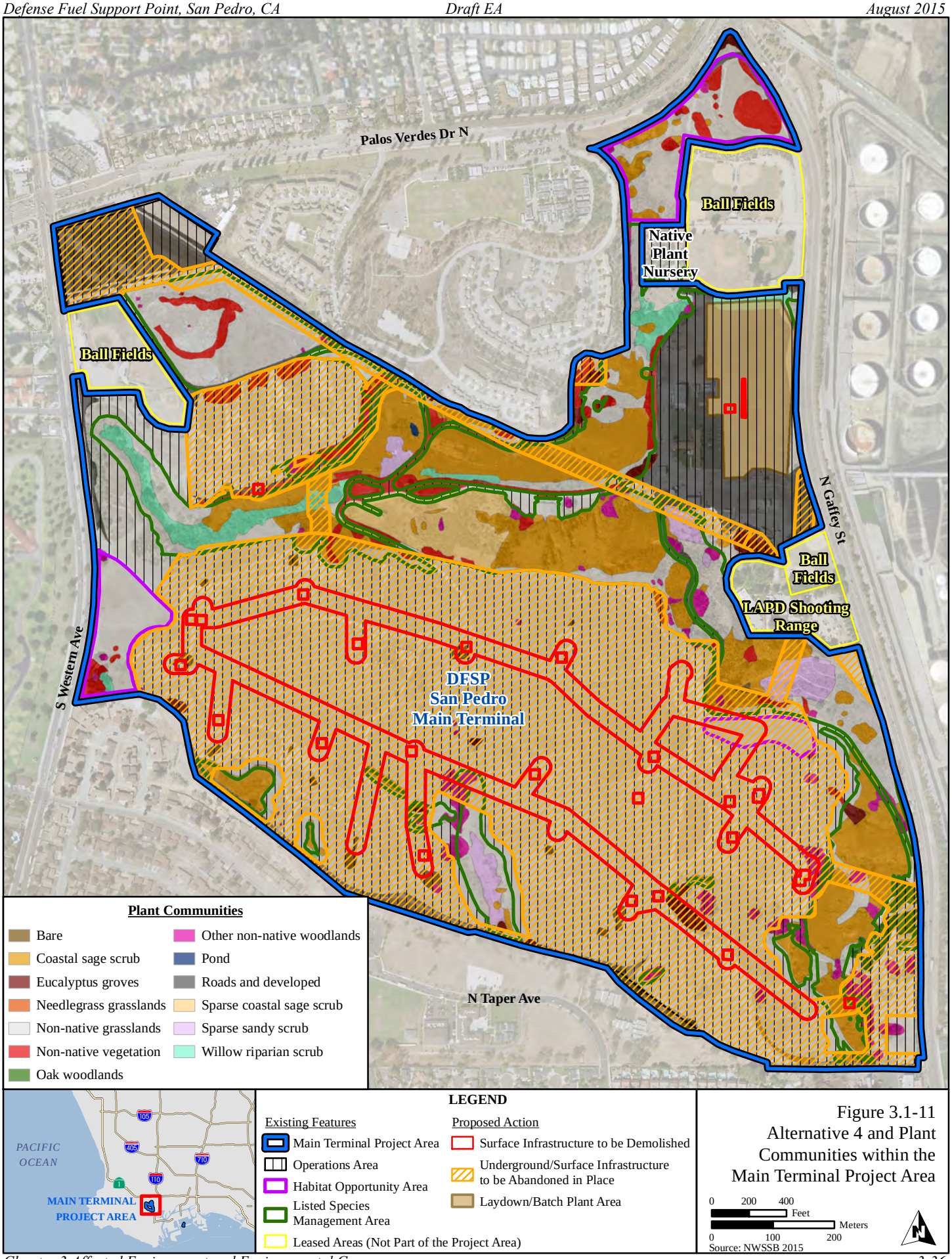


Figure 3.1-11
Alternative 4 and Plant Communities within the Main Terminal Project Area

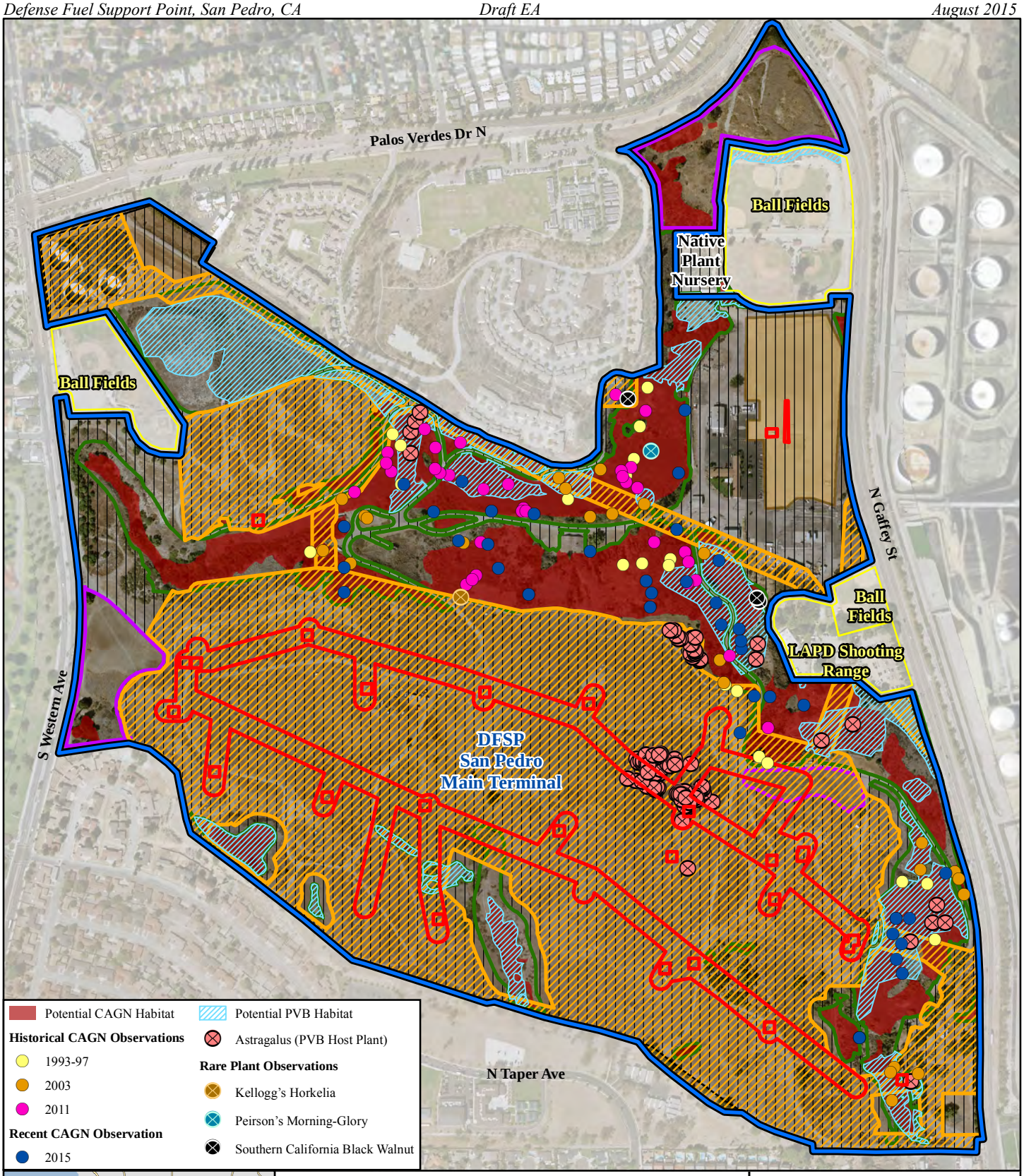


Figure 3.1-12
Alternative 4 and Location of Special Status Species within the Main Terminal Project Area

activity) impacts due to demolition would be similar to, but slightly less than, those discussed for Alternative 1 because demolition activities would remove less habitat. In addition, given the small amount of area that would be disturbed and the large amount of suitable habitat outside the project footprint, pairs and individuals would be expected to utilize suitable habitat onsite away from human activity associated with the project.

Other Special Status Species

Implementation of Alternative 4 at the Main Terminal would not affect known locations of sensitive plant species.

Migratory Bird Treaty Act Species

Alternative 4 would result in temporary impacts to 15 acres of suitable habitat (mostly non-native grassland) for MBTA species. Indirect temporary impacts to MBTA species also would be similar to but slightly more than described for Alternative 1 because demolition activities would remove more habitat.

Marine Terminal and Interconnecting Pipelines

Although the endangered CLT could fly by or forage in the vicinity of the Marine Terminal, it is unlikely to be affected by closure and demolition activities which would be localized and similar to other, on-going activities in the industrialized area of the harbor complex. The Marine Terminal is over 2 miles from the CLT nest area on the end of Pier 400. Similarly, other special status species, including black skimmer, loggerhead shrike, California brown pelican, and American peregrine falcon would be unlikely to be affected by the activity at the Marine Terminal for similar reasons. Listed and sensitive species are unlikely to occur along the interconnecting pipeline routes because they pass through heavily developed mostly industrial or commercial areas that provide little or no habitat for sensitive native species.

Partial Operation and Partial Closure

Following project demolition and restoration activities, partial operations would occur in compliance with measures developed through consultation with the USFWS to avoid/minimize impacts to biological resources. In addition, biological resources would continue to be managed in accordance with the DFSP San Pedro INRMP.

Following demolition, revegetation to be conducted in accordance with the Revegetation Plan and habitat succession would gradually occur, allowing recovery of vegetation and habitat from adverse impacts caused by demolition and closure activities. Post-closure operations would reflect the outcome of ESA consultation with USFWS to include continuation of captive breeding and release of PVB, operation of the nursery, monitoring of PVB, and revegetation activities as described in the impact avoidance and minimization measures. Environmental cleanup activities may also occur. In addition, biological resources would continue to be managed in accordance with the INRMP.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 4.

Summary

Direct temporary impacts to biological resources under Alternative 4 would occur to approximately 16 acres of vegetation and land cover types, including 0.74 acres of vegetation and land cover types in the Listed Species Management/Habitat Opportunity Area and 15.25 acres in the Operations Area. The impact to non-native grasslands would affect approximately 7 percent of the non-native grasslands on the

site. Quantitatively, the affected habitat acreage at the Main Terminal would be the same as Alternative 2. Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances. Alternative 4 would temporarily disturb 0.18 acre of potentially occupied PVB habitat, representing approximately 0.6 percent of the total PVB habitat at the Main Terminal, and 0.09 acre of potentially occupied CAGN habitat, representing approximately 0.16 percent of the total CAGN habitat at the Main Terminal. Alternative 4 would temporarily impact up to 15 acres of potential habitat for MBTA species.

Following demolition and restoration, impacts to biological resources would occur from continuing operations as well as on-going monitoring and maintenance and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Therefore, with implementation of impact avoidance and minimization measures proposed, Alternative 4 would result in no significant impact to biological resources.

3.1.3.5 No Action Alternative

Reversal of Temporary Closure

The No Action Alternative would consist of reconnecting tanks and pipelines; reinstalling tank level controls; reinstalling meters; and removing all tag-outs used for securing the facility. Selection of the No Action Alternative would result in indirect temporary impacts to vegetation, wildlife and sensitive species due to increased noise, dust, and human activity. No direct temporary impacts would occur because no surface disruption of habitat would occur. Repair activities as well as operations and maintenance activities would be conducted in compliance with the existing 2010 BO, if a new BO is not issued.

Complete Operation

Under the No Action Alternative, operations would presumably resume to historical levels at DFSP San Pedro. Operations would continue to occur in compliance with measures developed through consultation with the USFWS to avoid/minimize impacts to biological resources from operations and maintenance activities. In addition, biological resources would continue to be managed in accordance with the INRMP.

Impact Avoidance and Minimization Measures

Implementation of the No Action Alternative would comply with existing measures developed through past regulatory coordination/consultation including some of the measures spelled out under Alternative 1. Therefore, no new impact avoidance and minimization measures have been identified.

No Action Alternative Summary

With the implementation of the existing measures developed through past regulatory coordination/consultation, impacts to biological resources from ongoing operations of the facility such as mowing vegetation, would continue under the No Action Alternative. Indirect temporary impacts associated with maintenance activities would occur. Operations would comply with measures developed through consultation with the USFWS to avoid/minimize impacts to biological resources. Biological resources would continue to be managed in accordance with the DFSP San Pedro INRMP. Therefore, implementation of the No Action Alternative would result in continuation of historical non-significant impacts of routine operations and maintenance and there would be no significant new impacts to biological resources.

3.2 GEOLOGICAL RESOURCES

3.2.1 DEFINITION OF RESOURCE

The topography, geology, soils, and mineral resources are the geological resources of a given area. The elevation, slope, aspect, and surface features found within a given area form its topography. Long-term geological, seismic, erosional, and depositional processes typically influence the topographic relief of an area. The geology of an area includes the geologic formations (i.e., bedrock) and geologic hazards of an area. Bedrock refers to consolidated earthen materials that may be made up of either interlocking crystals (igneous and metamorphic rocks) or fragments of other rocks compressed and cemented together over time by pressure and dissolved minerals that have hardened in place (sedimentary rocks).

Geologic hazards include seismic hazards (earthquakes, ground rupture, ground shaking, liquefaction, and tsunamis); landslides; and erosion. Seismic hazards can also trigger landslides and increase the effects of erosion. Soil lies above bedrock and consists of unconsolidated, weathered bedrock fragments (sand and silt); decomposed organic matter from plants, bacteria, fungi, and other living things. The value of soil as a geologic resource lies in its potential to support plant growth, especially agriculture. Mineral resources are metallic or non-metallic earth materials that can be extracted for a useful purpose, such as iron ore that can be refined to make steel, gravel that can be used to build roads, or petroleum and natural gas.

The Region of Influence (ROI) for geological resources includes the Main Terminal, Marine Terminal, the pipeline route between the terminals, and the immediate surrounding area (i.e., the northern portion of the Port of Long Beach, North Gaffey Street, and the residential areas to the north, west, and south of the Main Terminal). The aboveground segments of the off-site underground pipelines subject to demolition are located in developed areas with no unique geological resources. Similarly, the off-site underground pipelines would remain underground; no impact to geological resources would occur from any of the alternatives. As such, the off-site pipeline segments are not discussed or analyzed in this section.

3.2.2 AFFECTED ENVIRONMENT

3.2.2.1 Geologic History Background

The project area is located in the Southwestern Block of the Los Angeles Basin (Norris and Webb 1990). The Southwestern Block is bounded on the east by the Newport-Inglewood-Rose Canyon Fault Zone (Figure 3.2-1). Troughs in bedrock in the Los Angeles Basin up to 20,500 feet (6,250 meters) deep have been filled with marine sediments and formed reservoirs for petroleum and natural gas (Norris and Webb 1990). The Palos Verdes Fault Zone crosses the Main Terminal (Figure 3.2-1). The Palos Verdes Hills formed when marine sediments were uplifted along the steep Palos Verdes Fault. It is estimated that the Palos Verdes Hills began rising approximately 1.8 million years ago, and continue to rise at a rate of approximately 2.0 to 4.0 millimeters per year (Port of Long Beach 2006).

The large, active Portuguese Bend landslide and two smaller landslides are located approximately 3.4 miles (5.5 kilometers) southwest of the Main Terminal (Figure 3.2-1). The Portuguese Bend landslide was caused by a combination of steep slopes overlain with clay soil, natural wave erosion of the cliffs along the shore, and residential landscape watering and septic tanks (Norris and Webb 1990). Landslides have been occurring in the Portuguese Bend area for approximately 250,000 years, with movements occurring since 1956 caused by construction (vonder Linden 1989).

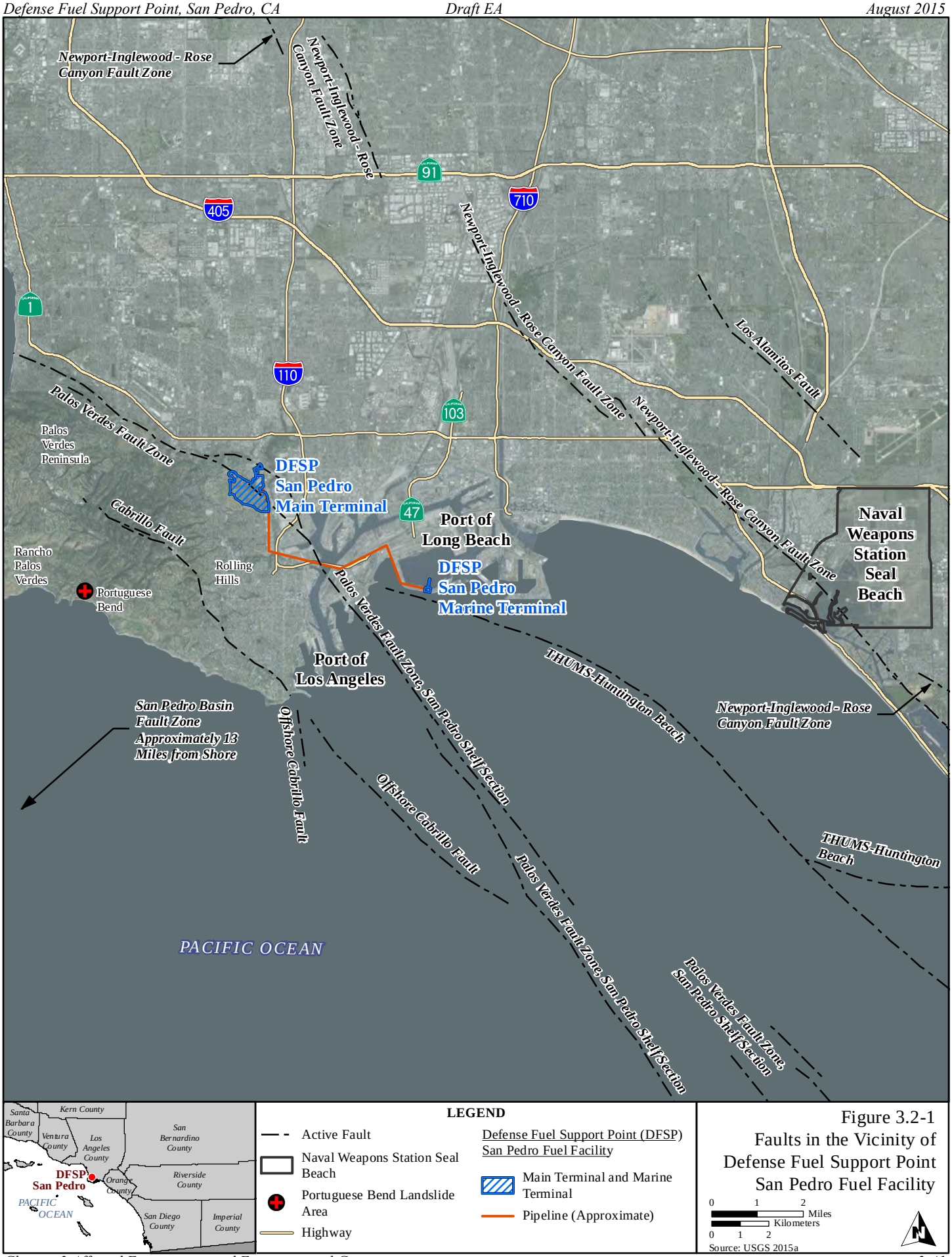


Figure 3.2-1
Faults in the Vicinity of Defense Fuel Support Point San Pedro Fuel Facility

3.2.2.2 Site Topography

The northeastern portion of the site, occupied by the Main Terminal offices and buildings, is generally flat and is located approximately 30 feet (9 meters) above mean sea level (msl). The western portion of the Main Terminal rises steeply from the administrative portion to an elevation of approximately 180 feet (55 meters) above msl, and then forms a gentle, westward rising slope with a maximum elevation of approximately 260 feet (80 meters) above msl in the northwestern corner of the property where the ASTs are located. An east-west oriented central ravine with steep sides bisects the Main Terminal. The elevation at the bottom of the ravine is approximately 84 feet (26 meters) above msl. Figure 3.2-2 presents elevation contours at the Main Terminal. The Marine Terminal is flat and is approximately 15 feet (5 meters) above msl.

As shown in Photo 3.2-1, the natural slopes and topography of the Main Terminal in many areas were altered during the original installation of USTs and pipelines; through fill with construction debris; and excavation and grading for other past construction projects (DFSP San Pedro 2014). The USTs were constructed during various periods by excavating areas for each tank and then reburying once the tanks were completed (DLA 2008). A network of roads were built to access the construction sites and included several earthen dams built along the small ravines that cut into the bluff (Photo 3.2-2). Six pump houses were constructed along the contours of a ravine below the original twenty tanks. Additional phases of construction resulted in excavation alterations of the original topography, including additional USTs, roadways, and other infrastructure (DLA 2008).

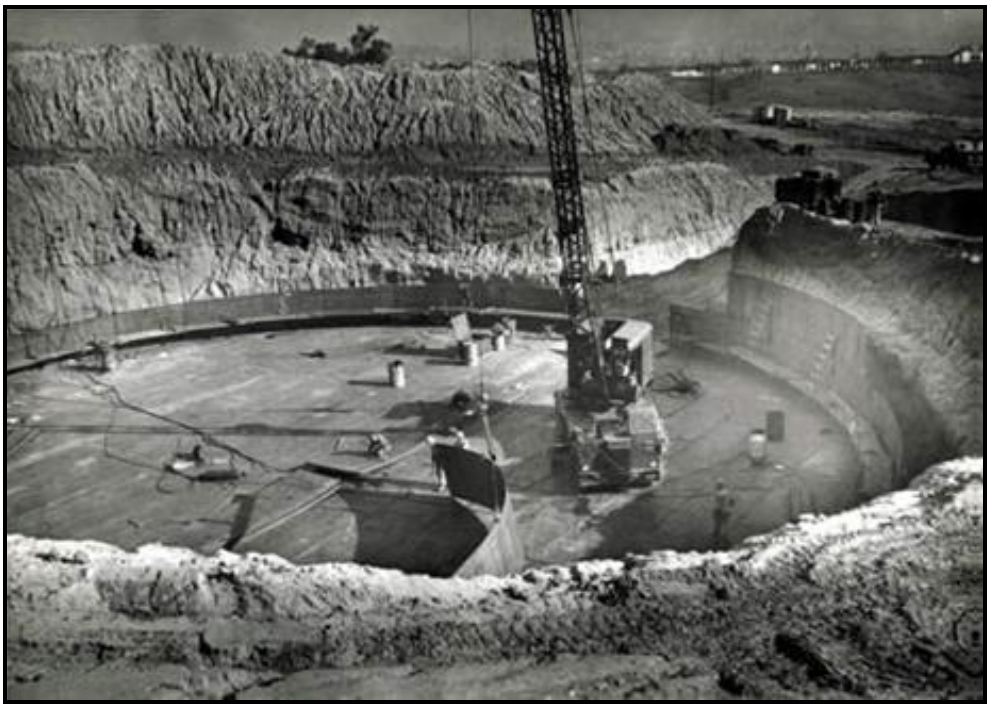


Photo 3.2-1. Construction of an UST at the Main Terminal from 1952 – 1954 during the Korean Conflict (DLA 2008)

Photo 3.2-2. Installation of the USTs at the Main Terminal in 1942 (DLA 2008)

3.2.2.3 Geology

Bedrock

Bedrock in the project area comprises Catalina schist (a metamorphic rock) and the Monterey shale (a fine-grained sedimentary rock) (Norris and Webb 1990; State of California 2003). However, due to the thick overlying sediments and soils, bedrock is rarely exposed at the surface. There are small patches of the Catalina schist on the Palos Verdes Peninsula, and the Malaga mudstone member of the Monterey shale is exposed in the deep central ravine of the Main Terminal (State of California 2003).

Geologic Hazards

Seismic Hazards

Southern California is a highly active seismic region, crossed by multiple faults. A fault is a fracture or line of weakness in the earth's crust, where bedrock on one side of the fault is offset vertically or horizontally relative to bedrock on the other side of the fault (City of Los Angeles 2012). Figure 3.2-1 presents active faults in the project area and region.

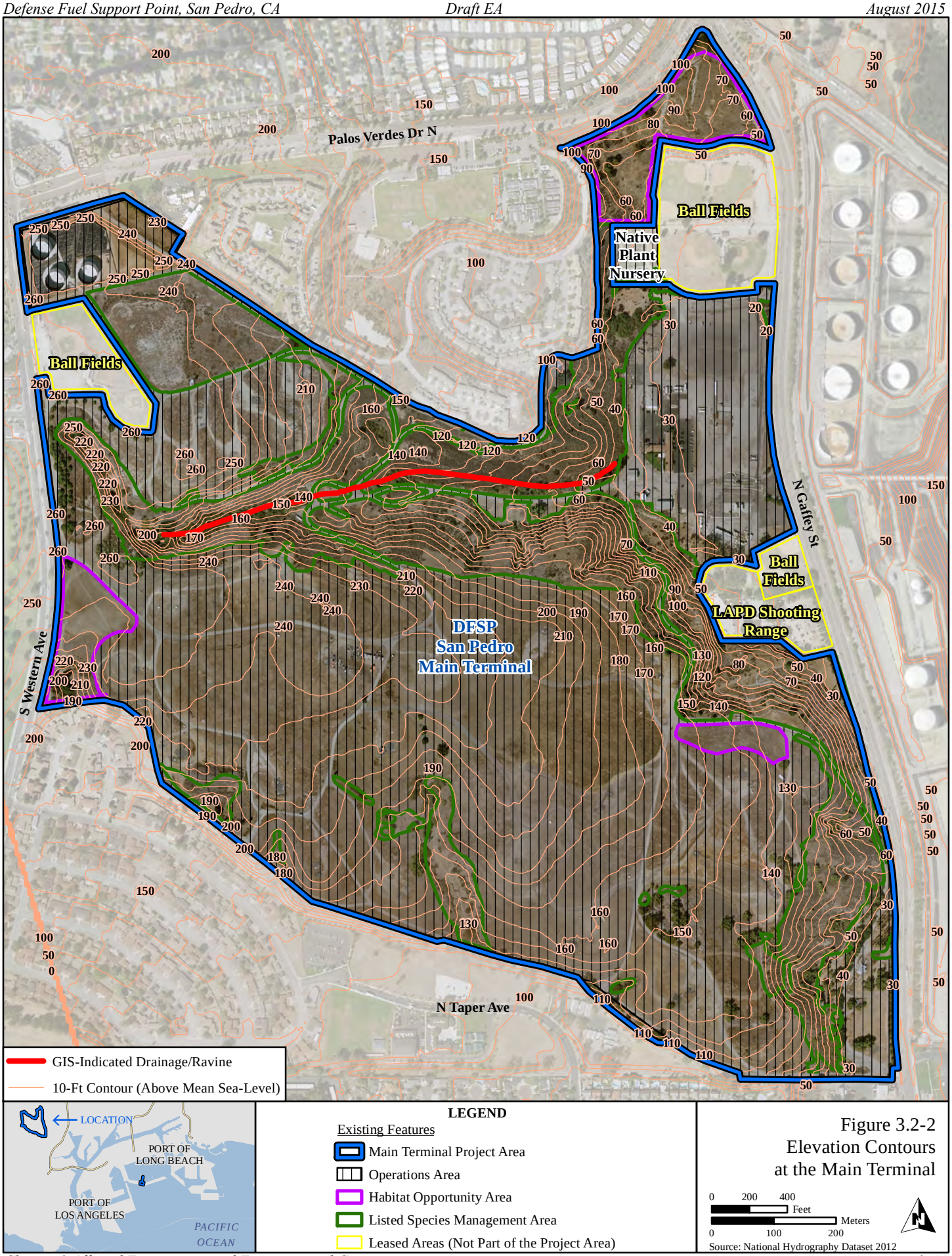


Figure 3.2-2
Elevation Contours
at the Main Terminal

With regard to the DFSP San Pedro project area, the widest section of the Palos Verdes Fault Zone, San Pedro Shelf Zone Section, is near the Vincent Thomas Bridge, where the DFSP San Pedro pipeline route crosses below the Los Angeles Harbor Main Channel (Los Angeles Harbor Department 2014). The onshore Palos Verdes Fault Zone crosses the Main Terminal site diagonally from southeast to northwest, beneath several USTs on the hill, the ASTs in the northwest corner of the site, and many valves and sections of on-site pipeline. The THUMS-Huntington Beach Fault runs along the south side of the Navy "Mole Pier," on which the Marine Terminal is located (refer to Figure 3.2-1). The Cabrillo Fault is located approximately 2 miles (3.2 kilometers) west of the Main Terminal, and approximately 4 miles (6.4 kilometers) southwest of the Marine Terminal. Table 3.2-1 provides seismic information for active faults in and around the project area.

Table 3.2-1. Summary of Seismic Data for Active Faults in Project Area

Fault Name	Conservative Mean Characteristic Earthquake Moment Magnitude[1]	Earthquake Classification	Conservative Percent Chance of Earthquake Occurrence	Slip Rate (millimeters per year)
Palos Verdes Fault Zone[2]	6.65 to 7.2	Major	Less than 10	2.0 to 4.0
Palos Verdes Fault Zone, San Pedro Shelf Section[2]	6.65 to 7.2[2]	Major	Less than 10	2.0 to 4.0
Cabrillo Fault Zone	6.25 to 6.5	Moderate	Less than 0.001	0.1
THUMS- Huntington Beach Fault	7.1 to 7.2	Major	Less than 0.001	0.5 to 1.0
Newport-Inglewood-Rose Canyon Fault Zone[2]	6.7 to 7.2	Major	Less than 0.10	0.5 to 1.5
Los Alamitos Fault	6.5	Moderate	Less than 0.10	0.25 to 0.50
San Pedro Basin Fault Zone	7.1 to 7.2	Major	Less than 0.10	0.5 to 1.0

Notes: [1] Moment Magnitude is a measure of the energy the earthquake releases.
[2] The Newport-Inglewood-Rose Canyon Fault Zone caused the 1933 Long Beach earthquake, one of the major disasters in the history of southern California (Norris and Webb 1990; City of Los Angeles 2012).

Sources: Norris and Webb 1990; Port of Long Beach 2006; City of Los Angeles 2012; Los Angeles Harbor Department 2014; U.S. Geological Survey 2015.

The primary seismic hazard that results from an earthquake caused by local faults is strong ground shaking. The intensity of the shaking depends on several factors, including the magnitude of the earthquake, distance from the epicenter of the earthquake, and the underlying soil conditions. In general, effects will be greater the larger the magnitude of the earthquake and the closer a site is to the epicenter. Soil properties can also increase the earthquake's shock waves. In general, the shock waves are unchanged by bedrock, are somewhat increased in thick alluvium, and are greatly increased in thin alluvium (City of Los Angeles 2012). Outside the Port of Los Angeles, which is constructed on artificial fill, the on-shore portion of the pipeline route and the Main Terminal are underlain by natural soils derived from alluvium, mostly sand and silt (National Cooperative Soil Survey 2000, 2003).

Liquefaction

Liquefaction is the sudden loss of strength and stiffness in water-saturated soils, due to the ground shaking caused by an earthquake. The effects of liquefaction include loss of the soil's ability to support structures. All low-elevation land at the Main Terminal lies within the liquefaction zone mapped by the City of Los Angeles. This includes all the land, facilities, and structures at the eastern base of the hill: the parking area, administration buildings, and fueling station. The land along the road at the bottom of the central ravine and the low area at the base of the hill in the southeastern corner of the Main Terminal are mapped in the liquefaction zone as well. Ten valves and several sections of the on-site pipeline are located in the southeastern mapped liquefaction zone (City of Los Angeles 2012).

The Marine Terminal and the entire pipeline on Terminal Island are also located in the liquefaction zone. The remainder of the onshore pipeline route is outside the liquefaction zone until it reaches the low-lying, eastern part of the Main Terminal (California Department of Conservation 1998; City of Los Angeles 2012).

Erosion

Erosion is the removal/loss of soil or soft bedrock such as shale or mudstone due to the force of runoff from rainfall. The Main Terminal has steep slopes and soft, highly permeable soils that could be subject to erosion without protective vegetative cover. Some areas are severely eroded with much of the upper soil profile missing. Drainage at the Main Terminal is partially controlled by a series of concrete-lined V-ditches. The Marine Terminal is located on a level, partially paved developed site where drainage is controlled to prevent erosion. On-site pipelines are buried; however, in some areas short segments have been exposed due to erosion.

Tsunamis and Seiches

Tsunamis are large ocean waves caused by significant seismic events, such as an earthquake or a submarine landslide near the California coastline. The Marine Terminal, Pier 12, and the entire pipeline route within the Port of Los Angeles boundary lie within the tsunami inundation area (California Emergency Management Agency 2009a). Seiches are seismically induced waves that surge back and forth in an enclosed basin and may be expected in the Port of Los Angeles and Port of Long Beach harbors as a result of earthquakes. A significant seiche could cause damage to sea walls and piers (Los Angeles Harbor Department 2014). The Main Terminal is located outside the tsunami inundation area (California Emergency Management Agency 2009b).

Regulatory Framework

Public health and safety with regard to earthquake-related hazards are addressed by the Alquist-Priolo Earthquake Fault Zoning Act (California Public Resource Code §§ 2621-2630 1972 amended 1994) and State Seismic Hazards Mapping Act (California Public Resource Code §§ 2690-2699 1990). The purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to prevent construction of buildings used for human occupancy across the surface trace of active faults (City of Los Angeles 2012). The Palos Verdes Fault Zone – which crosses DFSP San Pedro as described above and shown on Figure 3.2-1 – is classified in the City of Los Angeles Safety Element as a Fault Rupture Study Area. However, the Palos Verdes Fault Zone is not classified as an Alquist-Priolo Earthquake Fault Zone (Los Angeles Harbor Department 2012) and therefore, construction in this area is not subject to the Alquist-Priolo Earthquake Fault Zoning Act. The Navy complies with all applicable laws and regulations, and also meets the substantive requirements of those laws and regulations that do not formally apply to the federal agencies such as the Navy, to the fullest extent practicable.

3.2.2.4 Soils

Natural soils at the Main Terminal comprise Ramona Loam, Ramona Sandy Loam, Yolo Loam, and Yolo Sandy Loam (National Cooperative Soil Survey 2000, 2003). Table 3.2-2 describes the properties of these soils. However, these soil properties were defined for agricultural purposes and all the land along the pipeline route is intensively developed for commercial and industrial use. Construction of the USTs and underground pipelines on the property has extensively disturbed the natural soils and topography at the Main Terminal. In addition, up to 6 acres (2.4 hectares) of a ravine in the southeast corner of the Main Terminal were filled with construction rubble and rough-graded into an engineered slope (DFSP San Pedro 2014). Figure 3.2-3 shows the soils in the project area.

Table 3.2-2. Natural Soil Types in the Project Area

Soil Type	Composition	Drainage	Agricultural Use/Value
Ramona Loam and Ramona Sandy Loam	Ramona loam is equal parts silt, sand, and clay; sandy loam has a larger proportion of sand.	Found on nearly level to moderately steep slopes; slow to rapid runoff; moderately slow permeability.	Mostly used to grow grain, hay or for pasture; irrigated to grow citrus, olives, truck crops, and deciduous fruits. Uncultivated areas have a cover of annual grasses, herbaceous plants, chamise, or chaparral.
Yolo Loam and Sandy Loam	Yolo soils comprise fine sand-silty loam.	Found on nearly level to moderate slopes. They are well-drained with slow to medium run off.	Yolo soils are used for intensive row, field, and orchard crops. Original vegetation was annual grasses, herbaceous plants, and scattered oak.

Sources: National Cooperative Soil Survey 1972, 2000.

The soils in the level northern portion of the Main Terminal property may have been farmed in the early 1900s. However, the land has not been farmed since acquisition by the Navy in 1942 (DFSP San Pedro 2014).

The Port of Long Beach, (including the Marine Terminal) and the Port of Los Angeles are constructed of artificial fill, some of it material dredged from the harbor and channels (State of California 2003; DFSP San Pedro 2014). The pipeline route through the Port of Long Beach and the Port of Los Angeles lies in artificial fill. Below the Port of Los Angeles Main Channel, the pipeline is buried in marine sediments (State of California 2003). Onshore, the pipeline route to the Main Terminal lies in artificial fill within the Port of Los Angeles boundary, and then it passes through Yolo Loam and Ramona Sandy Loam (State of California 2003; National Cooperative Soil Survey 2000, 2003).

3.2.2.5 Mineral Resources

The Main Terminal was never developed or used for petroleum or natural gas production (DFSP San Pedro 2014). The Wilmington Oil Field, the third largest oil field in the lower 48 states, runs from San Pedro to offshore Seal Beach (City of Long Beach 2015). There is oil field infrastructure within the Port of Long Beach, but not where the Marine Terminal is located. A very small portion of the Wilmington Oil Field adjoins San Pedro, where the onshore portion of the DFSP San Pedro pipeline is located (City of Los Angeles 2012).

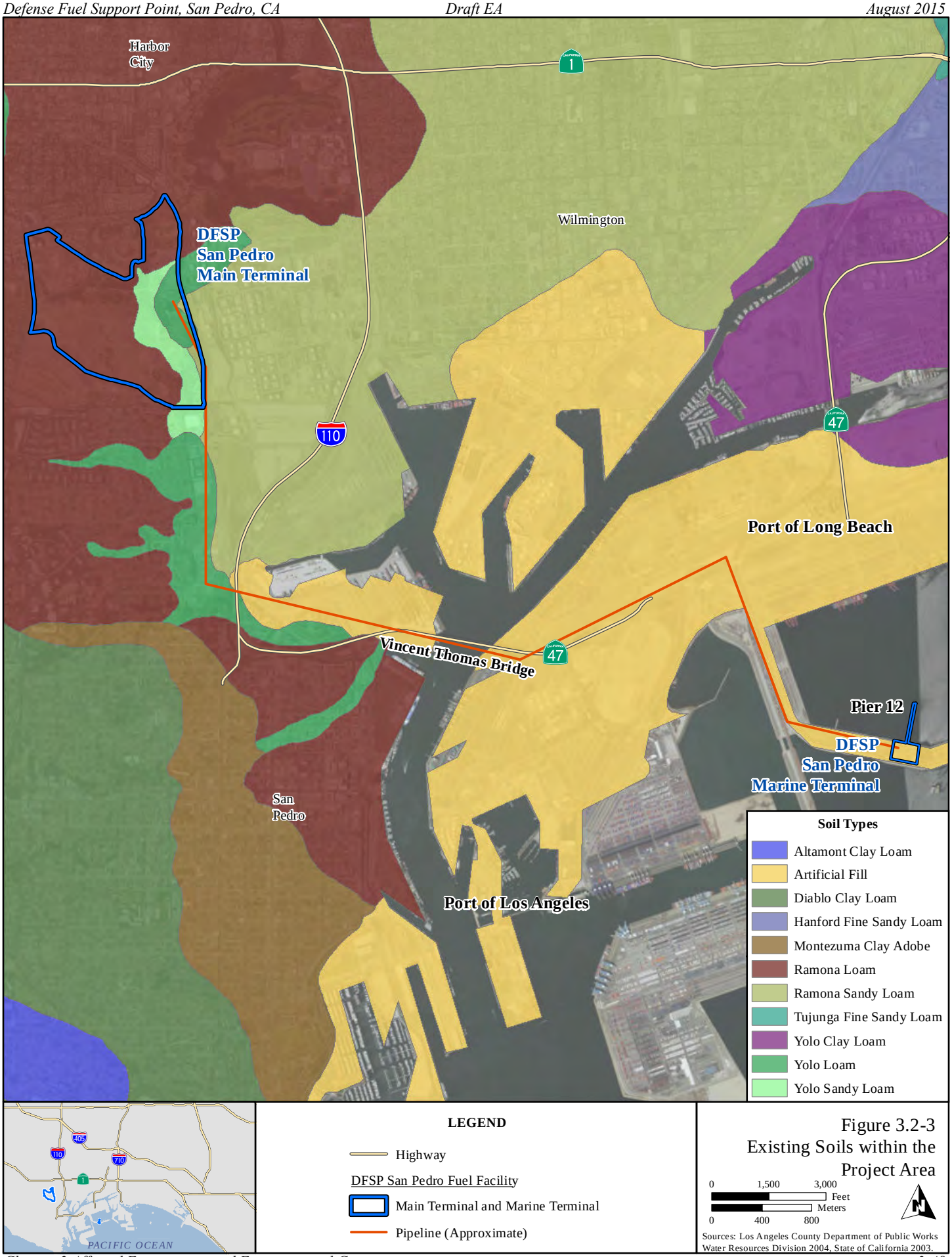


Figure 3.2-3
Existing Soils within the Project Area

3.2.3 ENVIRONMENTAL CONSEQUENCES

The evaluation of geological impacts with respect to the potential for significance considers the degree to which the following would potentially occur: soil disturbance that would result from demolition activities; changes to existing topography that could increase the potential for erosion and landslides; loss of agriculturally productive soil; risk of earthquake-related injury/damage; and loss of potentially developable mineral deposits.

3.2.3.1 Alternative 1

Complete Closure with Partial Demolition

DFSP San Pedro Main Terminal

Complete closure of the Main Terminal under Alternative 1 would involve demolition of the ASTs, and all buildings and infrastructure except the office/administrative buildings (refer to Figure 2-1). Approximately 25 acres (10.7 hectares) would be disturbed. All USTs would be filled with an inert solid. USTs at the Main Terminal are found in the following three areas:

- Area north of Central Ravine – six USTs, single-wall coated-steel construction, 2,100,000-gallon capacity.
- Area south of Central Ravine – twenty USTs, pre-stressed concrete construction 2,100,000-gallon capacity.
- Administration Area – one UST, pre-stressed concrete construction (13,000-gallon capacity); one UST, double-wall fiberglass construction, 5,000-gallon capacity.

As Table 3.2-3 shows, of the three inert materials that could be used to fill the USTs, concrete weighs approximately twice as much as soil, and approximately three times as much as foamcrete. By comparison, concrete weighs approximately three times as much as fuel.

If filled with soil, the soil on top of the USTs would first be removed and stockpiled nearby. Then the tops of the USTs would be removed, and the stockpiled soil and other soil from the Operations Area would be pushed into the UST shell to bring the topography back up to grade, approximately. Thus, a minor change in topography in the Operational Area would occur.

The volume of fill dirt needed for Alternative 1 would be approximately 273,200 cubic yards. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats. The soils used for backfill would be tested for contaminants and only those soils determined to be free from contaminants and that meet regulatory requirements would be used. Depending on the resulting topography, drainage controls may be constructed around the partially filled USTs to minimize erosion and ponding of water that might result from the change in topography, as needed.

If concrete or foamcrete are used to fill the USTs, these would be injected into the USTs and no excavation or removal of the top of the USTs would occur. These options would result in less disturbance to soil and no alteration of topography in the vicinity of the USTs, resulting in reduced impacts to soils or topography as compared to the option using soils as backfill.

Contractors would mobilize out of the identified laydown area and would drive on established roads to prevent damage to vegetation and erosion of surface soil. Subject to the results of geotechnical/

engineering evaluation and conformance with its recommendations for closure of the USTs and pipelines, there would be no potential increase of landslides and erosion under Alternative 1.

Table 3.2-3. Weight of UST Fill Materials

UST Volume (gallons)	UST Volume (cubic yards)	Concrete (tons)	Soil (tons)	Foamcrete (tons)
5,000	25	49.6	27.3	16.4
13,000	64	126.6	71.0	42.6
2,100,000	10,400	20,450	11,470	6,900

Sources: Zeller International 2000; Cart-Away Concrete 2011; Today's Homeowner.com 2015.

Demolition of approximately 9,600 linear feet of on-site underground pipeline and the valve pits would involve excavation to an average depth of approximately 10 feet (3 meters). The excavated areas would be filled using on-site soils; no fill would be trucked in from off-site. The excavated area would then be compacted to engineering standards and graded to approximate existing slope contours. There would be minimal to no impact with regard to the potential for landslides and increased erosion. Following filling of the excavated areas, all the refilled areas would be revegetated to provide a surface cover to protect the soil from erosion.

There is no petroleum or other mineral extraction at the Main Terminal, so there would be no impact to mineral resources. Activities would not impact bedrock at the Main Terminal.

Marine Terminal and Off-Site Pipelines

Complete closure of the Marine Terminal under Alternative 1 would involve demolition of surface structures and facilities. Surface disturbance would be minimal. Any excavated areas would be filled using on-site soils; no fill is expected to be trucked in from off-site. The excavated area would then be compacted to engineering standards and graded to approximate existing contours. There would be minimal to no impact with regard to the potential for landslides and increased erosion.

The process of plugging and/or filling the underground off-site pipelines would be done on the surface, as would closing the pipeline valves on either side of the line where it crosses beneath the Los Angeles Harbor Main Channel. Complete closure of off-site pipelines would be by injecting inert materials from multiple surface injection points. There would be no excavation, so there would be no landslide or erosion potential.

Earthquakes and their resulting hazards - ground shaking, liquefaction, tsunamis, and seiches - are existing natural hazards of the Ports of Long Beach and Los Angeles, and the Marine Terminal and pipelines within them. The activities associated with complete closure of the off-site pipelines would not increase the potential for human exposure to these hazards, or for damage to property.

There is no petroleum or other mineral extraction at the Marine Terminal, so there would be no impact to mineral resources. Bedrock lies so deep beneath the Marine Terminal that there would be no impact to bedrock. The Marine Terminal site is flat, so closure activities would not increase the risk of landslides.

Post-closure

Post-closure would involve no further disturbance of soil as no operations would occur. The USTs and pipelines have already been cleaned. Under Alternative 1 they would be filled with an inert solid and the pipelines would be plugged and/or filled with an inert solid and abandoned in place; thus, a release of hazardous materials would not occur if USTs or abandoned pipelines are damaged during an earthquake. Through implementation of measures identified in the geotechnical/engineering evaluation, the activities

associated with post closure of DFSP San Pedro under Alternative 1 would not increase the potential for human exposure to these hazards, or for property damage.

Impact Avoidance and Minimization Measure

Impact avoidance and minimization measures associated with geological resources are listed in Appendix B.

Summary

Under Alternative 1, surface disturbance and grading would occur. Through implementation of engineering measures and erosion controls identified in the geotechnical/engineering evaluation, increased risk for landslides and erosion would be minimized. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. If the soil backfill option is chosen for filling the USTs, a minor change in topography in the Operational Area would occur. Therefore, implementation of Alternative 1 would not have a significant impact to geological resources.

3.2.3.2 Alternative 2

Complete Closure with Minimal Demolition

Under Alternative 2, impacts to geological resources would be similar as described for Alternative 1; however, because the extent of demolition and earth-moving activities under Alternative 2 (refer to Figure 2-2) would be less than Alternative 1 (approximately 16 acres [6.5 hectares]), the potential for ground-disturbing activities to affect geological resources would be less than as described for Alternative 1.

The volume of fill dirt needed for Alternative 2 would be approximately 230,200 cubic yards. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats. The dirt would come from the Operational Area, excluding areas containing existing IRP sites and ephemeral drainages. Soils used for backfill would be tested for contaminants and only those soils determined to be free from contaminants and that meet regulatory requirements would be used. Depending on the resulting topography, drainage controls may be constructed around the partially filled USTs to minimize erosion and ponding of water that might result from the change in topography, as needed.

Post-closure

Under Alternative 2, post-closure impacts would be the same as described for Alternative 1.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 2.

Summary

Under Alternative 2, minimal surface disturbance and minor grading would occur. Through implementation of engineering measures and erosion controls identified in the geotechnical/engineering evaluation, increased risk for landslides and erosion would be minimized. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. If the soil backfill option is chosen for filling the USTs, a minor change in topography in the Operational Area would occur. Therefore, implementation of Alternative 2 would not have a significant impact to geological resources.

3.2.3.3 Alternative 3

Complete Closure with Complete Demolition

Under Alternative 3, impacts to geological resources would be much greater than those described for Alternative 1 because substantially more demolition would occur under Alternative 3 (refer to Figure 2-3) than under Alternative 1. Approximately 90 acres (36 hectares) of surface disturbance would occur under Alternative 3, as compared to approximately 25 acres (10.1 hectares) under Alternative 1. In addition, the extent of surface disruption due to the driving of vehicles and movement of equipment at the Main Terminal would be greater. All USTs would be excavated and removed. Excavation of the USTs and the underground pipelines would present a potential for increased landslides and erosion, especially on the steep hillsides and ravines where the USTs and pipelines would be removed. This potential would be moderated though the implementation of the identified impact avoidance and minimization measures.

After the pipelines and USTs are removed, the excavated area would be filled using on-site soils excavated during removal or from the Operations Area in the immediate vicinity of sites; no fill would be trucked in from off-site. Soils used for backfill would be tested for contaminants and only those soils determined to be free from contaminants and that meet regulatory requirements would be used. The excavated area would then be compacted to engineering standards and graded to approximate existing slope contours, as much as possible. However, because the volume of soil in the immediate vicinity of and from on top of the USTs would not be sufficient to completely fill the void left from removal of the USTs, there would be a moderate change in topography at each removal site. This would primarily affect areas on the relatively level bluff tops where USTs would be removed, resulting in changes in topography. Drainage controls would be constructed around the partially filled USTs to minimize erosion and ponding of water that might result from the change in topography, as needed. Demolition of infrastructure would result in alteration of the existing topography, but post construction slopes and aspects would still approximate existing conditions.

Post-closure

Under Alternative 3, post-closure impacts would be the same as described for Alternative 1.

Impact Avoidance and Minimization Measures

Impact avoidance and minimization measures associated with geological resources are listed in Appendix B.

Summary

Under Alternative 3, extensive surface disturbance and grading would occur. Increased risk for landslides and erosion would be minimized with the implementation of the identified impact avoidance and minimization measures. There would be no or negligible impacts to mineral resources or bedrock. The impact avoidance and minimization measures proposed to minimize the risk for erosion and landslides would lessen the degree of potential impacts from earthquakes. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. Substantial changes in topography at each UST removal site on the bluff tops would result. Therefore, implementation of Alternative 3 would have a significant impact to geological resources.

3.2.3.4 Alternative 4

Partial Closure with Minimal Demolition

Under Alternative 4, proposed demolition activities (refer to Figure 2-4) would be similar as described for Alternative 2, with approximately 16 acres (6.5 hectares) of surface disturbance. The volume of fill dirt

needed for Alternative 4 would be approximately 210,800 cubic yards. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats. Soils used for backfill would be tested for contaminants and only those soils determined to be free from contaminants and that meet regulatory requirements would be used. Depending on the resulting topography, drainage controls may be constructed around the partially filled USTs to minimize erosion and ponding of water that might result from the change in topography, as needed.

Partial Operation

Under Alternative 4, the partial operation of DFSP San Pedro would not impact geological resources, as no surface disturbance would occur. No increased risk of geological hazards would occur.

Impact Avoidance and Minimization Measure

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 4.

Summary

Under Alternative 4, minimal surface disturbance and minor grading would occur. Through implementation of engineering measures and erosion controls identified in the geotechnical/engineering evaluation, increased risk for landslides and erosion would be minimized. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. Partial operations would not affect geological resources. If the soil backfill option is chosen for filling the USTs, a minor change in topography in the Operational Area would occur. Therefore, implementation of Alternative 4 would not have a significant impact to geological resources.

3.2.3.5 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, all ASTs, USTs, pipelines would be repaired to meet the applicable regulatory requirements, as well as Navy policies and procedures. Most of the repairs would not involve surface disturbance; however, at the Main Terminal, evaluating fill and return lines between valve pits and four USTs, and replacing any remaining flanges with welded sections and providing secondary containment for exposed areas could involve some minor excavation. Renovating or replacing the oil/water separator would involve excavation as well, but the excavations would not increase the potential for landslides or erosion.

Presumed Eventual Resumption of Full Operations

Under the No Action Alternative, it is presumed that DFSP San Pedro would resume full operations. All ASTs, USTs, and pipelines would operate in compliance with all applicable regulatory requirements and Navy policies and procedures. All ground-disturbing activities associated with necessary repairs would have been completed during the repair/reversal phase; however, some minor excavation may eventually be needed during operation for on-going maintenance. Any excavated areas would be filled using on-site soils; no fill would be trucked in from off-site. The excavations would not increase the potential for landslides or erosion.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Summary

Under the No Action Alternative, minimal surface disturbance and minor grading would occur. There would be no increased risk for landslides or erosion. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. Therefore, implementation of the No Action Alternative would not have a significant impact to geological resources.

3.3 WATER RESOURCES

3.3.1 DEFINITION OF RESOURCE

Water resources include surface water, groundwater, water quality, and floodplains. Surface water includes lakes, ponds, rivers, streams, impoundments, nearshore waters, and wetlands. Groundwater is water that is located below the ground surface. Water quality describes the chemical and physical composition of water as affected by natural conditions and human activities. Floodplains are relatively flat areas adjacent to rivers, streams, watercourses, bays, or other bodies of water subject to inundations during flood events. A 100-year floodplain is an area that is subject to a 1 percent chance of flooding in any particular year.

Water resource regulations focus on the right to use water and protection of water quality. The principal federal laws enforced by the U.S. Environmental Protection Agency (USEPA) to protect water quality are the Clean Water Act (CWA), as amended (33 U.S. Code [USC] § 1251 et seq.), and the Safe Drinking Water Act (42 USC § 300f *et seq*.). The CWA provides protection of surface water quality and preservation of wetlands. The Porter-Cologne Water Quality Control Act (California Water Code §§ 13000-13999.10) assigns the State Water Resources Control Board (SWRCB) and the RWQCB's responsibilities for protection of the waters within their regions. The regional boards are also responsible for implementing provisions of the CWA delegated to states, such as the National Pollutant Discharge Elimination System (NPDES), which regulates point and non-point discharges of pollutants to waters.

In the Water Quality Control Plan for the Los Angeles Region (Basin Plan), the Los Angeles RWQCB designated beneficial uses for the surface water and groundwater in the project area. Beneficial uses are defined as the uses of water necessary for the survival or well-being of man, plants, and wildlife; and are protected against degradation of their quality under the state Porter-Cologne Act (Los Angeles RWQCB 1995). Examples of beneficial uses include drinking; swimming; industrial and agricultural water supplies; and the support of fresh and saline aquatic habitats. The Basin Plan sets objectives for water quality that must be maintained to protect the designated beneficial uses of water resources in the Los Angeles Region and conform to the state's anti-degradation policy.

Waters of the U.S. other than wetlands are defined as areas under the U.S. Army Corps of Engineers (USACEs) jurisdiction pursuant to Section 404 of the CWA and are generally defined by the ordinary high water mark (OHWM). The USACE's jurisdiction can extend beyond the OHWM to the limit of adjacent wetlands, when present. Wetlands are defined under CWA regulations (33 CFR 328) as, "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamp, marshes, bogs, and similar areas."

EO 11990, *Protection of Wetlands*, requires that governmental agencies, in carrying out their responsibilities, provide leadership and "take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." Each agency is to consider factors relevant to a proposed project's effect on the survival and quality of the wetlands by maintenance of natural systems, including conservation and long-term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, and wildlife. If no practical alternative can be demonstrated, agencies are required to provide for early public review of any plans or proposals for new construction in wetlands.

EO 11988, *Floodplain Management* directs all federal agencies to refrain from conducting, supporting, or allowing any activity that would significantly encroach into a floodplain or impact floodplain resources, unless it is the only practicable alternative. If the lead agency finds that the only practicable alternative requires siting in a floodplain, the agency shall either design or modify its action to minimize harm to or within the floodplain and publically explain why the action is proposed to be located in a floodplain.

EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, revises EO 11988 and establishes a flexible framework to increase resilience against flooding and help preserve the natural values of floodplains. This ensures that federal agencies expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended.

3.3.2 AFFECTED ENVIRONMENT

The ROI for water resources is the proposed project area and any potential downstream receiving waters. The project area includes the DFSP San Pedro Main Terminal, off-site pipelines, and DFSP San Pedro Marine Terminal and receiving waters include the Port of Los Angeles and the Port of Long Beach (refer to Figure 1-2). The aboveground segments of the off-site underground pipelines subject to demolition are located in developed areas with no overlapping or adjacent water resources. The off-site underground pipelines would remain in place as they are almost entirely underground, and cannot feasibly be excavated and removed (see discussion of off-site pipelines at Section 2.2.2). Accordingly, water resources in proximity to or associated with off-site pipelines would not be affected by the alternatives.

3.3.2.1 DFSP San Pedro Main Terminal

Surface Water

The Main Terminal property consists of rolling hills, ravines, and a gently sloping partially paved administrative portion of the Operations Area. Surface water at the Main Terminal is ephemeral. Jurisdictional waters have not been identified at the Main Terminal. A reconnaissance-level wetland delineation was conducted in 2003 (DFSP San Pedro 2014) across the entire DFSP San Pedro property and identified the following surface water features:

- 2.05 acres (0.83 hectare) of potential wetlands, mostly seasonally flooded arroyo willow or mule fat scrub); and
- 0.36 acre (0.15 hectare) of other water areas consisting of intermittent or ephemeral channels which are predominantly unvegetated.

National Wetland Inventory-indicated areas are depicted on Figure 3.3-1. Stormwater at the Main Terminal collects and runs off into the various ravines that dissect the area (refer to Figure 3.2-1). The surface runoff is allowed to follow natural drainage patterns and drains eastward to North Gaffey Street where it is directed into the municipal stormwater drains and then enters the Port of Los Angeles. The DLA has prepared a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Industrial Activities Storm Water General Permit CAS000001, adopted by the SWRCB (DLA 2013b). The SWPPP is actively being maintained for the Main Terminal and includes monitoring and mitigation.

Groundwater

Groundwater at the Main Terminal ranges in depth from 10 to 35 feet (3 to 11 meters) below ground surface (bgs) in the areas of lower elevation and up to 134 feet (41 meters) bgs in the tank farm area located at the top of the hill. Groundwater beneath the facility is not used for any municipal or industrial purposes although the Los Angeles RWQCB has included it in the beneficial use aquifer. Based on the lack of suitable water bearing sediments, future water production within the Main Terminal is not practical (DFSP San Pedro 2014).

Water Quality

As part of the on-going monitoring and sampling of facility groundwater wells performed under a Los Angeles RWQCB approved facility groundwater monitoring and sampling program, the DLA is actively evaluating the occurrence and concentration of fuel components floating on or dissolved in site groundwater, as well as monitoring potential migration from other sources. Under the jurisdiction and approval of the Los Angeles RWQCB, on-going remedial measures have been implemented in the Pump House and administrative portion of the Main Terminal to treat degraded groundwater. Although the site is located within a groundwater area classified by the Los Angeles RWQCB as usable, including as drinking water, there is no indication from current data that drinking groundwater resources have been affected (DLA 2011).

Floodplains

There is no indication of floodplains at the Main Terminal (Federal Emergency Management Agency [FEMA] 2008).

3.3.2.2 DFSP San Pedro Marine Terminal

Surface Water

The Marine Terminal is located on flat land in the Port of Long Beach. The entire port complex is heavily developed and much of the land area is fill that was created using marine sediment from dredging adjacent water areas to construct shipping channels and berthing areas. There are no surface waters within the Marine Terminal; however, the Marine Terminal is surrounded by the jurisdictional waters of the Port of Long Beach.

Stormwater runoff at the facility is fully contained and captured by a series of containment basins, berms, and catchments (DLA 2011). Stormwater not otherwise contained may pool in areas, but will generally drain to the northeast and into the Long Beach Middle Harbor. Runoff on the pier is designed to drain to one of the valve pits, piping channels, or to a manifold vault. A drain basin and sump allows for the transfer of water or fuel to the slop tank at the Terminal. On the Marine Terminal, all of the secondary containment structures are connected to the oil/water separator or the slop tank (DLA 2011). A SWPPP has been prepared and is actively being maintained for the Marine Terminal and includes monitoring and mitigation (DLA 2015a).

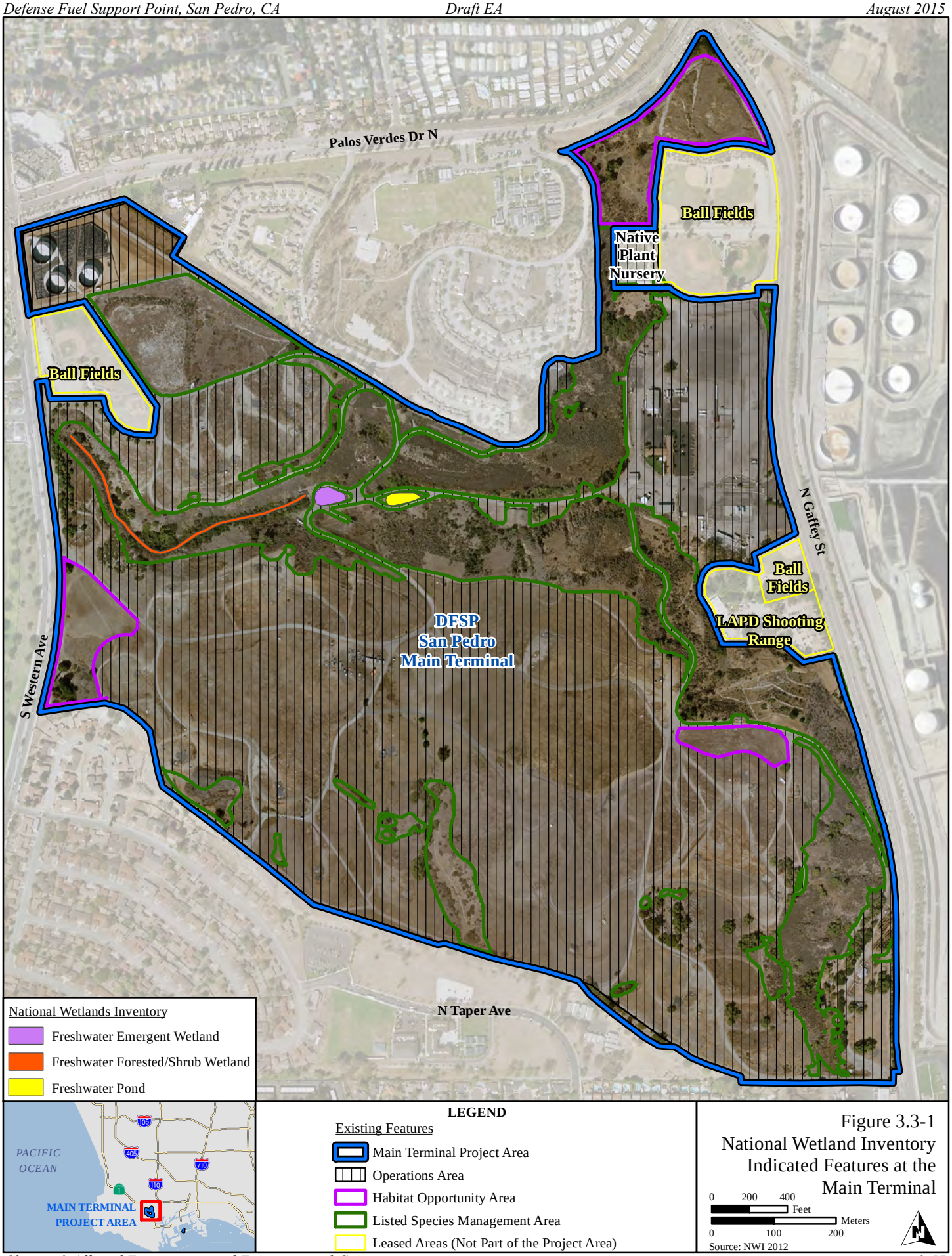


Figure 3.3-1
National Wetland Inventory
Indicated Features at the
Main Terminal

Groundwater

The underlying groundwater at the Marine Terminal is expected to be saline and not fit for drinking water use or other beneficial uses. There have been no reported groundwater investigations completed at the site, thus the quality of the groundwater is not known (DLA 2011).

Water Quality

Stormwater runoff is either routed through the oil/water separator or collected in the slop tank for off-site treatment or recycling. An oil/water sump (out-of-service) and a below-grade oil/water separator are located at the Marine Terminal. The current operator of the Marine Terminal minimizes the use of the oil/water separator, and water processed in the separator is limited to rainwater; no ballast or wastewater from ships visiting the pier is accepted at the Main Terminal (DLA 2011).

Floodplains

The Marine Terminal is located outside of the 100-year floodplain (FEMA 2008).

3.3.3 ENVIRONMENTAL CONSEQUENCES

The environmental consequences evaluation for water resources includes a qualitative and quantitative analysis of surface water, groundwater, water quality, and floodplains to the extent possible given available project data. The analysis of potential impacts considers both direct and indirect impacts. Direct impacts result from disturbance of surface waters or removal or alternation of groundwater, while indirect impacts include effects to water quality away from the demolition/post-closure or partial operation site. The following factors are also considered in evaluating potential impacts to water resources:

- Degrading the quality of surface waters by introducing pollutants that pose a risk to human health, agricultural use, or ecological conditions.
- Noncompliance with applicable water quality standards, laws, and regulations.
- Decreasing existing and/or future beneficial uses of surface waters.
- Depleting or contaminating a groundwater source that is usable for municipal, private, or agricultural purposes.
- Increasing the risk of flooding.

In this evaluation, BMPs and engineering controls (e.g., erosion control, runoff reduction, and sediment removal measures) are assessed for their ability to avoid, minimize, or reduce/eliminate potential impacts to water resources, in compliance with applicable local, state, or federal regulations. For each of the four water resource categories, the impact analysis is further broken down by demolition (short-term impacts) and post-closure or partial operation (long-term impacts). If an activity is deemed as having an impact, the activity then can be evaluated to determine if the impact is significant or less than significant, as evaluated against the above bulleted list.

3.3.3.1 Alternative 1

Complete Closure with Partial Demolition

Surface Water

Demolition activities under Alternative 1 would not occur in surface waters and no materials would be stored or stockpiled in surface waters. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat

Opportunity Areas, IRP sites, and ephemeral drainages. Some infrastructure that is located in the ravine at the Main Terminal would be abandoned in place and the ravine would not be impacted. Closure of on-site pipelines would also not occur in surface waters and would be done in accordance with all applicable regulatory requirements. Demolition activities would result in no direct impacts to surface water and indirect impacts to surface waters would be avoided through implementation of a project-specific construction SWPPP and all applicable BMPs (refer to *Water Quality* discussion below).

Groundwater

Most demolition activities under Alternative 1 would occur aboveground and would not directly impact groundwater. The in-place abandonment of USTs would not impact groundwater. It is unlikely that groundwater would be encountered during the removal of underground pipelines at the Main Terminal. However, if groundwater is encountered, dewatering wells or sumps may be used to lower the water table a few feet below the impacted excavation area. This lowering of the water table would be temporary and water levels affected by dewatering would return to normal levels when pipeline removal is completed. All groundwater encountered would be captured, sampled, and pretreated before discharge in accordance with the project specific SWPPP (see *Water Quality* discussion for details).

Water Quality

As described in Section 1.2.3, the ASTs and USTs were cleaned and isolated/secured, and the pipelines, both on-site and off-site, were cleaned and isolated/secured as part of temporary closure. No additional cleaning would be needed. Demolition activities at the Main and Marine Terminals (to include potential temporary soil and demolition debris stockpiling) associated with Alternative 1 may result in the generation of pollutants including sediment and other constituents associated with demolition (e.g., nutrients, trace metals, oil and grease, miscellaneous waste, and other toxic chemicals). Without controls, the pollutants could potentially enter receiving waters; however, controls are identified in the impact avoidance and minimization measures (see Appendix B).

Because the combination of demolition activities associated with the project at the Main Terminal would disturb more than 1 acre (0.4 hectare) of land, Alternative 1 would be subject to the requirements of the Construction General Permit. In compliance with the Construction General Permit, the contractor would prepare and implement a project-specific construction SWPPP and all applicable BMPs, in accordance with the Permit from initiation through completion of demolition activities. Implementation of a construction SWPPP and these BMPs would minimize the potential for pollutants to enter receiving waters during demolition.

Soil and groundwater contamination has been found during the temporary closure process. A follow-on site investigation and restoration project has been initiated. If any additional soil or groundwater contamination is found during the closure process, a follow-on site investigation and restoration project would be initiated. Cleanup would be negotiated with CUPA and the Los Angeles RWQCB. This process would include analysis of any such contamination and ensure that any potentially contaminated soil or groundwater would be disposed of in accordance with applicable federal, state, and local regulations.

Floodplains

Demolition activities would not occur directly in floodplains and existing pipelines located within or below floodplains would be closed in place. Therefore, demolition activities associated with implementation of Alternative 1 would result in no impacts to floodplains.

Post-closure

Following closure of the fuel facility, no operations would occur. Thus, no impacts to water resources from Alternative 1 would occur. New SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities.

Impact Avoidance and Minimization Measures

Impact avoidance and minimization measures associated with water resources are listed in Appendix B.

Summary

Under Alternative 1, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters at the Main Terminal and Marine Terminal during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities. Therefore, implementation of Alternative 1 would not have a significant impact to water resources.

3.3.3.2 Alternative 2

Complete Closure with Minimal Demolition

Under Alternative 2, impacts to water resources would be as described for Alternative 1; however, because the extent of demolition and earth-moving activities under Alternative 2 would be less than Alternative 1, the potential for ground-disturbing activities to affect water resources would be less than described for Alternative 1.

Post-closure

Under Alternative 2, post-closure impacts would be the same as described for Alternative 1.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 2.

Summary

Under Alternative 2, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities. Therefore, implementation of Alternative 2 would not have a significant impact to water resources.

3.3.3.3 Alternative 3

Complete Closure with Complete Demolition

Under Alternative 3, substantially more demolition would occur than under Alternative 1 (refer to Figures 2-3 and 2-1, respectively). Therefore, impacts to water resources would be potentially greater than those described for Alternative 1. The additional excavation to remove pipelines and USTs would increase the potential for erosion due to a greater area of ground disturbance. Implementation of the project-specific

construction SWPPP and associated BMPs under Alternative 3 demolition would minimize the potential for sediment and other pollutants to enter receiving waters, both from excavation activities and from any potential temporary stockpiles of soil and/or demolition debris. The additional excavation would also have an increased potential to encounter groundwater. If groundwater is encountered, the same actions as presented for Alternative 1 would be followed. Infrastructure that is located in the ravine at the Main Terminal (refer to Figure 3.2-2) would be demolished, resulting in temporary impacts to the area. However, surface waters would be avoided and no direct impacts to surface waters would occur.

Post-closure

Under Alternative 3, post-closure impacts would be the same as described for Alternative 1.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 3.

Summary

Under Alternative 3, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters at the Main Terminal and Marine Terminal during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities. Therefore, implementation of Alternative 3 would not have a significant impact to water resources.

3.3.3.4 Alternative 4

Partial Closure with Minimal Demolition

Under Alternative 4, proposed demolition activities would be similar as described for Alternative 2.

Partial Operation

Under Alternative 4, proposed partial operation activities would be conducted in compliance with all regulations protecting water resources. New SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to future site conditions and activities. Out-of-service infrastructure that prevents/minimizes water pollution (e.g., the oil/water sump) would be brought back into service.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 4.

Summary

Under Alternative 4, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters during demolition and abandonment activities. For partial operation, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to site conditions and activities. Therefore, implementation of Alternative 4 would not have a significant impact to water resources.

3.3.3.5 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, repairs of existing facilities would present a potential for release of pollutants to water resources. However, adherence to the Main Terminal and Marine Terminal SWPPPs and associated BMPs during repair activities would occur to minimize the potential for an inadvertent release to water resources. Otherwise, repairs under the No Action Alternative would not involve disturbance of surface waters, groundwater, or floodplains.

Presumed Eventual Resumption of Full Operations

Under the No Action Alternative, the presumed resumption of full operations at DFSP San Pedro would be conducted in compliance with all regulations protecting water resources. Stormwater runoff at the Main Terminal and Marine Terminal would be managed and monitored in compliance with requirements outlined in the respective SWPPPs. If an organization other than DLA assumes responsibility for operations, the new organization must submit for coverage under the applicable stormwater permit and prepare a new SWPPP. Out-of-service infrastructure that prevents/minimizes water pollution (e.g., the oil/water separator) would be returned to service.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Summary

Under the No Action Alternative, no direct impacts to surface waters, groundwater, or floodplains would occur. Implementation of and adherence to the Main Terminal and Marine Terminal SWPPPs and associated BMPs would minimize the potential for pollutants to enter receiving waters during repair activities. During operations, stormwater would be managed in accordance with the applicable Main Terminal and Marine Terminal SWPPPs. Therefore, implementation of the No Action Alternative would not have a significant impact to water resources.

3.4 TRANSPORTATION

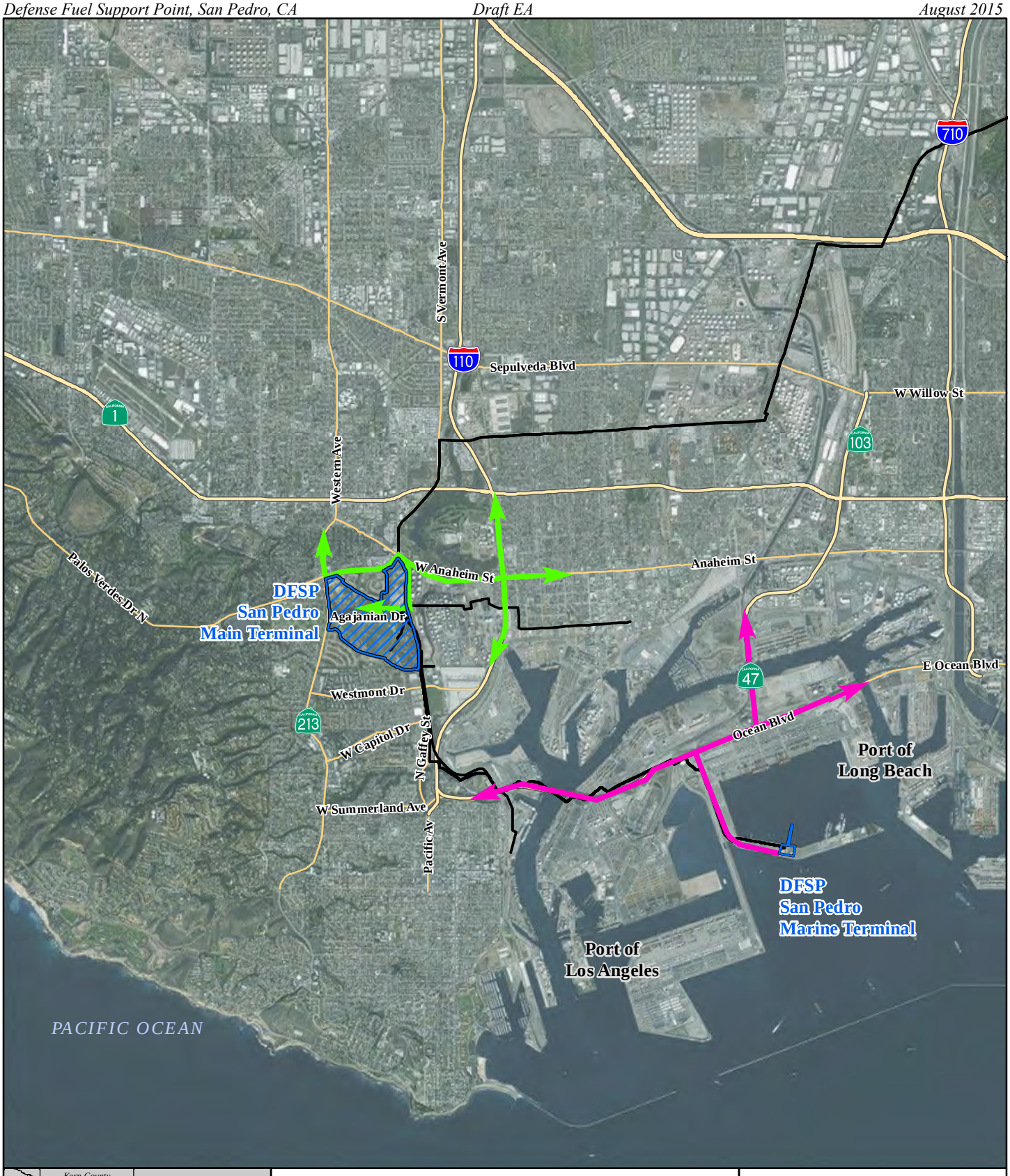
3.4.1 DEFINITION OF RESOURCE

For the purposes of this analysis, transportation refers to the movement of traffic (i.e., passenger vehicles and trucks) on both public and private roadways.

Roadway operating conditions are described in terms of Level of Service (LOS) ratings, which have been developed by the Transportation Research Board. LOS is rated on a scale of A to F, with LOS A reflecting free-flowing traffic conditions and LOS F representing heavily congested conditions (Transportation Research Board 2010). Generally, LOS C or better is considered an acceptable operating condition during peak traffic periods in more rural contexts, while LOS D is considered to be adequate in more urbanized areas.

3.4.2 AFFECTED ENVIRONMENT

Interstate (I)-110, I-710, I-405, State Route (SR) 47, and SR-213 (Western Avenue) provide regional access to the Main Terminal and surrounding areas (including the Marine Terminal) (Figure 3.4-1). North Gaffey Street provides direct access to the Main Terminal via a stop-sign controlled intersection with Agajanian Drive, which extends westward from this intersection into the interior of the Main Terminal (Figure 3.4-1). The segment of North Gaffey Street adjacent to the Main Terminal provides two lanes in each direction, separated by a two-way left turn lane.



LEGEND

- Highway
- Major Road
- Main Terminal and Marine Terminal
- Off-Site Pipelines (Approximate)

Likely Travel Routes

- Main Terminal
- Marine Terminal

Figure 3.4-1
Local and Regional Access to Defense Fuel Support Point San Pedro

0 0.5 1 Miles
0 0.5 1 Kilometers

Under existing conditions, this segment experiences LOS A conditions in the afternoon peak hours in both directions of travel (City of Los Angeles 2012). The Marine Terminal is located in the City of Long Beach adjacent to Nimitz Road, within the Port of Long Beach (Figure 3.4-1). Peak hourly volume traffic along this segment has been recorded at 527 northbound and 831 southbound trips. The capacity for this segment is listed at 1,600 vehicles per hour in each direction (City of Los Angeles 2012).

Currently DFSP San Pedro is temporarily closed; therefore, no fuel delivery trips occur. Current traffic associated with DFSP San Pedro is limited to the current workers (15) commuting, security patrols, native plant nursery staff/volunteers, and occasional visitors. On average, the estimated number of daily (Monday through Friday) trips to the Main Terminal via the Main Gate is approximately 20. No regularly scheduled daily trips occur to/from the Marine Terminal.

3.4.3 ENVIRONMENTAL CONSEQUENCES

For transportation, a significant impact would occur if an alternative were to result in a substantial increase in peak hour traffic such that roadway segment LOS would deteriorate from LOS D or better conditions without the alternative, to LOS E or F conditions with the alternative. The impact determination is based on a qualitative analysis that considers the number of additional trips generated by the alternative, and the degree to which these trips would be concentrated in peak commuting periods (i.e., generally from 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M.).

3.4.3.1 Alternative 1

Complete Closure with Partial Demolition

Complete closure with partial demolition would involve a temporary increase in traffic to accommodate the proposed demolition activities. The number of daily trips associated with demolition was estimated using survey data collected by the South Coast Air Quality Management District (SCAQMD), which has been incorporated into the California Emissions Estimator Model (CalEEMod) (California Air Pollution Control Officers Association 2015), which was used to estimate the criteria pollutant emissions for the alternatives (see Section 3.5). The duration of Alternative 1 would be approximately 4 years. To provide a conservative analysis, it was assumed that all types of trips would occur throughout the estimated duration of complete closure with partial demolition activities under Alternative 1.

Alternative 1 would generate approximately 133 daily construction worker trips[15] and 148 daily trips for the removal of demolition debris. Consistent with the air quality analysis (refer to Section 3.5.1), an additional 30 trips per day were assumed to be necessary to bring materials into the Main Terminal for UST closure. The combined total of 311 daily trips account for demolition activities at both the Main Terminal and Marine Terminal. Construction worker trips would be made using automobiles and light-duty trucks, delivery trips would involve medium- and heavy-duty trucks (i.e., having a gross vehicle weight of between 10,001 pounds and 26,000 pounds), and demolition debris removal trips would be made in very large heavy-duty trucks (i.e., having a gross vehicle weight of between 33,000 and 60,000 pounds). Almost all of these trips would occur Monday through Friday; however, it is possible that occasional trips would occur on Saturdays. This analysis assumes no trips would occur on Sundays or holidays.

[15] For this analysis, a trip is defined as each time a vehicle moves; thus, a vehicle going into the Main Terminal (one trip) and then later leaving the Main Terminal (one trip) would constitute two trips.

Of these trip types, only worker trips are likely to involve a substantial recurring traffic increase during weekday peak commuting periods (i.e., generally from 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M.). Given that it currently operates at LOS A, North Gaffey Street can accommodate a substantial increase in traffic and remain at LOS D or better[16]. The number of worker trips (i.e., approximately 133 daily trips) would be minor when added to existing traffic volumes, and would be limited to the duration of closure activities. Delivery trips and debris removal trips would occur throughout the workday, and would not be expected to be concentrated in peak commuting periods. Demolition-related truck traffic would follow local haul routes and restrictions, as applicable. In addition, estimated daily trips would fluctuate on a daily basis as demolition activities move from site to site. As with the Main Terminal, traffic generated by demolition activities at the Marine Terminal would not result in a substantial increase in recurring peak hour traffic. Similarly, the demolition of the aboveground segments of the off-site pipelines would result in a negligible increase in traffic, localized to each pipeline segment where demolition would occur.

Post-closure

Following closure, traffic would be limited to periodic trips; these trips would be few and infrequent.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 1.

Summary

Under Alternative 1, proposed partial demolition activities would generate approximately 311 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during peak hours. Following closure, average daily trips would be negligible. Therefore, implementation of Alternative 1 would not have a significant impact to transportation.

3.4.3.2 Alternative 2

Complete Closure with Minimal Demolition

Under Alternative 2, the demolition activities associated with complete closure and minimal demolition would be similar to those of Alternative 1; however, because demolition would cover a smaller area and be shorter (approximately 3 years), the estimated number of average daily trips would be fewer than Alternative 1. This traffic is estimated to consist of approximately 133 daily construction worker trips and 59 daily trips for the removal of demolition debris. Similar to Alternative 1, an additional 40 trips per day are assumed to be necessary to bring materials into the Main Terminal for UST closure. Total traffic generation for this phase of Alternative 2 would be 232 daily trips.

As with Alternative 1, truck trips would not be expected to be concentrated in the peak commuting periods, and there is substantial capacity on North Gaffey Street to accommodate the temporary increase in average daily trips. As with the Main Terminal, traffic generated by demolition activities at the Marine Terminal would not result in a substantial increase in recurring peak hour traffic. Similarly, the demolition of the aboveground segments of the off-site pipelines would result in a negligible increase in traffic, localized to each pipeline segment where demolition would occur. The duration of Alternative 2 would be approximately 3 years. To provide a conservative analysis, it was assumed that all types of trips

[16] Based on the conservative assumption that all commuting trips would be in single occupancy vehicles, and that all trips would coincide with the peak commuting hours. Given this assumption, half of the 76 trips would be inbound in the morning peak hour and half would be outbound during the afternoon peak hour.

would occur throughout the estimated duration of complete closure with minimal demolition activities under Alternative 2.

Post-closure

Under Alternative 2, post-closure impacts would be the same as described for Alternative 1.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 2.

Summary

Under Alternative 2, proposed minimal demolition activities would generate approximately 232 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during peak hours. Following closure, average daily trips would be negligible. Therefore, implementation of Alternative 2 would not have a significant impact to transportation.

3.4.3.3 Alternative 3

Complete Closure with Complete Demolition

Under Alternative 3, the volume of demolition-related traffic would be higher than the preceding two alternatives. Specifically, implementation of Alternative 3 is estimated to generate a daily average of approximately 170 daily construction worker trips and 188 daily trips for the removal of demolition debris. Unlike Alternatives 1 and 2, Alternative 3 would not involve any additional demolition-related trips for the delivery of materials for UST closure. Alternative 3 would involve the backfilling of excavations associated with UST removal. However, for the purpose of this analysis, it is assumed that the necessary fill material following removal would be provided from within the Main Terminal; therefore, there would be no additional truck traffic generation associated with backfilling.

The duration of Alternative 3 would be approximately 4 years. To provide a conservative analysis, it was assumed that all types of trips would occur throughout the estimated duration of complete closure with complete demolition activities under Alternative 3. The total daily traffic generated under Alternative 3 would be 358 trips. Based on current conditions, there is substantial capacity[17] on North Gaffey Street to accommodate the temporary increase in estimated average daily trips. As with the Main Terminal, traffic generated by demolition activities at the Marine Terminal would not result in a substantial increase in recurring peak hour traffic. Similarly, the demolition of the aboveground segments of the off-site pipelines would result in a negligible increase in traffic, localized to each pipeline segment where demolition would occur.

Post-closure

Under Alternative 3, post-closure impacts would be the same as described for Alternative 1.

[17] Based on the capacity of this segment, North Gaffey Street could accommodate an increase of 600 vehicles in one direction of travel during the afternoon peak hour and still maintain LOS D. Even with the conservative assumption that all demolition-related trips approach the Main Terminal from the same direction during a peak commuting hour, North Gaffey Street could accommodate an additional 242 peak hour trips from other sources before falling to LOS E. In practice, trips would occur throughout the day and would approach the Main Terminal from both the north and the south on North Gaffey Street.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 3.

Summary

Under Alternative 3, complete demolition activities would generate approximately 358 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during peak hours. Following closure, average daily trips would be negligible. Therefore, implementation of Alternative 3 would not have a significant impact to transportation.

3.4.3.4 Alternative 4

Partial Closure with Minimal Demolition

Under Alternative 4, the demolition activities associated with partial closure and repair activities would be similar to those of Alternative 1; however, because demolition would cover a smaller area and be shorter, the estimated number of average daily trips would be fewer than Alternative 1. Specifically, implementation of Alternative 4 is estimated to generate a daily average of approximately 133 daily construction worker trips, 28 daily trips for the delivery of materials to close USTs, and 59 daily trips for the removal of demolition debris.

The duration of Alternative 4 would be approximately 3 years. To provide a conservative analysis, it was assumed that all types of trips would occur throughout the estimated duration of partial closure with minimal demolition operations under Alternative 4. The combined daily traffic generation for this phase of Alternative 4 would be 220 daily trips. As with Alternative 1, truck trips would not be concentrated in the peak commuting periods and there is substantial capacity on North Gaffey Street to accommodate the temporary increase in estimated average daily trips. As with the Main Terminal, traffic generated by demolition activities at the Marine Terminal would not result in a substantial increase in recurring peak hour traffic. Similarly, the demolition of the aboveground segments of the off-site pipelines would result in a negligible increase in traffic, localized to each pipeline segment where demolition would occur.

Partial Operation

Should partial operations occur, there would be a recurring increase in traffic associated with workers and the delivery of fuel by trucks to various customers. Under full operation, fuel delivery from DFSP San Pedro involves approximately 1,188 trucks year (DLA 2013a). Under Alternative 4, operations would be approximately one-third of historical operations. Thus, assuming that deliveries would occur primarily on weekdays (or approximately 260 days per year), there would be an average of approximately 2 fuel delivery trucks entering/leaving the Main Terminal each day (4 total trips per workday).

Fuel deliveries would use 7,500-gallon tanker trucks. Trucks have a disproportionate impact on roadway capacity due to their large size and generally sluggish performance. The Highway Capacity Manual includes factors used to convert trucks to an equivalent number of passenger vehicles. On level terrain, this factor is 1.5 passenger vehicles per truck (Transportation Research Board 2010). Applying this factor to the average daily traffic generation described above results in an increase of approximately six passenger car equivalent trips per day. Table 3.4-1 summarizes the trip generation estimates used in this analysis.

Table 3.4-1. Fuel Delivery Trip Estimation, Partial Operation under Alternative 4

Type of Trips	Number	Source	Notes
Annual fuel delivery trucks, full operation	1,188	DLA 2013a	JP-5 and JP-8 fuel delivery trucks per month and by destination in impact summary table, Categorical Exclusions Attachment 1
Daily fuel delivery trucks, full operation	5	Assumption (i.e., delivery on 260 days per year)	1,188/5 = 4.569; rounded to 5
Daily fuel delivery trucks, partial operation	2	Assumption (i.e., partial operation is one-third of full operation)	5/3 = 1.67; rounded to 2
Daily fuel delivery truck trips, partial operation	4	Assumption (i.e., one inbound and one outbound trip per truck)	--
Daily passenger car equivalent trips, partial operation	6	Transportation Research Board 2010	1.5 passenger cars per truck

As discussed in Section 1.5.2, Alternative 4 would result in approximately 15 employees commuting to DFSP San Pedro. Assuming one inbound and one outbound trip per employee per day, there would be 30 daily employee trips. Based on current conditions, there is substantial capacity on North Gaffey Street to accommodate the estimated average increase in fuel truck (6 passenger car equivalent trips) and worker trips. Thus, the increase of approximately 36 average daily trips would be negligible when added to existing conditions.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 4.

Summary

Under Alternative 4, proposed partial demolition activities would generate approximately 220 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during peak hours. With partial operation, the estimated increase of 36 average daily trips during peak commuting periods would be negligible. Therefore, implementation of Alternative 4 would not have a significant impact to transportation.

3.4.3.5 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, repair/reversal activities would result in a temporary increase in traffic caused by construction worker commuting trips and the delivery of necessary equipment and materials. The duration of the No Action Alternative would be approximately 3 years. To provide a conservative analysis, it was assumed that all types of trips would occur throughout the estimated duration of temporary closure reversal operations under the No Action Alternative.

The volume of traffic would consist of approximately 50 daily worker trips and 20 material delivery trips. In addition, periodic demolition trips would occur; however, this number of trips would be small, as no substantial demolition would occur. As with Alternative 1, truck trips would not be expected to be concentrated in peak commuting periods and there is substantial capacity on North Gaffey Street to accommodate the temporary increase in estimated average daily trips. As with the Main Terminal, traffic generated by demolition activities at the Marine Terminal would not result in a substantial increase in recurring peak hour traffic.

Presumed Eventual Resumption of Full Operations

Under the No Action Alternative, the presumed resumption of full operations at DFSP San Pedro would result in the resumption of fuel delivery from DFSP San Pedro to DLA customers. This would result in approximately 1,188 fuel delivery trucks per year entering/leaving DFSP San Pedro (DLA 2013a). As shown in Table 3.4-2, full operation would involve 15 average daily passenger car equivalent trips each day. The predicted employee level of 30 persons would generate 60 average daily trips. The combined estimated average increase of 75 daily trips would be a minor addition to the existing traffic volume on North Gaffey Street.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Table 3.4-2. Fuel Delivery Trip Estimation, Resumption of Full Operation under the No Action Alternative

Type of Trips	Value	Source	Notes
Annual fuel delivery trucks, full operation	1,188	DLA 2013a	JP-5 and JP-8 fuel delivery trucks per month and by destination in impact summary table, Categorical Exclusions Attachment 1
Daily fuel delivery trucks, full operation	5	Assumption (i.e., delivery on 260 days per year)	1,188/5 = 4.569; rounded to 5
Daily fuel delivery truck trips, full operation	10	Assumption (i.e., one inbound and one outbound trip per truck)	--
Daily passenger car equivalent trips, full operation	15	Transportation Research Board 2010	1.5 passenger cars per truck

Summary

Under the No Action Alternative, proposed repair/reversal activities would generate approximately 70 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. With resumption of full operations, the estimated increase of 75 average daily trips during peak commuting periods would be negligible. Therefore, implementation of the No Action Alternative would result in no significant impact to transportation.

3.5 AIR QUALITY

3.5.1 DEFINITION OF RESOURCE

3.5.1.1 Criteria Pollutants and Ambient Air Quality Standards

Air quality is defined by ambient air concentrations of specific pollutants that are of concern with respect to the health and welfare of the public by the USEPA. The USEPA has established National Ambient Air Quality Standards (NAAQS) for these pollutants. The seven major pollutants of concern, called "criteria pollutants," are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). Primary NAAQS are established to protect public health. Secondary NAAQS may also be established to avoid other adverse impacts to the public welfare such as odors or visibility effects. Areas that violate a federal air quality standard are designated as nonattainment areas. Once a nonattainment area meets the standards and redesignation requirements outlined in the Clean Air Act (CAA), the area is designated as a maintenance area.

Ambient air quality refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) that occurs at a particular geographic location. The ambient air quality levels measured at a particular location are determined by the interactions of emissions, meteorology, and chemistry. Emission considerations include the types, amounts, and locations of pollutants emitted into the atmosphere. Meteorological considerations include wind and precipitation patterns affecting the distribution, dilution, and removal of pollutant emissions. Chemical reactions can transform pollutant emissions into other chemical substances. Ambient air quality data are generally reported as a mass per unit volume (e.g., micrograms per cubic meter [$\mu g/m^3$] of air) or as a volume fraction (e.g., parts per million [ppm] by volume).

Pollutant emissions typically see the amount of pollutants or pollutant precursors introduced into the atmosphere by a source or group of sources. Pollutant emissions contribute to the ambient air concentrations of criteria pollutants, either by directly affecting the pollutant concentrations measured in the ambient air or by interacting in the atmosphere to form criteria pollutants. Primary pollutants, such as CO, SO_2, Pb, and some particulates, are emitted directly into the atmosphere from emission sources. PM_{10} and $PM_{2.5}$ are generated as primary pollutants by various mechanical processes (for example, abrasion, erosion, mixing, or atomization) or combustion processes. However, fine particulate matter (PM_{10} and $PM_{2.5}$) can also be formed as secondary pollutants through chemical reactions or by gaseous pollutants condensing into fine aerosols. Secondary pollutants, such as O_3, NO_2, and some particulates, are formed through atmospheric chemical reactions that are influenced by meteorology, ultraviolet light, and other atmospheric processes. In general, emissions that are considered "precursors" to secondary pollutants in the atmosphere (such as volatile organic compounds [VOCs] and oxides of nitrogen [NO_x], which are considered precursors for O_3), are the pollutants for which emissions are evaluated to control the level of O_3 in the ambient air.

The State of California has identified four additional pollutants for ambient air quality standards: visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The California Air Resources Board (CARB) has also established the more stringent California Ambient Air Quality Standards (CAAQS). Areas within California in which ambient air concentrations of a pollutant are higher than the state and/or federal standard are considered to be in nonattainment for that pollutant. Table 3.5-1 details both the federal and state ambient air quality standards.

3.5.1.2 Greenhouse Gases

Greenhouse Gases (GHGs) are gases that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most significant of the human activities emitting GHGs is the burning of fossil fuels. The accumulation of GHGs in the atmosphere regulates the earth's temperature. Scientific evidence indicates a trend of increasing global temperature over the past century correlating with an increase in GHG emissions from human activities.

The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential, which is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential scale is standardized to CO_2, which has a value of one. For example, CH_4 has a global warming potential of 21, which means that CH_4 has a global warming effect 21 times greater than CO_2 on an equal-mass basis.

CO_2 is the dominant gas in terms of quantities of total GHG emissions, although other GHGs have a higher global warming potential than CO_2. Total GHG emissions from a source are often reported as a

CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emissions of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs. The potential effects of GHG emissions are by nature global and cumulative, and thus it is impractical to attribute climate change to individual projects. Therefore, the impact of GHG emissions associated with this project is discussed in the context of cumulative impacts in Chapter 4.

Table 3.5-1. Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS[1]		CAAQS
		Primary	Secondary	Concentration
Ozone (O_3)	1-Hour	-	Same as Primary Standard	0.09 ppm (180 µg/m^3)
	8-Hour	0.075 ppm (147 µg/m^3)		0.070 ppm (137 µg/m^3)
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	None	9.0 ppm (10 mg/m^3)
	1-Hour	35 ppm (40 mg/m^3)		20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m^3)	Same as Primary Standard	0.030 ppm (57 µg/m^3)
	1-Hour	100 ppb (188 µg/m^3)		0.18 ppm (339 µg/m^3)
Sulfur Dioxide (SO_2)	Annual Average	0.03 ppm (80 µg/m^3)	-	-
	24-Hour	0.14 ppm (365 µg/m^3)	-	0.04 ppm (105 µg/m^3)
	3-Hour	-	0.5 ppm (1,300 µg/m^3)	-
	1-Hour	-	-	0.25 ppm (655 µg/m^3)
Suspended Particulate Matter (PM_{10})	24-Hour	150 µg/m^3	Same as Primary Standard	50 µg/m^3
	Annual Arithmetic Mean	-		20 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	35 µg/m$_3$	Same as Primary Standard	-
	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3	12 µg/m^3
Lead (Pb)	30-Day Average	-	-	1.5 µg/m^3
	Calendar Quarter	1.5 µg/m^3	Same as Primary Standard	-
	3-Month Rolling Average	0.15 µg/m^3		
Hydrogen Sulfide	1-Hour	No Federal Standards		0.03 ppm (42 µg/m^3)
Sulfates	24-Hour			25 µg/m^3
Visibility Reducing Particles	8-Hour (10 a.m. to 6 p.m., Pacific Standard Time)			In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.
Vinyl Chloride[2]	24-Hour			0.01 ppm (26 µg/m^3)

Source: CARB 2015a; USEPA 2015a.

Notes: [1] NAAQS (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[2] The CARB has identified Pb and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

mg/m^3= milligrams per cubic meter.

3.5.2 AFFECTED ENVIRONMENT

3.5.2.1 Regional Setting

DFSP San Pedro is located in the cities of San Pedro and Long Beach, within the South Coast Air Basin (SCAB). The SCAB comprises a single air district, the SCAQMD, and consists of Orange County, the western portion of Los Angeles County, the southwestern portion of San Bernardino County, and the western portion of Riverside County.

The DFSP San Pedro area enjoys the typical southern California "Mediterranean" climate, with cool, dry summers and mild winters. The major influences on the regional climate are the Eastern Pacific High (a strong, persistent high-pressure system) and the Pacific Ocean. Seasonal variations in the position and strength of the Eastern Pacific High are a key factor in the weather changes in the area. From February through July, the prevailing winds generally come from the south (onshore) or from the west. From August through January, the prevailing winds generally come from the west-northwest direction (Western Regional Climate Center 2015).

The entire air basin is currently in extreme nonattainment of the 8-hour O_3 NAAQS, in moderate nonattainment of the $PM_{2.5}$ NAAQS, and is a maintenance area for CO, NO_2, and PM_{10} (USEPA 2015b). In addition, Los Angeles County was designated as nonattainment for the Pb NAAQS due to exceedances measured near a large battery recycling facility after the USEPA reduced the Pb standard to 0.15 $\mu g/m^3$ in 2008 (SCAQMD 2012).

With respect to the CAAQS, the SCAB is in nonattainment of the state standards for O_3, $PM_{2.5}$, and PM_{10} (CARB 2015b), and is in attainment of all other CAAQS criteria pollutants.

3.5.2.2 Region of Influence

The ROI for DFSP San Pedro is defined by the SCAB. For inert pollutants (all pollutants other than O_3 and its precursors), the ROI is generally limited to a few miles downwind from the source. However, for a photochemical pollutant such as O_3, the ROI may extend much farther downwind. O_3 is a secondary pollutant that is formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors (VOC and NO_x). The maximum effect on O_3 levels from precursors tends to occur several hours after the time of emission during periods of high solar load and may occur many miles from the source. O_3 and its precursors transported from other regions can also combine with local emissions to produce high local O_3 concentrations.

3.5.2.3 Regulatory Framework

Federal Requirements

Under NEPA, air quality impacts must be evaluated and assessed with regard to the significance of their impacts. In addition to NEPA, the CAA, General Conformity, and New Source Review (NSR) are applicable to analyses of impacts to air quality. These federal requirements are discussed in the following sections.

Clean Air Act

The USEPA is the agency responsible for enforcing the CAA of 1970 and the 1977 and 1990 CAA amendments. The purpose of the CAA is to establish NAAQS, which classify areas as to their attainment status relative to the NAAQS; develop schedules and strategies to meet the NAAQS; and to regulate emissions of criteria pollutants and air toxics to protect public health and welfare. Under the CAA, individual states are allowed to adopt ambient air quality standards and other regulations, provided they

are at least as stringent as federal standards. The CAA Amendments established new deadlines for achievement of NAAQS, dependent upon the severity of nonattainment.

The USEPA requires each state to prepare a State Implementation Plan (SIP), which describes how that state will achieve compliance with NAAQS. A SIP is a compilation of goals, strategies, schedules, and enforcement actions that will lead the state into compliance with all federal air quality standards. Each change to a compliance schedule or plan must be incorporated into the SIP. In California, the SIP consists of separate elements for each air basin, depending upon the attainment status of the particular air basin.

The CAA Amendments also require that states develop an operating permit program that would require permits for all major sources of pollutants. The program would be designed to reduce criteria pollutant emissions and control emissions of hazardous air pollutants by establishing control technology guidelines for various classes of emission sources. Under the CAA, state and/or local agencies may be delegated authority to administer the requirements of the CAA, including requirements to obtain permits to operate stationary sources on Navy installations.

General Conformity

Under 40 CFR Part 93 and the provisions of Part 51, Subchapter C, Chapter I, Title 40, Appendix W of the CFR, of the CAA as amended, federal agencies are required to demonstrate that federal actions conform with the applicable SIP. To ensure that federal activities do not hamper local efforts to control air pollution, Section 176(c) of the CAA, 42 USC 7506(c) prohibits federal agencies, departments, or instrumentalities from engaging in, supporting, providing financial assistance for, licensing, permitting or approving any action which does not conform to an approved SIP or federal implementation plan.

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emission thresholds that trigger requirements of the General Conformity Rule are called *de minimis* levels. Table 3.5-2 identifies the federal nonattainment and maintenance pollutants and the relevant *de minimis* emission thresholds for the ROI.

Table 3.5-2. Applicable General Conformity Rule *de minimis* Levels (tons/year)

VOCs[1]	NO_x[1]	CO[2]	SO_2[4]	NO_2[2]	PM_{10}[2]	$PM_{2.5}$[1]
10	10	100	NA	100	100	100

Source: USEPA 2015c.
Notes: [1.] SCAQMD is an extreme nonattainment area for the 8-hour federal O_3 standard; VOCs and NO_x are precursors to the formation of O_3. It is in nonattainment of the federal $PM_{2.5}$ standard
[2.] SCAQMD is a maintenance area for CO, NO_2, and PM_{10}.
[3.] The Los Angeles County portion of the SCAQMD is in nonattainment of the 2008 lead NAAQS. The corresponding *de minimis* level is 25 tons/year; however, the alternatives would have negligible lead emissions (see Section 4.2.3).
[4.] NA = not applicable because the SCAQMD attains the SO_2 NAAQS.

To demonstrate conformity with the CAA, a project must clearly demonstrate that it does not cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard, any required interim emission reductions, or other milestones in any area. A conformity applicability analysis is required for each of the nonattainment pollutants or its precursor emissions.

Compliance with the General Conformity Rule can be demonstrated in several ways. Compliance is presumed if the net increase in direct and indirect emissions from a federal action would be less than the relevant *de minimis* level.

New Source Review (NSR)

A NSR is required when a source has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specified major source thresholds (100 or 250 tons per year), predicated on the source's industrial category. A major modification to the source also triggers a NSR. The NSR process ensures that factors such as the availability of emission offsets and their ability to reduce emissions are addressed and conform with the SIP.

Hazardous Air Pollutants

The USEPA has listed 188 substances that are regulated under Section 112 of the CAA, and the state of California has identified additional substances that are regulated under state and local air toxics rule. Emission factors for most Hazardous Air Pollutants (HAPs) from combustion sources are roughly three or more orders of magnitude lower than emission factors for criteria pollutants. Trace amounts of HAPs may be emitted from sources during the demolition and closure activities; however, the amounts that would be emitted would be small in comparison with the emissions of criteria pollutants. Emissions of HAPs would also be subject to dispersion due to wind mixing and other dissipation factors.

Local Requirements

In Los Angeles County, the SCAQMD is the agency responsible for the administration of federal and state air quality laws, regulations, and policies. The SCAQMD's tasks include air pollution monitoring, preparation of the SIP for the SCAB, and the promulgation of rules and regulations. The SIP includes strategies and tactics to be used to attain the federal O_3 standard within the SCAB. The SIP elements are taken from the Regional Air Quality Strategy and the SCAQMD plan for attaining the state O_3 standard, which is more stringent than the federal standard. The SCAQMD's rules and regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts.

These regulations require that facilities constructing, altering, or replacing stationary equipment that may emit air pollutants obtain an Authority to Construct permit. Further, SCAQMD regulations require stationary sources of air pollutants to obtain and maintain Permits to Operate for all stationary sources subject to the requirements of Regulation II. The SCAQMD is responsible for the review of applications and for the approval and issuance of these permits. Once a permit is issued, the facility is responsible for compliance with the conditions specified in the permit, and is responsible for quantification of emissions associated with the permitted unit.

3.5.2.4 Existing Conditions

With the temporary closure of DFSP San Pedro, fuel storage and distribution activities shifted to the Kinder Morgan facilities located in the cities of Watson and Carson. Both Kinder Morgan facilities are located within the same air basin and county as DFSP San Pedro.

Since the fuel facility temporary closure process was completed at DFSP San Pedro, there have been approximately 15 employees on site daily. These employee vehicle trips, in addition to other miscellaneous trips each day, currently contribute negligible air emissions to the region.

Before temporary closure, DFSP San Pedro facilities within the Main Terminal and Pier 12 operated under permits issued by the SCAQMD. Table 3.5-3 lists the permits (and completed permit applications from 2011) with the current status of each, as of June 2015.

Table 3.5-3. Status of Formerly Active SCAQMD Permits and Completed Permit Applications

Type	Number	Equipment Description
Permit	D92550	Main Terminal - Soil Treatment, Vapor Extraction
Permit	D80486	Main Terminal - Storage Tank #48
Permit	D80487	Main Terminal - Storage Tank #49
Permit	D80488	Main Terminal - Storage Tank #50
Permit	F94906	Main Terminal - Soil Vapor Extraction and Treatment System
Permit	D84832	Pier 12 – Storage Tank #253
Permit	D84833	Pier 12 - Storage Tank #254
Permit	D85360	Pier 12 - Storage Tank #502
Permit	D85361	Pier 12 - Storage Tank #501
Permit	D84829	Pier 12 - Storage Tank #252
Permit	D84830	Pier 12 - Storage Tank #251
Permit	G19451	Main Terminal - Diesel-Powered Fire Fighting Pump
Permit	G20707	Main Terminal - Diesel-Powered Backup Electrical Generator
Application	512175	Pier 12 Electric Generator
Application	512176	Pier 12 Fire Fighting Pump

Source: SCAQMD Facility Information Detail database (SCAQMD 2015).

The pipelines themselves are not subject to permitting under the guidelines of the SCAQMD, since on- and off-site pipelines do not generate emissions.

3.5.3 ENVIRONMENTAL CONSEQUENCES

This resource section focuses on groups of activities that have the potential to result in an impact to the ambient air quality. The analysis was separated by the project phases as discussed in Chapter 2: activities related to the closure (or partial closure) of the facilities, and operational activities (if applicable). Types of activities that could affect air quality include operation of construction equipment, worker trips, and earth moving activities.

3.5.3.1 Approach to Analysis

The air quality analysis estimated the magnitude of emissions that would occur from proposed demolition and other activities related to the closure (or partial closure) of the fuel facilities, as well as proposed operational activities where applicable. Demolition-related activities would include demolition of the fuel facilities, and other activities such as earth movement to reach the underground facilities, operation of a batch plant to mix concrete on-site to fill tanks and pipes slated for closure, and vehicle trips to and from the site.

The analysis compared emissions from the proposed closure and demolition activities under each alternative to the criteria identified in Section 3.5.2.3, to evaluate the significance of the impacts to air quality resources. The *de minimis* thresholds provide logical thresholds for assessing impact significance.

3.5.3.2 Emissions Evaluation Methodology

Air quality impacts from demolition, closure, and operational (as applicable) activities proposed under each action alternative would primarily occur from combustive emissions due to the use of fossil fuel-powered equipment and emissions generated from a batch plant. Emissions were estimated using the CalEEMod, which is the current comprehensive tool for quantifying air quality impacts from land use projects throughout California. The model was developed in collaboration with the air districts of California and includes default data (e.g., emission factors, trip lengths, meteorology, and source inventory) that have been provided by the various California air districts to account for local requirements and conditions (California Air Pollution Control Officers Association 2015). For this analysis, default

data were overridden in the model by project-specific data (as provided in Chapter 2), when available. Assumptions were made regarding the total number of days each piece of equipment would be used and the number of hours per day each type of equipment would be used. In addition to CalEEMod, data from CARB's EMFAC model was used to calculate the emissions from the concrete batching process. Assumptions and model inputs are located within the modeling calculations in Appendix C.

3.5.3.3 Alternative 1

Complete Closure with Partial Demolition

Over the 4-year demolition and closure period of Alternative 1, there would be roughly 130,000 square feet (12,077 square meters) of structures, tanks, and pipes to be demolished (approximately 32,500 square feet [3,019 square meters] per year). In addition, if selected, approximately 160,000 cubic yards (122,329 cubic meters) of concrete/foamcrete materials would be trucked on-site to fill the USTs. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats.

The analysis and associated emissions reflect an assumption that concrete/foamcrete would be used and brought on-site; however, if soil is used, then the presented emissions would be lower because all soil used would come from within the Main Terminal project area.

Table 3.5-4 presents a summary of the annual emissions associated with the demolition and closure activities under Alternative 1. For modeling purposes, it was assumed that one-fourth of the proposed activities would occur each year, within the 4-year demolition and closure period. Therefore, the annual estimated emissions shown in Table 3.5-4 would occur each year during the 4-year period. As shown in Table 3.5-4, estimated emissions from demolition and closure activities would be below *de minimis* thresholds and would not trigger a formal Conformity Determination under the CAA General Conformity Rule.

Table 3.5-4. Alternative 1 – Annual Emissions from Complete Closure with Partial Demolition, with Evaluation of Conformity

Emission Source	Emissions (tons/year)					
	VOCs	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Alternative 1 – Annual Emissions (4-year period)	0.63	2.78	23.34	0.05	1.36	0.72
Additional Annual Emissions from Concrete Batching	0.00	0.08	0.01	0.00	5.95	0.00
Total Annual Emissions	**0.63**	**2.98**	**23.35**	**0.05**	**7.31**	**0.72**
Conformity *de minimis* Thresholds	10	10	100	NA	100	100
Exceeds Conformity *de minimis* Thresholds?	No	No	No	No	No	No

Note: NA = not applicable.

There are residential, educational, and recreational facilities to the north, south, and west of the Main Terminal site. To the east and southeast of the Main Terminal are the Ports of Los Angeles and Long Beach, and associated industrial facilities. During periods of onshore wind flow (generally when prevailing winds come from the south) in the spring and summer months, there would be a chance for fugitive dust from excavation and demolition activities to be carried to the areas north of the Main Terminal, towards residential, commercial, and educational areas (refer to Figure 3.6-1). When the prevailing winds come from the west-northwest, generally from August to January, there would be a chance for fugitive dust to be carried into the Port-related industrial areas to the east of the Main Terminal site. However, throughout the entire year, dust suppression methods (such as using water trucks to wet unvegetated or disturbed areas twice daily or as needed) would be implemented to minimize fugitive dust emissions.

After demolition activities have ceased, disturbed areas would be revegetated, which would reduce dust generation potential. A dust control plan would not be required as long as required dust control measures from the SCAQMD are implemented during the entire phase of earth-moving activities.

The amount of water that would be needed for dust suppression activities would be highly dependent upon the amount of soil moved at one time, the type and moisture content of the soil, time of year, weather conditions, etc. Non-potable water may be used for dust suppression activities at the time the project is implemented.

Post-closure

Following closure, no operations would occur. Emissions would be limited to those generated by periodic trips; these trips would be few and infrequent and as such, post-closure emissions would be negligible.

Impact Avoidance and Minimization Measures

Impact avoidance and minimization measures associated with air quality are listed in Appendix B.

Summary

Alternative 1 would generate dust that could migrate off-site during certain conditions. Alternative 1 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Therefore, implementation of Alternative 1 would not have a significant impact to air quality.

3.5.3.4 Alternative 2

Complete Closure with Minimal Demolition

Under Alternative 2, demolition would involve 25 valve pits and approximately 9,600 linear feet of underground pipeline. The amount of concrete or foamcrete and the number of requisite truck trips would be the same as Alternative 1 (approximately 160,000 cubic yards [122,329 cubic meters]), except that the tank filling and closure process would occur over 3 years instead of 4 years. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. The excavation of fill dirt would not affect PVB or CAGN habitats.

Table 3.5-5 presents a summary of the annual emissions associated with the demolition and closure activities under Alternative 2. For modeling purposes, it was assumed that one-third of the proposed activities would occur each year, within the 3-year demolition and closure period. Therefore, the annual estimated emissions shown in Table 3.5-5 would occur each year during the 3-year period. As shown in Table 3.5-5, estimated emissions from demolition and closure activities would be below *de minimis* thresholds and would not trigger a formal Conformity Determination under the CAA General Conformity Rule.

Table 3.5-5. Alternative 2 – Annual Emissions from Complete Closure with Minimal Demolition, with Evaluation of Conformity

Emission Source	Emissions (tons/year)					
	VOCs	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Alternative 2 – Annual Emissions (3-year period)	0.65	2.88	23.68	0.05	1.37	0.72
Additional Annual Emissions from Concrete Batching	0.00	0.08	0.01	0.00	7.93	0.00
Total Annual Emissions	**0.65**	**2.96**	**23.69**	**0.05**	**9.30**	**0.72**
Conformity *de minimis* Thresholds	10	10	100	NA	100	100
Exceeds Conformity *de minimis* Thresholds?	No	No	No	No	No	No

Note: NA = not applicable.

Post-closure

Following closure, no operations would occur. Emissions would be limited to those generated by periodic trips; these trips would be few and infrequent and as such, post-closure emissions would be negligible.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 2.

Summary

Alternative 2 would generate dust that could migrate off-site during certain conditions. Alternative 2 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Therefore, implementation of Alternative 2 would not have a significant impact to air quality.

3.5.3.5 Alternative 3

Complete Closure with Complete Demolition

Implementation of Alternative 3 would include the largest amount of demolition and earth-moving activities. However, under Alternative 3, no batch plant would be needed. Under Alternative 3, all ASTs and USTs would be excavated and demolished, as would all on-site underground pipelines, off-site aboveground pipelines, and the pump houses, loading racks, vaults, etc. at the DFSP San Pedro Main Terminal and Marine Terminal. Over the 4-year demolition and closure period of Alternative 3, there would be roughly 165,300 square feet (15,357 square meters) of structures, tanks, and pipes to be demolished.

Because the USTs would be excavated and removed, no truck trips to bring concrete or foamcrete materials on-site would be required. All soil from excavation and grading activities would remain on-site, and no soil would be brought on-site to fill excavated tanks and pipes.

Table 3.5-6 presents a summary of the annual emissions associated with the demolition and closure activities under Alternative 3. For modeling purposes, it was assumed that one-fourth of the proposed activities would occur each year, within the 4-year demolition and closure period. Therefore, the annual estimated emissions shown in Table 3.5-6 would occur each year during the 4-year period. As shown in Table 3.5-6, estimated emissions from demolition and closure activities would be below *de minimis* thresholds and would not trigger a formal Conformity Determination under the CAA General Conformity Rule.

Table 3.5-6. Alternative 3 – Annual Emissions from Complete Closure with Complete Demolition, with Evaluation of Conformity

Emission Source	Emissions (tons/year)					
	VOCs	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Alternative 3 – Annual Emissions (4-year period)	**0.73**	**2.97**	**28.40**	**0.56**	**1.62**	**0.87**
Conformity *de minimis* Limits	10	10	100	NA	100	100
Exceeds Conformity *de minimis* Limits?	No	No	No	No	No	No

Note: NA = not applicable.

The estimated emissions under Alternative 3 are similar to Alternative 1, for several reasons:

- Both alternatives have a 4-year timeline (compared to a 3-year timeline for Alternatives 2 and 4).
- For modeling purposes, and to be consistent with other resource sections, it was assumed that the same types and numbers of construction vehicles would be used (along with the same number of construction personnel).

- All alternatives were modeled with the same basic assumptions: disturbed soil would be watered twice daily, and the cleanest construction vehicle engines available would be used.

In addition, while not a similarity, Alternative 1 is analyzed with the assumption that a temporary batch plant would be used, whereas Alternative 3 would not. The emissions reduction associated with the lack of a batch plant is somewhat offset by the increase in emissions associated with the larger project area under Alternative 3.

Post-closure

Following closure, no operations would occur. Emissions would be limited to those generated by periodic trips; these trips would be few and infrequent and as such, post-closure emissions would be negligible.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 3.

Summary

Alternative 3 would generate dust that could migrate off-site during certain conditions. Given that a comparatively much greater area would be disturbed under Alternative 3 as compared to the other alternatives, a higher dust generation potential would occur with implementation of Alternative 3. Alternative 3 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Therefore, implementation of Alternative 3 would not have a significant impact to air quality.

3.5.3.6 Alternative 4

Partial Closure with Minimal Demolition

Under Alternative 4, only the concrete USTs would be filled and abandoned, along with their associated on-site pipelines, resulting in roughly 111,300 cubic yards (85,095 cubic meters) of fill material required (approximately 37,000 cubic yards [28,289 cubic meters]) each year for the 3-year partial closure time period, and 28 total concrete/foamcrete truck trips per day). If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. Demolition activities would only consist of the demolition of 9,600 linear feet of underground pipeline along with 25 valve pits (the same as under Alternative 2).

The proposed maintenance, repair, and construction activities to return to active status would be temporary in duration and small in scope, and would therefore have minimal impacts to the regional air quality. There would be no construction activities; instead, required activities to enable fuel facility operation include repairing, upgrading, replacing, and coating existing and new equipment and structures, as needed.

Table 3.5-7 presents a summary of the annual emissions associated with the demolition and closure activities under Alternative 4. Emission calculations are provided in Appendix C. For modeling purposes, it was assumed that one-third of the proposed activities would occur each year, within the 3-year demolition and partial closure period. Therefore, the annual estimated emissions shown in Table 3.5-7 would occur each year during the 3-year period. As shown in Table 3.5-7, estimated emissions from demolition and closure activities would be below *de minimis* thresholds and would not trigger a formal Conformity Determination under the CAA General Conformity Rule.

Table 3.5-7. Alternative 4 – Annual Emissions from Partial Closure with Minimal Demolition, with Evaluation of Conformity

Emission Source	Emissions (tons/year)					
	VOCs	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Alternative 4 – Annual Emissions (3-year period)	0.63	2.75	23.50	0.05	1.36	0.72
Additional Annual Emissions from Concrete Batching	0.00	0.08	0.01	0.00	5.52	0.00
Total Annual Emissions	**0.64**	**2.83**	**23.57**	**0.05**	**6.88**	**0.72**
Conformity *de minimis* Limits	10	10	100	NA	100	100
Exceeds Conformity *de minimis* Limits?	No	No	No	No	No	No

Note: NA = not applicable.

Partial Operation

When the activities to return the facility to partial operational status are complete, the impact to the regional air quality would be the same as under existing conditions. The existing volume of fuel being received, stored, and distributed/issued currently at the Kinder Morgan fuel facilities would be lessened, as some of the fuel would be distributed at the DFSP San Pedro facility instead. However, the difference between the receipt, storage, and distribution from DFSP San Pedro and the same activities at Kinder Morgan equates to a local change within an approximately 10-mile (16-kilometer) radius. The Kinder Morgan facility and DFSP San Pedro are within the same air basin and within the same county. Partial operations would result in an increase in worker trips to DFSP San Pedro, and as such vehicle emissions; however, these emissions would be negligible.

New equipment may require new permits to construct/operate through the SCAQMD. Therefore, DFSP San Pedro would be responsible for obtaining appropriate air emission permits and operating in accordance with those permits, and in general, operating in accordance with all SCAQMD laws and regulations.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 4.

Summary

Alternative 4 would generate dust that could migrate off-site during certain conditions. Alternative 4 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before initiating partial operations. Therefore, implementation of Alternative 4 would not have a significant impact to air quality.

3.5.3.7 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, there would be no demolition or closure of the existing fuel facilities. Instead, the existing facilities would be repaired so that the fuel facility could resume full operations. Required activities to enable fuel distribution include repairing, upgrading, replacing, and coating existing and new equipment and structures, as needed. The repairs required to return the fuel facility to service would be temporary in duration and small in scope; therefore, the emissions would be less than Alternative 1 estimated emissions.

Presumed Eventual Resumption of Full Operations

Under the No Action Alternative and with the presumed resumption of full operations at DFSP San Pedro, the existing volume of fuel being received, stored, and distributed/issued currently at the Kinder

Morgan fuel facilities would be lessened, as some of that fuel would be distributed at the DFSP San Pedro facility instead. However, the difference between the receipt, storage, and distribution from DFSP San Pedro and the same activities at Kinder Morgan equates to a local change within a 10-mile (16-kilometer) radius. The Kinder Morgan facility and DFSP San Pedro are within the same air basin and within the same county. Therefore, regionally, the level of truck traffic transporting fuel is not expected to change. Regionally, the amount of tankers delivering fuel is also not expected to change. The resumption of full operations would result in an increase in worker trips to DFSP San Pedro, and as such vehicle emissions.

DFSP San Pedro would be responsible for obtaining appropriate air emission permits and operating in accordance with those permits, and in general operating in accordance with all SCAQMD laws and regulations.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Summary

The No Action Alternative would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before resuming operations. Therefore, implementation of the No Action Alternative would not have a significant impact to air quality.

3.6 NOISE

3.6.1 DEFINITION OF RESOURCE

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, to the human ear. Noise is loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that interferes with or disrupts normal activities. The human environment includes a certain consistent level of noise that varies by area. This is called ambient, or background, noise. Although exposure to high noise levels can cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise; perceived importance of the noise and its appropriateness in the setting; time of day and type of activity during which the noise occurs; and the sensitivity of each individual.

Sound includes multiple variables, including frequency and intensity. Frequency describes the pitch of the sound measured in hertz, while intensity describes the sound's loudness measured in decibels (dB). Decibels are measured using a logarithmic scale[18]. A sound level of zero dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Generally, of the human ear experiences sound levels of 110 to 120 dB as discomfort, levels between 130 to 140 dB are felt as pain, and levels above this range risk ear tissue damage (Berglund and Lindvall 1995).

Table 3.6-1 provides an example of the dB levels associated with various common outdoor and indoor activities to provide a frame of reference. The minimum change in sound level that an average human ear can detect is approximately 1 to 2 dB. The human ear readily perceives a 3- to 5-dB change. A change in sound level of approximately 10 dB is usually perceived by the average person as a doubling (or if decreasing by 10 dB, halving) of the loudness.

[18] A scale of measurement that displays the value of a quantity in terms of orders of magnitude.

Table 3.6-1. Noise Levels Associated with Common Outdoor and Indoor Activities

Noise Level (dB)	Common Outdoor Activities	Common Indoor Activities
110 - 100	Jet Fly-over at 1,000 feet (300 meters)	Rock Band
100 - 90	Gas Lawn Mower at 3 feet (1 meter)	-
90 - 80	Diesel Truck at 50 feet (1.5 meters), moving at 50 miles/hour (80 kilometers/hour)	Food Blender at 3 feet (1 meter)
70	Commercial Area, Gas Lawn Mower at 100 feet (30 meters)	Vacuum Cleaner at 10 feet (3 meters)
60	Heavy Traffic at 300 feet (90 meters)	Normal Speech at 3 feet (1 meter)
50 - 40	Quiet Urban Daytime	Large Business Office
40 - 30	Quiet Urban/Suburban Nighttime	Theater, Large Conference Room (Background)
30 - 20	Quiet Rural Nighttime	Library, Bedroom at Night, Concert Hall (Background)
20 – 10	-	Broadcast/Recording Studio
0	Lowest Threshold of Human Hearing	-

Source: Caltrans 2009.

Environmental noise measurements use an "A-weighted" scale that filters out very low and very high frequencies to replicate human sensitivity. An "A" is typically added to the measurement unit to identify that the measurement has been made with this filtering process (dBA). Noise levels are generally low if below 60 dBA, moderate from 60-70 dBA, and high above 70 dBA (City of Los Angeles 2012). Typically, individuals may consider loud environments adverse; however, they generally accept higher noise levels associated with specific environments, including dense urban or industrial areas, which generally range from 65 to 80 dBA. Noise impacts are assessed based on the incremental increase in noise levels experienced by sensitive noise receptors as the result of a proposed action. Sensitive noise receptors are buildings or parks where quiet forms a basic element of their purpose; residences and buildings where people normally sleep (e.g., homes) where nighttime noise is most annoying; and institutional land uses (e.g., schools, libraries, parks, churches) with primarily daytime and evening use.

Noise levels decrease with increasing distance from the source. Noise levels are further reduced by the presence of acoustically "hard" environments (e.g., concrete sound walls) and "soft" environments (e.g., vegetation). Hard environments typically reduce noise levels by 3 dBA while soft environments reduce noise levels by 4.5 dBA for every doubling of a distance from the source. Typically, noise from stationary sources drops by 6 to 7.5 dBA for every doubling of distance from the source. Noise may be further reduced if there is an obstruction, such as a wall, building or trees, between the noise sources and the sensitive receptors (City of Los Angeles 2012).

3.6.2 AFFECTED ENVIRONMENT

The affected environment for this noise analysis focuses on the DFSP San Pedro Main Terminal and surrounding areas. The off-site pipelines (by virtue of being primarily located underground [the aboveground segments are not located adjacent to sensitive noise receptors) and the Marine Terminal (by virtue of having no surrounding noise receptors) are not included in the affected environment for noise as negligible temporary impacts to the noise environment would occur in these areas.

3.6.2.1 Existing Conditions

DFSP San Pedro is located in a dense mixed-use area surrounded by residential areas, commercial properties, high-volume roadways, and industrial facilities. Noise levels in the area are primarily affected by roadway traffic and industrial facilities. Given the high density of the surrounding development, the noise environment is generally loud, especially during times of peak traffic. The existing noise level along

North Gaffey Street, located along the eastern boundary of DFSP San Pedro Main Terminal ranges from 62 to 71.3 dBA (City of Los Angeles 2012). As a result, the general noise level in the area surrounding DFSP San Pedro is estimated to range between 65 to 75 dBA on average. Within the central portion of the Main Terminal, the noise environment is much quieter, given the distance from surrounding development, the varied topography, and the lack of substantial noise sources. DFSP San Pedro has not received a noise complaint during the entire history of its operations (DLA 2015b).

Sensitive Noise Receptors

Locations or land uses that may be sensitive to exposure by elevated noise levels typically include residential areas, public services, and recreational areas. These sensitive noise receptors may experience sensitivity to noise generated by human activities. Within the project area, several sensitive noise receptors are located adjacent to, or near the Main Terminal (Figure 3.6-1). Given the projected timeline for implementation of the Proposed Action, this noise analysis assumes that the Ponte Vista housing development (which is currently under construction) is fully constructed and occupied.

3.6.3 ENVIRONMENTAL CONSEQUENCES

A significant noise impact would occur if proposed demolition and/or operational activities were to result in a substantial increase in noise that would be (1) noticeably distinct from ambient conditions for sensitive receptors surrounding the project area and (2) either extreme (if short-term or intermittent) or continuous. To evaluate the level of potential impact, a qualitative analysis was performed that considered the noise generated by demolition equipment; the attenuation of noise over distances; and the reduction in noise caused by obstructions (e.g., topography) that lie between the noise source and sensitive noise receptors. Sensitive noise receptors are shown on Figure 3.6-1.

3.6.3.1 Alternative 1

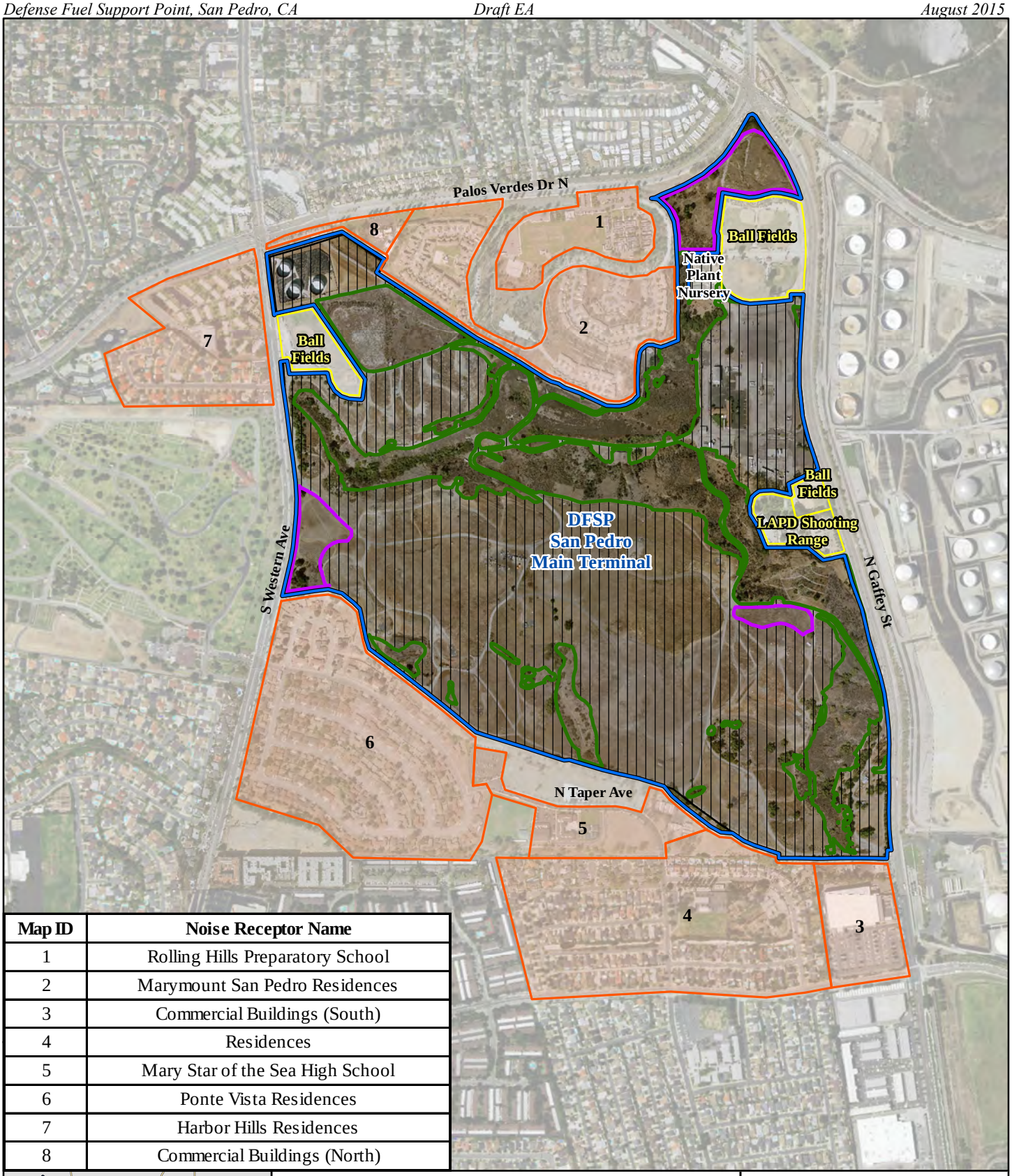
Complete Closure with Partial Demolition

Proposed demolition equipment would consist of a variety of equipment, to include but not be limited to backhoes, dozers, excavators, loaders, dump trucks, pickup trucks, generators, air compressors, saws, welding equipment, and miscellaneous small equipment. Table 3.6-2 presents the noise levels associated with the operation of representative demolition equipment at a distance of 50 feet (15 meters).

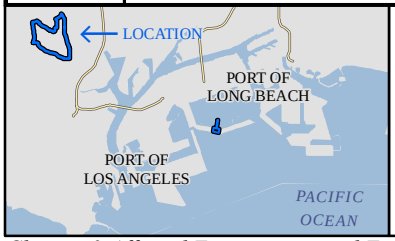
Table 3.6-2. Estimated Demolition Equipment Noise Levels

Equipment Type	Estimated Noise Level (dB) at 50 feet (15 meters)
Air compressor	81
Backhoe	80
Compactor	82
Concrete Saw	90
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Jack Hammer	88
Loader	85
Pump	76
Scraper	89
Truck (heavy)	88
Welding Torch	74

Source: Federal Highway Administration 2006.



Map ID	Noise Receptor Name
1	Rolling Hills Preparatory School
2	Marymount San Pedro Residences
3	Commercial Buildings (South)
4	Residences
5	Mary Star of the Sea High School
6	Ponte Vista Residences
7	Harbor Hills Residences
8	Commercial Buildings (North)



LEGEND

Existing Features
- Main Terminal Project Area
- Operations Area
- Habitat Opportunity Area
- Listed Species Management Area
- Leased Areas (Not Part of the Project Area)
- Sensitive Receptors

Figure 3.6-1
Location of Identified Sensitive Noise Receptors

0 200 400 Feet
0 100 200 Meters

Temporary noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) from the source. During demolition activities, overall noise levels would result from the combined effect of the noise contributions from multiple pieces of equipment in use at a given time, which typically is dominated by the three or four highest noise generators. All demolition would be done in an incremental and methodical manner; no explosions or instantaneous complete structure demolition (implosions) would occur.

The majority of the demolition activities proposed under Alternative 1 would be located in the central and eastern portions of the Main Terminal. Noise levels would decrease with increasing distance from the source. The demolition activities in these areas would be focused along the eastern border, in areas of lower topography, thus shielding surrounding sensitive noise receptors from demolition noise. Conversely, the proposed demolition of the ASTs in the northwest corner of the Main Terminal would be near surrounding residential and commercial structures with partial topographic shielding. Demolition noise would not be continuous, and the noise level between sources and receptors would decrease based on the distance and the presence of acoustically "hard" or "soft" environments, and/or obstructions lying in between.

The proposed abandonment of underground or surface infrastructure would occur in focused locations throughout the Main Terminal Operations Area. Associated noise levels would be less than proposed demolition activities and consistent with the surrounding area. This is because, in general, abandonment activities would consist of filling the infrastructure with an inert material, typically done by a pumping truck (76 dB at a distance of 50 feet), and with less attendant (noise) equipment. Noise levels would decrease with increasing distance from the source.

If needed, the on-site temporary batch plant would be erected in a paved portion of the administrative portion of the Operations Area. Noise generated would include ready-mix truck trips, engine spool-up and feeding of the hoppers by front-loaders, mixing of concrete/foamcrete, and departure of the trucks. Batch plant operations generate noise levels of approximately 75 dBA at a distance of 100 feet, consistent with the noise generated by proposed demolition equipment. The temporary batch plant location would be situated lower than surrounding sensitive noise receptors; thus, topography would reduce off-site noise impacts such that batch plant noises would be indistinct in the surrounding existing noise environment.

Proposed demolition and abandonment activities would progress from site-to-site, throughout the project duration (approximately 4 years); thus, the noise impacts would be spread out over a large area in a transitory and temporary manner. Workers would travel on existing roads as they approach DFSP San Pedro, causing an incremental increase in traffic noise from these streets. Other than surrounding roadways, no one area adjacent to the Main Terminal would be subject to noise impacts for the duration of the project.

Noise from closure activities would be limited to the working hours of the demolition crews and machinery; outside of working hours, noise levels would return to existing conditions, reflective of the dense urban/industrial setting. While the schools, residences, and commercial structures located near proposed demolition activities would likely hear noise generated by proposed demolition activities, the noise levels would not be substantially higher than existing conditions. While the majority of closure activities would occur during normal working hours, some evening or night closure activities (e.g., truck trips) may occur.

Demolition activities would generally be completed before ball field activities occur (the ball fields are generally used from 3:00 P.M. to dusk during the week, and 8:00 A.M. to dusk on weekends); however,

during periods of overlap between demolition and ball field activities, demolition noise would be noticeable when occurring in proximity to the ball fields.

Post-closure

Under Alternative 1, vehicle noise generated by periodic trips would be negligible. No new sources of noise would be created and noise levels would be consistent with existing conditions (e.g., temporary closure).

Impact Avoidance and Minimization Measure

The impact avoidance and minimization measure associated with noise is listed in Appendix B.

Summary

Under Alternative 1, noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the source. In addition to increasing distance, the topography would shield sensitive noise receptors from demolition noise. Conversely, the proposed demolition of the ASTs in the northwest corner of the Main Terminal would be near surrounding residential and commercial structures with partial topographic shielding. Noise impacts would be spread out over a large area in a transitory and temporary manner. While the schools, residences, and commercial structures located near proposed demolition activities might hear noise generated by temporary demolition activities, the noise levels would not be noticeably distinct from the existing noise environment. Post-closure vehicle noise generated by periodic trips would be negligible. No new sources of noise would be created and noise levels would be consistent with existing conditions (e.g., temporary closure). Therefore, implementation of Alternative 1 would not have a significant impact to sensitive noise receptors.

3.6.3.2 Alternative 2

Complete Closure with Minimal Demolition

Under Alternative 2, the bulk of demolition would occur in the southeast corner of the Main Terminal. Demolition activities would include a subset of the equipment presented under Alternative 1 (refer to Table 3.6-2). The nearest sensitive noise receptors would be shielded by topography from proposed demolition activities; thus, no impact from noise would occur at these areas.

The proposed abandonment of underground or surface infrastructure would occur in spot locations throughout the Main Terminal Operations Area. Abandonment activities would consist of filling the infrastructure with an inert material, typically done by a pumping truck (76 dB at a distance of 50 feet), and with less attendant (noise) equipment. Noise levels would decrease with increasing distance from the source. Under Alternative 2, if a temporary batch plant were used, noise impacts would be as described for Alternative 1.

Post-closure

Under Alternative 2, vehicle noise generated by periodic trips would be negligible. No new sources of noise would be created and noise levels would be consistent with existing conditions (e.g., temporary closure).

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measure proposed for Alternative 1 as presented in Appendix B would apply to Alternative 2.

Summary

Under Alternative 2, the temporary noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the source. The majority of the demolition activities proposed under Alternative 2 would be in areas of lower topography, away from sensitive noise receptors. The nearest sensitive noise receptors would be shielded by topography from proposed demolition activities; thus, no impact from noise would occur at these areas. While the schools, residences, and commercial structures located near proposed demolition activities would likely hear noise generated by temporary demolition and/or abandonment activities, the noise levels would not be noticeably distinct from the existing noise environment. Therefore, implementation of Alternative 2 would not have a significant impact to sensitive noise receptors.

3.6.3.3 Alternative 3

Complete Closure with Complete Demolition

Under Alternative 3, given the scale of the excavation required, noise would be concentrated in the affected areas until the infrastructure is removed, resulting in comparatively greater noise impacts as compared to Alternative 1. Noise would be transitory throughout the Main Terminal as demolition activities progress; however, large numbers of truck trips would occur consistently throughout the project, thus adding to the traffic-generated noise environment.

While the majority of noise-generating activities would occur in the central portion of the Main Terminal, at times proposed demolition activities would be near off-site residential, commercial, and education structures. Given the scale and scope of proposed demolition activities, noise would likely be noticeable to surrounding receptors at times. However, the noise impacts would be temporary, limited to construction hours, and noise levels at sensitive noise receptors would be reduced due to increasing distance from the source.

Post-closure

Under Alternative 3, vehicle noise generated by periodic trips would be negligible. No new sources of noise would be created and noise levels would be consistent with existing conditions (e.g., temporary closure).

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measure proposed for Alternative 1 as presented in Appendix B would apply to Alternative 3.

Summary

Under Alternative 3, noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the source. Given the scale of the excavation required in Alternative 3, noise would be concentrated in the affected areas until the infrastructure is removed, resulting in comparatively greater noise impacts as compared to Alternative 1. Thus, the proposed demolition activities would generate noise that would likely be noticeable to surrounding receptors, and more so as compared to the other alternatives. However, the noise impacts would be temporary, limited to construction hours, and noise levels at sensitive noise receptors would be reduced due to increasing distance from the source. Therefore, implementation of Alternative 3 would not have a significant impact to sensitive noise receptors.

3.6.3.4 Alternative 4

Partial Closure with Minimal Demolition

Under Alternative 4, noise levels would be slightly less than as described for Alternative 1. Proposed repair and activation activities would generate temporary, localized, and indistinct noise levels from the surrounding noise environment.

Partial Operation

Once closure actions outlined under Alternative 4 are complete, partial operations would resume at DFSP San Pedro. Noise would occur as the result of employee trips and truck trips for the delivery of fuel, as well as operations within the fuel facility itself. As discussed in Section 3.4, the volume of traffic would be minor (approximately one-third of historical operations) and thus would not result in a substantial increase in noise. Furthermore, historical operations never generated a noise complaint; thus, a resumption of operations at a one-third level of historical operations would not be expected to affect sensitive noise receptors.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measure proposed for Alternative 1 as presented in Appendix B would apply to Alternative 4.

Summary

Under Alternative 4, noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the source. The majority of the demolition activities proposed under Alternative 4 would be in areas of lower topography, away from sensitive noise receptors. The nearest sensitive noise receptors would be shielded by topography from proposed demolition activities; thus, no impact from noise would occur at these areas. Proposed repair and activation activities would generate temporary, localized, and indistinct noise levels from the surrounding noise environment. Negligible noise would occur as the result of employee trips and truck trips for the delivery of fuel. Therefore, implementation of Alternative 4 would not have a significant impact to sensitive noise receptors.

3.6.3.5 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, infrastructure repair and reactivation activities would result in temporary and indistinct noise levels from the surrounding noise environment. The bulk of noise would be generated by truck trips delivering equipment and materials for necessary repairs and reactivation activities. Equipment used to affect the repairs and reactivation would be less noisy than the equipment presented in Table 3.6-2, and would occur mainly within the interior portions and/or lower topography areas of the Main Terminal. The noise would be indistinct from existing noise sources at sensitive noise receptors.

Presumed Eventual Resumption of Full Operations

Following the completion of the repair/reversal actions associated with the No Action Alternative, the presumed resumption of full operations at DFSP San Pedro would generate noise levels between 65-80 dBA at the Main Terminal, a level typically associated with industrial areas and consistent with the surrounding noise environment. Noise levels, and in particular, those associated with truck traffic, would be consistent with those generated for several decades up until the temporary closure of DFSP San Pedro in 2014. During this time, DFSP San Pedro received zero noise complaints. Noise generated by a

resumption of full/historical operations at DFSP San Pedro would be indistinct from the overall noise environment.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Summary

Under the No Action Alternative, infrastructure repair and reactivation activities would contribute temporary noise levels to the surrounding noise environment. The noise would be indistinct from existing noise sources at sensitive noise receptors. Operations at the Main Terminal would generate noise levels between 65-80 dBA, a level typically associated with industrial areas and consistent with the surrounding noise environment. Therefore, implementation of the No Action Alternative would not have a significant impact to sensitive noise receptors.

3.7 HAZARDOUS MATERIALS AND WASTES

3.7.1 DEFINITION OF RESOURCE

The affected environment for hazardous materials and wastes is related to past and present hazardous materials and petroleum product storage/use; soil and groundwater contamination issues; and hazardous waste and petroleum waste disposal practices within the project area. Hazardous materials are defined as chemical substances that pose a substantial hazard to human health or the environment. Hazardous materials include hazardous substances, extremely hazardous substances, hazardous chemicals, and toxic chemicals. In general, these materials pose hazards because of their quantity, concentration, physical, chemical, or infections characteristics. Hazardous materials may be found in the form of a solid, liquid, semi-solid, or contained gaseous material that alone or in combination may: (1) cause, or significantly contribute to, an increase in mortality or an increase in serous irreversible or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

On a federal level, hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA), which provides the U.S. Environmental Protection Agency (USEPA) with authority to control hazardous waste from "cradle-to-grave," including its generation, transportation, treatment, storage, and disposal. RCRA identifies hazardous sites with lists of specific wastes, and categorizes wastes that exhibit a specific characteristic (e.g., ignitable, corrosive, reactive, or toxic) in accordance with RCRA-specific definitions. The USEPA uses the term "hazardous substance" for chemicals that, if released into the environment above a certain amount, must be reported and, depending on the threat to the environment, federal involvement in handling the incident can be authorized under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Petroleum products are those substances included within the petroleum exclusion to CERCLA, as interpreted by the courts and USEPA, including crude oil or any fraction thereof that is not otherwise listed or designated as a hazardous substance, such as gasoline, kerosene, diesel oil, jet fuels, and fuel oil. Natural gas, natural gas liquids, and synthetic gas usable for fuel are also considered petroleum products. Cleanup of releases exclusively comprising petroleum products is conducted under RCRA or RCRA-based state laws and regulations.

On a state level, the California Hazardous Waste Control Law (HWCL), codified in Title 22, Chapter 6.5 of the CCR, is the basic hazardous waste regulation in the State of California. The HWCL implements the RCRA waste management system in California and specifies that generators have the primary duty to

determine whether their wastes are hazardous and to ensure its proper management and disposal. The Department of Toxic Substances Control (DTSC) is the State agency primarily responsible for enforcing the HWCL. In 1992, California was granted authorization by the USEPA to also enforce the federal RCRA hazardous waste laws and regulations.

Asbestos in Structures and Buildings

Asbestos is regulated both as a hazardous air pollutant under the federal Clean Air Act regulations and as a potential worker safety hazard under the authority of the California Department of Occupational Safety and Health Administration (Cal/OSHA). These regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos-containing building materials (ACMs); specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local government agencies before beginning renovation or demolition that could disturb ACMs. The agencies with primary responsibility for asbestos safety are the South Coast Air Quality Management District (SCAQMD), Cal/OSHA, Occupational Safety and Health Administration (OSHA), and the USEPA.

Lead-Based Paint

Federal, state, and local laws and regulations govern handling of building materials that contain lead-based paint. OSHA Lead Construction Standards establish a maximum safe exposure level for the following types of construction work where lead exposure may occur: demolition or salvage of structures where lead or materials containing lead are present; removal or encapsulation of materials containing lead; and new construction, alteration, repair, or renovation of structures or materials containing lead. Typically, building material debris with lead-based paint is considered hazardous waste (CCR, Title 22, Division 4.5, Chapter 2) unless the paint is chemically or physically removed from the building debris.

3.7.2 AFFECTED ENVIRONMENT

3.7.2.1 Past and Present Hazardous Materials and Petroleum Product Use

The DFSP San Pedro Main Terminal contains 28 underground storage tanks (USTs) and 10 above ground storage tanks (ASTs), distributed throughout the facility. Fuels stored and distributed at the facility have changed over the years. Tanks at the facility have most recently been used to store various petroleum products, such as JP-5, JP-8, and F-76 (DFM) diesel fuel Other diesel fuels handled at the facility since the 1940s have included bunker fuel, Navy Special, Navy distillate, and DFM. Other jet fuels have included aviation gas and JP-4 (DLA 2011).

Three pipelines installed in 1986 provided a dedicated line to transfer JP-5, JP-8, and DFM between the Main Terminal and Marine Terminal (refer to Figure 1-5, the "Long Beach" pipelines). The DFM line has been taken out-of-service and abandoned in place. The line has been cleaned of product and filled with concrete slurry between the Main Terminal and the Harbor-Regan (West) Valve Station. The remainder of the line has been filled with nitrogen to provide an internal inert atmosphere and to prevent internal corrosion of the line from occurring. The pipelines are almost entirely underground with the exception of two valve stations, located on each side of the Main Channel of the Los Angeles Harbor (DLA 2012). The 14-inch JP-5 and JP-8 pipelines were operational until August 2013 when they were placed in temporary closure (DLA 2013a).

None of the underground segments of the off-site underground pipelines would be demolished under any of the alternatives; therefore, no potentially contaminated soil would be disturbed or excavated. As a result, no impacts would occur with respect to hazardous materials and waste. Similarly, demolition of the

aboveground segments of the off-site pipelines would result in no impacts related to hazardous materials and waste. As such, the off-site pipeline segments are not discussed or analyzed in this section.

The Marine Terminal contains 13 ASTs, only a portion of which were routinely used for the temporary reception and holding of products, waste fuel, and slop. Aqueous film forming foam, for use in a fire-fighting system, was stored in bulk containers within a storage building. Booster pumps were used to pump fuel to the Main Terminal. A separate UST and associated piping was previously used for the storage and transfer of diesel fuel for use in an emergency generator. The UST was removed under oversight of the City of Long Beach Certified Unified Program Agency (CUPA) on December 15, 2010. A no further action status was issued by the CUPA on March 2011 (DLA 2011).

3.7.2.2 Hazardous Materials and Petroleum Product Releases

DFSP San Pedro Main Terminal

Inadvertent releases of petroleum products and hazardous materials have resulted in subsurface contamination of soil and groundwater in several areas within the Main Terminal, including the administrative portion, the Pump House Area, and the Tank Farm Area. It is unknown whether ACMs, lead-based paint, or other hazardous materials, such as mercury switches, are present at the Main Terminal.

Administration Area

In the administration area, five locations were identified where the soil and groundwater were potentially contaminated with total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylene compounds. Petroleum products released included diesel, jet fuel, and gasoline, which leaked from a truck fill stand, fuel line, main manifold pit, and former UST. In addition, sampling has indicated the presence of dissolved fuel oxygenates, including tributyl alcohol in groundwater, which are not attributed to on-site operations, but are suspected to have originated from the refinery located to the east or from the multiple pipelines underlying North Gaffey Street (DLA 2011).

A soil gas survey was completed along a commercial pipeline easement that traverses the administration area and extends northwestward and upslope of the area. The objective of this survey was to evaluate whether historical documented or undocumented releases from the commercial pipelines have affected groundwater in the administration area. The results of the survey provided no evidence of significant fuel releases in the pipeline easement (DLA 2012).

Adsorbed-, dissolved-, and liquid-phase hydrocarbons have been identified during subsurface investigations in the administration area. Fifty wells, including groundwater monitoring, vapor-extraction, and air sparging wells, have been installed in this area. The Los Angeles Regional Water Quality Control Board (RWQCB)required remedial action to address elevated concentrations of benzene in administration area soil and groundwater (DLA 2011). The remediation system was installed in late 2007, tested in early 2008, and is now fully operational. The remediation system has treated soil and groundwater in the vicinity of Buildings 113 and 108, and over 30,000 pounds of hydrocarbons have been extracted and treated (DLA 2012).

Extracted soil vapors are treated in an electrically-fired, thermal oxidizer, with emissions governed by a SCAQMD permit. Quarterly remediation operation and performance progress reports and semiannual groundwater monitoring reports are submitted to the RWQCB; SCAQMD monitoring records are maintained per conditions of the permit, and quarterly status reports are submitted to the SCAQMD (DLA 2012).

In October 2012, an additional field investigation indicated that a northwest/southeast-trending fault in the southern administration area appears to act as a pathway for groundwater movement to deeper depths. Groundwater gradients are toward this fault zone and groundwater is present at much greater depths south of the fault zone. Benzene concentrations reported in samples from discreet depth intervals indicate a general decline with increasing depth. In every case, the highest concentrations were reported in the samples from the shallowest depth interval (60 to 65 feet below ground surface [bgs]), in comparison to the middle depths (80 to 85 feet bgs) and the deepest interval (100 to 105 feet bgs) (The Source Group 2014).

Pump House Area

Several leaks have occurred from various pump seals in the older, out-of-service pump buildings, from a diesel pipeline in 1991, and from a 10-inch product line in September 1999. Specific information on the locations or quantities of the releases is not available. Several subsurface investigations have revealed the presence of adsorbed-, dissolved-, and liquid phase hydrocarbons in the Pump House Area. During these investigations, 81 monitoring wells were installed in the Pump House Area. In addition, a 1991 off-site fuel release from an 18-inch pipeline under North Gaffey Street, east of the northern portion of the Pump House Area, resulted in contamination of the underlying soil and groundwater (DLA 2011).

Cleanup of liquid-phase hydrocarbons, impacted soil, and groundwater is currently on-going in the Pump House Area of the DFSP San Pedro Main Terminal. Liquid-phase hydrocarbons, also known as floating product, are petroleum hydrocarbons, such as fuel, which have leaked into the subsurface and are floating on the groundwater. Remediation and monitoring efforts are under the regulatory oversight of the RWQCB, Los Angeles Region. The remediation system entails total fluid recovery wells, which extract both liquid-phase and dissolved phase petroleum hydrocarbons, bioventing wells, and vapor extraction wells. Treated groundwater is re-injected into the shallow aquifer in the Pump House Area through a series of infiltration wells. The current remediation system became fully functional in 1996 and has been modified and expanded in the intervening years. The principal remediation objective was the recovery of liquid phase hydrocarbons from areas with pre-remedial thicknesses ranging up to 15 feet. To date, 20,500 gallons of petroleum product recovered in liquid state and an additional 31,000 gallons have been destroyed via vapor extraction and bioremediation. Product thickness reduction is nearly 95 percent in all Pump House Area monitoring and recovery wells (DLA 2012; The Source Group 2015a, 2015b).

Re-injection of the treated groundwater, which began in February 2004, is taking place under a Waste Discharge Requirements permit issued by the RWQCB. Extracted soil vapors are treated in activated carbon vessels, with emissions governed by a SCAQMD permit. An annual remediation operation and performance progress report and semiannual groundwater monitoring reports are submitted to the RWQCB. Although monitoring records are maintained per conditions of the permit, reporting to the SCAQMD is not required. In the first quarter of 2015, approximately 124,025 gallons of groundwater were extracted, treated, and re-injected into the aquifer (DLA 2012; The Source Group 2015b).

Monitoring/extraction wells in the Pump House area indicate that greater than 95 percent of liquid phase petroleum product has been removed from the aquifer. Product recovery efforts would continue in this area and would be focused on the wells with the greatest product thicknesses and wells with the lowest percent reduction from historical highs (The Source Group 2015a).

Tank Farm Area

Releases of stored fuel via tank overfill, tank leakage, and pipeline leaks have been documented in the Tank Farm Area. Twenty-five monitoring wells have been installed in this area. Sixteen of those wells are

regularly sampled as part of the semiannual monitoring and sampling of groundwater in the Tank Farm Area. Although this sampling indicates that groundwater has been adversely impacted by past releases of fuel, the extent of the localized liquid-phase and dissolved-phase plumes are limited and confined to the area within the Tank Farm Area (DLA 2011).

The initial phases of remediation of JP-8 impacted soil and groundwater is currently on-going at Tank 4, in the south central Tank Farm Area. Interim remediation and monitoring efforts are under the regulatory oversight of the RWQCB. Interim remedial measures, which were initiated in the summer of 2012, consist of periodic hand bailing of liquid phase petroleum product and operation of a trailer-mounted, soil vapor extraction and treatment unit. To date, the soil vapor extraction system has removed and treated approximately 2,500 pounds (1,134 kilograms) of hydrocarbons and 20 gallons have been removed via hand-bailing from monitoring well T4-MW-1, the only well containing liquid phase petroleum product at Tank 4 (DLA 2012).

Extracted soil vapors are treated in a propane-fired thermal oxidizer, with emissions governed by an SCAQMD permit. Remediation operation and performance progress reports and semiannual groundwater monitoring reports are submitted to the RWQCB. SCAQMD monitoring records are maintained per conditions of the permit (DLA 2012).

In 2014 and 2015, soil borings were completed around the perimeter of the USTs and samples were collected adjacent to and below the base of the tanks, which extend to a depth of approximately 25 feet, to determine whether potential tank leaks have resulted in soil contamination. Samples were collected at a distance of 5 feet from the USTs, to a maximum depth of 40 feet bgs. Data gathered provide evidence of past releases from the vicinity of most of these USTs. The lateral and vertical extent of contamination was not necessarily established during the investigation, based on the limited number and depth of the soil borings; however, the contamination is believed to be limited and confined to the Tank Farm Area (The Source Group 2015c through 2015q). An additional nature and extent evaluation is scheduled to begin in fall 2015.

Installation Restoration Program Sites

In the early 1980s, the Navy Installation Restoration Program (IRP) was established to search for, investigate, and remediate Navy sites that were contaminated with chemicals and hazardous substances in the years before safe handling and waste management practices were established. In addition, sites with munitions and explosives-related contaminants were investigated. These investigations were completed in compliance with CERCLA. Areas with potential for known contamination at the DFSP San Pedro Main Terminal have been identified as legacy sites and these are being evaluated as Navy IRP sites. There are three active Operable Units (OUs) at the Main Terminal: Sites 6, 31, and 32. These three sites are described in the following paragraphs and depicted on Figure 3.7-1.

Site 6 encompasses impacts to soil in the South Ravine, which is located in the south-central portion of the DFSP San Pedro fuel facility. This ravine was also formerly used as a disposal area that included paint spills, rusted 55-gallon drums, 5-gallon and 1-gallon cans of unknown content, wooden debris, furniture, metal pipe, concrete, and tires. Soil samples collected from borings indicated the presence of heavy fuels, organic and inorganic lead, and semi-volatile organic compounds (SVOCs). A Remedial Investigation/Feasibility Study was scheduled to begin in 2012 (DLA 2011).

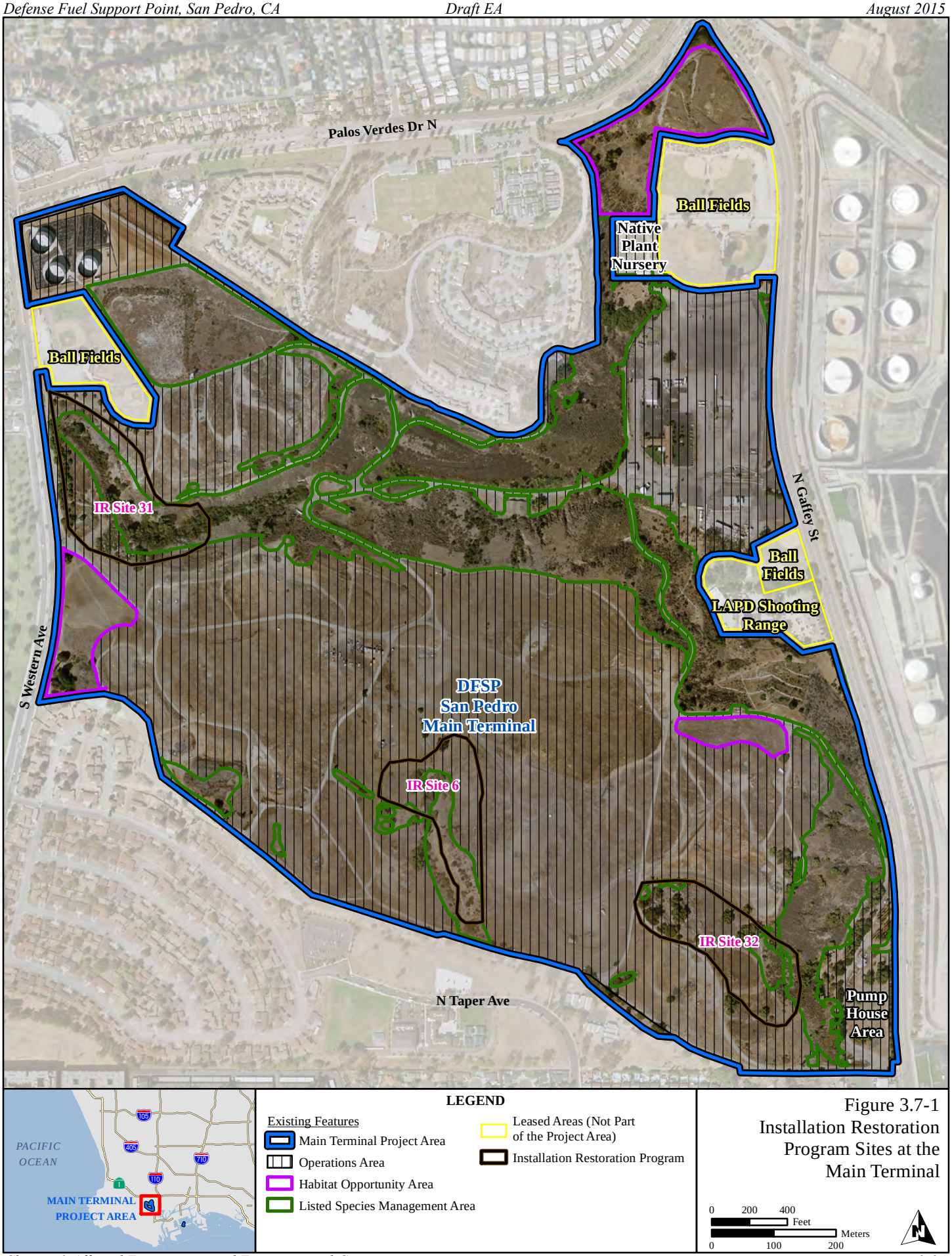


Figure 3.7-1
Installation Restoration Program Sites at the Main Terminal

Site 31 encompasses impacts to soil in the western end of the Central Ravine, which bisects the central two-thirds of the DFSP San Pedro fuel facility. This site consists of a ravine reportedly filled with civilian construction debris, including debris from a "tar factory" that existed before the Navy began using the property in 1942. Contaminants of concern in soil samples included metals, heavy fuels, SVOCs, polychlorinated biphenyls (PCBs), and pesticides. Due to limited access (the debris was covered by soil in the 1970s) and depth of groundwater over 100 feet, the site does not appear to pose an immediate risk. However, the extent of soil contamination, actual depth to groundwater, and the future potential impact to groundwater beneath the site was undetermined and further investigation was recommended (DLA 2011).

Site 32 encompasses impacts to soil in the Southeast Ravine, located in the southeastern area of the DFSP San Pedro fuel facility. The ravine was filled with construction debris around the 1970s. In addition, a diesel fuel release of 100,000 gallons, in 1979, was reported in this area. Soil sampling from borings indicated the presence of SVOCs, PCBs, organic lead, benzo(a)pyrene, and TPH as bunker fuel. Chemicals in groundwater include polycyclic aromatic hydrocarbons, volatile organic compounds (VOCs), gasoline range organics, and metals. A human health risk assessment completed in 2011 indicated the contamination is a result of a combination of disposed building materials, as well as fuel operations in the site area, surrounding Tank Farm Area, and nearby Pump House area. Three metals were identified as chemicals of ecological concern; therefore, additional site characterization has been proposed as part of a feasibility study to select or refine remedial alternatives (DLA 2011).

On-Going Monitoring and Remediation

In-situ soil and groundwater remediation is on-going at the Main Terminal. In the administration area, 50 wells, including groundwater monitoring, vapor-extraction, and air sparging wells, have been installed. In the Pump House Area, 81 monitoring wells have been installed. Cleanup of liquid phase petroleum product, impacted soil, and groundwater is currently on-going in this area. In the Tank Farm Area, 25 monitoring wells have been installed and in-situ soil and groundwater remediation is on-going. The remediation systems in these three areas include thermal oxidizers and other aboveground equipment.

Pipeline Corridor

Three fuel releases were reported from the DFM pipeline in 1982, 1983, and 1990/1991. Site investigations at the 1990/1991 release site indicated soil and groundwater contamination, including liquid-phase hydrocarbons floating on groundwater. Groundwater remediation, primarily consisting of removal of liquid-phase hydrocarbons on groundwater, was completed at least through 2011 (DLA 2011, 2012).

Operations at the ConocoPhillips refinery and tank farm, located east and across North Gaffey Street from DFSP San Pedro, have resulted in the release of petroleum fuel contaminants to soil and groundwater. Groundwater impacted by petroleum constituents and additives, including tertiary-butyl alcohol, a gasoline additive present in Pump House Area monitoring wells, extends westward to at least North Gaffey Street and onto the Pump House Area of the Main Terminal. Thus, the dissolved-phase groundwater plume extends under the pipelines in North Gaffey Street (DLA 2011).

Borings drilled on the west side of the Main Channel, in the vicinity of the pipelines, indicated the presence of crude oil soil contamination, which was apparently related to a former Chevron Marine Terminal at that location. Excavations revealed visible free product (i.e., brown liquid petroleum) among the contaminated soil (DLA 2011).

Research indicated no historical storage or use of chlorinated solvents or other hazardous substances in association with the pipelines, and no hazardous wastes appear to have been generated. The State Fire

Marshall, the pipeline oversight regulatory agency, reported that the pipelines are compliant and have complied with applicable federal, state, and local regulations. The pipelines are coated with a 1-inch thick, bituminous-based vinyl tape and tar (bitumen) that is impregnated with asbestos. No sampling data identifying the type and concentration of asbestos present in the pipeline coating were available. The exposed portions of the pipelines do not contain lead-based paint (DLA 2011).

Marine Terminal

Two fuel releases have been reported from the Marine Terminal, primarily into marine waters. However, one of the releases, a 50-gallon (0.2 cubic meters) waste fuel release, may have resulted in contaminated soil. A record search did not indicate releases of hazardous substances on-site. There are no known groundwater quality issues pertaining to released fuels or chemicals associated with the Marine Terminal. Although there are no groundwater monitoring wells on-site, the underlying groundwater would be expected to be saline and not fit for human consumption or other beneficial uses (DLA 2011).

There are no known asbestos-containing materials present at the Pier 12 Marine Terminal. Given the age of the Marine Terminal, it is unlikely that asbestos-containing materials were used in facility building materials, such as tiles, floor mastic, and insulation. However, lead-based paint was discovered at the Marine Terminal, which would subject these surfaces to Cal/OSHA exposure assessment requirements when disturbed for construction or demolition purposes (DLA 2011).

3.7.2.3 Management of Hazardous Materials and Wastes and Petroleum, Oil, and Lubricants

DFSP San Pedro operates in accordance with an Operation, Maintenance, Environmental, and Safety (OMES) Plan (USACE 2013), which satisfies the requirements for a manual required by 49 Code of Federal Regulations (CFR) 195.402 and 33 CFR 154.300. The OMES Plan is designed to comply with federal regulations regarding transfer of bulk oil and hazardous materials, marine terminal operations, marine terminal pipelines, and OSHA standards. The OMES Plan also includes U.S. Government and DoD directives regarding operation and maintenance of petroleum systems, operation and maintenance of cathodic protection systems, and quality assurance/surveillance for petroleum products. The OMES Plan includes environmental protection management protocols, including spill response, stormwater and NPDES permit monitoring, hazardous materials/waste management, compliance cleanup, discharge containment, and emergency response actions.

DFSP San Pedro operates in accordance with a Storm Water Pollution Prevention Plan (SWPPP) (DLA 2013b) and Oil and Hazardous Substance Integrated Contingency Plan (DFSP San Pedro 2013). The SWPPP is designed to address water quality issues associated with industrial discharges and stormwater discharges. The Oil and Hazardous Substance Integrated Contingency Plan is an operational, single-source document designed to meet the combined regulatory requirements for an USEPA Facility Response Plan. The plan also addresses the emergency planning, notification, and response actions directed by RCRA; CERCLA; the Emergency Planning and Community Right-to-Know Act; and the OSHA. The plan is consistent with the National Contingency Plan and the Area Contingency Plan.

DFSP San Pedro also operates in accordance with a Hazardous Material, Hazardous Waste, and Universal Waste Management Plan (The Source Group 2013). This plan establishes uniform policies, procedures, and responsibilities for the receipt, management, storage, labeling, disposal, and handling of hazardous materials, hazardous wastes, and universal waste and includes the requirements for environmental compliance with hazardous waste regulations. This plan applies to the Main Terminal and the Pier 12 Marine Terminal and must be followed by all Government, contractor, and tenant personnel that handle hazardous materials, hazardous waste, or universal waste on these premises.

The Department of Navy diverts as much demolition waste from landfills as possible using demolition deconstruction techniques to reduce, reuse, or recycle the various types of waste. Demolition material is recycled as feasible and, if not, categorized and sent to an appropriate disposal facility. Any required asbestos, lead, or PCB abatement is conducted before demolition activities begin. The removal methods, health and safety procedures, and disposal methods conform to the regulations of federal, state, and local regulatory agencies.

3.7.3 ENVIRONMENTAL CONSEQUENCES

Hazardous materials and waste impacts are primarily related to the health and safety of workers. Hazardous materials and waste impacts would be considered significant in the event that workers would be exposed to contaminated soil, petroleum products, petroleum waste, ACMs, lead-based paint, PCBs, or other hazardous waste. Hazardous materials and waste related impacts would also be considered significant in the event that abandonment in-place of underground infrastructure and demolition of aboveground infrastructure would damage or destroy monitoring wells, remediation wells, or aboveground remediation infrastructure.

3.7.3.1 Alternative 1

Complete Closure with Partial Demolition

Under Alternative 1, aboveground infrastructure would be demolished at the DFSP San Pedro Main Terminal and Marine Terminal; however, most of the off-site pipelines are underground. These off-site pipelines, as well as all underground pipelines located at the Main Terminal and Marine Terminal, would be partially abandoned in place in accordance with UFC 3-460-01, Design: Petroleum Fuel Facilities, which provides guidance on the rehabilitation, deactivation, or closure of fueling facilities. Chapter 14 of this guidance lists the requirements for closing a fueling facility. As described in Section 1.2.3, the ASTs and USTs were cleaned and isolated/secured, and the pipelines, both on-site and off-site, were cleaned and isolated/secured as part of temporary closure. No additional cleaning would be needed.

Based on environmental site assessments completed at the Main Terminal and documented releases at the Main Terminal and Marine Terminal, near surface soils have been locally impacted by petroleum hydrocarbons and hazardous substances. Figure 3.7-2 shows the location of proposed demolition activities associated with Alternative 1 in relation to the IRP sites identified at the Main Terminal. Site 31 consists of a contaminated debris filled ravine that was subsequently covered with soil; therefore, it is unlikely that proposed surface infrastructure to be demolished in the vicinity of this site would encounter contaminated soil associated with the dumped debris. However, Site 32, another contaminated debris filled canyon in the southeast portion of the Main Terminal, was also the site of a 100,000-gallon fuel release in 1979. Therefore, near-surface soils may be impacted by petroleum hydrocarbons in the vicinity of proposed demolition sites located immediately adjacent to Site 32. Site 6 is a contaminated debris filled ravine that underlies a proposed demolition site. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages.

Demolition of aboveground infrastructure would include removal of concrete foundations buried into near-surface soils. In addition, approximately 9,600 linear feet of on-site underground pipeline would be demolished (excavated and removed). As previously discussed, the Navy would divert as much demolition waste from landfills as possible using demolition deconstruction techniques to reduce, reuse, or recycle the various types of waste. Demolition material would be recycled as feasible and if not, categorized and sent to an appropriate disposal facility.

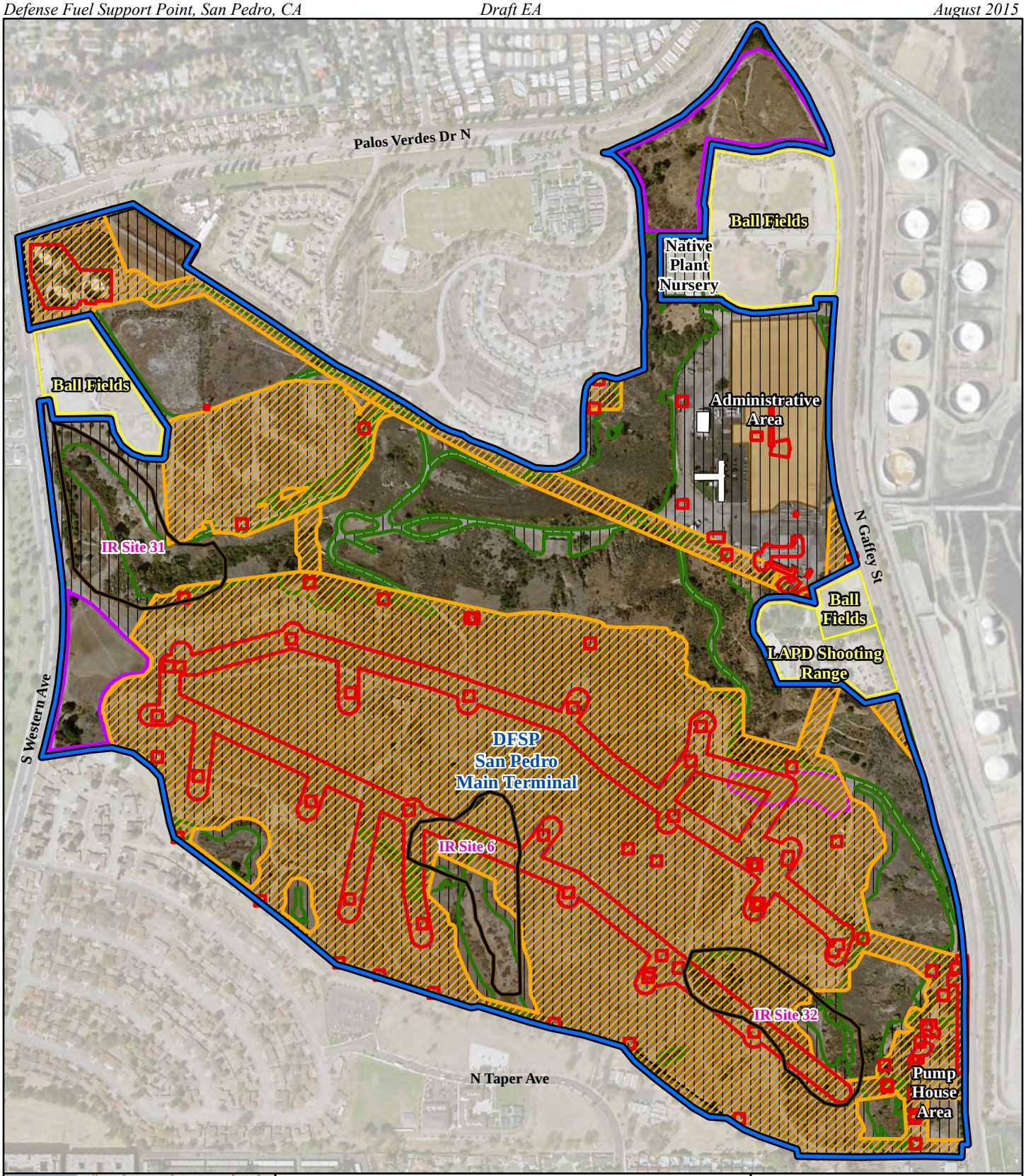


Figure 3.7-2
Alternative 1 and Installation Restoration Program Sites at the Main Terminal

Contamination may be present in soils removed to expose foundations and underground pipelines. In the absence of proper controls, exposure of on-site workers to contaminated soil could result in adverse health and safety impacts. However, the potential for adverse impacts would be addressed by the identified impact avoidance and minimization measures. Soil and groundwater contamination has been found during the temporary closure process. A follow-on site investigation and restoration project has been initiated. If any additional soil or groundwater contamination is found during the closure process, a follow-on site investigation and restoration project would be initiated.

Soil remediation would potentially involve excavating petroleum discolored/odorous soil and then confirming that the contaminated soil has been removed by sampling the sidewalls and base of the excavation. In the event that laboratory results indicate that contaminated soil remains, additional excavation, sampling, and laboratory analysis would be completed until all contaminated soil has been removed. Potentially contaminated soil would be segregated from clean soil, stockpiled, and sampled to characterize the soil for proper disposal. Petroleum contaminated soil is typically disposed in Class II landfills; however, in the event that laboratory results characterize the soil as hazardous waste, the soil would likely be disposed at a Class I landfill. Alternatively, contaminated soil could possibly be remediated in-situ (i.e., in-place), using methods such as soil vapor extraction, which essentially involves establishing a vacuum through the subsurface such that contaminated vapors are extracted from the soil and are sent through a filter before being emitted to the atmosphere.

Partial abandonment in-place of underground infrastructure and partial demolition of aboveground infrastructure would have no impact on monitoring wells, remediation wells, and aboveground remediation infrastructure. However, 9,600 feet of underground pipeline and 25 valve pits would be demolished throughout the Main Terminal. Some of these pipelines may be located near aboveground remediation equipment and/or in proximity to subsurface wells. Pavement excavation, soil excavation, and pipeline removal activities in the vicinity of remediation equipment and wells would be carefully planned to avoid potential damage to remediation equipment.

There are no known ACMs present at the Main Terminal or the Marine Terminal. However, ACMs are present in pipeline coating along the Pipeline Corridor. Testing would be completed before demolition of all structures to determine whether ACMs are present. In the event that ACMs are present, abatement work would be completed in accordance with the DFSP San Pedro Hazardous Material, Hazardous Waste, and Universal Waste Management Plan, as well as applicable SCAQMD, Cal/OSHA, OSHA, and USEPA regulations. In addition, there is no known lead-based paint at the Main Terminal or along the Pipeline Corridor. However, lead-based paint at the Marine Terminal would subject these surfaces to OSHA exposure assessment requirements when disturbed for demolition purposes. Testing would be completed before demolition of all structures to determine whether lead-based paint is present. The presence of other types of hazardous materials, such as discarded mercury switches, at the Main Terminal is unknown. If hazardous materials are encountered during demolition activities at the Main Terminal, they would be handled and disposed of in accordance with the DFSP San Pedro Hazardous Material, Hazardous Waste, and Universal Waste Management Plan and applicable regulations.

Compliance with the DFSP San Pedro Hazardous Material, Hazardous Waste, and Universal Waste Management Plan, OSHA, and other applicable regulatory exposure requirements during demolition would reduce the likelihood of adverse impacts to worker health and safety in association with ACMs and lead-based paint.

Post-closure

Under Alternative 1, no fuels would be stored or transferred to/from DFSP San Pedro. As such, there would be no potential for inadvertent releases of petroleum products or hazardous materials. On-going site assessments and remediation activities would continue in accordance with applicable requirements of the CUPA, RWQCB, DTSC, and USEPA. Compliance with such applicable regulatory requirements may result in additional site remediation and a reduction in petroleum and hazardous waste, such that beneficial impacts would occur during the post-closure period.

Impact Avoidance and Minimization Measures

Impact avoidance and minimization measures associated with hazardous materials and wastes are listed in Appendix B.

Summary

Under Alternative 1, all infrastructure would be closed, demolished, and/or abandoned in place in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites. In addition, underground pipelines and valve pits to be demolished may be located beneath aboveground remediation equipment and/or in proximity to subsurface wells. However, implementation of the identified impact avoidance and minimization measures, in conjunction with compliance with all applicable legal requirements, would prevent risk of human exposure to contamination and would protect equipment and facilities associated with on-going environmental remediation efforts at the Main Terminal. Following closure, there would be no potential for inadvertent releases of petroleum or hazardous materials as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue. Therefore, implementation of Alternative 1 would result in no significant impact related to hazardous materials and wastes.

3.7.3.2 Alternative 2

Complete Closure with Minimal Demolition

Figure 3.7-3 shows the location of proposed demolition activities associated with Alternative 2 in relation to the IRP sites identified at the Main Terminal. Under Alternative 2, closure impacts would be as described for Alternative 1; however, because the extent of demolition and earth-moving activities under Alternative 2 would be less than Alternative 1, the potential for ground-disturbing activities to encounter potentially contaminated soil would be less. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages. Similarly, less demolition would result in less impacts related to disturbance of potential ACMs and lead-based paint. Under Alternative 2, off-site, aboveground pipeline segments would be demolished and off-site, underground pipelines would be secured and abandoned in place. Demolition of off-site, aboveground pipelines could potentially damage off-site remediation equipment and wells, although it is expected that damage to remediation equipment could be avoided through careful planning and implementation measures.

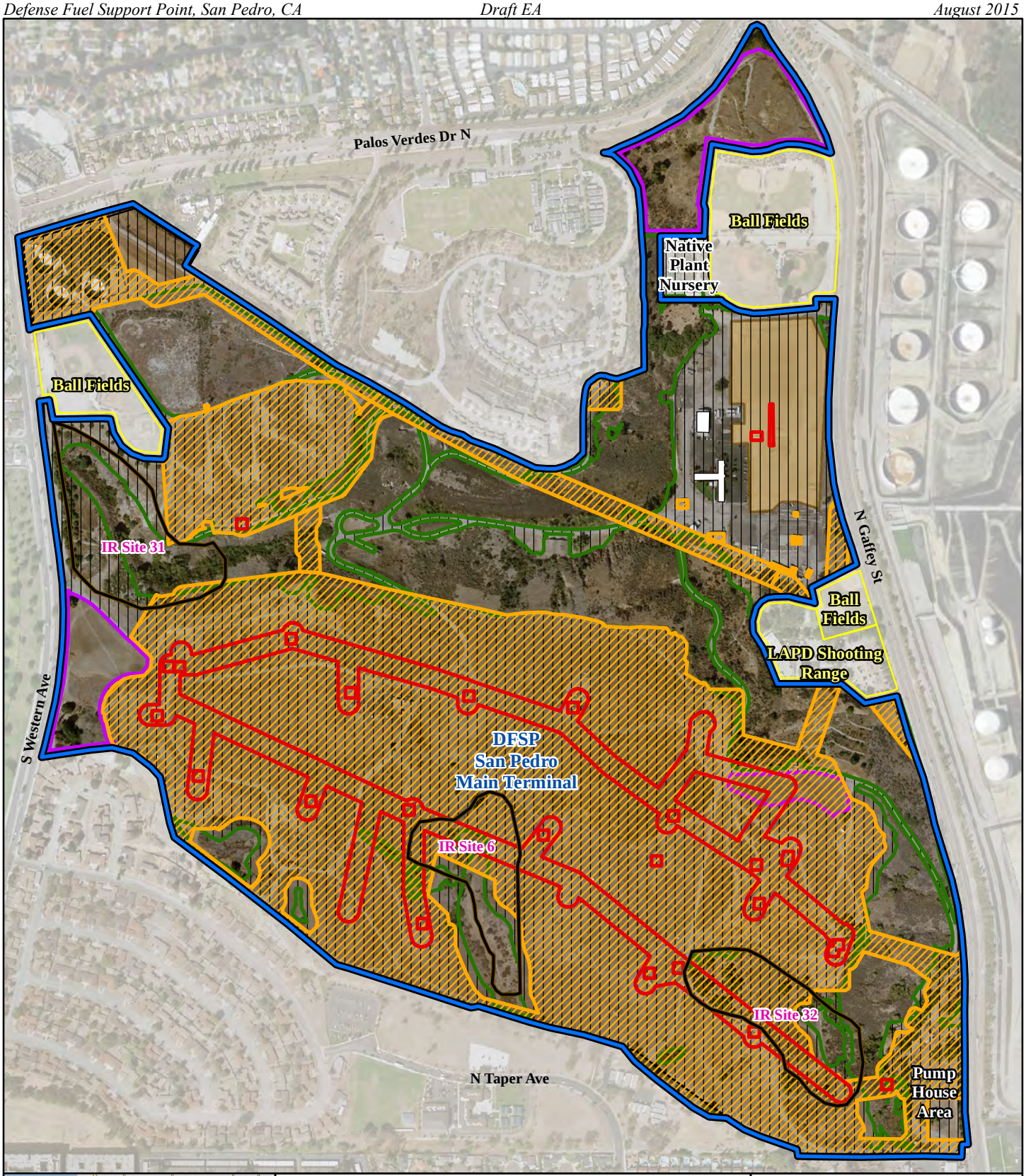


Figure 3.7-3
Alternative 2 and Installation Restoration Program Sites at the Main Terminal

Post-closure

Under Alternative 2, post-closure impacts would be the same as described for Alternative 1.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 2.

Summary

Under Alternative 2, all infrastructure would be closed, demolished, and/or abandoned in place in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites. In addition, pipelines and valve pits to be demolished may be located beneath aboveground remediation equipment and/or in proximity to subsurface wells. However, implementation of the identified impact avoidance and minimization measures, in conjunction with compliance with the DFSP San Pedro Hazardous Material, Hazardous Waste, and Universal Waste Management Plan and all applicable legal requirements, would prevent risk of human exposure to contamination and would protect equipment and facilities associated with on-going environmental remediation efforts at the Main Terminal. Following closure, there would be no potential for an inadvertent release of petroleum or hazardous materials as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue. Therefore, implementation of Alternative 2 would result in no significant impact related to hazardous materials and wastes.

3.7.3.3 Alternative 3

Complete Closure with Complete Demolition

Figure 3.7-4 shows the location of proposed demolition activities associated with Alternative 3 in relation to the IRP sites identified at the Main Terminal. Under Alternative 3, proposed demolition activities would occur in numerous areas of documented releases. In addition, Navy IRP sites underlie areas of proposed demolition, including Sites 6, 31, and 32. Based on the greater amount of disturbed ground areas, impacts would be similar in nature but greater in extent than those described for Alternative 1. Notably, based on the large size of the USTs (2.1 million gallons), demolition of underground infrastructure would include removal and temporary stockpiling of relatively large quantities of potentially contaminated soil to expose the pipelines and USTs for removal. In addition, contaminated soil may be present beneath the removed USTs and pipelines. Other impacts associated with implementation of Alternative 3 would be as described for Alternative 1, including protocols related to excavation, segregated stockpiling, sampling, and disposal of contaminated soil. These activities would be completed in accordance with CUPA and RWQCB, Los Angeles Region requirements.

Post-closure

Under Alternative 3, post-closure impacts would be the same as described for Alternative 1.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 3.

Figure 3.7-4
Alternative 3 and Installation Restoration Program Sites at the Main Terminal

Summary

Under Alternative 3, all infrastructure would be closed and removed in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites, or other currently unknown contaminated areas. While the nature of impacts associated with Alternative 3 would be similar to those for Alternative 1, the extent of impacts for Alternative 3 would be greater based on the greater amount of disturbed ground area. Notably, based on the large size of the USTs (2.1 million gallons), demolition of underground infrastructure would include removal and temporary stockpiling of relatively large quantities of potentially contaminated soil to expose the pipelines and USTs for removal. In addition, contaminated soil may be present beneath the removed USTs and pipelines. However, implementation of the identified impact avoidance and minimization measures, in conjunction with compliance with the DFSP San Pedro Hazardous Material, Hazardous Waste, and Universal Waste Management Plan and all applicable legal requirements, would prevent risk of human exposure to contamination and would protect equipment and facilities associated with on-going environmental remediation efforts at the Main Terminal. Following closure, there would be no potential for inadvertent releases of petroleum products or hazardous materials as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue. Therefore, implementation of Alternative 3 would result in no significant impact related to hazardous materials and wastes.

3.7.3.4 Alternative 4

Partial Closure with Minimal Demolition

Figure 3.7-5 shows the location of proposed demolition activities associated with Alternative 4 in relation to the IRP sites identified at the Main Terminal. Under Alternative 4, proposed demolition and partial closure activities would be as described for Alternative 1, albeit at a slightly reduced level as less infrastructure would be demolished or closed. If the USTs are filled with soil, the soil needed to fill the USTs would be obtained from within the Operations Area, avoiding Listed Species Management Areas, Habitat Opportunity Areas, IRP sites, and ephemeral drainages.

Petroleum, oil, and lubricants would be used during reinstallation, repair, and upgrades of various infrastructure. Inadvertent releases of such substances could result in localized soil contamination; however, repair and reactivation activities would be implemented in accordance with applicable plans (i.e., the SWPPP, OMES Plan, Oil and Hazardous Substance Integrated Contingency Plan, and the Hazardous Material, Hazardous Waste, and Universal Waste Management Plan) to minimize the potential for an inadvertent release.

Partial Operation

Under Alternative 4, renewed operation of fuel operations would be reduced in comparison to pre-temporary closure volume/activity. Operations would be conducted in accordance with protocols established in the existing OMES Plan, SWPPP, Oil and Hazardous Substance Integrated Contingency Plan, and Hazardous Material, Hazardous Waste, and Universal Waste Management Plan. On-going site assessments, monitoring, and remediation activities would continue.

Impact Avoidance and Minimization Measures

The same impact avoidance and minimization measures proposed for Alternative 1 as presented in Appendix B would apply to Alternative 4.

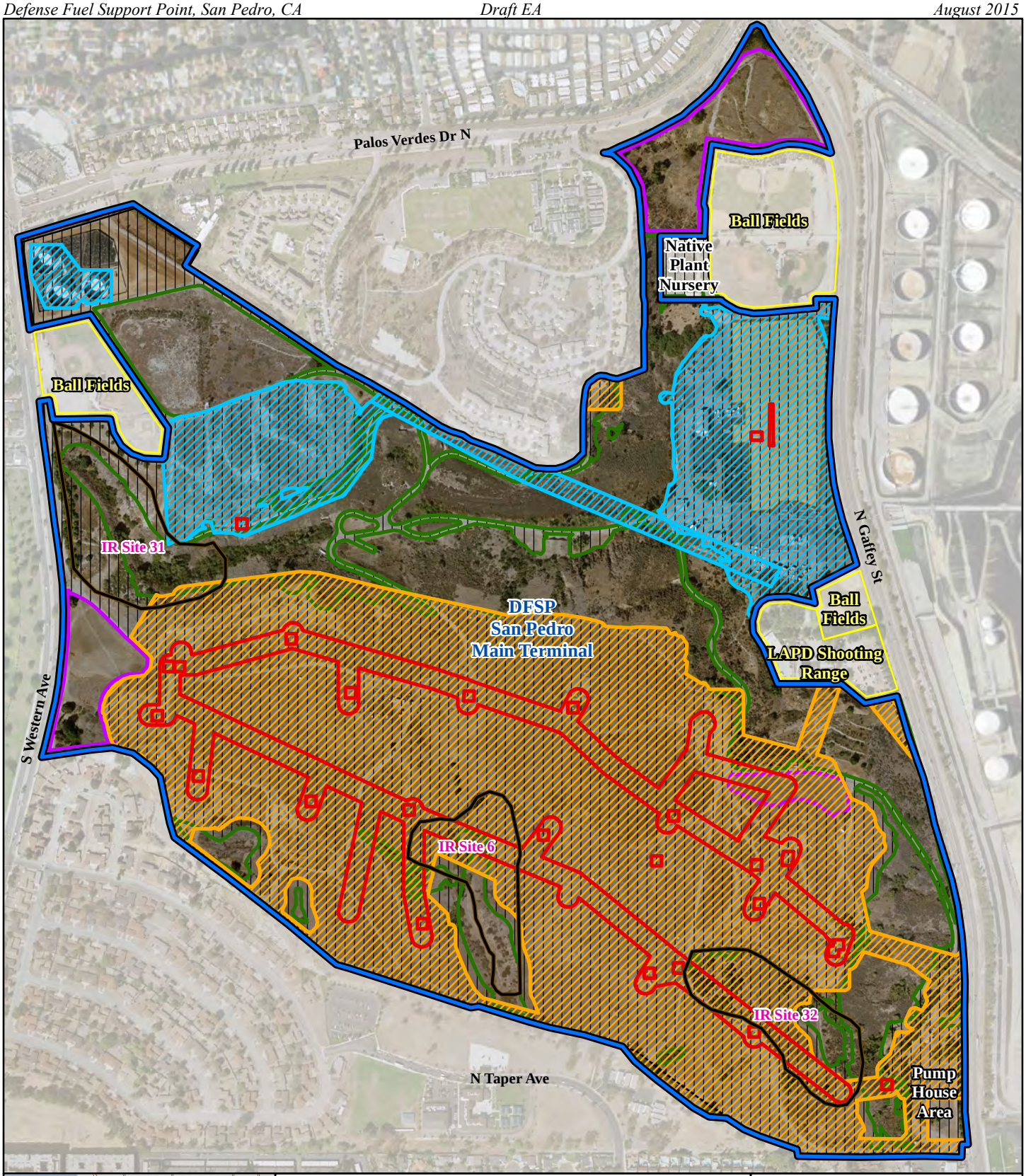


Figure 3.7-5
Alternative 4 and Installation Restoration Program Sites at the Main Terminal

Summary

Under Alternative 4, the identified partial infrastructure would be closed, demolished, and/or abandoned in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites. Existing plans (see Section 3.7.2.3) would be followed to minimize the potential for an inadvertent release. On-going site assessments and remediation activities would continue. Implementation of the identified impact avoidance and minimization measures, in conjunction with compliance with the DFSP San Pedro Hazardous Material, Hazardous Waste, and Universal Waste Management Plan and all applicable legal requirements, would prevent risk of human exposure to contamination and would protect equipment and facilities associated with on-going environmental remediation efforts at the Main Terminal. Therefore, implementation of Alternative 4 would result in no significant impact related to hazardous materials and wastes.

3.7.3.5 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, petroleum, oil, and lubricants would be used during reinstallation, repair, and upgrades of various infrastructure. Inadvertent releases of such substances could result in localized soil contamination; however, repair and reactivation activities would be implemented in accordance with applicable plans (e.g., the DFSP San Pedro SWPPP and the DFSP San Pedro Hazardous Material, Hazardous Waste, and Universal Waste Management Plan) to minimize the potential for an inadvertent release.

Presumed Eventual Resumption of Full Operations

Under the No Action Alternative, it is presumed that fuel operations would return to pre-temporary closure conditions. Operations would be conducted in accordance with the existing OMES Plan, SWPPP, Oil and Hazardous Substance Integrated Contingency Plan, and Hazardous Material, Hazardous Waste, and Universal Waste Management Plan. On-going site assessments and remediation activities would continue.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Summary

Under the No Action Alternative, it is presumed that existing infrastructure would be repaired and reactivated in accordance with applicable regulations. Existing plans (see Section 3.7.2.3) would be followed to minimize the potential for an inadvertent release. On-going site assessments, monitoring, and remediation activities would continue. Implementation of the identified impact avoidance and minimization measures, in conjunction with compliance with all applicable plans and legal requirements, would prevent risk of human exposure to contamination and would protect equipment and facilities associated with on-going environmental remediation efforts at the Main Terminal. Therefore, implementation of the No Action Alternative would result in no significant impact related to hazardous materials and wastes.

3.8 CULTURAL RESOURCES

3.8.1 DEFINITION OF RESOURCE

Cultural resources comprise districts, buildings, sites, structures, areas of traditional use, or objects with historical, architectural, archeological, cultural, or scientific importance. They include archeological resources (both prehistoric and historic), historic architectural resources (physical properties, structures, or built items), and traditional cultural resources (those important to living communities, including Native Americans, for religious, spiritual, ancestral, or traditional reasons).

The National Historic Preservation Act (NHPA) of 1966, as amended, establishes policy and procedures regarding historic properties. Federal regulations define historic properties to include prehistoric and historic sites, buildings, structures, districts, or objects listed or eligible for listing on the National Register of Historic Places (NRHP), as well as artifacts, records, and remains related to such properties (NHPA, as amended [Section 306108 of Title 54 USC]). Compliance with Section 106 of the NHPA, which directs federal agencies to take into account the potential effects of a federal undertaking on historic properties that may be present, is outlined in the Advisory Council on Historic Preservation's regulations, Protection of Historic Properties (36 CFR Part 800).

3.8.2 AFFECTED ENVIRONMENT

The Area of Potential Effects (APE) of an undertaking is defined at 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist."

The APE includes all areas that may be directly or indirectly impacted by activities associated with the proposed complete or partial closure of DFSP San Pedro. The APE for the current undertaking includes the Main Terminal, the Marine Terminal (Pier 12), and the locations of the pipelines connecting the Main Terminal to the Marine Terminal. By virtue of their location (almost entirely underground) and the proposed activity, the off-site pipelines are not discussed or analyzed in this section.

For historic architectural resources, the APE also includes the viewshed of any architectural historic property that could be affected by the alternatives. For Native American resources, the APE includes the construction footprint and the viewsheds of any traditional cultural resources that could be affected by construction.

3.8.2.1 Prehistoric and Historic Setting

Prehistory

Previous studies at DFSP San Pedro have followed the cultural chronology proposed by William Wallace in 1955 (e.g., DLA 2008). Archaeologists have updated the Wallace model over the succeeding decades, but the Wallace model still offers a general timeline for the prehistory of the region (Table 3.8-1).

Table 3.8-1. Prehistoric Chronological Sequences of the Los Angeles Basin (after Wallace 1955)

Horizon 1	Horizon 2	Horizon 3	Horizon 4
Early Man	Millingstone	Intermediate	Late Prehistoric
Pre-7000 Before Present (BP)	7000 BP – 3000 BP	3000 BP – 1000 BP	1000 BP – 244 BP

Early Man

Wallace (1955) describes the Early Man Horizon as being typified by a hunting culture with large projectile points and crescentics (notched scrapers). The hunting culture of the Early Man Horizon is often associated with the Clovis culture of North America from the Paleoindian Period (12,000-10,000 Before Present [BP]). The Clovis culture is indicated by the presence of fluted (e.g., Clovis) projectile points. Many Clovis Era sites are often ephemeral and only associated with lithic surface manifestations, making dating of these Early Man sites very difficult.

Millingstone

The Millingstone Horizon represents a period of population growth throughout southern California. As a result of the population increase, the archaeological record indicates a transition from a subsistence strategy heavily reliant on hunting, to a gathering strategy (Glassow et al. 2007). Groundstone artifacts including manos, metates, soapstone, and cogstones became more prevalent during the Millingstone Horizon (Padon 1995). Few projectile points are found at sites originating from the Millingstone Horizon, suggesting a greater emphasis on gathering and plant food processing.

Intermediate

Large, stemmed projectile points appear during the Intermediate Horizon, indicating a shift from gathering back to hunting. Greater numbers of marine resources appear in coastal sites, with deep-sea fish remains present. The mortar and pestle also replace the mano and metate during the Intermediate Period, suggesting a shift from hard-shell seeds to acorns from California oak trees (Padon 1995). Tools identified at Intermediate sites include shellfish hooks and bone harpoon barbs. Faunal remains from Intermediate sites may include whale, sea lions, seals, sea otter, porpoise (Weinman and Stickel 1978). Artiodactyl (e.g., deer) remains are also present, suggesting skill at both marine and terrestrial food procurement.

Late Prehistoric

The cultural systems present at the time of European contact developed during the Late Prehistoric Period. The Late Prehistoric Horizon included new cultural practices reflecting wide-ranging subsistence practices and an increase in ceremonial artifacts, personal adornment artifacts (i.e., jewelry), and trade items such as obsidian and steatite (Del Chario 1982). The bow and arrow were also introduced to the region during the Late Prehistoric Period, as evidenced by the presence of smaller projectile points (Padon 1995). The introduction of the bow and arrow and emphasis on material culture may have coincided with the immigration of the Takic-speaking Tongva people, who inhabited the Los Angeles Basin until European contact (Padon 1995).

Ethnography

The survey area is within the ethnographic Gabrielino (Tongva) territory. Before European contact, the Gabrielino occupied the Los Angeles Basin, northern Orange County, Santa Catalina Island, and San Clemente Island. Subsistence strategies included both coastal and inland sources, depending on the seasons, with people occupying permanent and semi-permanent villages. The Gabrielino employed temporary camps while on hunting trips and exploiting marine resources (Padon 1995). Each Gabrielino village acted as an autonomous unit with its own village headman and shaman.

History

In 1542, Juan Rodriquez Cabrillo discovered the San Diego and San Pedro Bays. Cabrillo described San Pedro as an excellent harbor with good country including many plains and groves of trees (DLA 2008).

The Spanish made few early attempts to colonize areas north of San Diego, then known as Alta California. After Russian incursions along the northern coast into Alaska and Oregon, the Spanish renewed their interest in settling Alta California (DLA 2008).

In 1766, Spain ordered Jose de Galvez to Mexico to oversee expeditions into California. The goal of the expeditions was to lead groups of ships north along the California coast to "rediscover the people of the bays of San Diego and Monterey" (DLA 2008). In July of 1769, the first mission at San Diego was established. One month later, the explorers discovered an Indian village named Yang-na and renamed the settlement as Nuestra Senora la Reina de Los Angeles (DLA 2008). The expedition continued north to what is now the San Francisco Bay and then returned to San Diego in January of 1770.

In 1770, Father Junipero Serra was commissioned to establish a mission system extending from San Diego to San Francisco. The mission San Gabriel Archangel was founded in 1771. In 1821, Mexico won independence from Spain. By 1825, California became a formal territory of the Republic of Mexico. The Mexican government attempted to control access into the territory, but keeping foreign settlers out of the region proved difficult. Groups from the U.S. began settling the area as early as 1841. In May of 1846, the U.S. declared war on Mexico. The Mexican-American War ended on February 2, 1848, with the signing of the Treaty of Guadalupe Hidalgo. As a result of the treaty, California was transferred to the U.S.

After occupation of California by the U.S., military supply depots and barracks were constructed in Los Angeles and San Pedro to supply troops stationed in the area. In an effort to make Los Angeles more of a shipping hub for the west coast, harbors were constructed in Los Angeles and San Pedro, followed by a transcontinental railroad in 1869 (DLA 2008). In 1873, the first orange groves were planted in Los Angeles, making agriculture a primary industry for the region. The established railway helped transport fruit to eastern markets. Soon after, other agricultural industries such as dairy, ranching, and wineries sprang up in and around Los Angeles. By 1910, Los Angeles was the nation's agricultural leader.

The DFSP San Pedro fuel facility was established in 1942, after the Japanese attack on Pearl Harbor (DLA 2008). San Pedro was selected to house a bulk fuel depot because of its proximity to port and refinery centers.

On October 30, 1942, 485 acres (916 hectares) of land around the current Main Terminal was granted for the depot. In addition, a lease was being developed for wharf space and a fueling terminal. Excavation of the bluff overlooking Gaffey Street for installation of 20 underground storage tanks was initiated in July 1942. Each underground fuel tank is 20 feet high with a diameter of 135 feet and a capacity of 50,000 barrels (DLA 2008). Following construction, the roofs and exteriors of the tanks were reinforced with poured concrete and the tanks were reburied. Six pump houses connected directly to the tanks were also installed in 1942. In addition, the depot pipelines were connected to nine major commercial oil companies equipped to fill the depot tanks with fuel as needed. Access by construction workers was via a network of dirt roads. As part of this road network, several earthen dams with culverts were constructed within ravines to allow more efficient access between construction sites (McLeod and Whetsell 1999).

3.8.2.2 Cultural Resources within the Project Area

A cultural resources records search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System at California State University, Fullerton, on January 27, 2015. This records search included all available maps, reports, and site forms within a 1-mile (1.6-kilometer) radius of the APE. The following provides a summary of those findings.

Archeological Survey Coverage

Based on the above records search and data review, there were a total of 78 cultural resources investigations within a 1-mile (1.6-kilometer) radius of the APE. Of these studies, six covered portions of the APE. The studies include Greenwood and Associates (1977), Beroza (1980), Del Chario (1982), Brock et al. (1983), and Weide (1993).

The entire DFSP San Pedro was surveyed for cultural resources in 1998 (McLeod and Whetsell 1999). This study located no new prehistoric or historic sites (McLeod and Whetsell 1999). The 1998 study also evaluated two prehistoric sites (see below) and found that they were ineligible for listing in the NRHP (McLeod and Whetsell 1999).

For the present analysis, the Navy completed a Phase I cultural resources survey of the Main Terminal at DFSP San Pedro (Leidos 2015). No previously unrecorded prehistoric or historic cultural resources were identified during this study.

Archeological Resources

Two previously recorded archaeological sites (CA-LAN-117 and CA-LAN-289) are mapped within the current APE. These sites are described below.

Site CA-LAN-117 was recorded in 1952 based on information provided by D. L. True (no date) (Eberhart 1952). The record provides only a general location of the site with directions given from nearby roads. No information is provided concerning site components, and the SCCIC did not provide any report associated with the recording of CA-LAN-117. During the 2015 study (Leidos 2015), archeologists investigated the site location provided by the SCCIC. Ground visibility in the area was extremely poor at the time of the survey with approximatively 90 percent vegetation coverage. Three shell fragments were noted where the site would be, but no other cultural components could be identified. Based on the lack of previously recorded data, it is unclear if the shell fragments represent any of the original site constituents.

Site CA-LAN-289 was recorded in 1960 (D. L. True 1960). The site record identifies a camp area with scattered artifacts including manos and metates. No midden was apparent in the site area. The site record provides a general location of the site with directions to the site area from nearby roads. No map was included with the site record. The SCCIC did not provide any report associated with the recording of CA-LAN-289. During the 2015 study (Leidos 2015), archeologists investigated the site location provided by the SCCIC, which currently lies immediately west of a subsurface storage tank. Two concrete drainage ditches and two paved roads also pass through the probable original site boundary. After an intensive investigation, no artifacts could be identified within the previously established site boundary.

In addition to the two previously recorded archaeological sites, two isolates were identified during the 2015 investigation (Leidos 2015). These isolated artifacts consisted of a single ceramic stoneware fragment and possible waste flakes. Isolates do not qualify as historic properties and thus are ineligible for the NRHP. Based on the results of the most recent studies at DFSP San Pedro, the Navy finds that there are no NRHP-eligible archaeological sites at DFSP San Pedro. The State Historic Preservation Officer (SHPO) has not commented on the Navy's determinations of eligibility. The Navy is in consultation with the SHPO.

The Integrated Cultural Resources Management Plan (ICRMP) (DLA 2008) determined that extensive disturbance characterizes the area; although some archaeological resources have been identified, they are in disturbed contexts or have not been relocated. The ICRMP concluded "the sites no longer exist or the remnants do not possess any contextual integrity or association to warrant any further consideration. This

research did not indicate the potential for historic archaeological resources within the DFSP San Pedro." However, there are at least 25 archeological sites within 1 mile of DFSP San Pedro, so that if undisturbed sediments are located on DFSP San Pedro, it is possible that archaeological sites could be found, and that they could be considered eligible for listing on the NRHP.

Historic Buildings and Structures

Resource P-19-190005 consists of the DFSP San Pedro Historic District. The facilities associated with the installation (built between 1942 and 1955) were recorded in 1998 as a historic district (McLeod and Whetsell 1999). According to the 1999 study, the District was found to retain exceptional integrity in its structures' setting, workmanship, and design from for its role as a fuel depot during World War II. The District was recommended as eligible for the NRHP under Criterion A and Criterion C. The SHPO concurred with the findings of the 1999 study.

A re-evaluation of the NRHP eligibility of DFSP San Pedro was conducted in 2014 (Sproul 2014). The study found that the buildings and structures at DFSP San Pedro built before 1946 do not meet the criteria for listing in the NRHP as a historic district. Under Criterion A, the facility does not have a *specific and important association* with a historic trend or event. Under Criterion B, the facility has no known specific association with a person or persons important to the history of the Navy, San Pedro, the state of California, or the nation in general. The buildings and structures do not appear to embody the *distinctive characteristics* of a type, period, or method of construction, or represent the work of a master architect and, therefore, do not appear to be eligible under Criterion C. Finally, because the buildings and structures represent property types typical to military facilities of similar age and function, they are not likely to yield significant new information in history and, therefore, do not appear to be eligible under Criterion D. In addition, the study considered questions related to the potential for eligibility related to Cold War-era themes and found no basis for NRHP eligibility under standard criteria or criteria consideration G.

In summary, Sproul (2014) found that while DFSP San Pedro provided an important function to the Navy during World War II and the Cold War, its specific historic association and design qualities are of secondary importance when seen in context. The underground storage tanks and associated buildings at DFSP San Pedro were based on designs replicated at several facilities in California and across the nation during World War II and their historic associations are limited to generalized logistical support during World War II. There are no similar installations in California that rise to the level of significance necessary for inclusion in the NRHP under Criterion A or for associations with Cold War-era themes.

Sproul (2014) concluded that the historical, architectural, and engineering characteristics of World War II-era fuel supply storage and delivery-related properties at DFSP San Pedro are insufficient to be considered eligible for the NRHP under Criterion C. This finding pertains particularly to the guard/watchtower called out in the 1998 U.S. Forest Service report as individually eligible under Criterion C. Finally, the Sproul (2014) study recommended that the DFSP San Pedro facility be removed from consideration as an eligible historic district and that the guard/watchtower be removed from consideration as an individually eligible property. Based on the results of the most recent investigations, the Navy has found that there is no NRHP-eligible district, and no individually NRHP-eligible historic property at DFSP San Pedro. The SHPO has not commented on this revised finding.

Traditional Cultural Resources

There are no known traditional cultural resources within or adjacent to the APE.

3.8.3 ENVIRONMENTAL CONSEQUENCES

NEPA requires an assessment of the impacts from federal actions on cultural resources. In addition, Section 106 of the NHPA requires that federal agencies take into account the effects of their undertakings on historic properties that may potentially be present. Impacts on cultural resources are considered potentially significant for purpose of NEPA if a historic property, as defined under 36 CFR 800.16 and 36 CFR 60.4, would be physically damaged or altered, isolated from the context considered significant, or affected by project elements that would be out of character with the significant property or its setting, to the extent that the historic property's NRHP eligibility would be affected.

The Navy is seeking a finding of "no historic properties affected" for the Proposed Action.

3.8.3.1 Alternative 1

Complete Closure with Partial Demolition

Proposed partial demolition activities at the Main Terminal associated with Alternative 1 would require the use of standard heavy-duty demolition equipment (e.g., excavators, cranes, bulldozers, trucks). Consequently, ground disturbance would occur under this alternative. Two previously recorded archaeological resources are mapped within the project APE, but they could not be relocated during the recent archaeological survey (Leidos 2015). Regardless, these sites are considered not eligible for the NRHP. There are no historic buildings or structures and no previously identified traditional cultural resources within the APE. Although unlikely, due to the amount of disturbances required to construct the Main Terminal, it is, however, possible that archaeological sites are present but were hidden from view by heavy vegetation (less than 10 percent visibility) during the 2015 survey. In this case, demolition-related ground disturbance has the potential to encounter previously unrecorded archaeological resources; if such resources are present and encountered, ground-disturbing activities in the area would stop and the Navy would comply with Section 106 of the NHPA and consult with the SHPO regarding treatment options.

The Marine Terminal does not represent landforms that existed during the time of Native American occupation of the area. Artificial fill material in the area does not have the potential to contain intact, potentially significant, prehistoric or historic archaeological or cultural resources. Thus, Alternative 1 would not reasonably be expected to impact significant archaeological resources at the Marine Terminal. Similarly, Alternative 1 would not affect archaeological resources in the vicinity of the off-site pipeline routes because it is in an area that has been previously disturbed and it does not have the potential to contain intact, potentially significant, prehistoric or historic archaeological or cultural resources. Thus, Alternative 1 would not reasonably be expected to impact significant archaeological resources along the pipeline route.

Under Alternative 1, no operations would occur at DFSP San Pedro following closure. Because there are no historic properties at DFSP San Pedro, there would be no impacts to cultural resources from post-closure operations under Alternative 1. Adherence with the DFSP San Pedro ICRMP would continue.

Impact Avoidance and Minimization Measure

The impact avoidance and minimization measure associated with cultural resources is listed in Appendix B.

Summary

Under Alternative 1, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. Although unlikely, if previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro

ICRMP would continue. Therefore, implementation of Alternative 1 would not have a significant impact to cultural resources.

3.8.3.2 Alternative 2

Complete Closure with Minimal Demolition

Under Alternative 2, closure impacts to cultural resources would be as described for Alternative 1; however, because the extent of demolition and earth-moving activities under Alternative 2 would be less than Alternative 1, the potential for ground-disturbing activities to encounter archeological resources would be comparatively less than Alternative 1.

Under Alternative 2, post-closure impacts to cultural resources would be as described for Alternative 1.

Impact Avoidance and Minimization Measure

The same impact avoidance and minimization measure proposed for Alternative 1 as presented in Appendix B would apply to Alternative 2.

Summary

Under Alternative 2, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. Although unlikely, if previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro ICRMP would continue. Therefore, implementation of Alternative 2 would not have a significant impact to cultural resources.

3.8.3.3 Alternative 3

Complete Closure with Complete Demolition

Under Alternative 3, closure impacts to cultural resources would be as described for Alternative 1; however, because the extent of demolition and earth-moving activities under Alternative 3 would be more than Alternative 1, the potential for ground-disturbing activities to encounter archeological resources would be comparatively greater than Alternative 1.

Under Alternative 3, post-closure impacts to cultural resources would be as described for Alternative 1.

Impact Avoidance and Minimization Measure

The same impact avoidance and minimization measure proposed for Alternative 1 as presented in Appendix B would apply to Alternative 3.

Summary

Under Alternative 3, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. Although unlikely, if previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro ICRMP would continue. Therefore, implementation of Alternative 3 would not have a significant impact to cultural resources.

3.8.3.4 Alternative 4

Partial Closure with Minimal Demolition

Under Alternative 4, partial closure impacts to cultural resources would be as described for Alternative 1; however, because the extent of demolition and earth-moving activities under Alternative 4 would be less than Alternative 1, the potential for ground-disturbing activities to encounter archeological resources would be comparatively less than Alternative 1.

Partial Operation

Under Alternative 4, the partial operation of DFSP San Pedro would not affect cultural resources, as no known or NRHP-eligible cultural resources are located at DFSP San Pedro.

Impact Avoidance and Minimization Measure

The same impact avoidance and minimization measure proposed for Alternative 1 as presented in Appendix B would apply to Alternative 4.

Summary

Under Alternative 4, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. If previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro ICRMP would continue. Therefore, implementation of Alternative 4 would not have a significant impact to cultural resources.

3.8.3.5 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, it is presumed that ground-disturbing activities would occur to repair the facility to return it to full operation. There would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. Although unlikely, if previously unrecorded archaeological resources are encountered, work in the affected area would stop.

Presumed Eventual Resumption of Full Operations

Under the No Action Alternative, the presumed resumption of full operations at DFSP San Pedro would not affect cultural resources, as no known or NRHP-eligible cultural resources are located at DFSP San Pedro.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Summary

Under the No Action Alternative, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. It is unlikely that any previously unrecorded archaeological resources would be encountered, as repair/reactivation activities would occur in previously disturbed areas. Therefore, implementation of the No Action Alternative would not have a significant impact to cultural resources.

3.9 VISUAL RESOURCES

3.9.1 DEFINITION OF RESOURCE

Visual resources are the natural and man-made features that comprise the visual qualities of a given area, or "viewshed." These features form the overall impression that an observer receives of an area or its landscape character. Topography, water, vegetation, man-made features, and the degree of panoramic view available are examples of visual characteristics of an area.

3.9.2 AFFECTED ENVIRONMENT

3.9.2.1 DFSP San Pedro Main Terminal

Overview

DFSP San Pedro consists of buildings, ASTs, pipelines, and vast open areas of vegetation. The eastern edge of the site lies at street level and includes the area where the office and administrative buildings are located. The site slopes upward from the street level along North Gaffey Street and levels off to a mesa, providing views of the surrounding area on all four sides. The topography of the site is irregular, with much relief as elevation ranges from approximately 20 to 286 feet (6 to 87 meters). Several small drainages bisect the Main Terminal. Paved and dirt access roads traverse the site. Electrical infrastructure, including poles and transmission lines, run across the Main Terminal. Small structures and other concrete infrastructure are scattered throughout the mostly visually undeveloped site. A handful of aboveground pipes, tanks, and storage structures are visible throughout the site.

Because the bulk of the fuel facility is not visible (mostly underground), the Main Terminal offers viewers an attractive viewshed in a region filled with dense industrial, commercial, and residential development. A native plant nursery operated by the Palos Verdes Peninsula Land Conservancy, that grows locally sourced plant species, is located near the administrative portion of the Main Terminal. In 2000, as part of a joint Navy-Community beautification project, trees were planted along the eastern border of the Main Terminal, within Navy property adjacent to North Gaffey Street. These trees are managed consistent with available resources.

Surrounding Viewshed

To the east of the Main Terminal across North Gaffey Street is an industrial fuel facility. North, south, and west of the Main Terminal are residential and commercial developments. The Main Terminal is visible from surrounding public viewpoints on all four sides. Figure 3.9-1 presents a satellite image of the Main Terminal with street-level photos of the perimeter of the Main Terminal. These photos are representative of the viewshed to passing motorists and pedestrians.

Palos Verdes Drive North runs along portions of the northern edge of the Main Terminal. The northeast and southeast corners of the site are visible from the Palos Verde Drive North, looking south. Topography obstructs lines of sight onto the northeast corner of the Main Terminal, providing a view of a fenced hill in the foreground (see Photo 1). Trees partially mask direct views onto the northern boundary of the Main Terminal, and the topography further obscures direct lines of sight. A small shopping center and an approximately 6-foot (1.8-meter) brick wall along the back of the property partially obstructs direct lines of sight from Palos Verde Drive North, looking south onto the northwest corner of the Main Terminal.

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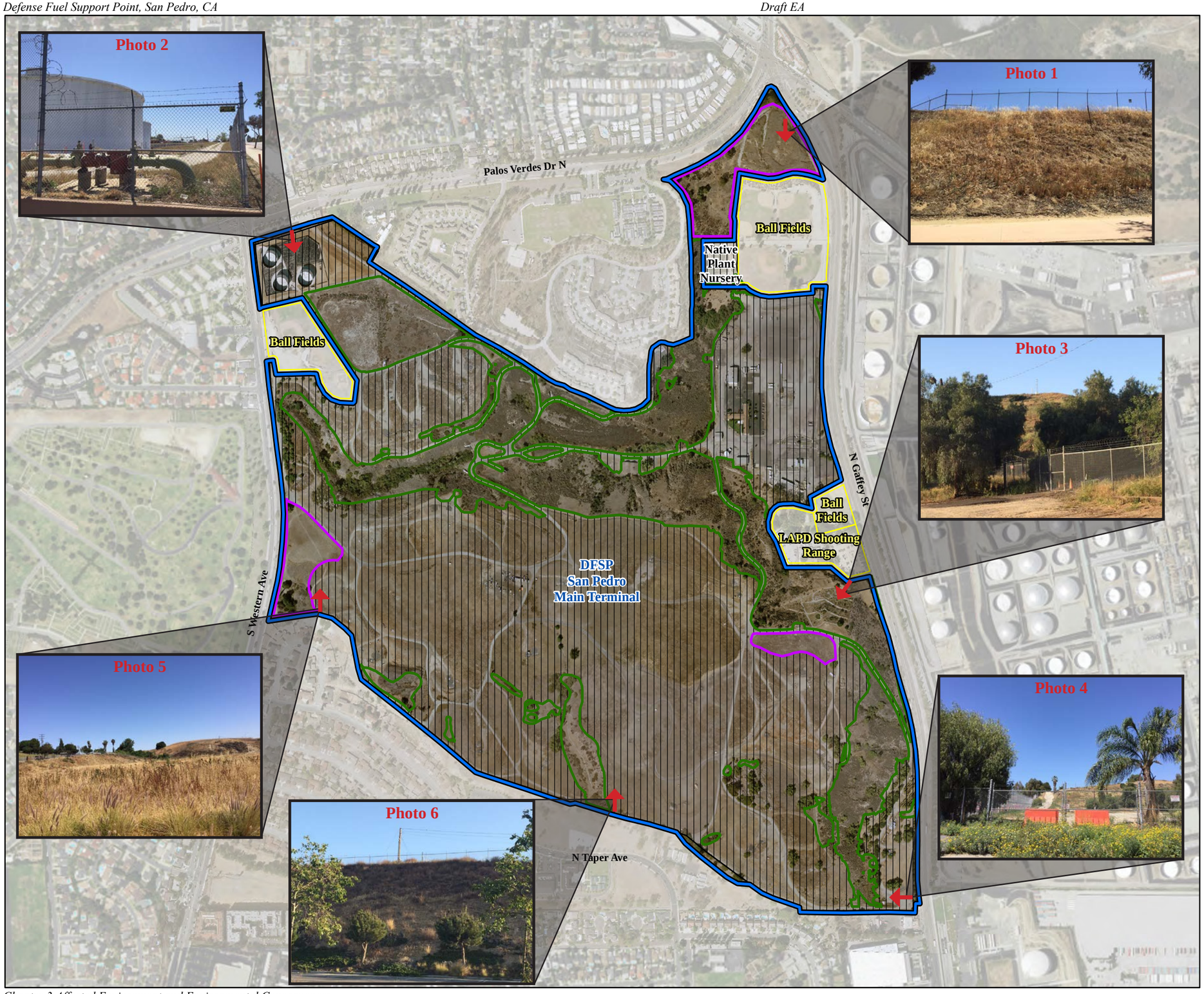


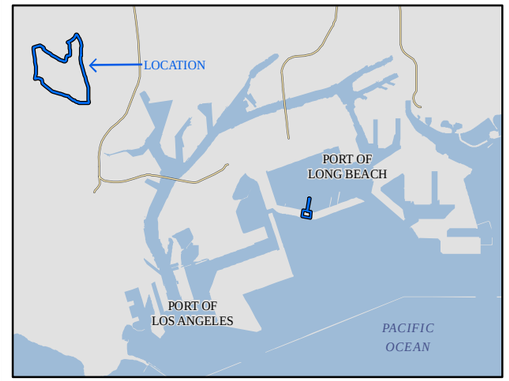
Figure 3.9-1
Views of DFSP San Pedro
Main Terminal from Adjacent Locations

LEGEND

- Photo Direction

Existing Features

- Main Terminal Project Area
- Operations Area
- Habitat Opportunity Area
- Listed Species Management Area
- Leased Areas (Not Part of the Project Area)



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Three large ASTs and fencing are visible from the street in the background, behind the foreground commercial development. These ASTs are striking visual elements in their location; though they are incongruent with the immediate visual landscape (mainly residential and commercial), they are consistent with the overall petroleum industry visual landscape of the region. The ASTs are also visible along South Western Avenue from the west of the Main Terminal, looking east. A ball field is located directly south of the ASTs along South Western Avenue. The parking lot and field are fenced, and a storage container for the field is located in the parking lot, partially obstructing direct lines of sight to the ASTs (see Photo 2).

The ball fields and LAPD shooting range along the eastern edge of the site lie at street level on North Gaffey Street. The developed area of the Main Terminal, including administrative buildings, a parking lot, and a paved road are visible from ball fields; however, trees and topography otherwise obscure direct lines of sight to the Main Terminal (see Photo 3).

Commercial development borders the southeast boundary of the Main Terminal. From the southeast corner of the Main Terminal, visible to the public looking northwest from North Gaffey Street, direct lines of sight are masked by trees and topography (see Photo 4).

The southern boundary of the Main Terminal travels southwest from South Western Avenue, toward the eastern boundary along North Gaffey Street. There are no major roadways adjacent to the southern boundary. Directly south of the Main Terminal along South Western Avenue is a disturbed construction site for the future Ponte Vista housing area (see Photo 5). The varied topography of the Main Terminal is visible to the public in the background when looking northeast. The viewshed of the southern portion of the Main Terminal consists of trees, vegetation, and limited power and fuel transmission infrastructure. Mary Star of the Sea High School is located directly south from the center of the Main Terminal's southern border, though the separating slope is steep and tall. A two-lane road (North Taper Avenue) and a small area of undeveloped land separate the school from the Main Terminal fence, and trees located directly north of the fence and the topography of the area obscure direct views looking north from the school into the Main Terminal (see Photo 6).

The majority of the western side of the Main Terminal is visible to the public looking east from South Western Avenue. The viewshed is comprised of varied topography, a dirt access road, vegetation, and trees. In the distance, electrical transmission infrastructure, aboveground pipes, and other built features are visible, but the view is partially obscured by topography and trees.

3.9.2.2 DFSP San Pedro Marine Terminal

The Marine Terminal and Pier 12 are located in an industrial area near the Port of Long Beach. The perimeter is fenced and large ASTs and one-story metal-sided structures are visible (refer to the top image of the EA cover). The entire site lies at street level and is visible on all sides from the road. The structures at the Marine Terminal are consistent with the visual character of the surrounding area. The Marine Terminal is relatively isolated and detached from high-volume roadways; thus, it is not subject to high-volume close-proximity public viewing, unlike the Main Terminal. Pier 12 extends into Port of Long Beach waters (Photo 3.9-1).

Photo 3.9-1. Pier 12 at the Marine Terminal

3.9.2.3 Off-site Pipelines

As described in Section 1.2, all of the off-site pipelines included in the Proposed Action are primarily located underground. The short aboveground segments of the off-site pipelines are located in urbanized areas, adjacent to transportation infrastructure (e.g., overpasses and roadways) and therefore are consistent with the surrounding visual environment.

3.9.3 ENVIRONMENTAL CONSEQUENCES

The factors considered in determining the level of impacts on visual resources include: (1) scenic quality of the project site and vicinity; (2) available visual access and visibility, frequency and duration that the landscape is viewed; (3) viewing distance and degree to which project components would dominate the view of the observer; (4) resulting contrast of the proposed facilities or activities with existing landscape characteristics; (5) the extent to which project features or activities would block views of higher value landscape features; and (6) the level of public interest in the existing landscape characteristics and concern over potential changes.

3.9.3.1 Alternative 1

Complete Closure with Partial Demolition

Under Alternative 1, proposed demolition and abandonment activities at the DFSP San Pedro Main Terminal would result in the transport and staging of demolition and abandonment equipment, vehicles, materials, and workers. The transport of equipment and vehicles on area roadways would be consistent with the visual character of the surrounding industrialized area, as heavy trucks regularly use area roadways to transport fuel and other industrial items from the neighboring fuel facility and commercial development. Once at the facility, the equipment and vehicles would at times be visible to the public, both outside of the facility and within (i.e., from the ball fields) as demolition and abandonment activities progress. If needed, the temporary batch plant would be constructed within the administrative portion of

the Operations Area. The batch plant would likely be visible to passing motorists, though likely not long enough to make an impression on the viewer.

The equipment used would be typical of construction and demolition activities occurring throughout the urbanized industrial region. Demolition and abandonment activities would have the potential to generate dust; however, the amount of dust would be moderated through the impact avoidance and minimization measure as presented in Appendix B. The visual presence of equipment within the fuel facility would be temporary and shift from site to site as work progresses.

At the Main Terminal, the most visible elements to be demolished would be the group of ASTs located in the northwest corner of the facility. Given their prominent location at the corner of the facility and adjacent to major roadways and commercial and residential areas, demolition activities would be highly visible to the public. However, the demolition activities would be temporary and the surrounding fence would screen some views.

All elements at the Marine Terminal would be demolished, with the exception of Pier 12. During demolition at the Marine Terminal, the temporary visual impacts would be similar to those described above for the Main Terminal; however, given the location of the Marine Terminal, less visual impact would occur, as there are fewer viewers in the area.

The removal of the aboveground segments of the off-site pipelines would occur in developed areas adjacent to transportation infrastructure. Their removal would not result in an impact to the urban viewshed. The resulting paved surface would be consistent with the surrounding areas. No visual impact would occur.

Post-closure

The removal of the ASTs from the northwest corner of the Main Terminal would result in a positive visual impact to the immediate visual landscape. The balance of infrastructure to be demolished would be within small areas (e.g., valves and pipelines) not visible to the public. The existing buildings at the Main Terminal would remain and be placed in a long-term caretaker condition. This condition would have no impact to the visual environment, as the buildings would continue to look the same when viewed at a distance by the public. In areas subject to demolition and ground disturbance, the areas would be revegetated consistent with the DFSP INRMP (NAVWPNSTA Seal Beach 2014), resulting in a visual setting consistent with existing conditions. The trees planted along North Gaffey Street in the 2000 joint Navy-Community effort would continue to be managed consistent with available resources.

The removal of the Marine Terminal tanks and buildings would alter the visual landscape; however, this alteration would slightly enhance the viewshed (existing vertical sight obstructions would be demolished). The resulting surface would consist of paved, level ground. Pier 12 would remain and thus no impact to the marine viewshed would occur.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 1.

Summary

Under Alternative 1, proposed demolition and abandonment activities would result in temporary and transitory negative impacts to the visual environment. In particular, the removal of the ASTs at the Main Terminal would be most visible to the public. Post-demolition, beneficial impacts to the visual environment would occur, as infrastructure with high visual profiles (e.g., ASTs) would be replaced with low-profile vegetation and at-grade surfaces. Disturbed areas would be planted/seeded with vegetation

consistent with the DFSP INRMP (NAVWPNSTA Seal Beach 2014), resulting in a beneficial impact to visual resources. Therefore, implementation of Alternative 1 would not have a significant impact to visual resources.

3.9.3.2 Alternative 2

Complete Closure with Minimal Demolition

Under Alternative 2, closure impacts to visual resources would generally be as described for Alternative 1; however, the extent of demolition and abandonment activities under Alternative 2 would be less than Alternative 1. Notably, due to the small amount of ground-disturbance (i.e., minimal demolition), little dust would be generated. No demolition would occur at the Marine Terminal.

Post-closure

Under Alternative 2, post-closure conditions of visual resources would be the same as existing conditions. The areas of demolition and abandonment in place of infrastructure would not noticeably change the visual environment.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 2.

Summary

Under Alternative 2, proposed demolition and abandonment activities would result in temporary and transitory negative impacts to the visual environment. Post-demolition, no impacts to the visual environment would occur, as no changes would be discernable by the public given the minimal amount of demolition proposed under this alternative. Therefore, implementation of Alternative 2 would not have a significant impact to visual resources.

3.9.3.3 Alternative 3

Complete Closure with Complete Demolition

Environmental consequences under Alternative 3 would be similar to those described for Alternative 1, but the complete demolition would result in a longer period and greater visual expanse of temporary disturbance. The complete demolition would result in a comparatively longer period of temporary disturbance to the visual resources, as large numbers of equipment, vehicles, and workers would be visible, especially during UST excavation activities. In addition, it is likely that temporary stockpiles of dirt and/or debris would occur and these stockpiles would be visible to the public from certain viewpoints (e.g., from North Gaffey Street). Thus, implementation of Alternative 3 would be visible to the public, especially when excavation of the USTs occurs. This activity would also create dust; though the amount of dust would be minimized (as described in Section 3.5), dust would have the potential to drift on the prevailing wind and negatively affect visibility. Furthermore, retaining walls and other similar structures may be erected.

Post-closure

After removal, the excavated areas would be filled and graded to be consistent with pre-removal conditions; however, minor (less than 20 feet [6 meter]) reductions in topography could potentially occur in some areas. The overall change in topography, especially when viewed from a distance, would likely be indistinguishable from existing topography. Vegetation would be planted and maintained in accordance with the DFSP INRMP (NAVWPNSTA Seal Beach 2014), resulting in a beneficial impact to

visual resources. The trees planted along North Gaffey Street in the 2000 joint Navy-Community effort would continue to be managed consistent with available resources.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 3.

Summary

Under Alternative 3, proposed demolition activities would result in temporary and transitory negative impacts to the visual environment. The complete demolition would result in a comparatively longer period and greater visual expanse of temporary disturbance. Thus, implementation of Alternative 3 would be visible to the public, especially when excavation of the USTs occurs. In addition, it is likely that temporary stockpiles of dirt and/or debris would occur and these stockpiles would be visible to the public from certain viewpoints (e.g., from North Gaffey Street). This activity would also create dust, would have the potential to drift on the prevailing wind and negatively affect off-site visibility. Furthermore, retaining walls and other similar structures may be erected. However, the overall change in topography, especially when viewed from a distance, would likely be indistinguishable from existing topography, and visual impacts seen from closer to the installation would be temporary and would not continue beyond the completion of the demolition phase. Vegetation would be planted and maintained in accordance with the DFSP INRMP (NAVWPNSTA Seal Beach 2014), completing the general restructuring of the pre-disturbance visual environment. Therefore, implementation of Alternative 3 would not have a significant impact to visual resources

3.9.3.4 Alternative 4

Partial Closure with Minimal Demolition

Under Alternative 4, proposed demolition and repair activities would be as described for Alternative 1, albeit at a reduced level, as less infrastructure would be closed. Notably, there would be less equipment and vehicles on site, and due to the small amount of ground-disturbance (i.e., minimal demolition), little dust would be generated. No demolition would occur at the Marine Terminal.

Partial Operation

Under Alternative 4, proposed demolition and repair activities would result in temporary and transitory negative impacts to the visual environment. Post-demolition, the visual impacts associated with the resumption of partial operations would be visually consistent with historical and regional activities, though at a reduced level (as compared to historical operations). The trees planted along North Gaffey Street in the 2000 joint Navy-Community effort would continue to be managed consistent with available resources. Therefore, implementation of Alternative 4 would result in no significant impact to visual resources.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for Alternative 4.

Summary

Under Alternative 4, proposed demolition and repair activities would result in temporary and transitory negative impacts to the visual environment. Post-demolition, the visual impacts associated with the resumption of partial operations would be visually consistent with historical and regional activities, though at a reduced level (as compared to historical operations). Therefore, implementation of Alternative 4 would not have a significant impact to visual resources.

3.9.3.5 No Action Alternative

Reversal of Temporary Closure

Under the No Action Alternative, proposed repair and reversal activities at the DFSP San Pedro Main and Marine Terminals would require the use of vehicles, equipment, and workers. The associated activity would result in a temporary and transitory impact to visual resources as the fuel facility is repaired and made ready to resume operations. The activity would appear to the casual observer as being consistent with operations associated with fuel facilities or industrial activity. There would be little dust generation potential, as minimal surface-disruption would occur.

Presumed Eventual Resumption of Full Operations

Under the No Action Alternative, the presumed resumption of full operations would result in an increase in activity at DFSP San Pedro. This activity would be visible to the public, as mobile elements would be added to the viewshed. As a whole, the fuel facility would continue to look the same; but the resumption of activity would likely be noticeable to the public. The resumption of historical operations at DFSP San Pedro would be visually consistent with the region, and no new elements that might affect the viewshed would be introduced. The trees planted along North Gaffey Street in the 2000 joint Navy-Community effort would continue to be managed consistent with available resources.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures have been identified for the No Action Alternative.

Summary

Under the No Action Alternative, proposed repair activities would result in temporary and transitory negative impacts to the visual environment. Post-demolition, the visual impacts associated with the resumption of historical operation would be visually consistent with historical and regional activities. Therefore, implementation of the No Action Alternative would not have a significant impact to visual resources.

3.10 SUMMARY OF POTENTIAL IMPACTS

Table 3.10-1 summarizes the potential impacts to each resource area with implementation of each alternative. The following sections provide summaries of the potential alternative-specific impacts to each resource area.

Table 3.10-1. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Biological Resources					
Impact Summary	No Significant Impact. Direct temporary impacts to approximately **25 acres of vegetation and land cover types** at the Main Terminal. This would affect **0.27 acres of potentially occupied Palos Verdes blue butterfly (PVB) habitat**, approximately 1 percent of the total PVB habitat mapped on the Main Terminal, and **0.45 acres of potentially occupied California gnatcatcher (CAGN) habitat**, approximately 0.8 percent of the total CAGN habitat at the Main Terminal. Approximately **19 acres of potential habitat for Migratory Bird Treaty Act (MBTA) species** would be affected. Temporary indirect impacts through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the Integrated INRMP.	No Significant Impact. Direct temporary impacts would occur to approximately **16 acres of vegetation and land cover types** at the Main Terminal. This would affect **0.18 acres of potentially occupied PVB habitat**, approximately 0.6 percent of the total PVB habitat mapped on the Main Terminal, and approximately **0.09 acres of potentially occupied CAGN habitat**, approximately 0.16 percent of the total CAGN habitat at the Main Terminal. Approximately **15 acres of potential habitat for MBTA species** would be affected. Temporary indirect impacts would occur through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the INRMP.	Significant Impact. Direct temporary impacts to approximately **93 acres of vegetation and land cover types** at the Main Terminal. This would affect **2.95 acres of potentially occupied PVB habitat**, approximately 10.4 percent of the total PVB habitat mapped on the Main Terminal, and **6.45 acres of potentially occupied CAGN habitat**, approximately 11.4 percent of the total CAGN habitat at the Main Terminal. Approximately **85 acres of potential habitat for MBTA species** would be affected. Temporary indirect impacts would occur through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the INRMP.	No Significant Impact. Direct temporary impacts to approximately **16 acres of vegetation and land cover types** at the Main Terminal. This would affect **0.18 acres of potentially occupied PVB habitat**, approximately 0.6 percent of the total PVB habitat mapped on the Main Terminal, and approximately **0.09 acres of potentially occupied CAGN habitat**, approximately 0.16 percent of the total CAGN habitat at the Main Terminal. Approximately **15 acres of potential habitat for MBTA species** would be affected. Temporary indirect impacts would occur through dust, noise, and demolition-related disturbances. Biological resources would continue to be managed in accordance with the INRMP.	No Significant Impact. No direct impacts to biological resources would occur. Indirect temporary impacts associated with repair activities would occur. Resumption of full operations would comply with avoidance and minimization measures previously developed through consultation with U.S. Fish and Wildlife Services. Biological resources would continue to be managed in accordance with the INRMP.

Table 3.10-1. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Geological Resources					
Impact Summary	No Significant Impact. Surface disturbance and grading would occur. Through implementation of engineering measures and erosion controls, increased risk for landslides and erosion would be minimized. No or negligible impacts would occur to mineral resources, bedrock, or soils. No impact to topography would occur if the concrete or foamcrete options are chosen for underground storage tank (UST) fill. If the soil backfill option is chosen for filling the USTs, a minor change in topography in the Operational Area would occur. Post-closure, no increased risk of earthquake damage, or their resulting hazards.	No Significant Impact. Minimal surface disturbance and minor grading would occur but to a lesser extent than Alternative 1. Impacts to topography associated with various option of fill for the USTs would be same as described for Alternative 1. Post-closure impacts would be similar to those described for Alternative 1.	Significant Impact. A greater area of ground disturbance would occur as compared to Alternative 1. No impact to bedrock or increase in earthquake-related hazards. Potential for landslides and erosion, especially on steep hillsides and ravines would be minimized with the implementation of impact avoidance and minimization measures. Moderate changes in topography would occur. Post-closure impacts would be similar to those described for Alternative 1.	No Significant Impact. Impacts would be similar to those described for Alternative 2. Impacts to topography associated with various option of fill for the USTs would be same as described for Alternative 1. Partial operations would not affect geological resources.	No Significant Impact. Activities associated with repair/reversal would cause minimal surface disturbance and grading and would have similar impacts as described for Alternative 1. Resumption of full operations would not affect geological resources.

Table 3.10-1. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Water Resources					
Impact Summary	No Significant Impact. No direct impacts to surface waters or floodplains. Negligible impacts to groundwater resources. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters at the Main Terminal and Marine Terminal during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities.	No Significant Impact. Closure and demolition impacts and post-closure procedures would be similar to those described for Alternative 1 except a smaller area would be subject to ground-disturbing activity.	No Significant Impact. Closure and demolition impacts and post-closure procedures would be similar to those described for Alternative 1 except that complete demolition would result in more ground disturbance and hence increased potential for erosion and encountering groundwater; however, potential minimized by adherence to the SWPPPs.	No Significant Impact. Closure and demolition impacts and partial post-closure procedures would be similar to those described for Alternative 2 except a smaller area would be subject to ground-disturbing activity. Partial operations conducted in compliance with new SWPPPs and associated BMPs prepared for the Main and Marine Terminals.	No Significant Impact. No direct impacts to surface waters, groundwater, or floodplain modifications would occur. Operations would adhere to applicable Main Terminal and Marine Terminal SWPPPs and associated BMPs. If an organization other than DLA assumes responsibility for operations, the new organization must submit for coverage under the applicable stormwater permit and prepare a new SWPPP.
Transportation					
Impact Summary	No Significant Impact. Temporary increase in daily trips (311), of which a majority would occur during non-peak hours. No unacceptable operating conditions during peak traffic periods. Post-closure, negligible amount of trips.	No Significant Impact. Temporary increase in daily trips (232 trips), of which a majority would occur during non-peak hours. No unacceptable operating conditions during peak traffic periods. Post-closure, negligible amount of trips.	No Significant Impact. More daily trips (358 trips total) as compared to Alternatives 1 and 2 but would not result in unacceptable operating conditions during peak traffic periods. Post-closure, negligible amount of trips.	No Significant Impact. Temporary increase in daily trips (220), of which a majority would occur during non-peak hours. During partial operations, negligible increase of 36 daily trips during peak hours.	No Significant Impact. Temporary increases in daily trips (70) during proposed repair/reversal activities. During full operations, negligible increase of 75 daily trips during peak hours.

Table 3.10-1. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Air Quality					
Impact Summary	No Significant Impact. Temporary increase in dust. Alternative 1 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Post-closure negligible air quality impacts.	No Significant Impact. Temporary increase in dust. Alternative 2 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Post-closure negligible air quality impacts.	No Significant Impact. Temporary increase in dust. Alternative 3 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Post-closure negligible air quality impacts.	No Significant Impact. Temporary increase in dust. Alternative 4 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before initiating partial operations.	No Significant Impact. The No Action Alternative would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before initiating full operations.
Noise					
Impact Summary	No Significant Impact. Temporary and incremental noise from demolition near residential and commercial areas. Noise levels at identified sensitive receptors would not be noticeably distinct from the existing noise environment. Post-closure, no operational noise. Periodic trip noise would be negligible.	No Significant Impact. Temporary and incremental noise from demolition would occur but in a smaller and topography-shielded area, away from residential and commercial areas. Noise levels at identified sensitive receptors would not be noticeably distinct from the existing noise environment. Post-closure, no operational noise. Periodic trip noise would be negligible.	No Significant Impact. Increased in localized noise throughout the Main Terminal from equipment and vehicles. Given the scale and scope of proposed demolition activities, noise would likely be noticeable to surrounding receptors at times. Post-closure, no operational noise. Periodic trip noise would be negligible.	No Significant Impact. Temporary and localized noise from demolition activities as well as localized noise during repair and activation activities. Noise levels at identified sensitive receptors would not be noticeably distinct from the existing noise environment. Noise from partial operations would be less than historical levels and indistinct.	No Significant Impact. Repair activities would generate noise levels at identified sensitive receptors that would not be noticeably distinct from the existing noise environment. Noise from operations would be consistent with historical levels and the surrounding noise environment.

Table 3.10-1. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Hazardous Materials and Wastes					
Impact Summary	No Significant Impact. Infrastructure closed, demolished, and/or abandoned in accordance with applicable regulations. Proposed demolition activities could encounter petroleum associated with existing Navy IRP sites and/or DLA restoration sites, or aboveground remediation equipment and/or occur in proximity to subsurface wells. Post-closure, no potential for inadvertent petroleum or hazardous waste releases would occur as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue.	No Significant Impact. Infrastructure closure and abandonment impacts would be similar to those described for Alternative 1. Because a smaller and localized area of demolition would occur, there would be less ground disturbance and less potential to encounter contaminated soil. Post-closure impacts would be similar as described for Alternative 1.	No Significant Impact. Infrastructure would be closed and demolished in accordance with applicable regulations. The nature of the impacts would be similar, but the extent of impacts would be greater than those described for Alternative 1. Notably, based on the large size of the USTs, demolition of underground infrastructure would include removal and temporary stockpiling of relatively large quantities of potentially contaminated soil to expose the pipelines and USTs for removal. In addition, contaminated soil may be present beneath the removed USTs and pipelines. Post-closure impacts would be similar to those described for Alternative 1.	No Significant Impact. Infrastructure would be closed, demolished, and/or abandoned in accordance with applicable regulations. Proposed demolition could encounter product associated with existing Navy IRP sites and/or DLA restoration sites. Under partial operations, existing plans would be followed to minimize potential for inadvertent release. On-going site assessments and remediation activities would continue.	No Significant Impact. Existing infrastructure would be repaired and reactivated in accordance with applicable regulations. Under operations, existing plans would be followed to minimize potential for inadvertent release. On-going site assessments and remediation activities would continue.

Table 3.10-1. Summary of Potential Impacts

Resource Area	***Alternative 1: Complete Closure with Partial Demolition***	***Alternative 2: Complete Closure with Minimal Demolition***	***Alternative 3: Complete Closure and Complete Demolition***	***Alternative 4: Partial Closure with Minimal Demolition***	***No Action Alternative: Reversal of Temporary Closure and Presumed Eventual Resumption of Full Operations***
Cultural Resources					
Impact Summary	No Significant Impact. No impact to known NRHP or NRHP-eligible cultural resources or historic resources. Post-closure, adherence with the DFSP San Pedro Integrated Cultural Resources Management Plan would continue.	No Significant Impact. Impacts would be as presented for Alternative 1.	No Significant Impact. Impacts would be as presented for Alternative 1.	No Significant Impact. Impacts would be as presented for Alternative 1.	No Significant Impact. Impacts would be as presented for Alternative 1.
Visual Resources					
Impact Summary	No Significant Impact. Temporary and transitory negative impacts from demolition and abandonment activities. Post-closure, beneficial impacts from replacement of high visual structures (i.e., ASTs and buildings) with low-profile vegetation and at-grade surfaces.	No Significant Impact. Closure and post-closure impacts to visual resources would be similar as those described for Alternative 1. However, demolition and abandonment activities would be less than Alternative 1 (ASTs at the Main Terminal would still be visible) and would require less equipment and vehicles on-site.	No Significant Impact. Closure and post-closure activities would be similar to those described for Alternative 1.	No Significant Impact. Proposed demolition and repair activities would result in temporary and transitory negative impacts to the visual environment. Visual impacts associated with resumption of partial operations would be visually consistent with the historical and regional activities at a reduced level compared to historic operations.	No Significant Impact. Proposed repair activities would result in temporary and transitory negative impacts to the visual environment. Visual impacts associated with resumption of full operations would be visually consistent with the historical and regional activities.

Notes: AST = aboveground storage tank; BMPs = Best Management Practices; CAA = Clean Air Act; CAGN = coastal California gnatcatcher; INRMP = Integrated Natural Resources Management Plan; IRP = Installation Restoration Program; MBTA = Migratory Bird Treaty Act; NRHP = National Register of Historic Places; PVB = Palos Verdes blue butterfly; SWPPP = Stormwater Pollution Prevention Plan.

3.10.1 ALTERNATIVE 1

3.10.1.1 Biological Resources

With the successful implementation of the impact avoidance and minimization measures listed in Appendix B, direct temporary impacts to biological resources under Alternative 1 would occur to approximately 25 acres of vegetation and land cover types. Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances. Alternative 1 would temporarily disturb 0.27 acre of potentially occupied PVB habitat, which is approximately 1 percent of the total PVB habitat at the Main Terminal, and 0.45 acre of potentially occupied CAGN habitat, which is approximately 0.8 percent of the total CAGN habitat at the Main Terminal. For comparison, the estimated temporary impacts to PVB and CAGN habitat from clearing (0.27 acre and 0.45 acre, respectively) would be less than the 0.5 acre of habitat disturbance for each allowed by the 2010 BO (USFWS 2010a) during 1 year for routine operations and maintenance activities.

Following closure, no impacts to biological resources would occur, as no operations would occur other than on-going monitoring, maintenance, and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Therefore, with implementation of impact avoidance and minimization measures proposed, implementation of Alternative 1 would not have a significant impact to biological resources.

3.10.1.2 Geological Resources

Under Alternative 1, surface disturbance and grading would occur. Through implementation of engineering measures and erosion controls identified in the geotechnical/engineering evaluation, increased risk for landslides and erosion would be minimized. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. If the soil backfill option is chosen for filling the USTs, a minor change in topography in the Operational Area would occur. Therefore, implementation of Alternative 1 would not have a significant impact to geological resources.

3.10.1.3 Water Resources

Under Alternative 1, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters at the Main Terminal and Marine Terminal during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities. Therefore, implementation of Alternative 1 would not have a significant impact to water resources.

3.10.1.4 Transportation

Under Alternative 1, proposed partial demolition activities would generate approximately 311 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during peak hours. Following closure, average daily trips would be negligible. Therefore, implementation of Alternative 1 would not have a significant impact to transportation.

3.10.1.5 Air Quality

Alternative 1 would generate dust that could migrate off-site during certain conditions. Alternative 1

would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Therefore, implementation of Alternative 1 would not have a significant impact to air quality.

3.10.1.6 Noise

Under Alternative 1, noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the source. In addition to increasing distance, the topography would shield sensitive noise receptors from demolition noise. Conversely, the proposed demolition of the ASTs in the northwest corner of the Main Terminal would be near surrounding residential and commercial structures with partial topographic shielding. Noise impacts would be spread out over a large area in a transitory and temporary manner. While the schools, residences, and commercial structures located near proposed demolition activities might hear noise generated by temporary demolition activities, the noise levels would not be noticeably distinct from the existing noise environment. Therefore, implementation of Alternative 1 would not have a significant impact to sensitive noise receptors.

3.10.1.7 Hazardous Materials and Wastes

Under Alternative 1, all infrastructure would be closed, demolished, and/or abandoned in place in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites. In addition, underground pipelines and valve pits to be demolished may be located beneath aboveground remediation equipment and/or in proximity to subsurface wells. Following closure, there would be no potential for an inadvertent releases of petroleum or hazardous materials as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue. Therefore, implementation of Alternative 1 would not have a significant impact related to hazardous materials and wastes.

3.10.1.8 Cultural Resources

Under Alternative 1, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. Although unlikely, if previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro ICRMP would continue. Therefore, implementation of Alternative 1 would not have a significant impact to cultural resources.

3.10.1.9 Visual Resources

Under Alternative 1, proposed demolition and abandonment activities would result in temporary and transitory negative impacts to the visual environment. In particular, the removal of the ASTs at the Main Terminal would be most visible to the public. Post-demolition, beneficial impacts to the visual environment would occur, as infrastructure with high visual profiles (e.g., ASTs) would be replaced with low-profile vegetation and at-grade surfaces. Disturbed areas would be planted/seeded with vegetation consistent with the DFSP INRMP (NAVWPNSTA Seal Beach 2014), resulting in a beneficial impact to visual resources. Therefore, implementation of Alternative 1 would not have a significant impact to visual resources.

3.10.2 ALTERNATIVE 2

3.10.2.1 Biological Resources

Direct temporary impacts to biological resources under Alternative 2 would occur to approximately 16 acres of vegetation and land cover types, over 15 acres of which are in the Operations Area. Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise,

or other demolition-related disturbances. Alternative 2 would temporarily disturb 0.18 acre of potentially occupied PVB habitat, representing approximately 0.6 percent of the total PVB habitat on the Main Terminal, and 0.09 acres of potentially occupied CAGN habitat, representing approximately 0.16 percent of the total CAGN habitat on the Main Terminal. For comparison, the estimated temporary impacts to PVB and CAGN habitat from clearing (0.18 acre and 0.09 acre, respectively) would be less than the 0.5 acre allowed by the 2010 BO (USFWS 2010a) to be cleared during 1 year for routine operations and maintenance activities. Alternative 2 would temporarily impact up to 15 acres of potential habitat for MBTA species.

Following closure, no impacts to biological resources would occur, as no operations would occur other than on-going monitoring, maintenance, and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Therefore, with implementation of impact avoidance and minimization measures proposed, implementation of Alternative 2 would not have a significant impact to biological resources.

3.10.2.2 Geological Resources

Under Alternative 2, minimal surface disturbance and minor grading would occur. Through implementation of engineering measures and erosion controls identified in the geotechnical/engineering evaluation, increased risk for landslides and erosion would be minimized. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. If the soil backfill option is chosen for filling the USTs, a minor change in topography in the Operational Area would occur. Therefore, implementation of Alternative 2 would not have a significant impact to geological resources.

3.10.2.3 Water Resources

Under Alternative 2, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities. Therefore, implementation of Alternative 2 would not have a significant impact to water resources.

3.10.2.4 Transportation

Under Alternative 2, proposed minimal demolition activities would generate approximately 232 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during non-peak hours. Following closure, average daily trips would be negligible. Therefore, implementation of Alternative 2 would not have a significant impact to transportation.

3.10.2.5 Air Quality

Alternative 2 would generate dust that could migrate off-site during certain conditions. Alternative 2 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. Therefore, implementation of Alternative 2 would not have a significant impact to air quality.

3.10.2.6 Noise

Under Alternative 2, short–term noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the

source. The majority of the demolition activities proposed under Alternative 1 would be in areas of lower topography, away from sensitive noise receptors. The nearest sensitive noise receptors would be shielded by topography from proposed demolition activities; thus, no impact from noise would occur at these areas. While the schools, residences, and commercial structures located near proposed demolition activities would likely hear noise generated by temporary demolition and/or abandonment activities, the noise levels would not be noticeably distinct from the existing noise environment. Therefore, implementation of Alternative 2 would not have a significant impact to sensitive noise receptors.

3.10.2.7 Hazardous Materials and Wastes

Under Alternative 2, all infrastructure would be closed, demolished, and/or abandoned in place in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites. In addition, pipelines and valve pits to be demolished may be located beneath aboveground remediation equipment and/or in proximity to subsurface wells, although it is expected that damage to remediation equipment could be avoided through careful planning and implementation measures. Following closure, there would be no potential for an inadvertent release of petroleum or hazardous materials as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue. Therefore, implementation of Alternative 2 would not have a significant impact related to hazardous materials and wastes.

3.10.2.8 Cultural Resources

Under Alternative 2, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. Although unlikely, if previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro ICRMP would continue. Therefore, implementation of Alternative 2 would not have a significant impact to cultural resources.

3.10.2.9 Visual Resources

Under Alternative 2, proposed demolition and abandonment activities would result in temporary and transitory negative impacts to the visual environment. Post-demolition, no impacts to the visual environment would occur, as no changes would be discernable by the public given the minimal amount of demolition proposed under this alternative. Therefore, implementation of Alternative 2 would not have a significant impact to visual resources.

3.10.3 ALTERNATIVE 3

3.10.3.1 Biological Resources

Direct temporary impacts to biological resources under Alternative 3 would occur to approximately 93 acres of vegetation and land cover types, approximately 83.5 acres of which would be in the Operations Area. The bulk of this impact would be to non-native grasslands (approximately 72 acres, over 68 of which are in the Operations Area). Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances. Alternative 3 would temporarily disturb 2.95 acres of potentially occupied PVB habitat, representing 10.4 percent of the PVB Habitat at the Main Terminal, and 6.45 acres of potentially occupied CAGN habitat, representing approximately 11.4 percent of the total CAGN habitat at the Main Terminal. For comparison, the combined estimated temporary impacts to PVB and CAGN habitat from clearing (2.95 acres and 6.45 acres, respectively) would substantially exceed the 0.5 acres allowed by the 2010 BO (USFWS 2010a) to

be cleared during 1 year for routine operations and maintenance activities. Alternative 3 would temporarily impact up to 85 acres of potential habitat for MBTA species.

Due to the more extensive habitat disturbance, the potential for injury or mortality to PVB and CAGN individuals, despite the implementation of impact avoidance and minimization measures (see Appendix B), is greater for Alternative 3 than for the other alternatives. In particular, given that the PVB only occurs at the Main Terminal, impacts from Alternative 3 to PVB habitat at the Main Terminal may have a more dramatic effect on the survival of this species than those associated with the other project alternatives. Alternative 3 also has the potential to remove or damage one of the three southern California black walnut trees on the site.

Following closure, no impacts to biological resources would occur, as no operations would occur other than on-going monitoring, maintenance, and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Even with implementation of proposed impact avoidance and minimization measures, implementation of Alternative 3 would have a significant impact to biological resources.

3.10.3.2 Geological Resources

Under Alternative 3, extensive surface disturbance and grading would occur. Increased risk for landslides and erosion would be minimized with the implementation of the identified impact avoidance and minimization measures. There would be no or negligible impacts to mineral resources or bedrock. The impact avoidance and minimization measures proposed to minimize the risk for erosion and landslides would lessen the degree of potential impacts from earthquakes. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. Moderate changes in topography would occur. Therefore, implementation of Alternative 3 would have a significant impact to geological resources.

3.10.3.3 Water Resources

Under Alternative 3, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters at the Main Terminal and Marine Terminal during demolition and abandonment activities. Post-closure, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to post-closure site conditions and activities. Therefore, implementation of Alternative 3 would not have a significant impact to water resources.

3.10.3.4 Transportation

Under Alternative 3, complete demolition activities would generate approximately 358 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during peak hours. Following closure, average daily trips would be negligible. Therefore, implementation of Alternative 3 would not have a significant impact to transportation.

3.10.3.5 Air Quality

Alternative 3 would generate dust that could migrate off-site during certain conditions. Given that a comparatively much greater area would be disturbed under Alternative 3 as compared to the other alternatives, a higher dust generation potential would occur with implementation of Alternative 3. Alternative 3 would not exceed *de minimis* levels; a CAA Conformity Determination would not be

required. Therefore, implementation of Alternative 3 would not have a significant impact to air quality.

3.10.3.6 Noise

Under Alternative 3, noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the source. Under Alternative 3, given the scale of the excavation required, noise would be concentrated in the affected areas until the infrastructure is removed from the affected area, resulting in comparatively greater noise impacts as compared to Alternative 1. Thus, the proposed demolition activities would generate noise that would likely be noticeable to surrounding receptors, and more so as compared to the other alternatives. However, the noise impacts would be temporary, limited to construction hours, and noise levels at sensitive noise receptors would be reduced due to increasing distance from the source. Therefore, implementation of Alternative 3 would not have a significant impact to sensitive noise receptors.

3.10.3.7 Hazardous Materials and Wastes

Under Alternative 3, all infrastructure would be closed and removed in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites and other unknown contaminated areas. Based on the greater amount of disturbed ground areas, impacts would be similar but greater than those described for Alternative 1. Notably, based on the large size of the USTs (2.1 million gallons), demolition of underground infrastructure would include removal and temporary stockpiling of relatively large quantities of potentially contaminated soil to expose the pipelines and USTs for removal. In addition, contaminated soil may be present beneath the removed USTs and pipelines. Following closure, there would be no potential for an inadvertent releases of petroleum or hazardous materials as no fuel would be stored or transferred to/from DFSP San Pedro. On-going site assessments and remediation activities would continue. Therefore, implementation of Alternative 3 would not have a significant impact related to hazardous materials and wastes.

3.10.3.8 Cultural Resources

Under Alternative 3, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. Although unlikely, if previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro ICRMP would continue. Therefore, implementation of Alternative 3 would not have a significant impact to cultural resources.

3.10.3.9 Visual Resources

Under Alternative 3, proposed demolition activities would result in temporary and transitory negative impacts to the visual environment. The complete demolition would result in a comparatively longer period and greater visual expanse of temporary disturbance. Thus, implementation of Alternative 3 would be visible to the public, especially when excavation of the USTs occurs. In addition, it is likely that temporary stockpiles of dirt and/or debris would occur and these stockpiles would be visible to the public from certain viewpoints (e.g., from North Gaffey Street). This activity would also create dust, would have the potential to drift on the prevailing wind and negatively affect off-site visibility. Furthermore, retaining walls and other similar structures may be erected. The overall change in topography, especially when viewed from a distance, would likely be indistinguishable from existing topography. Vegetation would be planted and maintained in accordance with the DFSP INRMP (NAVWPNSTA Seal Beach 2014), completing the general restructuring of the pre-disturbance visual environment. Therefore, implementation of Alternative 3 would not have a significant impact to visual resources.

3.10.4 ALTERNATIVE 4

3.10.4.1 Biological Resources

Direct temporary impacts to biological resources under Alternative 4 would occur to approximately 16 acres of vegetation and land cover types, including 0.74 acres of vegetation and land cover types in the Listed Species Management/Habitat Opportunity Area and 15.25 acres in the Operations Area. The impact to non-native grasslands would affect approximately 7 percent of the non-native grasslands on the site. Quantitatively, the affected habitat acreage at the Main Terminal would be the same as Alternative 2. Indirect temporary impacts to wildlife species may occur within adjacent habitat due to an increase in dust, noise, or other demolition-related disturbances. Alternative 4 would temporarily disturb 0.18 acre of potentially occupied PVB habitat, representing approximately 0.6 percent of the total PVB habitat at the Main Terminal, and 0.09 acre of potentially occupied CAGN habitat, representing approximately 0.16 percent of the total CAGN habitat at the Main Terminal. For comparison, the combined estimated temporary impacts to PVB and CAGN habitat from clearing (0.18 acre and 0.09 acre, respectively) would be less than the 0.5 acre allowed by the 2010 BO (USFWS 2010a) to be cleared during 1 year for routine operations and maintenance activities. Alternative 4 would temporarily impact up to 15 acres of potential habitat for MBTA species.

Following demolition and restoration, impacts to biological resources would occur from continuing operations as well as on-going monitoring, maintenance, and environmental cleanup activities, if applicable. Biological resources would continue to be managed in accordance with the INRMP. Therefore, implementation of Alternative 4 would not have a significant impact to biological resources.

3.10.4.2 Geological Resources

Under Alternative 4, minimal surface disturbance and minor grading would occur. Through implementation of engineering measures and erosion controls identified in the geotechnical/engineering evaluation, increased risk for landslides and erosion would be minimized. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. Partial operations would not affect geological resources. If the soil backfill option is chosen for filling the USTs, an minor change to overall site topography on the bluff tops would result. Therefore, implementation of Alternative 4 would not have a significant impact to geological resources.

3.10.4.3 Water Resources

Under Alternative 4, no direct impacts to surface waters or floodplains would occur. Any potential impacts to groundwater resources would be negligible. Implementation of and adherence to the project-specific construction SWPPP and associated BMPs would minimize the potential for pollutants to enter receiving waters during demolition and abandonment activities. For partial operation, new SWPPPs would be prepared for the Main Terminal and Marine Terminal in compliance with all regulatory requirements applicable to site conditions and activities. Therefore, implementation of Alternative 4 would not have a significant impact to water resources.

3.10.4.4 Transportation

Under Alternative 4, proposed partial demolition activities would generate approximately 220 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. The bulk of additional truck trips would not occur during peak hours. With partial operation, the estimated increase of 36 average daily trips would be negligible. Therefore, implementation of Alternative 4 would not have a significant impact to transportation.

3.10.4.5 Air Quality

Alternative 4 would generate dust that could migrate off-site during certain conditions. Alternative 4 would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before initiating partial operations. Therefore, implementation of Alternative 4 would not have a significant impact to air quality.

3.10.4.6 Noise

Under Alternative 4, noise associated with demolition activities would range from approximately 74 to 90 dB at 50 feet (15 meters) and then decrease with increasing distance from the source. The majority of the demolition activities proposed under Alternative 4 would be in areas of lower topography, away from sensitive noise receptors. The nearest sensitive noise receptors would be shielded by topography from proposed demolition activities; thus, no impact from noise would occur at these areas. Proposed repair and activation activities would generate temporary, localized, and indistinct noise levels from the surrounding noise environment. Negligible noise would occur as the result of employee trips and truck trips for the delivery of fuel. Therefore, implementation of Alternative 4 would not have a significant impact to sensitive noise receptors.

3.10.4.7 Hazardous Materials and Wastes

Under Alternative 4, the identified partial infrastructure would be closed, demolished, and/or abandoned in accordance with applicable regulations. Proposed demolition activities could encounter contamination associated with existing Navy IRP sites and/or DLA restoration sites. Existing plans (see Section 3.7.2.3) would be followed to minimize the potential for an inadvertent release. On-going site assessments and remediation activities would continue. Therefore, implementation of Alternative 4 would not have a significant impact related to hazardous materials and wastes.

3.10.4.8 Cultural Resources

Under Alternative 4, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. If previously unrecorded archaeological resources are encountered, work in the affected area would stop. Adherence to the DFSP San Pedro ICRMP would continue. Therefore, implementation of Alternative 4 would not have a significant impact to cultural resources.

3.10.4.9 Visual Resources

Under Alternative 4, proposed demolition and repair activities would result in temporary and transitory negative impacts to the visual environment. Post-demolition, the visual impacts associated with the resumption of partial operations would be visually consistent with historical and regional activities, though at a reduced level (as compared to historical operations). Therefore, implementation of Alternative 4 would not have a significant impact to visual resources.

3.10.5 NO ACTION ALTERNATIVE

3.10.5.1 Biological Resources

With the implementation of the existing measures developed through past regulatory coordination/ consultation, no direct impacts to biological resources would occur under the No Action Alternative. Indirect temporary impacts associated with maintenance activities would occur. Operations would comply with measures developed through consultation with the USFWS to avoid/minimize impacts to biological resources. Biological resources would continue to be managed in accordance with the DFSP San Pedro

INRMP. Therefore, implementation of the No Action Alternative would not have a significant impact to biological resources.

3.10.5.2 Geological Resources

Under the No Action Alternative, minimal surface disturbance and minor grading would occur. There would be no increased risk for landslides or erosion. There would be no or negligible impacts to mineral resources, bedrock, or soils. There would be no increased risk of earthquake-related hazards - ground shaking, liquefaction, tsunamis, and seiches. Therefore, implementation of the No Action Alternative would not have a significant impact to geological resources.

3.10.5.3 Water Resources

Under the No Action Alternative, no direct impacts to surface waters, groundwater, or floodplains would occur. Implementation of and adherence to the Main Terminal and Marine Terminal SWPPPs and associated BMPs would minimize the potential for pollutants to enter receiving waters during repair activities. During operations, stormwater would be managed in accordance with the applicable Main Terminal and Marine Terminal SWPPPs. Therefore, implementation of the No Action Alternative would not have a significant impact to water resources.

3.10.5.4 Transportation

Under the No Action Alternative, proposed temporary closure reversal activities would generate approximately 70 average daily trips. The temporary increase in daily trips would not result in unacceptable operating conditions during peak traffic periods. With resumption of full operations, the estimated increase of 75 average daily trips would be negligible. Therefore, implementation of the No Action Alternative would not have a significant impact to transportation.

3.10.5.5 Air Quality

The No Action Alternative would not exceed *de minimis* levels; a CAA Conformity Determination would not be required. All required air permits would be obtained before resuming operations. Therefore, implementation of the No Action Alternative would not have a significant impact to air quality.

3.10.5.6 Noise

Under the No Action Alternative, infrastructure repair and reactivation activities would contribute temporary noise levels to the surrounding noise environment. The noise would be indistinct from existing noise sources at sensitive noise receptors. Operations at the Main Terminal would generate noise levels between 65-80 dBA, a level typically associated with industrial areas and consistent with the surrounding noise environment. Therefore, implementation of the No Action Alternative would not have a significant impact to sensitive noise receptors.

3.10.5.7 Hazardous Materials and Wastes

Under the No Action Alternative, it is presumed that existing infrastructure would be repaired and reactivated in accordance with applicable regulations. Existing plans (see Section 3.7.2.3) would be followed to minimize the potential for an inadvertent release. On-going site assessments, monitoring, and remediation activities would continue. Therefore, implementation of the No Action Alternative would not have a significant impact to hazardous materials and wastes.

3.10.5.8 Cultural Resources

Under the No Action Alternative, there would be no impact to cultural resources as no known or NRHP-eligible cultural resources are located within the APE. It is unlikely that any previously unrecorded

archaeological resources would be encountered, as repair/reactivation activities would occur in previously disturbed areas. Therefore, implementation of the No Action Alternative would not have a significant impact to cultural resources.

3.10.5.9 Visual Resources

Under the No Action Alternative, proposed repair activities would result in temporary and transitory negative impacts to the visual environment. Post-demolition, the visual impacts associated with the resumption of historical operation would be visually consistent with historical and regional activities. Therefore, implementation of the No Action Alternative would not have a significant impact to visual resources.

CHAPTER 4
CUMULATIVE IMPACT ANALYSIS

4.1 INTRODUCTION

CEQ regulations implementing NEPA require that the cumulative impacts of a Proposed Action be assessed (40 CFR Parts 1500-1508). A cumulative impact is defined as the following:

> *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR § 1508.7)*

Cumulative effects are most likely to arise when a relationship exists between the Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated.

CEQ's guidance for considering cumulative effects states that NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant" (CEQ 1997). The first step in assessing cumulative effects; therefore, involves identifying and defining the scope of other actions and their interrelationship with the Proposed Action. The scope of the cumulative effects analysis involves both the geographic extent of the effects and the timeframe in which the effects could be expected to occur. The scope must consider other projects that coincide with the location and timing of the Proposed Action, and the duration of potential effects on the environment.

4.2 POTENTIALLY CUMULATIVE PROJECTS

This section identifies past, present, and reasonably foreseeable future actions not related to the Proposed Action that have the potential to cumulatively impact the resources in the affected environment for DFSP San Pedro and the associated regionally affected area. The geographic distribution, intensity, duration, and historical effects of similar activities were considered when determining whether a particular activity may contribute cumulatively to the impacts of the Proposed Action on the resources identified in this EA.

As depicted on Figure 4-1 and as described in the following paragraph, only one cumulative project has been identified: the Ponte Vista Housing Project. The Ponte Vista Housing project is located adjacent to the southern border of the DFSP San Pedro Main Terminal. This 61-acre (24.7 hectare) project proposes to demolish existing structures and then construct 676 new homes. The project also includes a 2.4-acre public park (1 hectare) located on Western Avenue at the southern end of the site. In addition, more than 7 acres (2.8 hectares) of internal open space are included. Groundbreaking for the project occurred in May 2014 and construction is estimated to last approximately 4 years. The project area encompasses the former Navy San Pedro housing area that was closed in the late 1990s (Ponte Vista 2015).

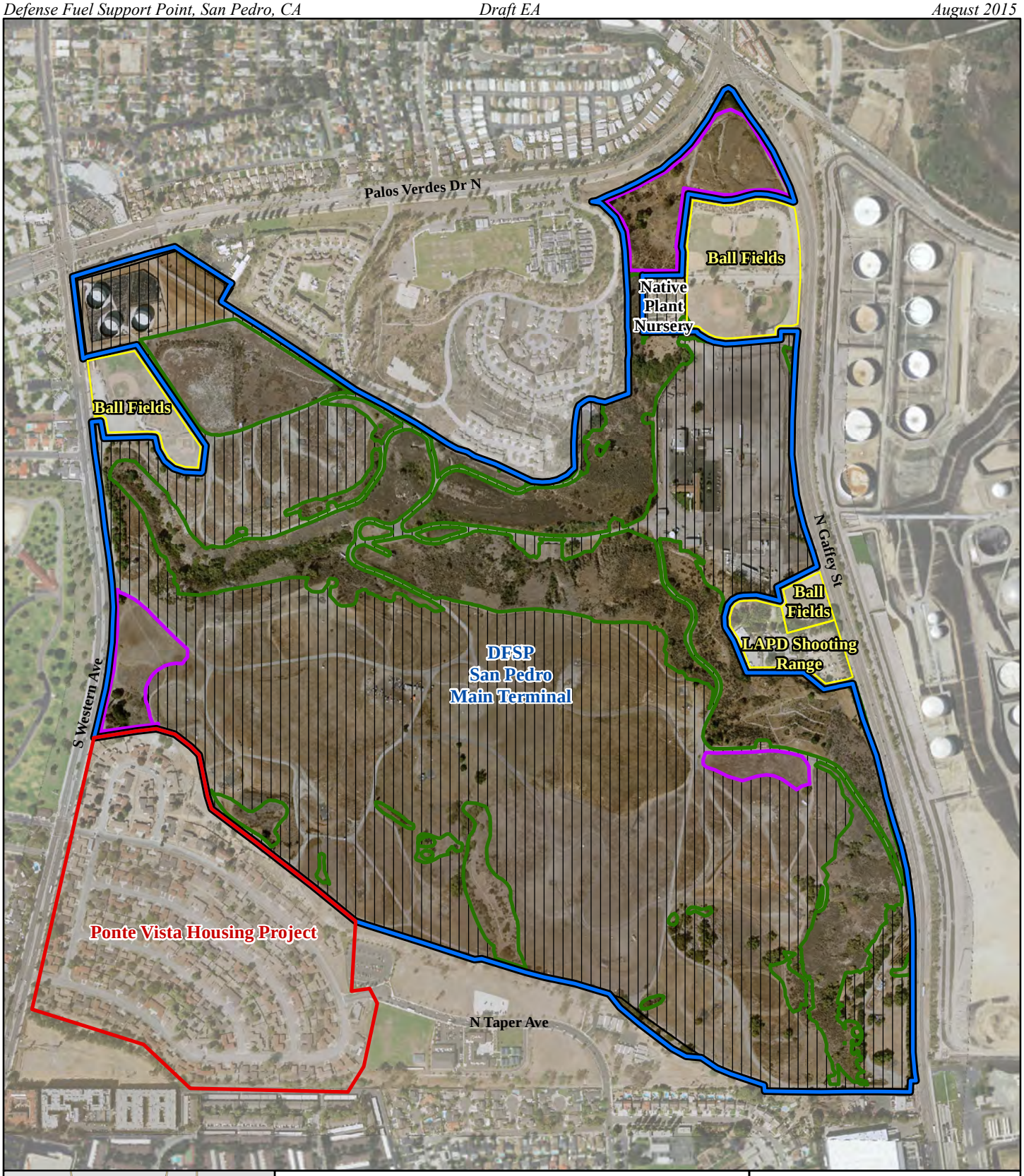

Figure 4-1
Cumulative Project Location

4.3 METHODOLOGY

4.3.1 GEOGRAPHIC SCOPE OF THE CUMULATIVE EFFECTS

For this analysis, a geographic scope, or ROI, for each cumulative effects issue was established. The ROI is generally based on the natural boundaries of the resources affected, rather than jurisdictional boundaries. The geographic scope may be different for each cumulative effects issue. The geographic extent of analysis may be different for each cumulative effects issue. The geographic analysis range for cumulative effects often extends beyond that of the direct effects of the proposed action. However, cumulative impact analysis does not extend beyond the area subject to indirect effects of a proposed action. Geographic area may vary among resources, as indirect effects associated with a proposed action also vary in extent by resource. However, if a proposed action is determined to have no direct or indirect effects on a resource, no future cumulative effects analysis is necessary. ROIs are defined in Section 4.4 for each resource area.

4.3.2 TIME FRAME OF THE CUMULATIVE EFFECTS ANALYSIS

A time frame for each issue related to cumulative effects has been determined. The time frame is defined as the long-term and short-term duration of the effects anticipated. Long-term can be as the longest lasting effect. Time frames, like geographic scope, can vary by resource. Each project in a region has its own implementation schedule, which may or may not coincide or overlap with the schedule for implementing the Proposed Action.

Past actions are projects that have been approved and/or permitted, and that have either very recently completed construction/implementation or have yet to complete construction/be implemented. Present actions are actions that are on-going at the time of the analysis. Reasonably foreseeable future actions are those for which there are existing decisions, funding, or formal proposals, or which are highly probable based on known opportunities or trends. However, these are limited to within the designated geographic scope and time frame. Reasonably foreseeable future actions are not limited to those that are approved for funding. However, this analysis does not speculate about future actions that are merely possible, but rather highly probable based on information available at the time of this analysis.

For this cumulative effects analysis, the time frame considered for cumulatively considerable projects includes projects recently approved or completed that are not yet addressed as part of the existing conditions of the area, projects under construction, and projects that are in the environmental review or planning process and for which enough information is available to discern their potential impacts. Projects for which no or insufficient information is known, or for which substantial uncertainty exists regarding the project, are considered speculative and are not evaluated as part of this analysis.

4.4 CUMULATIVE IMPACTS ANALYSIS BY ENVIRONMENTAL RESOURCE AREA

This section addresses the potential cumulative impacts of the Proposed Action in conjunction with the aforementioned cumulative project. These projects represent past, present, and reasonably foreseeable actions with the potential for cumulative impacts when considered in conjunction with the potential impacts from the Proposed Action.

4.4.1 BIOLOGICAL RESOURCES

The ROI for cumulative impacts is based on the presence of plant communities that provide suitable habitat for the federally listed PVB and/or CAGN. The cumulative effect of past actions (the development of southern California in general and the Palos Verdes Peninsula specifically) have led to the loss of large amounts of CAGN habitat and almost all of PVB habitat. That makes the Proposed Action's impact on

even small amounts of habitat (most particularly PVB) potentially significant when added to the aggregate effects of these past actions. Projects with potential direct and indirect impacts on biological resources include those that would result in the loss of native plant communities, permanent loss of sensitive plant populations, species losses that affect population viability, and the reduction in adjacent habitat quality from temporary actions including the addition of noise and dust during demolition to permanent effects such as the addition of lighting. For native plant and wildlife communities, other impacts could include habitat fragmentation or the permanent loss of contiguous (interconnecting) native habitats such as migration or movement corridors.

The Ponte Vista Housing Project would not cause a loss of sensitive habitats or resources, as the site was previously military housing and the Ponte Vista project plan does include habitat elements that would be favorable to certain biological resources if they develop as planned. However, construction on the Ponte Vista site is planned to continue through 2018, overlapping the construction period for DFSP and possibly increasing the noise and traffic in the DFSP project vicinity. This has some potential to cumulatively add to the local degradation, particularly in combination with Alternative 3, in which project activities spread over much of the Main Terminal site. Given the proximity of some potential PVB habitat on the southern end of the Main Terminal to the Ponte Vista site, there is the potential for temporary adverse cumulative effects on PVB should those habitat areas be occupied by PVB. Implementation of USFWS-approved impact avoidance, minimization, and mitigation measures proposed in this EA, would help minimize the potential for significant cumulative effects. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives, other than Alternative 3, would not result in significant cumulative impacts to biological resources. Conversely, when added to the impacts from other potentially cumulative actions, Alternative 3 would result in significant cumulative impacts to biological resources.

4.4.2 GEOLOGICAL RESOURCES

The ROI for geological resources includes DFSP San Pedro and adjacent landforms. The Proposed Action would result in surface disturbance. There would be no increased risk for landslides or erosion with the implementation of the identified impact avoidance and minimization measures. There would be no or negligible impacts to mineral resources, bedrock, or soils. The geotechnical report for the Ponte Vista Housing Project concluded that there is no substantial evidence the project would result in significant adverse impacts to geology and soils, and no further analysis was required. Requirements and recommendations of the geotechnical report would be required as conditions of the project (City of Los Angeles 2006). Therefore, when added to the impacts from other potentially cumulative actions, the alternatives, other than Alternative 3, would not result in significant cumulative impacts to geological resources. Conversely, when added to the impacts from other potentially cumulative actions, Alternative 3 would result in significant cumulative impacts to geological resources.

4.4.3 WATER RESOURCES

The ROI for water resources includes DFSP San Pedro and receiving waters. As discussed in Section 3.3, implementation of the alternatives would not result in significant impacts to water resources. The Ponte Vista Housing Project would comply with the same regulatory requirements and use similar erosion control measures and BMPs as described for this project. Other future projects would be required through applicable environment regulations (i.e., NEPA and/or CEQA) to consider the cumulative effects of these proposals, and to implement measures to avoid or minimize impacts to water resources. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives would not result in significant cumulative impacts to water resources.

4.4.4 TRANSPORTATION

The ROI for transportation includes the public roadway network that provides local and regional access to and from DFSP San Pedro. The construction of the Ponte Vista Housing Project will entail similar vehicles, workers, and equipment as proposed for the alternatives, resulting in a cumulative increase in construction/demolition-related trips. As mentioned, construction of the Ponte Vista Housing Project is currently on-going and the DFSP San Pedro project would not begin until 2016. It is possible for construction of Ponte Vista to be winding down, as demolition/repair of DFSP San Pedro would be ramping up. If this situation were to occur, based on the current capacity of North Gaffey Street, and considering the Ponte Vista Housing Project would generate 180 daily trips during peak construction activities (City of Los Angeles 2006), no substantial change in LOS would occur.

Upon completion, the Ponte Vista Housing Project would result in an increase in traffic on roads in the ROI. Although traffic generated from this project would primarily use Western Avenue, trips from this development would likely comingle with operations-related trips from the Proposed Action on other roadways that have interchanges with I-110 and/or other freeways in the area. This would include the five-way intersection of North Gaffey Street/South Vermont Street/Palos Verdes Drive/Normandie Avenue, which is located to the north of the Proposed Project that would accommodate traffic from both projects.

As noted in the Environmental Impact Report (EIR) prepared for the Ponte Vista project (City of Los Angeles 2006), this cumulative project has been conditioned with 36 mitigation measures intended to reduce the Ponte Vista project's traffic impacts to a level below significance. As shown in the Ponte Vista Housing Project Draft EIR, mitigation measures at this location would reduce the volume-to-capacity ratio[19] at this intersection to a level below the "no-project" condition. Accordingly, with the implementation of the Ponte Vista project, there would be an increase in capacity at this location. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives would not result in significant cumulative impacts to transportation.

4.4.5 AIR QUALITY

The ROI in this air quality cumulative effects analysis includes the SCAB. The minor impacts to air quality from implementation of Alternatives 1, 2, 3, or 4 that could contribute to potential cumulative impacts would be from emissions from trucks and vehicles used during proposed demolition and closure activities. Operational air emissions from the action alternatives would be negligible compared to the existing condition, and would not result in significant long-term increases in air emissions.

The combined air emissions of Alternatives 1, 2, 3, 4, or the No Action Alternative and potentially cumulative project would not have the potential to contribute in any appreciable way to an exceedance of an ambient air quality standard. As a result, proposed activities would produce less than cumulatively considerable air quality impacts. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives would not result in significant cumulative impacts to air quality.

[19] A measure of effectiveness used to determine the LOS of an intersection by comparing the volume of conflicting traffic movements (e.g., northbound left and southbound through) to the available capacity (based on the number of lanes available on each conflicting movement).

4.4.5.1 Greenhouse Gases

In addition to the potential cumulative impacts of additional criteria pollutants, the cumulative effects analysis for air quality would determine if the Proposed Action would contribute to global climate change (in combination with the other identified past, present, and future projects). The most recent California Climate Change Scenarios Assessment predicts that temperatures in California could increase by approximately 2.7 degrees Fahrenheit (°F) by 2050, and up to 8.6°F by 2100 (California Energy Commission 2012). Predictions of long-term negative environmental impacts due to global warming include sea level rise, changing weather patterns with increases in the severity of droughts, changes to local and regional ecosystems including the potential loss of species, and a substantial reduction in winter snow pack. In California, predictions of these effects include exacerbation of air quality problems, a reduction in municipal water supply, increased impacts from coastal flooding, an increase in the number and intensity of wild fires, and damage to marine and terrestrial ecosystems (California Energy Commission 2012). For a discussion of the potential impacts from climate change-related coastal flooding on the Proposed Action, refer to Section 5.2.3.

In December of 2014, the CEQ issued revised draft guidance for federal agencies, to guide them on when and how to consider the effects of GHG emissions and climate change in their projects (CEQ 2014). In the analysis of the direct effects of a Proposed Action, the CEQ proposes that it would be appropriate to (1) quantify cumulative emissions over the life of the project; (2) discuss measures to reduce GHG emissions, including consideration of reasonable alternatives; and (3) qualitatively discuss the link between such GHG emissions and climate change. Formulating significance criteria for GHG emissions is problematic, as it is difficult to determine what level of proposed emissions would substantially contribute to global climate change. The CEQ recommends that 25,000 metric tons of CO_2e or more being produced by a Proposed Action be considered the threshold warranting a more substantial evaluation of—but not necessarily a determination of—significance of climate change impact (CEQ 2014).

4.4.5.2 Greenhouse Gases Cumulative Effects Analysis

The potential effects of GHG emissions are by nature global and cumulative and it is impractical to attribute climate change to individual activities. Therefore, an appreciable impact on global climate change could only occur in the context of GHG emissions associated with the alternatives combining cumulatively with GHG emissions from other human-made activities on a global scale.

Alternative 1: Complete Closure with Partial Demolition

Table 4.4-1 summarizes the annual GHG emissions that would occur with implementation of Alternative 1.

Table 4.4-1. Estimated Annual GHG Emissions – Alternative 1

Scenario/Activity	Metric tons per year			
	CO_2	CH_4	N_2O	CO_2e[1]
Alternative 1 – Annual Emissions	4,405.45	1.22	0.00	4,431.17
Additional Annual Emissions from Concrete Batching	15.09	NA	NA	15.09
Total Annual Emissions	**4,420.54**	**1.22**	**0.00**	**4,446.26**

Note: [1]$CO_2e = CO_2 + (21 * CH_4) + (310 * N_2O)$.
NA = not applicable.

As an indication of the nominal relative magnitude of these emissions, total annual CO_2e emissions in the U.S. were approximately 5.5 billion metric tons (USEPA 2015d). The annual GHG emissions during the demolition and closure process would be roughly 0.0000081 percent of the total U.S. emissions, and well

below the 25,000 metric tons of CO_2e threshold proposed by CEQ. Therefore, when GHG impacts from Alternative 1 are added to the GHG impacts from the cumulative project, there would not be significant GHG cumulative impacts to global climate change from implementation of Alternative 1. There would also be no significant cumulative impact from the emission of criteria pollutants in conjunction with the other past, present, and reasonably foreseeable actions.

Alternative 2: Complete Closure with Minimal Demolition

Table 4.4-2 summarizes the annual GHG emissions that would occur with implementation of Alternative 2.

Table 4.4-2. Estimated Annual GHG Emissions – Alternative 2

Scenario/Activity	Metric tons per year			
	CO_2	CH_4	N_2O	CO_2e[1]
Alternative 2 – Annual Emissions	4,413.86	1.22	0.00	4,439.56
Additional Annual Emissions from Concrete Batching	15.09	NA	NA	15.09
Total Annual Emissions	**4,428.95**	**1.22**	**0.00**	**4,454.65**

Note: [1]$CO_2e = CO_2 + (21 * CH_4) + (310 * N_2O)$.
NA = not applicable.

The annual GHG emissions during the demolition and closure process would be roughly 0.000081 percent of the total U.S. emissions, and well below the 25,000 metric tons of CO_2e threshold proposed by CEQ. Therefore, when GHG impacts from Alternative 2 are added to the GHG impacts from the cumulative project, there would not be significant GHG cumulative impacts to global climate change from implementation of Alternative 2. There would also be no significant cumulative impact from the emission of criteria pollutants in conjunction with the other past, present, and reasonably foreseeable actions.

Alternative 3: Complete Closure with Complete Demolition

Table 4.4-3 summarizes the annual GHG emissions that would occur with implementation of Alternative 3.

Table 4.4-3. Estimated Annual GHG Emissions – Alternative 3

Scenario/Activity	Metric tons per year			
	CO_2	CH_4	N_2O	CO_2e[1]
Alternative 3 – Annual Emissions	4,315.24	1.22	0.00	4,340.93

Note: [1]$CO_2e = CO_2 + (21 * CH_4) + (310 * N_2O)$.

The annual GHG emissions during the demolition and closure process would be roughly 0.000079 percent of the total U.S. emissions, and well below the 25,000 metric tons of CO_2e threshold proposed by CEQ. Therefore, when GHG impacts from Alternative 3 are added to the GHG impacts from the cumulative project, there would not be significant GHG cumulative impacts to global climate change from implementation of Alternative 3. There would also be no significant cumulative impact from the emission of criteria pollutants in conjunction with the other past, present, and reasonably foreseeable actions.

Alternative 4: Partial Closure with Minimal Demolition

Table 4.4-4 summarizes the annual GHG emissions that would occur with implementation of Alternative 4.

Table 4.4-4. Estimated Annual GHG Emissions – Alternative 4

Scenario/Activity	Metric tons per year			
	CO_2	CH_4	N_2O	CO_2e[1]
Alternative 4 – Annual Emissions	4,382.97	1.22	0.00	4,408.67
Additional Annual Emissions from Concrete Batching	15.09	NA	NA	15.09
Total Annual Emissions	**4,398.06**	**1.22**	**0.00**	**4,423.76**

Note: [1]$CO_2e = CO_2 + (21 * CH_4) + (310 * N_2O)$.
NA = not applicable.

The annual GHG emissions during the demolition and closure process would be roughly 0.000080 percent of the total U.S. emissions, and well below the 25,000 metric tons of CO_2e threshold proposed by CEQ. Therefore, when GHG impacts from Alternative 4 are added to the GHG impacts from the cumulative project, there would not be significant GHG cumulative impacts to global climate change from implementation of Alternative 4. There would also be no significant cumulative impact from the emission of criteria pollutants in conjunction with the other past, present, and reasonably foreseeable actions.

No Action Alternative

Under the No Action Alternative, there would be no demolition activities, and the proposed activities maintenance, repair, and construction activities to return to active status would be temporary in duration and small in scope, and would therefore have minimal impacts to the regional air quality. Once the DFSP San Pedro fuel facility is fully operational, there would be no change in regional impact to air quality, as the same operations would cease to exist at the Kinder Morgan fuel facilities 10 miles (16 kilometers) away. Therefore, when GHG impacts from the No Action Alternative are added to the GHG impacts from the cumulative project, there would not be significant GHG cumulative impacts to global climate change from implementation of the No Action Alternative. There would also be no significant cumulative impact from the emission of criteria pollutants in conjunction with the other past, present, and reasonably foreseeable actions.

4.4.6 NOISE

The ROI for noise consists of DFSP San Pedro and adjacent communities. The Proposed Action in conjunction with the Ponte Vista Housing Project would generate intermittent, temporary noise impacts throughout the ROI. The duration of these localized impacts would be limited to the construction phases of the Ponte Vista Housing Project; some overlap with the Proposed Action may occur (refer to the discussion in Section 4.5.4). Should project overlap occur, construction/demolition-related noise levels would have the potential to magnify noise levels. However, due to the distance between the projects, and the prevalence of shielding topography, no cumulative noise impacts related to sensitive noise receptors would occur. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives would not result in significant cumulative impacts related to noise.

4.4.7 HAZARDOUS MATERIALS AND WASTES

The ROI for hazardous materials and wastes includes DFSP San Pedro and adjacent communities. Alternatives 1 through 3 would not result in significant impacts related to existing soil contamination due to adherence to OSHA standards and to a site-specific Health and Safety Plan, which would include detailed precautionary measures to substantially reduce potential exposure of on-site personnel to petroleum waste and/or hazardous waste.

Alternative 4 and the No Action Alternative would include use, storage, and transfer of petroleum products and hazardous materials during renewed operations of the DFSP San Pedro facility. Renewed DFSP San Pedro operations would occur in accordance with an OMES Plan, SWPPP, and Oil and Hazardous Substance Integrated Contingency Plan.

Construction at the Ponte Vista housing project would potentially result in incidental releases of petroleum products and hazardous materials during fueling and maintenance of construction equipment. However, such releases would be mitigated through implementation of a mandated SWPPP and associated BMPs, such that impacts would not occur. In addition, any potential soil contamination found during excavations and grading for the housing project would be addressed through established federal, state, and local guidelines regulating petroleum and hazardous waste. Hazardous materials and waste related impacts would be confined to the project area and would have no cumulative effects. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives would not result in significant cumulative impacts related to the increased exposure of people to public health and safety risks from hazardous materials and wastes.

4.4.8 CULTURAL RESOURCES

The ROI for cultural resources consists of DFSP San Pedro and adjacent lands. No historic properties have been identified within the DFSP San Pedro project area. The location of the Ponte Vista Housing Project has been developed, with streets, housing units, and landscaping. Although the area might have contained archaeological resources at one time, because of its proximity to the coast, with extensive industrial, residential, and port-related development, it is unlikely that undisturbed historic properties remain. Therefore, it is unlikely that any of the action alternatives associated with closure of the DFSP San Pedro facilities would have an adverse cumulative effect to cultural resources from this development. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives would not result in significant cumulative impacts to cultural resources.

4.4.9 VISUAL RESOURCES

The ROI for visual resources consists of DFSP San Pedro and its greater viewshed. Implementation of the alternatives would result in temporary negative impacts to visual resources as demolition vehicles, materials, equipment, and debris are present at DFSP San Pedro. During construction of the Ponte Vista housing project similar temporary negative visual impacts would occur. Upon completion of any alternatives, the resulting visual environment would be either slightly improved, or, consistent with existing conditions. The Ponte Vista housing project is in effect replacing a previous housing project; thus, the overall visual environment at completion would be consistent with the viewshed. Therefore, when added to the impacts from other potentially cumulative actions, the alternatives would not result in significant cumulative impacts to visual resources.

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CHAPTER 5
OTHER NEPA CONSIDERATIONS

5.1 POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION AND THE OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL PLANS, POLICIES, AND CONTROLS

Table 5-1 presents a summary of regulatory compliance status for the Proposed Action.

Table 5-1. Summary of Regulatory Compliance for the Proposed Action

Plan, Policy, or Control	Regulatory Authority	Compliance Status	EA Section
NEPA	Navy	This EA has been prepared in accordance with NEPA, CEQ regulations implementing NEPA, and Navy NEPA procedures.	Entire EA
DLA Regulation 1000.22, *Environmental Considerations in Defense Logistics Agency Actions*	DLA	This EA has been prepared in accordance with DLA NEPA procedures.	Entire EA
Coastal Zone Management Act (CZMA)	California Coastal Commission	The Navy considered the effects of the Proposed Action would have on coastal uses and resources for purposes of federal consistency review under the CZMA and determined there would be no reasonably foreseeable direct or indirect effects on coastal uses and resources. It is anticipated that the Navy will prepare a Coastal Consistency Negative Determination and submit it to the California Coastal Commission for concurrence	Chapter 3
EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-income Populations*	Navy	Based on the analysis in this EA, Navy concludes that Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.	1.5.2
EO 13045, *Protection of Children from Environmental Risks and Safety Risks*	Navy	Based on the analysis in this EA, Navy concludes that the Proposed Action would not result in environmental health risks and safety risks that may disproportionately affect children.	1.5.2
Endangered Species Act	USFWS	Coordination with the USFWS is on-going.	3.1
Migratory Bird Treaty Act	USFWS	The Proposed Action would comply with the MBTA.	3.1
Clean Water Act	USACE, SWRCB, Los Angeles RWQCB	The Proposed Action would be implemented in compliance with California's Construction General Permit. Proposed demolition activities would require preparation of a SWPPP and use of BMPs to control water pollution by regulating point sources that discharge pollutants into waters of the United States.	3.3
Clean Air Act	USEPA, CARB, SCAQMD	The air quality analysis in this EA concludes that under all alternatives, emissions: (1) would not exceed *de minimis* levels, (2) would not create a major regional source of air pollutants or affect the current attainment status, and (3) would comply with all applicable state and regional air agency rules and regulations.	3.5, 4.5.5
Resource Conservation and Recovery Act	USEPA	Demolition debris would be taken to an appropriate facility for disposal.	3.7
Comprehensive Environmental Response, Compensation, and Liability Act	USEPA	The Navy's IRP would continue to monitor and conduct reviews of remedial action methods every 5 years as required.	3.7
National Historic Preservation Act	SHPO	The Proposed Action would not affect any sites, buildings, structures, or objects that are deemed eligible for nomination to the NRHP.	3.8

5.2 CLIMATE CHANGE

The *Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews* issued by the CEQ on December 18, 2014 recommends incorporating impacts associated with climate change as part of the standard cumulative impact analysis of all NEPA documents. The draft guidance encourages agencies to determine which climate change impacts warrant consideration in their analyses based on both the Proposed Action's potential impact to climate changes and the potential impact a changing climate may have on implementation of the Proposed Action. In addition, EO 13653, *Preparing the United States for the Impacts of Climate Change*, directs federal agencies to continue to develop, implement, and update comprehensive plans that integrate consideration of climate change into agency operations and overall mission objectives.

The USEPA developed a "State of Knowledge" website following the 2007 Intergovernmental Panel on Climate Change report. The USEPA affirms that while the contribution is uncertain, human activities are substantially increasing GHG emissions, which, in turn, are contributing to a global warming trend (USEPA 2015e). The U.S. Global Change Research Program (USGCRP) is a working group coordinating the efforts of 13 different federal agencies, including the U.S. Department of Agriculture, the Department of the Interior, the DoD, and the Department of Energy. The USGCRP releases regular reports presenting the most current scientific consensus of predicted changes associated with global climate change. The 2014 National Climate Assessment report is the most recent complete report. This report summarizes the science of climate change and the impacts of climate change on the U.S., now and in the future, and is recommended by the CEQ 2014 draft guidance as the primary source for framing climate change discussions.

5.2.1 PREDICTED FUTURE CONDITIONS

The USGCRP looks to two potential future conditions as part of its predictive modeling process. Under conditions of lower GHG emissions, the average temperature in southwestern California may increase as much as 2.5°F by 2050, 3.5°F by 2070, and 4.5°F by 2099. Under conditions of higher continuous GHG emissions, the potential increase is greater in the long-term, and may be as much as 7.5°F by 2099. Projected changes in long-term climate predict more frequent extreme events such as heat waves and droughts (USGCRP 2014).

Current simulations predict decreasing precipitation, snowpack, runoff, and soil moisture for the region into the future. Specifically, winter and spring precipitation may decrease between 0 and 30 percent from currently observed levels, with biggest reduction predicted under the higher emissions scenario. While total precipitation is projected to decrease, the frequency of extreme rain events with the high potential for flooding is projected to increase. At the same time, extreme heat events are also expected to increase in frequency and magnitude. The temperatures observed during extreme events are projected to increase by 3°F to 9°F, depending on the emissions scenario used for predictive modeling (USGCRP 2014). This change in precipitation and heat would likely alter agricultural and ecosystem conditions.

As temperatures increase in the current century, optimal zones for growing crops will shift. Pests that were historically unable to survive in cooler areas may spread northward. Milder winters and earlier springs also may encourage greater numbers of pest species. Rising CO_2 levels in the atmosphere may increase growth of both crop and weed species. In some areas, water scarcity may reduce or even eliminate certain types of agricultural production. Similarly, changes in temperature and precipitation affect the composition and diversity of native animals and plants through altering their breeding patterns,

water and food supply, and habitat availability. In a changing climate, populations of some pests such as red fire ants and rodents, better adapted to a warmer climate, are projected to increase (USGCRP 2014).

5.2.2 IMPACT OF THE PROPOSED ACTION ON CLIMATE CHANGE

The Proposed Action has the potential to impact climate change via the emission of GHGs and temporary loss of habitat as carbon sinks. The GHG emissions associated with this proposed action are described in Section 4.5.5. The impacts to habitat would be temporary and loss of biological resources as a carbon sink would likewise be temporary.

As shown in Section 4.5.5, emissions under each alternative would be below the 25,000 metric tons of CO_2e level proposed in the draft NEPA guidance by the CEQ as the threshold warranting a more substantial evaluation of—but not necessarily a determination of—significance of climate change impact (CEQ 2014). Thus, the implementation of any of the evaluated alternatives would not contribute significantly to global climate change.

5.2.3 IMPACT OF CLIMATE CHANGE ON THE PROPOSED ACTION

Climate change has the potential to impact the operations included in the Proposed Action. Because the proposed action is coastal and involves underground pipe, the primary impacts on the project from climate change would result from sea level rise. Along the California coast, sea level has risen an average total of 7 inches (17.8 centimeters) from 1900 to 2005; this rate is predicted to accelerate in coming years (USGCRP 2014). Inundation associated with sea level rise could result in increased access and maintenance challenges. Furthermore, the rising sea level would similarly raise the coastal water table. As the water table rises to submerge a buried pipe, buoyant forces begin to stress the pipe as well. Larger pipes are more vulnerable from the buoyancy stress, as are empty pipes or those with compressible gases (Strategic Environmental Research and Development Program 2014).

The State of California provides recommended sea level rise ranges for planning analysis, derived from published work by the National Research Council. The State recommends a range of 0.39 to 2.0 feet (0.11 to 0.6 meter) rise for the period from 2000 through 2050, and 1.38 to 5.48 feet (0.42 to 1.67 meters) rise for the period from 2000-2100 (State of California 2014). Using the 2015 National Oceanic and Atmospheric Administration's Sea Level Rise and Coastal Flooding Impacts (v2.0) online tool, the Main Terminal is located sufficiently inland such that surface inundation would be unlikely for projected sea level rise under 5 feet (1.5 meters) (the maximum rise displayed by the tool). However, the Marine Terminal would continue to have the potential to be affected by sea level rise. Therefore, impacts to Marine Terminal infrastructure and submerged pipes would represent the biggest sea level rise-related risk to the project. As predictions for sea level rise in the project area become more refined, the Navy and DLA may wish to consider developing improved access infrastructure and/or protocols to be better able to ensure closed in place structures are able to withstand any predicted stresses. This may include hardening Marine Terminal infrastructure and stress testing the pipes and selecting/implementing inerting materials to withstand buoyancy forces.

5.3 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL OF VARIOUS ALTERNATIVES AND MITIGATION MEASURES BEING CONSIDERED

Energy demands would primarily occur during the closure/demolition phases of the project. The energy demands for the implementation of each action alternative would increase/decrease correspondingly with the footprint of each alternative. Alternative 4 would have longer term energy requirements, as it includes the partial operation of the facility moving forward, whereas the other action alternatives include closure

of the facility and thus would have minimal energy demands after complete closure. The No Action Alternative would similarly have long-term energy demands as the facility is returned to operation.

Closure/demolition activities would consume large volumes of non-renewable fossil fuel, in the form of diesel gasoline, for the operation of equipment and transportation. One of the primary opportunities for conservation of fuel is the regular maintenance of vehicles and equipment to maximize their fuel efficiency. As discussed in Section 3.5.3.3, all equipment would be in proper working order, equipment would not be allowed to idle when not in service, and all equipment would be shut down when not in operation for an extended period. Appendix B identifies the impact avoidance and minimization measures to be implemented under the Proposed Action.

5.4 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF NATURAL OR DEPLETABLE RESOURCES

The permanent use and subsequent loss of non-renewable resources, such as oil, natural gas, and iron ore, are considered irreversible because non-renewable resources cannot be replenished by natural means. An action that causes a loss in the value of an affected resource, which cannot be restored (e.g., disturbance of a cultural site), is considered an irretrievable commitment of resources. Similarly, the consumption of a renewable resource that would be lost for a period of time is also considered an irretrievable commitment of resources. Renewable natural resources include water, lumber, and soil, all of which can be replenished by natural means within a reasonable timeframe. All considered alternatives would require the irretrievable commitments of both non-renewable and renewable resources in the use of fuel, construction materials, and labor.

The alternatives would use varying amounts of these resources commensurate with the level of effort and size of footprint of each alternative. Alternatives 1, 2, and 3 would require minimal resources after proposed demolition activities are completed. Alternative 4 and the No Action Alternative would both require the use of non-renewable resources (primarily fossil fuels) for facility operations.

5.5 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Short-term uses of the environment associated with the Proposed Action would include impacts to habitat in the course of demolition and closure. Project-related construction activities would temporarily increase air pollution emissions in the immediate vicinity of the affected area(s).

As discussed in Chapter 3, the action alternatives would result in both short- and long-term environmental effects. Closure/demolition of DFSP San Pedro would not result in the types of impacts that would reduce environmental productivity, have long-term impacts on sustainability, affect biodiversity, or narrow the range of long-term beneficial uses of the environment.

5.6 ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED AND ARE NOT AMENABLE TO MITIGATION

The Navy has determined that the Proposed Action would not result in any significant impacts, except with respect to biological and geological under Alternative 3. Per the analysis provided in this EA, the Navy believes the majority of potential impacts could be avoided either entirely or nearly so. While some impacts clearly could not be avoided altogether, the Navy has determined that all such impacts could, to at least some extent, be reduced through impact avoidance and minimization measures as presented in Appendix B. The draft impact avoidance and minimization measures presented in Appendix B will be updated following completion of agency consultation.

CHAPTER 6
LIST OF AGENCIES AND PERSONS CONSULTED

To be provided.

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CHAPTER 7
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CHAPTER 8
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Appendix A

Public Scoping Period Report

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Defense Fuel Support Point San Pedro
Complete or Partial Closure Environmental Assessment
Public Scoping Period Report

Background

The Navy, in conjunction with the Defense Logistics Agency, is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts resulting from the proposed complete or partial closure of the fuel facility at Defense Fuel Support Point (DFSP) San Pedro. The Navy hosted a public meeting for the public and agencies to learn about the proposed project and provide their input for consideration. A 15-day public scoping comment period was established to provide an opportunity to public comment.

Public Notification

On February 27, 28, and April 1, 2015, the Navy published a public scoping meeting notice in the Los Angeles Times and the Daily Breeze. The publication of the Scoping Meeting notice announced the upcoming 15-day public comment period. The public comment period began on March 18, 2015 and ran until April 3, 2015. In addition to inviting the public and agencies to comment on the proposed project, the notice also announced the date, time, and location for the public meeting. The notice also provided the name, address, and e-mail of where comments should be sent.

In conjunction with the public notice, on February 25, 2015, the Navy mailed 1,661 public meeting notification postcards to individuals, agencies, elected officials, and interested parties that were on the project mailing list. This list included individuals who had expressed interest in past Navy projects in the area. The postcards gave details of the proposed project, the public meeting location, date and time, and the various methods to comment on proposed project.

Public Scoping Meeting

The objectives for the DFSP scoping meeting were to:

- Educate community members about the Complete or Partial Closure of the DFSP, the upcoming preparation of the EA, Proposed Action and Alternatives, National Environmental Policy Act process/timeline, and opportunity for public involvement.
- Provide an opportunity for members of the public to comment.
- To receive feedback from the public for consideration in the development of the Draft EA.

The meeting was held at the Crowne Plaza Los Angeles Harbor Hotel on Wednesday, March 18, 2015 from 6:00 P.M. to 8:00 P.M. The location for this meeting was chosen for its convenience and accessibility, as well as familiarity for community members. The time of day for this meeting was selected because it was the most convenient for the public. The meeting time was chosen while keeping in mind potential conflicts with other community events, religious holidays, cultural celebrations, and traditional and shift working hours.

The public scoping meeting was structured as an Open House format to serve multiple learning styles, facilitate an interactive process of information exchange, encourage one-on-one communication, provide access to consistent information, minimize confrontations, build credibility, solicit input from a broader range of attendees, and receive public comment.

Meeting materials included 13 poster boards, terminology handouts, and comment cards. Subject matter experts from the Navy, the Defense Logistics Agency, and the consultant team were available to provide details and answer questions. A total of 37 persons attended the public meeting.

Comments from the public and interested parties during the open houses were accepted in the following formats:

- Comment cards (provided at the public scoping meeting)
- Written comments (includes comments sent by mail and e-mail)

Public Scoping Period Comments

Eight comments were submitted at the public meeting. Following the meeting, an additional 11 comments were submitted via e-mail and mail. In total, 19 comments were received (refer to Section 1.7 of the EA for a summary table of comments).

Appendix B

Summary of Impacts to Biological Resources and Draft Impact Avoidance and Minimization Measures

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Appendix B summarizes the potential impacts to biological resources under each alternative (Table B-1) and presents the impact avoidance and minimization measures (Table B-2) that would be implemented as part of each alternative for each resource area, as applicable.

The draft impact avoidance and minimization measures presented in Table B-2 are subject to revision pending the outcome of on-going regulatory coordination.

Table B-1
Quantitative Comparison of Potential Biological Resource Impacts at the DFSP San Pedro Main Terminal

Direct Impacts	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Main Terminal Totals (Existing Conditions)
Temporary direct impacts on vegetation and land cover types	25 acres (8% of total)	16 acres (5% of total)	93 acres (30% of total)	16 acres (5% of total)	308.76 acres
PVB Habitat	0.27 acre (1.0% of total)	0.18 acre (0.6% of total)	2.95 acres (10.4 % of total)	0.18 acre (0.6% of total)	28.32 acres
CAGN Habitat	0.45 acre (0.8% of total)	0.09 acre (0.16% of total)	6.45 acres (11.4% of total)	0.09 acre (0.16% of total)	56.75 acres
Habitat for MBTA Species (excludes bare, developed, and roads)	19 acres (7% of total)	15 acres (5% of total)	85 acres (31% of total)	15 acres (5% of total)	277.66 acres

Table B-2

Draft Impact Avoidance and Minimization Measures for the Action Alternatives (1, 2, 3, and 4)

These draft impact avoidance and minimization measures presented are subject to revision pending the outcome of on-going regulatory coordination.

#	Applies to Alternative(s)	Action and Description
GENERAL		
Short-Term (Demolition)		
G-1	1, 2, 3, & 4	The contractor will be required to prepare an Environmental Protection Plan that will describe how the contractor will implement the mitigation, impact, avoidance and minimization measures presented in this table.
BIOLOGICAL RESOURCES (B)		
Short-Term (Demolition)		
B-1	1, 2, 3, & 4	The project area will be accessed using existing roads. Parking, driving, lay-down, stockpiling, and vehicle and equipment storage will be limited to previously compacted and developed areas within the Operations Area. No off-road vehicle use will be permitted beyond the Operations Areas and designated access routes, except as addressed in #B-2.
B-2	1, 2, 3, & 4	To minimize impacts to biologically sensitive areas, construction access routes will be determined in coordination with NAVFACSW biologists during the design phase, and delineated in the construction plans. This access route will be clearly marked and will be considered part of the project activity zone. Biologically sensitive areas will be clearly marked on project activity plans, and avoided by personnel and equipment.
B-3	1, 2, 3, & 4	At least seven days before project initiation, the limits of the project boundary, including temporary features such as staging areas, will be clearly marked with flagging, fencing, or signposts. All project-related activities will occur within the project boundary. Limits of the project activity zone will be clearly marked on construction plans. No unauthorized personnel or equipment (including off-road vehicle access) will be allowed outside the project activity limits or designated access routes. DLA will include in closure PWS.
B-4	1, 2, 3, & 4	To ensure fire does not commence due to project activities, shields, protective mats, or other fire prevention equipment will be used during grinding and welding, and vehicles will not be driven and parked in areas where catalytic converters could ignite dry vegetation. No smoking or disposal of cigarette butts will take place within vegetated areas. As a precaution, project trucks will carry water and shovels or fire extinguishers, to ensure fire does not spread due to project activities.
B-5	1, 2, 3, & 4	Should night work be authorized, any night work will involve shielding all lighting away from sensitive areas.
B-6	1, 2, 3, & 4	A contractor education program will be conducted in accordance with the DLA Energy EMS. It will be conducted during all project phases and will cover the potential presence of listed species; the requirements and boundaries of the project; the importance of complying with avoidance, minimization, and compensation measures; and problem reporting and resolution methods.
B-7	1, 2, 3, & 4	All trash generated by demolition activities will be disposed of properly. All food-related trash will be placed in sealed bins or removed from the site regularly. Following initial project activities, all equipment, waste, and project debris will be removed from the site, and the soil will be re-contoured before habitat restoration. The project contract will require the project debris to be recycled and quantities turned into DLA. DLA will include these requirements in a Performance Work Statement (PWS) for Closure.

#	Applies to Alternative(s)	Action and Description
B-8	1, 2, 3, & 4	Staging areas, laydown areas, and/or other temporary project activity-related requirements will be located within the Operations Area, in already disturbed areas or non-sensitive habitat types. DLA will include these requirements in a PWS for Closure.
B-9	1, 2, 3, & 4	Use of shoring or other excavation stability measures to reduce areas of impact may be employed where practicable. DLA will include these requirements in a PWS for Closure.
B-10	1, 2, 3, & 4	A qualified Project Biologist will be on site when work is being done in and/or adjacent to identified habitat areas. These identified habitat areas with an appropriate buffer will be included on project maps and drawings. The Project Biologist will identify work areas, monitor work activity, provide "tailgate" sessions for the demolition contractor, and oversee and execute the impact avoidance and minimization measures pertaining to biological resources. The Project Biologist will have experience with listed and sensitive species that occur or have the potential to occur in the project area. Before demolition activities, a qualified biologist will conduct pre-project clearance surveys to ascertain the demolition area is not being used by sensitive native species, including owls, raptors, and bats.
B-11	1, 2, 3, & 4	The following measures will be used to minimize and avoid impacts to CAGN: a. The biologist will monitor demolition activities. The Project Biologist will conduct pre-activity surveys for CAGN s and their nests in and within a 100-foot wide buffer surrounding the impact area. These surveys will be conducted within the week before the initiation of brush clearing, grading, or other demolition activities. The Navy will coordinate with the USFWS to determine appropriate nest survey frequency. Areas that have been surveyed would be flagged, and any vegetation that is required to be removed for purposes of demolition would be removed outside the breeding season. b. Dust migration in or adjacent to Coastal Sage Scrub areas will be minimized by lightly spraying areas of exposed soil with water during excavation activities when weather conditions require the use of dust control measures. c. The following measures will be employed if active CAGN nest(s) are detected within the immediate area of project impacts or within the surrounding 100-foot wide buffer: i. If practical, demolition activities will be avoided within 100 feet of a nest until the nest fails or juveniles successfully fledge as determined by the Project Biologist. ii. If any active CAGN nest (nest containing eggs or an empty or partial nest with CAGNs actively exhibiting breeding behaviors) occurs within 100 feet of proposed demolition area, the Project Biologist will report the nest to the Navy. The Project Biologist will use the distance to the project limits and local topography to determine if demolition activities are likely to directly damage a nest or disturb nesting activities. Signage will be installed to deter people from entering any area within an active CAGN nest. iii. Where damage or disturbance of any CAGN nest(s) is likely, NAVWPNSTA Seal Beach will implement further measures to avoid the likelihood of nest destruction or disturbance, including temporarily halting clearing activities until the nest fails or until at least 10 days after young fledge from the nest. Demolition activities will be directed to other areas farther from the active nest(s) where the activities will not disturb the active nest(s). iv. The Project Biologist will monitor nest progress, demolition activity, and protective fencing to minimize potential demolition-related disturbance and submit a weekly nest status report to NAVWPNSTA Seal Beach. A post-demolition report will be submitted to the USFWS summarizing the weekly nest status report and outcomes within six months of project completion. d. DLA will include these requirements in a PWS for Closure.

#	Applies to Alternative(s)	Action and Description
B-12	1, 2, 3, & 4	Due to the presence of MBTA habitat within the project area, a qualified biologist will conduct pre-activity surveys for migratory birds and their nests within the project area and associated buffer area. The areas will be flagged; any vegetation needing to be removed for demolition will be removed prior to breeding season. DLA will include these requirements in a PWS for Closure.
B-13	1, 2, 3, & 4	The contractor performing the closure activities will be required to prepare a Revegetation Plan that is consistent with the DFSP INRMP. The Revegetation Plan will address all revegetation efforts associated with the project activities and include specific erosion control measures, irrigation requirements, species composition, seed mix origins and ratios for that particular habitat, weed control, water regimes, maintenance activities, success criteria, and monitoring requirements. The Revegetation Plan will apply to all soil disturbance and will include the following: a. The Operations Area will be reseeded with native species. b. The Habitat Area (Listed Species Management and Habitat Opportunity Areas) will be restored with habitat plantings specific to the PVB and CAGN, as appropriate. c. To minimize and avoid impacts to CAGN following project completion, all suitable and/or occupied CAGN habitat that is temporarily impacted by project activities will undergo appropriate restoration activities (e.g., re-contouring, planting, and weeding). Restoration will be conducted consistent with the Restoration Plan. d. Revegetation methods for habitat areas will be consistent with the INRMP and include seeding and/or planting of container stock, salvaged plants, cuttings, or other propagules collected or propagated from a local native plant nursery or locally collected sources, including any sensitive plant species that will be impacted during soil disturbance or other project activities. Plants from local nurseries will use clean, weed-free soil. e. Reseeding/replanting that becomes necessary after the start of the rainy season will be done as soon as possible. f. DLA will include these requirements in a PWS for Closure.
Long-Term (Post-Closure)		
B-14	1, 2, 3, & 4	Areas impacted by project activities will be inspected by the Navy within one year following the completion of project activities to determine whether any remedial measures, such as re-seeding/re-planting, weed control, watering, and/or erosion control, are required. Up to five years of post-restoration monitoring within disturbed habitat areas will occur. Invasive weed control (e.g., hand removal, mechanical, and herbicide control) will be implemented in areas reseeded/replanted until the native vegetation is established. This will be conducted as part of the established Habitat Management Program and incorporated into the Habitat Management Plan and INRMP.
B-15	1, 2, 3, & 4	The project will minimize the potential for invasive plant species (i.e., weeds) or soil pathogens to become established in disturbed areas and spread into Listed Species Management Areas as well as minimize the risk of habitat degradation from the invasion of nonnative vegetation into Listed Species Management Areas. Invasive plant species generally include those species listed by the CALIPC and any species that can invade natural or restoration areas and replace or preclude the establishment of native or other more desirable species. Invasive Species (as listed by the CALIPC "high" and "moderate" categories) will be prevented from establishing in temporarily disturbed areas by biological monitoring and removal if discovered. The following measures will be implemented: a. Vegetation characteristics will be monitored annually within habitat areas using study areas defined in Longcore (2007). Monitoring will occur following the PVB flight season each year. The following characteristics will be estimated: i. Three permanent transects will be established in each survey area to estimate percent cover of native shrubs, native forbs, nonnative

#	Applies to Alternative(s)	Action and Description
		grasses, nonnative forbs, and bare ground. ii. For each study area, a qualified biologist will provide a narrative that describes which invasive species pose the most important threats to habitat. b. The following species will be eradicated from the Listed Species Management Areas, and any new invasion will be eliminated annually: giant reed (*Arundo donax)*, Peruvian peppertree (*Schinus molle*), and iceplant (*Carpobrotus edulis*). Eradication techniques will avoid PVB hostplants with a buffer (2 foot) around hostplant canopies and follow guidelines described in CAGN minimization measures. c. A qualified biologist will maintain and continually update a list of nonnative plants that are known to quickly invade and degrade native habitat in the vicinity of DFSP San Pedro. If plant species with rapid colonization and invasion potential are observed within the Listed Species Management Areas, they will be the highest priority for annual weed management. This list will initially include: spurge (*Euphorbia terracina*), castor bean (*Ricinus communis*) and pampas grass (*Cortaderia selloana*); d. Other nonnative plants will be managed as part of habitat maintenance using the approaches as deemed appropriate by a biologist: i. Routine nonnative vegetation control will be implemented using hand tools, including hand-held power tools such as weed trimmers, without the use of chemicals. ii. To minimize impacts to PVB adults, use of powered weed trimmers or other potential disturbance-inducing methods will be avoided during the PVB flight season (February 15 to May 31) within areas determined to be occupied by monitoring and areas mapped as potentially occupied by PVB. iii. In problematic areas, herbicides will be applied by certified pesticide applicators as needed using the following guidelines provided in the 2010 BO (FWS-LA-08B0606-08F0704 Conservation Measure 6 [USFWS 2010a]). iv. No herbicide will be applied within 2 feet of any coast locoweed (*Astragalus trichopodus var. lonchus*) or deerweed canopy. e. Using data from vegetation sampling, each study area will be assessed to determine whether it meets the following criteria in regards to the severity of nonnative plant dominance. i. If the relative ratio of nonnative plant cover to native plant cover for any study area exceeds 1:1, the biologist will initiate vegetation management for that study area during the same calendar year. ii. If nonnative vegetation remains above this threshold two years later, the biologist will contact the USFWS and DFSP San Pedro to coordinate remedial actions, which may include supplemental seeding to enhance success.
B-16	1, 2, 3, & 4	The following measures will be used to conserve PVB at the DFSP San Pedro: a. DFSP San Pedro will maintain a captive breeding program to support PVB protection and recovery and continue monitoring following methods described in the 2010 BO (FWS-LA-08B0606-08F0704 Conservation Measure 1 [USFWS 2010a]). b. PVB populations will be monitored via annual PVB surveys along transects that have been sampled since 1999 and as described in 2010 BO (FWS-LA-08B0606-08F0704 Conservation Measure 2 [USFWS 2010a]). c. Restore suitable habitat to existing conditions following demolition according to the Revegetation Plan. Habitat areas will be restored with habitat plantings specific to the PVB and CAGN.
B-17	1,2,3, & 4	Continued operation of the onsite native plant nursery.

#	Applies to Alternative(s)	Action and Description
GEOLOGICAL RESOURCES (G)		
Short-Term (Demolition)		
G-1	1, 2, & 4	A geotechnical/engineering evaluation will be conducted to determine the load-bearing capability of the native earth materials on the site, especially for the 2,100,000-gallon capacity USTs and abandoned pipelines that are located on the side slopes of hills and the central ravine. The evaluation will also recommend which of the three potential UST and pipeline fill materials is most suitable for the site-specific conditions, including response to ground shaking during an earthquake. The evaluation will identify engineering measures and guidelines for restoration of excavations, compacting of soils, and slope stabilization.
G-2	3	A geotechnical/engineering evaluation will be conducted to determine the engineering measures and guidelines for restoration of excavations, compacting of soils, and slope stabilization. The evaluation will also evaluate whether additional drainage diversion/control will be needed on the slopes. The potential for increased landslides and erosion will be minimized by following a site engineering plan that identifies appropriate fill materials, compaction to engineering standards, appropriate angles for the reconstructed slopes, and drainage control to stabilize the reconstructed slopes. Examples of engineering controls could be: a. The use of benched slopes on the steep hillsides; and b. Concrete-lined drainage ditches to direct runoff away from the reconstructed slopes. c. DLA will include in the closure PWS.
G-3	3	During demolition, contractors will be required to use a specified laydown area for the vehicles and equipment, drive on existing roads as much as possible, use of stabilized construction entrance/exit to minimize sediment from being carried offsite by vehicle tires, and use erosion-prevention BMPs such as: a. Covering soil piles at the work site; b. Using silt barriers to prevent soil loss from runoff; and c. Revegetating reconstructed slopes to provide a surface cover to protect the soil from erosion. d. DLA will include in the closure PWS.

#	Applies to Alternative(s)	Action and Description
WATER RESOURCES (W)		
Short-Term (Demolition)		
W-1	1, 2, 3, & 4	Appropriate BMPs will be implemented in accordance with the Construction General Permit that meet requirements for Best Available Technology and Best Conventional Pollutant Control Technology to reduce or eliminate pollutants from entering receiving waters. These BMPs generally fall into four main categories: erosion control, soil stabilization, sediment control, and non-stormwater management. BMPs may include but not be limited to the following: a. Stabilize disturbed soils through erosion and sediment control measures. b. Revegetate disturbed areas with native or naturalized plant species consistent with the surrounding vegetation once demolition is complete. c. Protection of storm drains around the demolition sites with sediment control (e.g., fiber rolls and sediment traps). d. Storage of hazardous materials with proper secondary containment, and establishment of designated vehicle and equipment maintenance areas. e. Management of spills and leaks from vehicles and equipment through inspections and use of drip pans, absorbent pads, and spill kits. f. At the Marine Terminal, appropriate BMPs (e.g., pier-level containment partitions, in-water containment boom) will be implemented (as warranted) to minimize the potential for demolition debris to enter the Port of Long Beach harbor. g. DLA will include in the closure PWS.
AIR QUALITY (A)		
Short-Term (Demolition)		
A-1	1, 2, 3, & 4	Proper and routine maintenance of all vehicles and equipment will occur to ensure that emissions are within design standards. DLA will include in the closure PWS.
A-2	1, 2, 3, & 4	Dust suppression methods (such as using water trucks to wet the disturbed areas and any soil stockpiles during demolition and covering stockpiles with tarps or other physical barriers) will minimize fugitive dust emissions. DLA will include in the closure PWS.
A-3	1, 2, 3, & 4	Demolition activities will not occur when wind speeds exceed 25 miles per hour. DLA will include in the closure PWS.
A-4	1, 2, 3, & 4	The best available engine technologies will be utilized on construction vehicles, when available (USEPA Tier 4 standards). DLA will include in the closure PWS.
NOISE (N)		
Short-Term (Demolition)		
N-1	1, 2, 3, & 4	The Navy complies with all applicable laws and regulations, and meets the substantive requirements of those laws and regulations that do not formally apply to the Navy, to the fullest extent practicable. In addition, the following measure will be implemented: a. The Navy will provide advanced notification of proposed demolition activities and associated demolition hours to the community.

#	Applies to Alternative(s)	Action and Description
HAZARDOUS MATERIALS AND WASTES (H)		
Short-Term (Demolition)		
H-1	1, 2, 3, & 4	Before the start of demolition activities, a site-specific Health and Safety Plan will be prepared and submitted for the Navy's approval, and all necessary permits and approvals will be obtained. The Health and Safety Plan will include detailed precautionary measures to substantially reduce potential exposure of on-site personnel to petroleum waste, hazardous waste, and potentially explosive gases. All on-site personnel handling or working in the vicinity of the contaminated soil will be trained in accordance with OSHA regulations for hazardous waste operations. These regulations are based on CFR 1910.120 (e) and 8 CCR 5192, which states that "general site workers" shall will receive a minimum of 40 hours of classroom training and a minimum of three days of field training. This training provides precautions and protective measures to reduce or eliminate hazardous materials/waste hazards at the work place. The site-specific Health and Safety Plan will describe the strategy for handling and disposing of all demolition debris. Part of this strategy will be to divert as much of the demolition waste from landfills as possible using demolition deconstruction techniques to reduce, reuse, or recycle the various types of waste. Any required asbestos, lead, or PCB abatement will be conducted before demolition activities begin. The removal methods, health and safety procedures, and disposal methods will conform to the applicable regulations of federal, state, and local regulatory agencies, including any required notifications. DLA will include these requirements in a PWS for Closure.
H-2	1, 2, 3, & 4	Before the start of demolition activities, DLA will coordinate with the RWQCB, Los Angeles Region, to determine whether demolition of underground and aboveground pipelines will potentially damage existing monitoring wells, remediation wells, and aboveground remediation equipment. In the event that such a scenario occurs, an environmental monitor, knowledgeable of on-site remediation equipment, will be present during underground pipeline demolition activities to verify that subsurface wells and remediation equipment are not damaged.
CULTURAL RESOURCES (C)		
Short-Term (Demolition)		
C-1	1, 2, 3, & 4	Halt work orders shall will be given if ground-disturbing activities were to encounter an unexpected archaeological discovery.

Appendix C
Air Quality Calculations

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Alternative 1 - Complete Closure with Partial Demolition of DFSP San Pedro

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - For modeling purposes, "General light industry" was the closest land use type. No "construction" proposed.

Construction Phase - No site prep, construction, paving, or arch coating phases. Total closure project to last 4 years, but modeled one year (as if 1/4 of the project would be completed per year).

Off-road Equipment - Equipment mix per DOPAA and model defaults.

Trips and VMT - Added 30 additional hauling trips per day, to include the need to bring soil or concrete materials onsite to fill USTs. (39,970 cy of fill required; approx 4000 truck trips per year, or 15.3 trips if there are 260 working days).

Grading - Assume grading consists of earth movement to reach the underground pipes being demolished, but all cut/fill would remain onsite. Approx. 4.72 acres of soil disturbance annually (18.89 over entire 4 years).

Construction Off-road Equipment Mitigation - Assume cleanest construction vehicle engines, and assume exposed areas would be watered twice daily.

Alternative 1 - Complete Closure with Partial Demolition of DFSP San Pedro

South Coast Air Basin, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	4.0443	44.0525	27.1237	0.0470	2.5919	2.0142	4.6061	1.3564	1.8612	3.2176	0.0000	4,373.2889	4,373.2889	1.2184	0.0000	4,398.8750
Total	**4.0443**	**44.0525**	**27.1237**	**0.0470**	**2.5919**	**2.0142**	**4.6061**	**1.3564**	**1.8612**	**3.2176**	**0.0000**	**4,373.2889**	**4,373.2889**	**1.2184**	**0.0000**	**4,398.8750**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.6367	2.7800	23.3351	0.0470	1.2851	0.0783	1.3633	0.6422	0.0777	0.7199	0.0000	4,373.2840	4,373.2840	1.2184	0.0000	4,398.8701
Total	**0.6367**	**2.7800**	**23.3351**	**0.0470**	**1.2851**	**0.0783**	**1.3633**	**0.6422**	**0.0777**	**0.7199**	**0.0000**	**4,373.2840**	**4,373.2840**	**1.2184**	**0.0000**	**4,398.8701**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**84.26**	**93.69**	**13.97**	**0.00**	**50.42**	**96.11**	**70.40**	**52.66**	**95.83**	**77.63**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2016	5	261	
2	Grading	Grading	1/1/2016	12/31/2016	5	261	

Alternative 1 - Complete Closure with Partial Demolition of DFSP San Pedro

South Coast Air Basin, Annual

Acres of Grading (Grading Phase): 4.72

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	6.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	2	6.00	226	0.29
Demolition	Rubber Tired Dozers	4	6.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	5	6.00	97	0.37
Demolition	Off-Highway Trucks	10	6.00	400	0.38
Grading	Graders	1	6.00	174	0.41
Grading	Scrapers	1	6.00	361	0.48
Grading	Rubber Tired Dozers	4	6.00	255	0.40
Grading	Excavators	3	6.00	226	0.29
Grading	Tractors/Loaders/Backhoes	10	6.00	97	0.37
Grading	Off-Highway Trucks	10	6.00	400	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	23	58.00	30.00	148.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	30	75.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

DFSP San Pedro - Concrete Batch Plant Emissions
Alternative 1: Complete Closure with Partial Demolition, Annual Emissions

Estimated Amount of Concrete per Phase	
Phase	**Cubic Yards***
Main Terminal Tanks	159,878
Marine Terminal Tanks	2
MAX Total	159,880
MAX Estimated annual (four years total)	39,970

Note: *the maximum operating capacity of the tanks

Annual Plant Wide Emissions Per Yard of Truck Mix Concrete

	Emission Factors - Controlled	Emissions - Controlled	Emissions - Controlled
	PM10 (lb/cy)	PM10 (lbs)	PM10 (tons)
Aggregate delivery to ground storage	0.0031	123.907	0.0620
Sand delivery to ground storage	0.0007	27.979	0.0140
Aggregate transfer to conveyor	0.0031	123.907	0.0620
Sand transfer to conveyor	0.0007	27.979	0.0140
Aggregate transfer to elevated storage	0.0031	123.907	0.0620
Sand transfer to elevated storage	0.0007	27.979	0.0140
Cement delivery to Silo	0.0001	3.997	0.0020
Cement supplement delivery to Silo	0.0002	7.994	0.0040
Weigh hopper loading	0.0038	151.886	0.0759
Truck mix loading	0.282	11271.54	5.6358
TOTAL		**11891.075**	**5.95**

Source : USEPA AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Chapter 11: Mineral Products Industry, Section 12: Concrete Batching*

Truck Emissions:

			Emission Factors (g/mi)										Emissions, lbs/day							Emissions, tons/year						
Equipment	**Vehicle Class**	**Fuel**	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**	**No. of Equipment**	**Miles per Day**	**Days in Service***	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**
Concrete Truck	T6 instate construction heavy	diesel	0.44	0.11	7.61	0.01	0.23	0.14	1038.39	15	20	260	0.02	0.00	0.34	0.00	0.01	0.01	45.79	0.00	0.00	0.04	0.00	0.00	0.00	5.95
Dump Truck	T7 CAIRP construction	diesel	1.32	0.19	5.58	0.02	0.24	0.16	1594.30	15	20	260	0.06	0.01	0.25	0.00	0.01	0.01	70.30	0.01	0.00	0.03	0.00	0.00	0.00	9.14
																			TOTAL	**0.01**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**	**15.09**

Notes:
* Assumed that trucks would be in service for half of the construction period, on business days only.
Source: EMFAC2011

Fugitive Dust Emissions from Unpaved Road Travel:

Vehicle Type	Miles per vehicle per day	Total Annual Miles per Vehicle	Vehicle Weight[1] (lbs)	Vehicle weight[1] (tons)	PM10 emissions per mile (lb/VMT)[2]	Annual PM10 emissions (tons/year)
Concrete Truck	0	0	48000	24	2.80	0.00
Dump Truck	0	0	68000	34	3.28	0.00
					TOTAL[3]	**0.00**

Notes:
[1]Average weight, assumed half of the trips are with the truck empty and the other half are with the truck full. Assumed concrete truck and dump truck each carry 10 cy of concrete or concrete materials when full.
[2]Formula for PM10 emissions:
E=1.5(silt content/12)^0.9 * (vehicle weight/3)^0.45
Assumes average silt content is 8.5%.
[3]Assumes that half of the truck travel is on major roads that receive a dust palliative, 70% efficiency

Total PM10 from concrete batching:

Emissions, tons/year						
CO	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**
0.01	0.00	0.08	0.00	5.95	0.00	15.09

Alternative 2 - Complete Closure with Minimal Demolition of DFSP San Pedro

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - For modeling purposes, "General light industry" was the closest land use type. No construction.

Construction Phase - No site prep, construction, paving, or arch coating phases. Total closure project to last 3 years, but modeled one year (as if 1/3 of the project would be completed per year).

Off-road Equipment - Equipment mix per DOPAA and model defaults.

Trips and VMT - Added 40 additional hauling trips per day, to include the need to bring soil or concrete materials onsite to fill USTs. (39,970 cy of fill required; approx 4000 truck trips per year, or 15.3 trips if there are 260 working days).

Grading - Assume grading consists of earth movement to reach the underground pipes being demolished, but all cut/fill would remain onsite. Approx. 3.88 acres of soil disturbance annually (11.63 over the entire 3-year construction timeframe).

Construction Off-road Equipment Mitigation - Assume cleanest construction vehicle engines, and assume exposed areas would be watered twice daily.

Alternative 2 - Complete Closure with Minimal Demolition of DFSP San Pedro

South Coast Air Basin, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	4.1098	44.5332	27.5832	0.0473	2.5892	2.0521	4.6413	1.3570	1.8961	3.2531	0.0000	4,401.1723	4,401.1723	1.2201	0.0000	4,426.7945
Total	**4.1098**	**44.5332**	**27.5832**	**0.0473**	**2.5892**	**2.0521**	**4.6413**	**1.3570**	**1.8961**	**3.2531**	**0.0000**	**4,401.1723**	**4,401.1723**	**1.2201**	**0.0000**	**4,426.7945**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.6481	2.8881	23.6842	0.0473	1.2878	0.0800	1.3678	0.6436	0.0793	0.7229	0.0000	4,401.1674	4,401.1674	1.2201	0.0000	4,426.7896
Total	**0.6481**	**2.8881**	**23.6842**	**0.0473**	**1.2878**	**0.0800**	**1.3678**	**0.6436**	**0.0793**	**0.7229**	**0.0000**	**4,401.1674**	**4,401.1674**	**1.2201**	**0.0000**	**4,426.7896**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**84.23**	**93.51**	**14.14**	**0.00**	**50.26**	**96.10**	**70.53**	**52.57**	**95.82**	**77.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2016	5	261	
2	Grading	Grading	1/1/2016	12/31/2016	5	261	

Alternative 2 - Complete Closure with Minimal Demolition of DFSP San Pedro

South Coast Air Basin, Annual

Acres of Grading (Grading Phase): 3.88

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	6.00	81	0.73
Demolition	Cranes	2	6.00	226	0.29
Demolition	Off-Highway Trucks	10	6.00	400	0.38
Demolition	Rubber Tired Dozers	4	6.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	5	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	6.00	81	0.73
Grading	Graders	1	6.00	174	0.41
Grading	Scrapers	1	6.00	361	0.48
Grading	Excavators	3	6.00	162	0.38
Grading	Rubber Tired Dozers	4	6.00	255	0.40
Grading	Off-Highway Trucks	10	6.00	400	0.38
Grading	Tractors/Loaders/Backhoes	10	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	23	58.00	40.00	59.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	30	75.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

DFSP San Pedro - Concrete Batch Plant Emissions
Alternative 2: Complete Closure with Minimal Demolition, Annual Emissions

Estimated Amount of Concrete per Phase	
Phase	**Cubic Yards***
Main Terminal Tanks	159,878
Marine Terminal Tanks	2
MAX Total	159,880
MAX Estimated annual (three years total)	53,293

Note: *the maximum operating capacity of the tanks

Annual Plant Wide Emissions Per Yard of Truck Mix Concrete

	Emission Factors - Controlled	Emissions - Controlled	Emissions - Controlled
	PM10 (lb/cy)	PM10 (lbs)	PM10 (tons)
Aggregate delivery to ground storage	0.0031	165.2093333	0.0826
Sand delivery to ground storage	0.0007	37.30533333	0.0187
Aggregate transfer to conveyor	0.0031	165.2093333	0.0826
Sand transfer to conveyor	0.0007	37.30533333	0.0187
Aggregate transfer to elevated storage	0.0031	165.2093333	0.0826
Sand transfer to elevated storage	0.0007	37.30533333	0.0187
Cement delivery to Silo	0.0001	5.329333333	0.0027
Cement supplement delivery to Silo	0.0002	10.65866667	0.0053
Weigh hopper loading	0.0038	202.5146667	0.1013
Truck mix loading	0.282	15028.72	7.5144
TOTAL		**15854.76667**	**7.93**

Source : USEPA AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Chapter 11: Mineral Products Industry, Section 12: Concrete Batching*

Truck Emissions:

			Emission Factors (g/mi)										Emissions, lbs/day							Emissions, tons/year						
Equipment	**Vehicle Class**	**Fuel**	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**	**No. of Equipment**	**Miles per Day**	**Days in Service***	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**
Concrete Truck	T6 instate construction heavy	diesel	0.44	0.11	7.61	0.01	0.23	0.14	1038.39	15	20	260	0.02	0.00	0.34	0.00	0.01	0.01	45.79	0.00	0.00	0.04	0.00	0.00	0.00	5.95
Dump Truck	T7 CAIRP construction	diesel	1.32	0.19	5.58	0.02	0.24	0.16	1594.30	15	20	260	0.06	0.01	0.25	0.00	0.01	0.01	70.30	0.01	0.00	0.03	0.00	0.00	0.00	9.14
																			TOTAL	**0.01**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**	**15.09**

Notes:
* Assumed that trucks would be in service for half of the construction period, on business days only.
Source: EMFAC2011

Fugitive Dust Emissions from Unpaved Road Travel:

Vehicle Type	Miles per vehicle per day	Total Annual Miles per Vehicle	Vehicle Weight[1] (lbs)	Vehicle weight[1] (tons)	PM10 emissions per mile (lb/VMT)[2]	Annual PM10 emissions (tons/year)
Concrete Truck	0	0	48000	24	2.80	0.00
Dump Truck	0	0	68000	34	3.28	0.00
					TOTAL[3]	**0.00**

Notes:
[1]Average weight, assumed half of the trips are with the truck empty and the other half are with the truck full. Assumed concrete truck and dump truck each carry 10 cy of concrete or concrete materials when full.
[2]Formula for PM10 emissions:
E=1.5(silt content/12)^0.9 * (vehicle weight/3)^0.45
Assumes average silt content is 8.5%.
[3]Assumes that half of the truck travel is on major roads that receive a dust palliative, 70% efficiency

Total PM10 from concrete batching:

Emissions, tons/year						
CO	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**
0.01	0.00	0.08	0.00	7.93	0.00	15.09

Alternative 3 - Complete Closure with Complete Demolition of DFSP San Pedro

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - For modeling purposes, "General light industry" was the closest land use type. No construction.

Construction Phase - No site prep, construction, paving, or arch coating phases. Total closure project to last 4 years, but modeled one year (as if 1/4 of the project would be completed per year).

Off-road Equipment - Equipment mix per DOPAA and model defaults.

Trips and VMT - No additional hauling truck trips because no fill required for USTs (they will be demolished).

Demolition -

Grading - Assume grading consists of earth movement to reach the underground pipes being demolished, but all cut/fill would remain onsite. Approx. 22.16 acres of soil disturbance annually (88.62 during the 4-year project construction timeframe).

Construction Off-road Equipment Mitigation - Assume cleanest construction vehicle engines, and assume exposed areas would be watered twice daily.

Alternative 3 - Complete Closure with Complete Demolition of DFSP San Pedro

South Coast Air Basin, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	5.0427	54.5594	33.3346	0.0564	3.1712	2.5752	5.7464	1.6753	2.3801	4.0554	0.0000	5,257.8464	5,257.8464	1.4968	0.0000	5,289.2783
Total	**5.0427**	**54.5594**	**33.3346**	**0.0564**	**3.1712**	**2.5752**	**5.7464**	**1.6753**	**2.3801**	**4.0554**	**0.0000**	**5,257.8464**	**5,257.8464**	**1.4968**	**0.0000**	**5,289.2783**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.7259	2.9661	28.4049	0.0564	1.5327	0.0893	1.6220	0.7819	0.0891	0.8711	0.0000	5,257.8404	5,257.8404	1.4968	0.0000	5,289.2722
Total	**0.7259**	**2.9661**	**28.4049**	**0.0564**	**1.5327**	**0.0893**	**1.6220**	**0.7819**	**0.0891**	**0.8711**	**0.0000**	**5,257.8404**	**5,257.8404**	**1.4968**	**0.0000**	**5,289.2722**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**85.61**	**94.56**	**14.79**	**0.00**	**51.67**	**96.53**	**71.77**	**53.33**	**96.25**	**78.52**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2016	5	261	
2	Grading	Grading	1/1/2016	12/31/2016	5	261	

Alternative 3 - Complete Closure with Complete Demolition of DFSP San Pedro

South Coast Air Basin, Annual

Acres of Grading (Grading Phase): 22.16

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	3	6.00	81	0.73
Demolition	Cranes	3	6.00	226	0.29
Demolition	Off-Highway Trucks	12	6.00	400	0.38
Demolition	Rubber Tired Dozers	5	6.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	10	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	6.00	81	0.73
Grading	Excavators	3	6.00	162	0.38
Grading	Graders	1	6.00	174	0.41
Grading	Off-Highway Trucks	12	6.00	400	0.38
Grading	Rubber Tired Dozers	5	6.00	255	0.40
Grading	Scrapers	1	6.00	361	0.48
Grading	Tractors/Loaders/Backhoes	12	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	33	82.50	0.00	188.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	35	87.50	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

Alternative 4 - Partial Closure with Minimal Demolition of DFSP San Pedro

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - For modeling purposes, "General light industry" was the closest land use type. No construction.

Construction Phase - No site prep, construction, paving, or arch coating phases. Total closure project to last 3 years, but modeled one year (as if 1/3 of the project would be completed per year).

Off-road Equipment - Equipment mix per DOPAA and model defaults.

Trips and VMT - Added 28 additional "vendor" trips per day, to include the need to bring soil or concrete materials onsite to fill USTs.

Demolition - Estimated 13,000 square feet of demolition per year.

Grading - Assume grading consists of earth movement to reach the underground pipes being demolished, but all cut/fill would remain onsite. Approx. 3.88 acres of soil disturbance (11.63 over the entire 3-year construction timeframe).

Construction Off-road Equipment Mitigation - Assume cleanest construction vehicle engines, and assume exposed areas would be watered twice daily.

Alternative 4 - Partial Closure with Minimal Demolition of DFSP San Pedro

South Coast Air Basin, Annual

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	4.0958	44.3911	27.4007	0.0470	2.5795	2.0499	4.6294	1.3543	1.8941	3.2483	0.0000	4,370.2831	4,370.2831	1.2199	0.0000	4,395.9005
Total	**4.0958**	**44.3911**	**27.4007**	**0.0470**	**2.5795**	**2.0499**	**4.6294**	**1.3543**	**1.8941**	**3.2483**	**0.0000**	**4,370.2831**	**4,370.2831**	**1.2199**	**0.0000**	**4,395.9005**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.6342	2.7459	23.5017	0.0470	1.2782	0.0778	1.3560	0.6408	0.0772	0.7181	0.0000	4,370.2782	4,370.2782	1.2199	0.0000	4,395.8956
Total	**0.6342**	**2.7459**	**23.5017**	**0.0470**	**1.2782**	**0.0778**	**1.3560**	**0.6408**	**0.0772**	**0.7181**	**0.0000**	**4,370.2782**	**4,370.2782**	**1.2199**	**0.0000**	**4,395.8956**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**84.52**	**93.81**	**14.23**	**0.00**	**50.45**	**96.20**	**70.71**	**52.68**	**95.92**	**77.89**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	12/31/2016	5	261	
2	Grading	Grading	1/1/2016	12/31/2016	5	261	

Alternative 4 - Partial Closure with Minimal Demolition of DFSP San Pedro

South Coast Air Basin, Annual

Acres of Grading (Grading Phase): 3.88

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	6.00	81	0.73
Demolition	Cranes	2	6.00	226	0.29
Demolition	Off-Highway Trucks	10	6.00	400	0.38
Demolition	Rubber Tired Dozers	4	6.00	255	0.40
Grading	Graders	1	6.00	174	0.41
Demolition	Tractors/Loaders/Backhoes	5	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	6.00	81	0.73
Grading	Scrapers	1	6.00	361	0.48
Grading	Excavators	3	6.00	162	0.38
Grading	Off-Highway Trucks	10	6.00	400	0.38
Grading	Rubber Tired Dozers	4	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	10	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	23	58.00	28.00	59.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	30	75.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

DFSP San Pedro - Concrete Batch Plant Emissions
Alternative 4. Partial Closure with Minimal Demolition, Annual Emissions

Estimated Amount of Concrete per Phase	
Phase	**Cubic Yards***
Main Terminal Tanks	111,294
Marine Terminal Tanks	0
MAX Total	111,294
MAX Estimated annual (three years total)	37,098

Note: *the maximum operating capacity of the tanks

Annual Plant Wide Emissions Per Yard of Truck Mix Concrete

	Emission Factors - Controlled	Emissions - Controlled	Emissions - Controlled
	PM10 (lb/cy)	PM10 (lbs)	PM10 (tons)
Aggregate delivery to ground storage	0.0031	115.004162	0.0575
Sand delivery to ground storage	0.0007	25.96868175	0.0130
Aggregate transfer to conveyor	0.0031	115.004162	0.0575
Sand transfer to conveyor	0.0007	25.96868175	0.0130
Aggregate transfer to elevated storage	0.0031	115.004162	0.0575
Sand transfer to elevated storage	0.0007	25.96868175	0.0130
Cement delivery to Silo	0.0001	3.709811679	0.0019
Cement supplement delivery to Silo	0.0002	7.419623358	0.0037
Weigh hopper loading	0.0038	140.9728438	0.0705
Truck mix loading	0.282	10461.66893	5.2308
TOTAL		**11036.68975**	**5.52**

Source : USEPA AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Chapter 11: Mineral Products Industry, Section 12: Concrete Batching*

Truck Emissions:

			Emission Factors (g/mi)										Emissions, lbs/day							Emissions, tons/year						
Equipment	**Vehicle Class**	**Fuel**	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**	**No. of Equipment**	**Miles per Day**	**Days in Service***	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**	**CO**	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**
Concrete Truck	T6 instate construction heavy	diesel	0.44	0.11	7.61	0.01	0.23	0.14	1038.39	15	20	260	0.02	0.00	0.34	0.00	0.01	0.01	45.79	0.00	0.00	0.04	0.00	0.00	0.00	5.95
Dump Truck	T7 CAIRP construction	diesel	1.32	0.19	5.58	0.02	0.24	0.16	1594.30	15	20	260	0.06	0.01	0.25	0.00	0.01	0.01	70.30	0.01	0.00	0.03	0.00	0.00	0.00	9.14
																			TOTAL	**0.01**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**	**15.09**

Notes:
* Assumed that trucks would be in service for half of the construction period, on business days only.
Source: EMFAC2011

Fugitive Dust Emissions from Unpaved Road Travel:

Vehicle Type	Miles per vehicle per day	Total Annual Miles per Vehicle	Vehicle Weight[1] (lbs)	Vehicle weight[1] (tons)	PM10 emissions per mile (lb/VMT)[2]	Annual PM10 emissions (tons/year)
Concrete Truck	0	0	48000	24	2.80	0.00
Dump Truck	0	0	68000	34	3.28	0.00
					TOTAL[3]	**0.00**

Notes:
[1]Average weight, assumed half of the trips are with the truck empty and the other half are with the truck full. Assumed concrete truck and dump truck each carry 10 cy of concrete or concrete materials when full.
[2]Formula for PM10 emissions:
E=1.5(silt content/12)^0.9 * (vehicle weight/3)^0.45
Assumes average silt content is 8.5%.
[3]Assumes that half of the truck travel is on major roads that receive a dust palliative, 70% efficiency

Total PM10 from concrete batching:

Emissions, tons/year						
CO	**VOC**	**Nox**	**Sox**	**PM10**	**PM2.5**	**CO2**
0.01	0.00	0.08	0.00	5.52	0.00	15.09

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