

Draft Environmental Impact Statement (EIS) for the Disposal and Reuse of the Former Naval Weapons Station Seal Beach, Detachment Concord Concord, California

October 2014 • DEIS



Prepared by:
Department of the Navy
Naval Facilities Engineering Command Headquarters,
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, CA 92108-4310

Cooperating Agency:
U.S. Army Corps of Engineers

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**Lead Agency:
United States Department of the Navy**

In accordance with Chief of Naval Operations Instructions 5090.1D

**DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE
DISPOSAL AND REUSE OF THE FORMER NAVAL WEAPONS STATION SEAL BEACH,
DETACHMENT CONCORD
CONCORD, CALIFORNIA
October 2014**

Abstract

This Environmental Impact Statement (EIS) presents an analysis of the U.S. Department of the Navy's (Navy's) disposal of surplus property at the former Naval Weapons Station Seal Beach, Detachment Concord (NWS Concord), in the City of Concord, Contra Costa County, California, and the subsequent redevelopment of the property by the local community. The Navy has declared approximately 5,028 acres of property at the former NWS Concord to be surplus to the needs of the federal government, in accordance with Public Law 101-510, the Defense Base Closure and Realignment Act of 1990, as amended in 2005. The City of Concord is the Local Redevelopment Authority (LRA) for redevelopment of the former NWS Concord. The EIS examines the potential human and natural environmental consequences of the proposed action and any impacts associated with the reasonably foreseeable reuse of the property.

Two redevelopment alternatives and a No Action Alternative were considered in this EIS. Alternative 1 (Preferred Alternative) is the disposal of the surplus property and reuse in accordance with the *Concord Reuse Project Area Plan* (Area Plan) as adopted by the City of Concord. Alternative 2 (Intensified Reuse) represents a higher intensity of use overall. Both alternatives focus on the preservation of a significant area of open space and conservation areas, and sustainable development characterized by walkable, village neighborhoods; transit-oriented development; and "complete streets" that balance multiple types of transportation. The No Action Alternative is the retention of the surplus property at the former NWS Concord by the U.S. government in caretaker status. The Navy is the lead agency for the proposed action.

Please contact the following person with comments and questions:

Department of the Navy
Director, BRAC Program Management Office West
Attn: Concord EIS
1455 Frazee Road, Suite 900
San Diego, CA 92018

Comments must be postmarked by November 25, 2014.

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
AEC	Atomic Energy Commission
AF	acre-feet
afy	acre-feet per year
Alquist-Priolo Act	California Alquist-Priolo Earthquake Fault Zoning Act
AMR	American Medical Response
amsl	above mean sea level
AOPI	Area of Potential Interest
APE	Area of Potential Effect
AQMD	Air Quality Management District
Area Plan	<i>Concord Reuse Project (CRP) Area Plan</i>
ARPA	Archaeological Resources Protection Act
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BA	Biological Assessment
BAAQMD	Bay Area Air Quality Management District
BART	(San Francisco) Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BLM	(U.S. Department of the Interior) Bureau of Land Management

BMP	Best Management Practices
BO	Biological Opinion
B.P.	Before Present
BRAC	Defense Base Closure and Realignment
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAAS	Commission of Accreditation of Ambulance Services
CAC	Community Advisory Committee
C&D	construction and demolition
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	(Concord) Citywide Climate Action Plan
CAPCOA	California Air Pollution Control Officers' Association
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCCFPD	Contra Costa County Fire Protection District
CCCFC&WCD	Contra Costa County Flood Control and Water Conservation District
CCCSD	Central Contra Costa Sanitary District
CCCWP	Contra Costa County Clean Water Program
CCHS	Contra Costa Health Services
CCPD	City of Concord Police Department
CCR	California Code of Regulations

CCTA	Contra Costa Transportation Authority
CCWD	Contra Costa Water District
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CDS	Concord Disposal Service
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHP	California Highway Patrol
CH ₄	methane
CII	Commercial, Institutional, Industrial
CLMR	Conditional Letter of Map Revision
CMP	Congestion Management Program
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CNWS	Concord Naval Weapons Station
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalency
CRP	Concord Reuse Project

CSU	California State University
CTC	California Transportation Commission
CUPA	Certified Unified Program Agency
CVP	(U.S. Bureau of Reclamation) Central Valley Project
CWA	Clean Water Act
CWP	County Watershed Program
cy	cubic yards
dB	decibel
dBA	A-weighted decibel
DNL	day-night average sound level (in decibels)
DBCRA	Defense Base Closure and Realignment Act of 1990
DEIR	Draft Environmental Impact Report
DERP	Defense Environmental Restoration Program
DO	dissolved oxygen
DOD	Department of Defense
DOT	U.S. Department of Transportation
DTSC	(California) Department of Toxic Substances Control
du	dwelling unit
DWSAP	Drinking Water Source Assessment and Protection
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EBS	Environmental Baseline Survey
ECCFPD	East Contra Costa Fire Protection District
ECCCHCP/NCCP	East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan
EE/CA	engineering evaluation/cost analysis

EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
EO	Executive Order
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ER	Environmental Restoration
ESA	Endangered Species Act
Far Western	Far Western Anthropological Research Group, Inc.
FE	Federally Listed Endangered
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FFA	Federal Facility Agreement
FFS	Focused Feasibility Study
FHA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FOSET	Finding of Suitability for Early Transfer
FOST	Finding of Suitability to Transfer
FPPA	Farmland Protection Policy Act
FR	<i>Federal Register</i>
FT	Federally Listed Threatened
FTE	full-time equivalent
FUDS	formerly utilized defense sites
FY	Fiscal Year
g	gravity

gpd	Gallons per day
GAO	General Accounting Office
GHG	greenhouse gas
gpcd	gallons per capita per day
GWP	global warming potential
HAPs	hazardous air pollutants
HCM	Highway Capacity Manual
HFCs	hydrofluorocarbons
HOV	High-Occupancy Vehicle
HRA	historical radiological assessment
HUD	(U.S. Department of) Housing and Urban Development
HVAC	Heating, Ventilation, and Air Conditioning
I-	Interstate (Highway)
IAS	Initial Assessment Study
IBC	International Building Code
ICC	International Code Council
ICs	institutional controls
IPCC	Intergovernmental Panel on Climate Change
IRP	Installation Restoration Program
ITP	Incidental Take Permit
ITS	Incidental Take Statement
JRP	JRP Historical Consulting, LLC
KCL	Keller Canyon Landfill
km	kilometer
KOP	key observation point
LA _{eq}	A-weighted energy equivalent level (in decibels)

LBP	lead-based paint
L _{dn}	Day-Night Average Sound Level
Leq(24)	24-hour equivalent continuous sound level
LID	Low Impact Development
LOS	level of service
LRA	Local Redevelopment Authority
LUCs	land use controls
LUC-RD	land use control remedial design
M	Magnitude (Richter Magnitude Value Scale)
MDUSD	Mount Diablo Unified School District
MEC	munitions and explosives of concern
mgd	million gallons per day
MMRP	Mitigation Monitoring and Reporting Plan <i>or</i> Military Munitions Response Program
mm/yr	millimeters per year
MOTCO	Military Ocean Terminal Concord
MOTEMS	Marine Oil Terminal Engineering Maintenance Standards
mph	miles per hour
MPO	Metropolitan Planning Organization
MPP	multi-purpose pipeline
MPPEH	material potentially presenting and explosive hazard
the MSA	San Francisco-Oakland-Fremont Metropolitan Statistical Area
MTC	Metropolitan Transportation Commission
MTCO _{2e}	Metric Tons Carbon Dioxide Equivalent
MTSO	multimodal transportation service objective
NAAQS	National Ambient Air Quality Standards

NAD	Naval Ammunition Depot
NAVFAC HQ	Naval Facilities Engineering Command Headquarters
Navy	The U.S. Department of the Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act of 1969
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO	nitric oxide
NOA	Notice of Availability
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	nitrogen oxides
NO ₂	nitrogen dioxide
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRC	U.S. Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRMP	Naval Radioactive Materials Permit
NTCHS	National Technical Committee for Hydric Soils
NTCRA	non-time-critical removal action
NWS Concord	Naval Weapons Station Seal Beach Detachment Concord
N ₂ O	nitrous oxide
OEA	(DOD) Office of Economic Adjustment
O ₃	ozone
PA	preliminary assessment

PA/SI	preliminary assessment/site inspection
PAH	polycyclic aromatic hydrocarbon
PBC	public benefit conveyance
PCBs	polychlorinated biphenyls
%g	percent of gravity
PFCs	perfluorocarbons
PGA	peak ground acceleration
PG&E	Pacific Gas & Electric Company
PHL	Potrero Hills Landfill
P.L.	Public Law
PM	particulate matter
PMO	Navy BRAC Program Management Office
POC	point-of-contact
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PSTS	professional, scientific, and technical services
P66	Phillips 66 Company
RASO	Radiological Affairs Support Office
RCRA	Resource Conservation and Recovery Act of 1976
RD	remedial design
RFA	RCRA Facility Assessment
RHL	Rural Historic Landscape
RI/FS	remedial investigation/feasibility study
RIMS II	Regional Input-Output Modeling System
ROD	Record of Decision
ROG	reactive organic gases

ROI	region of influence
RONA	Record of Non-Applicability
ROW	right-of-way
RTIP	Regional Transportation Improvement Program
RTPC	Regional Transportation Planning Committee
RVI	re-verification investigation
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SDDS	Surface Deployment and Distribution Command
SDWA	Safe Drinking Water Act
SE	State-listed Endangered
SFBAAB	San Francisco Bay Area Air Basin
SFO	San Francisco International Airport
SF ₆	sulfur hexafluoride
SHOPP	State Highway Operating and Protection Program
SHPO	State Historic Preservation Office
SI	Site Investigation
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SPCC	spill prevention, control, and countermeasure
SR	State Route
SSC	Special Species of Concern
ST	State-listed Threatened
STIP	State Transportation Improvement Program
SWMU	solid waste management unit
SWPP	Stormwater Pollution Prevention Plan

SWQCB	(California) State Water Quality Control Board
SWRCB	(California) State Water Resources Control Board
TACs	toxic air contaminants
TAZ	Traffic Analysis Zone
TCE	trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TDM	Travel Demand Management
TMDL	Total Maximum Daily Load
TOD	Transit-Oriented Development
TSCA	Toxic Substances Control Act
UNFCCC	United Nations Framework Convention on Climate Change
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
v/c	volume-to-capacity ratio
VMTs	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WAPA	Western Area Power Administration
WesPac	WesPac Energy—Pittsburg LLC

WTP water treatment plant
WWTP waste water treatment plant

Executive Summary

ES.1 Description of the Proposed Action

This Environmental Impact Statement (EIS) presents an analysis of the U.S. Department of the Navy's (Navy's) disposal of surplus property at the former Naval Weapons Station Seal Beach Detachment Concord (NWS Concord), in the City of Concord, Contra Costa County, California, and the subsequent reuse of the property by the local community. The Navy has declared approximately 5,028 acres of property at the former NWS Concord to be surplus to the needs of the federal government, in accordance with Public Law (P.L.) 101-510, the Defense Base Closure and Realignment Act of 1990, as amended in 2005 (DBCRA).

This EIS was prepared in accordance with the requirements of the DBCRA, National Environmental Policy Act (NEPA) of 1969, as amended (P.L. 91-190, 42 United States Code [U.S.C.] 4321-4370f); the Council on Environmental Quality (CEQ) procedures implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); and Navy procedures for implementing NEPA (32 CFR 775). The Navy is the lead agency for the proposed action, with the U.S. Army Corps of Engineers (USACE) serving as a cooperating agency for the preparation of this EIS.

The purpose of the proposed action is to dispose of surplus property at the former NWS Concord for subsequent reuse in a manner consistent with the policies adopted by the City of Concord during reuse planning that took place between 2008 and 2012. The need for the proposed action is to provide the local community the opportunity for economic development and job creation.

ES.2 Background

Base closure and realignment is the process used by the U.S. Department of Defense (DOD) to reorganize its installation infrastructure to more efficiently and effectively support its forces, increase operational readiness, and facilitate new ways of doing business. There are three primary phases of the BRAC process: disposal planning, surplus property designation and notice, and property disposal. A timeline of the BRAC process for the former NWS Concord includes the following milestones:

- **September 8, 2005:** The 2005 Defense Base Closure and Realignment Commission presented its Final Report to the President, which included the recommendation for the closure of NWS Concord.
- **February 7, 2006:** The DOD Office of Economic Adjustment (OEA) recognized the City of Concord as the Local Redevelopment Authority (LRA) responsible for the planning and redevelopment of surplus property at NWS Concord.
- **March 6, 2007:** A total of 5,028 acres of land at NWS Concord was determined surplus to the needs of the federal government (72 *Federal Register* [FR] 9935), following the transfer of approximately 60 percent of the total land area to other DOD and federal agencies
- **September 30, 2008:** The Navy closed the former NWS Concord in accordance with the DBCRA.
- Upon completion of the NEPA process, the Navy will issue its final disposal decisions and may convey the surplus property.

The surplus property of the former NWS Concord is located entirely within the City of Concord, Contra Costa County, California. The total area of the surplus property, which will be used throughout this EIS, is approximately 5,038 acres. This acreage is based on a recent property survey completed since the surplus property determination by the Navy and includes approximately 6 acres of noncontiguous property 500 feet to the west of the installation and west of Olivera Road. The former NWS Concord is located approximately 35 miles northeast of the City of San Francisco. The unincorporated communities of Clyde and Bay Point are located to the north, the City of Pittsburg is located to the east, and the City of Clayton is located to the southeast.

As indicated above, the city was recognized as the LRA responsible for developing a reuse plan for the surplus property at NWS Concord. The city initiated a community planning process in 2006 and evaluated seven alternatives for reuse of the surplus property.

The city evaluated the environmental impacts of these alternatives in a Draft Environmental Impact Report (DEIR), prepared in compliance with the California Environmental Quality Act (CEQA). The DEIR was initially published in 2008 and underwent extensive public review and comment. In response to comments received, the city eliminated all but two reuse alternatives. Those two alternatives, called “Clustered Villages” and “Concentration and Conservation,” were subjected to further environmental review in a second DEIR and a Final EIR (FEIR). The Concord City Council adopted the preferred, Clustered Villages alternative and certified the FEIR, Findings of Significance, and a Mitigation Monitoring and Reporting Plan in 2010.¹

In 2012, the City of Concord refined the reuse plan, adopted the resulting *Concord Reuse Project (CRP) Area Plan* (the Area Plan, hereafter), certified an addendum to the FEIR, and amended Concord’s citywide Concord 2030 General Plan (City of Concord 2012) to include the Area Plan. By incorporating the Area Plan into the General Plan, the community’s state-required “constitution for future development,” the City of Concord institutionalized its policies and guidance for reuse of the former NWS Concord.

ES.3 Scope of the EIS

This EIS evaluates the potential human and natural environmental consequences of the disposal and subsequent reuse of the surplus property. The resource areas examined in this EIS and potentially impacted are land use and zoning; socioeconomics and environmental justice; air quality and greenhouse gases; biological resources; cultural resources; topography, geology, and soils; hazards and hazardous substances; noise; public services; transportation, traffic, and circulation; utilities and infrastructure; visual resources and aesthetics; and water resources. The EIS also addresses potential cumulative impacts that may result from reasonably foreseeable projects in the region, including both federal and local projects.

This EIS addresses impacts based on the construction and full build-out timeframe of the approved Area Plan (25 years) and assumptions regarding foreseeable reuses of the property.

ES.4 Alternatives Considered in the EIS

The proposed action is the disposal of surplus property at the former NWS Concord by the Navy and subsequent reuse of the surplus property by the city. The primary approach to development of the

¹ Measures identified in the certified FEIR and its addendum and the associated Mitigation Monitoring and Reporting Plan (MMRP) that will avoid or mitigate potential environmental impacts are the responsibility of future developers or owners of the property. Compliance with these measures would take place under the jurisdiction and review of the City of Concord and federal, state, and local agencies with regulatory authority over and responsibility for such resources.

proposed action and alternatives was to (1) focus on the Navy's disposal of surplus property with the Area Plan as the reasonably foreseeable reuse of the property and then (2) consider a range of reasonable disposal alternatives and assess the human and natural environmental effects in the context of the reasonably foreseeable reuse of the property.

To assess the potential impacts of the proposed action, the Navy evaluated two property disposal and reuse alternatives—Alternative 1 and Alternative 2—and a No Action Alternative. Both Alternative 1 and Alternative 2 would be generally consistent with the policies adopted by the City of Concord during the reuse planning process that took place between 2008 and 2012. Both alternatives focus on the preservation of a significant area of open space and conservation areas, and sustainable development characterized by walkable neighborhoods, TOD, and “complete streets” that balance multiple types of transportation. Both alternatives would also be characterized by a series of “villages” connected by transit, allowing for significant new development while maintaining more than half of the site as parks, recreation land, and open space. Under both alternatives, the western side of the property would be developed as a series of mixed-use “development districts,” with a higher concentration of development at the north end, near SR 4 and the North Concord/Martinez Bay Area Rapid Transit (BART) Station.

These alternatives are further described below.

ES.4.1 Alternative 1 (Preferred Alternative)

Alternative 1 includes the disposal of surplus property at the former NWS Concord by the Navy and reuse in accordance with the city's Area Plan, as adopted. This alternative has been identified as the preferred alternative by the Navy.

Under Alternative 1, approximately 70 percent of the property would be maintained as conservation, parks, or recreational land uses, and 30 percent would be mixed-use development, including a mix of office, retail, residential, community facilities, light industrial, and research and development/educational land uses within eight “development districts.” Development on the site would allow for up to a maximum of 12,272 housing units and 6.1 million square feet of commercial space within the development footprint. Two major conservation areas proposed include a 2,537-acre regional park, which would encompass the east side of the property along the ridgeline of Los Medanos Hills, and the Mt. Diablo Creek corridor.

A summary of the development districts that would be established as part of Alternative 1 is presented below.

North Concord Transit-Oriented Development (TOD) Core (One District)

The North Concord TOD Core would be located in close proximity to the North Concord/Martinez BART Station, would serve as a regional employment center, and would have the highest intensity employment and mixed-use development within the plan area. The mixed-use development would include offices and retail shops, and may include multi-unit housing.

North Concord TOD Neighborhoods (Two Districts)

Located on the outskirts of the North Concord TOD Core, this development district would be a mixed-use residential district. Development would be within approximately 0.5 mile of the North Concord/Martinez BART Station to encourage pedestrian over vehicle traffic. This mixed-use residential development would consist of mid-rise multi-unit housing (approximately three- to six-story), community facilities such as libraries and schools, and commercial uses such as retail and grocery stores.

Central Neighborhoods (Two Districts)

Located on the outskirts of the North Concord TOD Neighborhoods, extending 0.5 to 1 mile from the North Concord/Martinez BART Station, this development district would be a moderate density, mixed-use residential district serving a range of household types and sizes. A mix of housing types, including mid-rise (approximately three- to six-story) multi-unit homes, low- to mid-rise multi-unit homes, and attached single-unit housing, would be located throughout the district. Housing would be in close proximity to retail shops, community facilities, and transit service, with the highest density of development envisioned to be around transit stops. Mid-rise buildings (approximately three- to six-story) would be located along Los Medanos Boulevard, a through street that would bisect the southern Central Neighborhood.

Village Centers (Seven Districts)

The Village Centers would act as anchors for the Village Neighborhoods (discussed below). Five districts would be located along Los Medanos Boulevard, and two districts would be located in the southwestern portion of the former NWS Concord property. Local-serving retail and services, community facilities, and public gathering spaces would be located within the districts. A mix of housing types, including multi-unit and attached single-unit housing in the form of apartments, townhomes, and condominiums, would also be located within the Village Centers.

Village Neighborhoods (Five Districts)

The Village Neighborhoods would be residential districts located around the Village Centers. These low- to moderate-density districts would serve a range of household types and sizes through rental and ownership units. Overall development would include low-rise attached single-unit housing in the areas surrounding the Village Centers and detached single-unit homes along the neighborhood edges where the housing density would gradually decrease to transition to adjacent neighborhoods.

Commercial Flex (One District)

Located in proximity to SR 4, this retail and/or workplace district would serve the region. Because of its proximity to SR 4 and Willow Pass Road, the Commercial Flex District is situated for uses that require high-capacity road access or high volumes of passby trips. Market demand would dictate the exact proportion of light industrial, large-format retail, research and development, and office uses that would be developed in this district. Overall development would include low-rise buildings with larger block sizes to accommodate larger building footprints typically associated with this type of development. The highest density uses would be located along Delta Boulevard.

Campus (One District)

Located south of the Commercial Flex District, this development district would be a campus environment that could accommodate a range of uses such as educational, research and development, cultural, and health care, and may include a university serving a student population of approximately 10,000 full-time students. These land uses may support complementary uses in the Commercial Flex District. Overall development would include clusters of buildings sited around public spaces. Community facilities, such as a library, could also be part of the Campus District.

First Responder Training Center (One District)

Located north of SR 4, this development district would include 80 acres of training grounds and related facilities to support regional first responders such as the Contra Costa County sheriff's and fire departments.

Greenways, Citywide Parks, and Tournament Facilities

The Greenways, Citywide Parks, and Tournament Facilities development district consists of parks, recreational areas, and linear open spaces. The Central Greenway would be a minimum of 100 feet wide

and would extend throughout the site along Mt. Diablo Creek and adjacent to the northern boundaries of the Village Neighborhoods, as well as through the Central Neighborhood, TOD, and Campus districts. This greenway would occupy approximately 380 acres of the site.

Neighborhood frame greenways would also be located along the southwest perimeter of the site, mostly adjacent to the Village Centers. These greenways would provide a transition space between development districts and existing neighborhoods adjacent to the site. The neighborhood frame greenways would range between 275 feet and 425 feet wide between existing Concord neighborhoods and villages, and between 150 feet and 500 feet wide between proposed villages, for a total of approximately 98 acres.

Three citywide parks would be created. These parks would be located adjacent to the proposed Campus District, adjacent to the existing Willow Pass Park, and at the location of the existing municipal Diablo Creek Golf Course. Each proposed citywide park would be approximately 45 to 175 acres, for an approximate total of 308 acres.

The citywide park adjacent to the Campus District would include an approximately 75-acre tournament sports facility. This facility would provide space for regional adult and youth tournaments, and may include softball, baseball, and soccer fields, as well as volleyball courts, batting cages, and other sports facilities.

Smaller pocket parks between 0.25 and 2 acres would be located throughout the plan area, as would neighborhood parks between 2 and 10 acres in size. The North Concord Plaza would be located at the entryway to the North Concord/Martinez BART Station and would provide pedestrian connections between the BART station and other modes of transportation. The plaza would range between 0.5 acre and 5 acres.

Conservation Open Space

The Conservation Open Space District consists of a large regional open space occupying approximately 2,537 acres, which would be located on the eastern portion of the former NWS Concord, and a linear open space along Mt. Diablo Creek (the Mt. Diablo Creek corridor). The land within this district is anticipated to be designated for open space and regional park uses and would be managed by the East Bay Regional Park District (EBRPD). This district would include some limited recreational uses, including trails, picnic areas, an interpretive area, and shaded seating areas.

ES.4.2 Alternative 2 (Intensified Reuse)

Alternative 2 is also consistent with the policies adopted by the City of Concord during the reuse planning process, but it represents a slightly different land use pattern, increased residential development, and a higher intensity of use overall, resulting from a slightly different land use pattern and increased residential development. Alternative 2 also has a slightly smaller development footprint than the Area Plan. The maximum total number of dwelling units and square feet of commercial floor space that can be built within the planning area, known as the Maximum Planning Area-wide Total, is defined in the Area Plan. The total number of dwelling units proposed in Alternative 2 would exceed the Maximum Planning Area-wide Total and require an amendment to the City of Concord's 2030 General Plan.

Under Alternative 2, development and conservation would take place in largely the same locations and according to the same development program, concepts, and principles, with some differences. Approximately 70 percent of the property would be maintained as conservation, parks, or recreational land uses, and 30 percent would be mixed-use development, including a mix of office, retail, residential, community facilities, light industrial, and research and development/educational land uses. Development on the site would allow for up to a maximum of 15,872 housing units and 6.1 million square feet of commercial space within the development footprint. (The total area of commercial uses would be the

same for Alternative 2 as Alternative 1.) Alternative 2 does not include the First Responder Training Center District, and the Campus District would be located in the area occupied by the First Responder Training Center District in Alternative 1. Alternative 2 also includes a smaller total number of Village Neighborhood and Village Center districts and somewhat more expanded TOD Core, TOD Neighborhood, and Central Neighborhood districts. Two major conservation areas proposed include a regional park, which would encompass the east side of the property along the ridgeline of the Los Medanos Hills and the Mt. Diablo Creek corridor, similar to Alternative 1. The citywide park that includes the tournament sports facility in Alternative 1 would be smaller in size in Alternative 2.

Alternative 2, “Intensified Reuse” as presented in this document, is different from Alternative 2, “Connected Villages” as presented in the NOI circulated during the public scoping period in March and April 2013. Alternative 2 was revised by the Navy in response to comments received during the public scoping period to be more consistent with the land use planning policies adopted by the City of Concord as well as known and foreseeable market conditions.

ES.4.3 No Action Alternative

The No Action Alternative is retention of the surplus property at the former NWS Concord by the U.S. government in caretaker status, and is evaluated in this EIS as prescribed by CEQ regulations. Under the No Action Alternative, no reuse or redevelopment would occur at the surplus property. Any current approved uses on the property would continue until remaining leases expire or the Navy decides to renew the lease. No new leases would be created under the No Action Alternative. Any remedial activities underway would continue until environmental cleanup is complete. Facilities would be maintained in accordance with the *BRAC Program Management Office (PMO) Building Vacating, Facility Layaway, and Caretaker Maintenance Guidance* (March 2007). In accordance with the *BRAC PMO Building, Vacating, Facility Layaway, and Caretaker Maintenance Guidance*, only conditions adversely affecting public health, the environment, and safety would be corrected in nonresidential areas.

ES.4.4 Comparison of Alternatives

Table ES-1 provides a comparison of land uses upon full build-out for the surplus property proposed under Alternatives 1 and 2 and analyzed in the EIS.

Table ES-1 Summary Comparison of Proposed Alternatives

District	Approximate Acres		Approximate Housing Units		Approximate Commercial Floor Space	
	Alt 1	Alt 2	Alt 1	Alt 2	Alt 1	Alt 2
Development Program						
North Concord TOD Core	55	80	700	2,113	3,000,000	3,000,000
North Concord TOD Neighborhoods	90	85	2,200	4,209	150,000	150,000
Central Neighborhoods	180	200	2,600	2,908	100,000	100,000
Village Centers	70	50	500	500	350,000	350,000
Village Neighborhoods	740	730	6,200	6,143	N/A	N/A
Commercial Flex	210	210	N/A	N/A	1,700,000	1,700,000
Campus	120	80	TBD	TBD	800,000	800,000
First Responder Training Center	80	–	N/A	N/A	N/A	N/A

Table ES-1 Summary Comparison of Proposed Alternatives

District	Approximate Acres		Approximate Housing Units		Approximate Commercial Floor Space	
	Alt 1	Alt 2	Alt 1	Alt 2	Alt 1	Alt 2
Greenways, Citywide Parks, and Tournament Facilities	786	786	N/A	N/A	N/A	N/A
Conservation Open Space	2,715	2,825	N/A	N/A	N/A	N/A
Total¹	5,046	5,046	12,200	15,872	6,100,000	6,100,000
Maximum Planning Area-wide Total²	5,046		12,272		6,115,718	

¹ The total area of the surplus property is approximately 5,038 acres. This total area being evaluated for disposal and reuse in this EIS is smaller than that of the Area Plan (5,046 acres) because the city’s plan included some areas, such as the North Concord/Martinez BART Station and the Diablo Creek Golf Course, that are not part of the Navy’s surplus property.

² The Maximum Planning Area-wide Total is defined in the City of Concord’s Area Plan and represents the maximum total number of dwelling units and square feet of commercial floor space that can be built within the planning area. Future planning phases will determine the precise acreage, number of dwelling units, and square feet of commercial space in each district; therefore, the final development program may differ from the one represented in this table as long as the Maximum Planning Area-wide Total is not exceeded. The total number of dwelling units proposed in Alternative 2 would exceed the Maximum Planning Area-wide Total and require an amendment to the City of Concord’s General Plan.

ES.5 Summary of Potential Environmental Consequences

The EIS examines the potential human and natural environmental consequences of the proposed action and any impacts associated with the reasonably foreseeable reuse of the property. Potential environmental impacts associated with Alternative 1, Alternative 2, and the No Action Alternative are summarized in Table ES-2.

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Land Use and Zoning	<p>Onsite Land Use: <i>Significant beneficial impacts (changes in land use; integration of mixed-use development into City of Concord, with public access to previously inaccessible military property).</i></p> <ul style="list-style-type: none"> • Redevelopment of 5,038-acre property into eight development districts and 2,715 acres of conservation open space. • Specific development proposals will follow a planning and permitting process administered by the City of Concord. 	<p>Onsite Land Use: <i>Significant beneficial impacts (changes in land use; integration of mixed-use development into City of Concord, with public access to previously inaccessible military property).</i></p> <ul style="list-style-type: none"> • Redevelopment of 5,038-acre property into seven development districts and 2,825 acres of conservation open space. • Specific development proposals will follow a planning and permitting process administered by the City of Concord. 	<p>Onsite Land Use: <i>Significant adverse impact.</i></p> <ul style="list-style-type: none"> • Existing land uses not consistent with Area Plan and other plans (also see Consistency with Land Use Plans and Zoning below).
	<p>Regional/Adjacent Land Use: <i>No direct impact; indirect beneficial impact (relieving development pressure on sensitive land resources in county).</i></p> <ul style="list-style-type: none"> • Consistent with local/regional land uses and land use plans. • Reduced offsite development pressure with mixed-use development planned onsite. 	<p>Regional/Adjacent Land Use: <i>No direct impact; indirect beneficial impact (relieving development pressure on sensitive land resources in county).</i></p> <ul style="list-style-type: none"> • Consistent with local/regional land uses and land use plans. • Reduced offsite development pressure with mixed-use development planned onsite. 	<p>Regional/Adjacent Land Use: <i>No impact.</i></p> <ul style="list-style-type: none"> • Compatible with regional/adjacent land uses.
	<p>Consistency with Land Use Plans and Zoning: <i>No adverse impact.</i></p> <ul style="list-style-type: none"> • Consistent with regional plans – BART Strategic Plan, ABAG Strategic Plan, Plan Bay Area: Strategy for a Sustainable Region, and Bay Area Joint Policy Committee’s FOCUS strategy. • Consistent with local plans – Concord Reuse Project Area Plan, Concord 2030 General Plan, Contra Costa (County) General Plan, and Pittsburg General Plan. 	<p>Consistency with Land Use Plans and Zoning: <i>Moderate adverse impact (higher number of residential units than included in General Plan).</i></p> <ul style="list-style-type: none"> • Consistent with regional plans – BART Strategic Plan, ABAG Strategic Plan, Plan Bay Area: Strategy for a Sustainable Region, and Bay Area Joint Policy Committee’s FOCUS strategy. • Consistent with local plans – Concord Reuse Project Area Plan, Concord 2030 General Plan, Contra Costa (County) General Plan, and Pittsburg General Plan. • Number of dwelling units would exceed total planned for the area and require amendment to Concord 2030 General Plan. 	<p>Consistency with Land Use Plans and Zoning: <i>Significant adverse impact.</i></p> <ul style="list-style-type: none"> • Not consistent with regional plans – BART Strategic Plan, ABAG Strategic Plan, Plan Bay Area: Strategy for a Sustainable Region, and Bay Area Joint Policy Committee’s FOCUS strategy. • Not consistent with local plans – Concord Reuse Project Area Plan, Concord 2030 General Plan, Contra Costa (County) General Plan, and Pittsburg General Plan.

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Socioeconomics and Environmental Justice	Economy, Employment, and Income: <i>Significant beneficial short-term and long-term impacts.</i> <ul style="list-style-type: none"> • \$6.3 billion in total construction expenditures. • Beneficial direct, indirect, and induced impacts from increased output, earnings, and employment in the area. • 22,714 jobs (direct, indirect, and induced) from construction expenditures. • 24,594 jobs (direct, indirect, and induced) at full build-out. 	Economy, Employment, and Income: <i>Significant beneficial short-term and long-term impacts.</i> <ul style="list-style-type: none"> • Greater total construction expenditures than Alternative 1. • Beneficial direct, indirect, and induced impacts from increased output, earnings, and employment in the area; slightly greater than Alternative 1 during construction phase. • More jobs from construction expenditures and at full build-out (direct, indirect, and induced) than Alternative 1. 	Economy, Employment, and Income: <i>No impact.</i> <ul style="list-style-type: none"> • No new economic activity in the form of construction expenditures or increased output, earnings, and employment.
	Population (impact on City of Concord population and demographics): <i>No significant adverse impact.</i> <ul style="list-style-type: none"> • Construction of 12,200 residential units would increase population in City of Concord by 32,387 persons. Regional population growth forecasted from other factors not related to proposed action. 	Population (impact on City of Concord population and demographics): <i>No significant adverse impact.</i> <ul style="list-style-type: none"> • Construction of 15,872 residential units would increase population in City of Concord by 41,642 persons. Regional population growth forecasted from other factors not related to proposed action. 	Population: <i>No impact.</i> <ul style="list-style-type: none"> • No change in local population.
	Housing and Commercial Property: <i>Minor beneficial impact.</i> <ul style="list-style-type: none"> • 12,200 new residential units would increase housing stock consistent with anticipated local and regional demand. • Consistent with City of Concord Homeless Assistance Plan and affordable housing goals. • Short-term impact on commercial property market from addition of 6.1 million square feet of commercial space when much vacant commercial space is already available. Impacts expected to decrease as anticipated regional growth occurs. 	Housing and Commercial Property: <i>Minor beneficial impact.</i> <ul style="list-style-type: none"> • 15,872 new residential units would increase housing stock consistent with anticipated local and regional demand. • Consistent with City of Concord Homeless Assistance Plan and affordable housing goals. • Short-term impact on commercial property market from addition of 6.1 million square feet of commercial space when much vacant commercial space is already available. Impacts expected to decrease as anticipated regional growth occurs. 	Housing and Commercial Property: <i>No impact.</i> <ul style="list-style-type: none"> • No change in housing and commercial property markets.
	Taxes and Revenue: <i>Significant beneficial impact.</i> <ul style="list-style-type: none"> • \$88 million increase in property tax and sales/use tax revenue from implementation of Alternative 1. 	Taxes and Revenue: <i>Significant beneficial impact.</i> <ul style="list-style-type: none"> • Greater increase in property tax and sales/use tax revenue from implementation of Alternative 2 than from implementation of Alternative 1. 	Taxes and Revenue: <i>No impact.</i> <ul style="list-style-type: none"> • No change in local government tax receipts.

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Environmental Justice and Protection of Children: <i>No significant adverse impact.</i></p> <ul style="list-style-type: none"> Potential minority or low-income populations exist within the study area. However, they would not experience a disproportionately high or adverse human health or environmental effect because no significant unmitigated impacts are expected to occur in surrounding communities as a result of Alternative 1. No unique environmental health or safety issues would impact children in the affected communities. 	<p>Environmental Justice and Protection of Children: <i>No significant adverse impact.</i></p> <ul style="list-style-type: none"> Potential minority or low-income populations exist within the study area. However, they would not experience a disproportionately high or adverse human health or environmental effect because no significant unmitigated impacts are expected to occur in surrounding communities as a result of Alternative 2. No unique environmental health or safety issues would impact children in the affected communities. 	<p>Environmental Justice and Protection of Children: <i>No impact.</i></p> <ul style="list-style-type: none"> No change from current conditions.
<p>Air Quality</p>	<p>Criteria Pollutants: <i>Significant adverse impacts. (Daily and annual emission totals indicate significant adverse impacts due to the size of the project.)</i></p> <p><u>Population and Vehicle Miles Traveled (VMT):</u></p> <ul style="list-style-type: none"> Population increases would be consistent with the Concord 2030 General Plan. The rate of increase in VMT would be less than the rate of increase in population. <p><u>Criteria pollutants:</u> Because of the size of the project, daily and annual emission estimates of criteria air pollutants from construction and operations would exceed BAAQMD significance thresholds, resulting in significant impacts.</p> <p><u>GHG Emissions:</u> Annual per capita GHG emissions resulting from the implementation of the Area Plan would be consistent with local and state GHG emission planning goals.</p>	<p>Planning Standards and Criteria Pollutants: <i>Significant adverse impacts. (Daily and annual emission totals would be higher than Alternative 1 and indicate significant adverse impacts due to the size of the project.)</i></p> <p><u>Population and VMT:</u></p> <ul style="list-style-type: none"> Population increases would exceed estimates in the Area Plan and would therefore not be consistent with the Concord 2030 General Plan, resulting in the potential for significant impacts. The rate of increase in VMT would be less than the rate of increase in population. <p><u>Criteria pollutants:</u> Because of the size of the project, daily and annual emission estimates of criteria air pollutants from construction and operations would exceed BAAQMD significance thresholds, resulting in significant impacts.</p> <p><u>GHG Emissions:</u> Annual per capita GHG emissions resulting from the implementation of Alternative 2 would be higher than Alternative 1 but would be consistent with local and state GHG emission planning goals.</p>	<p><i>No significant impact.</i></p> <p>No new emissions would be generated by the proposed action, which would not occur. However, the improvements and mitigations planned for the City of Concord would not be implemented and, given the growth of population anticipated for the region, criteria pollutants and GHG emissions would continue to increase.</p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Mitigation: Planned mitigation measures defined in the Area Plan, and evaluated in Book 3, the Area Plan Climate Action Plan (Area Plan CAP), would reduce the impacts of GHG and criteria pollutant emissions. Mitigation measures include transportation diversity and demand management, onsite photovoltaic installations, building design to meet energy efficiency standards, and use of best management practices (BMPs) such as proper maintenance of equipment and idling-reduction measures.</p>	<p>Mitigation: Planned mitigation measures defined in the Area Plan, and evaluated in the Area Plan CAP, would reduce the impacts of GHG and criteria pollutant emissions in Alternative 2. Mitigation measures include transportation diversity and demand management, onsite photovoltaic installations, building design to meet energy efficiency standards, and use of BMPs such as proper maintenance of equipment and idling-reduction measures.</p>	
<p>Biological Resources</p>	<p>Vegetation Communities and Habitats: <i>No significant adverse impacts.</i></p> <p><u>California Annual Grassland</u></p> <ul style="list-style-type: none"> • Permanent removal of existing vegetation communities and associated habitats, most of which is California annual grassland. Approximately 1,720 acres of grassland would be permanently impacted; however, approximately 2,045 acres of grassland habitat would remain onsite. • Potential adverse impacts to remaining grasslands due to invasive and non-native species would be addressed through implementation of the Area Plan, including the MMRP. • Temporary disturbance on areas to be maintained as conservation/open space during construction. <p><u>Coyote Brush Scrub/Coastal Sage Scrub</u></p> <ul style="list-style-type: none"> • Removal of 92 percent (4.6 acres) of this limited onsite habitat that does not provide suitable habitat for unique species. 	<p>Vegetation Communities and Habitats: <i>No significant adverse impacts.</i></p> <p><u>California Annual Grassland</u></p> <ul style="list-style-type: none"> • Permanent removal of existing vegetation communities and associated habitats, most of which is California annual grassland. Approximately 1,650 acres of grassland would be permanently impacted; however, approximately 2,115 acres of grassland habitat would remain onsite. • Potential adverse impacts to remaining grasslands due to invasive and non-native species would be addressed through implementation of the Area Plan, including the MMRP. • Temporary disturbance on areas to be maintained as conservation/open space during construction. <p><u>Coyote Brush Scrub/Coastal Sage Scrub</u></p> <ul style="list-style-type: none"> • Removal of all 5 acres of this limited onsite habitat that does not provide suitable habitat for unique species. 	<p>Vegetation Communities and Habitats: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p><u>Oak Woodland/Savannah</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 9 acres of this habitat type, leaving 92 percent (99 acres) undisturbed. Proposed removal would trigger the City of Concord Heritage Tree Ordinance and developer would be required to comply with the mitigation provisions of this ordinance. <p><u>Riparian Woodlands</u></p> <ul style="list-style-type: none"> Removal of 5 acres of this habitat type, leaving 84 percent (26 acres) undisturbed. Loss of riparian woodlands along Willow Pass Creek would be mitigated through the Section 401/404 process, and the establishment of a 300-foot riparian buffer along Mt. Diablo Creek would increase overall riparian woodland communities onsite. <p><u>Wetlands and Non-Wetland Waters</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 22.1 acres of jurisdictional and non-jurisdictional wetlands. Approximately 8,408 linear feet of jurisdictional waters would be permanently impacted. <p><u>Orchards and Plantations</u></p> <ul style="list-style-type: none"> Approximately 113 acres would be permanently removed from the site, leaving approximately 27 percent (43 acres) onsite. 	<p><u>Oak Woodland/Savannah</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 9 acres of this habitat type, leaving 92 percent (99 acres) undisturbed. Proposed removal would trigger the City of Concord Heritage Tree Ordinance and developer would be required to comply with the mitigation provisions of this ordinance. <p><u>Riparian Woodlands</u></p> <ul style="list-style-type: none"> Removal of 5 acres of this habitat type, leaving 84 percent (26 acres) undisturbed. Loss of riparian woodlands along Willow Pass Creek would be mitigated through the Section 401/404 process, and the establishment of a 300-foot riparian buffer along Mt. Diablo Creek would increase overall riparian woodland communities onsite. <p><u>Wetlands and Non-Wetland Waters</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 22 acres of jurisdictional and non-jurisdictional wetlands. Approximately 8,639 linear feet of jurisdictional waters would be permanently impacted. <p><u>Orchards and Plantations</u></p> <ul style="list-style-type: none"> Approximately 112 acres would be permanently removed from the site, leaving approximately 28 percent (44 acres) onsite. 	
	<p>Fish and Wildlife: <i>No significant adverse impacts. Moderate beneficial impacts from restoration of Mt. Diablo Creek and creation of 300-foot buffer.</i></p> <ul style="list-style-type: none"> Temporary impacts in the form of disturbance during construction may include displacement and minor impacts due to mortality of a small proportion of less-mobile species. Loss of existing habitat due to permanent habitat conversion to developed areas but there is a regional availability of these habitats coupled with the preservation of the Conservation/Open Space District. 	<p>Fish and Wildlife: <i>No significant adverse impacts. Moderate beneficial impacts from restoration of Mt. Diablo Creek and creation of 300-foot buffer.</i></p> <ul style="list-style-type: none"> Temporary impacts in the form of disturbance during construction may include displacement, and minor impacts due to mortality of a small proportion of less-mobile species. Loss of existing habitat due to permanent habitat conversion to developed areas but there is a regional availability of these habitats coupled with the preservation of the Conservation/Open Space District. 	<p>Fish and Wildlife: <i>No impact.</i></p> <ul style="list-style-type: none"> Overall abundance of wildlife may increase because of the lack of human activity.

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<ul style="list-style-type: none"> Loss of nesting areas for breeding birds, stopover areas for breeding birds, and stopover areas for migratory birds during construction would be minimized through the preservation of the conservation area and creation of a 300-foot buffer along Mt. Diablo Creek. Potential introduction of non-native wildlife species. Permanent loss of stream and wetland habitats would permanently displace aquatic biota; however, restoration of Mt. Diablo Creek and the creation of a 300-foot buffer would result in beneficial impacts. 	<ul style="list-style-type: none"> Loss of nesting areas for breeding birds, stopover areas for breeding birds, and stopover areas for migratory birds during construction would be minimized through the preservation of the conservation area and creation of a 300-foot buffer along Mt. Diablo Creek. Potential introduction of non-native wildlife species. Permanent loss of stream and wetland habitats would permanently displace aquatic biota; however, restoration of Mt. Diablo Creek and the creation of a 300-foot buffer would result in beneficial impacts. 	
	<p>Special Status Species: <i>No significant adverse impacts with mitigation.</i></p> <p><u>California Red-Legged Frog</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Removal of 2,315 acres of this species' habitat, including direct impacts to non-breeding aquatic habitat, upland, and dispersal habitats. Direct effects through harassment or mortality could occur during both construction and operation. <p><u>California Tiger Salamander</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Total of 957 acres of direct California tiger salamander habitat impacts estimated, including approximately 19 acres of high-quality habitat, 119 acres of medium-quality habitat, and 819 acres of low-quality habitat. Direct effects through harassment or mortality could occur during both construction and operation. 	<p>Special Status Species: <i>No significant adverse impacts with mitigation.</i></p> <p><u>California Red-Legged Frog</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Removal of 2,234 acres of this species' habitat, including direct impacts to non-breeding aquatic habitat, upland, and dispersal habitats. Direct effects through harassment or mortality could occur during both construction and operation. <p><u>California Tiger Salamander</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Total of 898 acres of direct California tiger salamander habitat impacts estimated. Direct effects through harassment or mortality could occur during both construction and operation. 	<p>Special Status Species: <i>No impact.</i></p> <ul style="list-style-type: none"> California red-legged frog and California tiger salamander populations would likely continue on the site.

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p><u>Alameda Whipsnake</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. No individuals have been previously documented onsite; however, suitable habitat exists. Permanent adverse impacts to Alameda whipsnake habitat through loss of suitable habitat and direct mortality of individuals during construction and post-development recreational use. <p>Mitigation for frog, salamander, and snake: The city's proposed master permitting framework that would be developed in coordination with the USFWS would ultimately be the basis for specific, adequate, and binding language for conservation of threatened and endangered species, explicitly establishing the city as the responsible party for mitigation required by the USFWS and USACE, and providing assurances of sufficient funding for compensatory mitigation.</p> <p><u>Bald and Golden Eagle</u></p> <p>Potential impacts to individuals or their habitat during construction due to loss or disturbance of an active nest. Any future reuse would be required to avoid and minimize potential impacts to the species and compensate for impacts to the species' habitat per the protections afforded by the MBTA, BGEPA, and CDFG Codes.</p>	<p><u>Alameda Whipsnake</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. No individuals have been previously documented onsite; however, suitable habitat exists. Permanent adverse impacts to Alameda whipsnake habitat through loss of suitable habitat and direct mortality of individuals during construction and post-development recreational use. <p>Mitigation for frog, salamander, and snake: The city's proposed master permitting framework that would be developed in coordination with the USFWS would ultimately be the basis for specific, adequate, and binding language for conservation of threatened and endangered species, explicitly establishing the city as the responsible party for mitigation required by the USFWS and USACE, and providing assurances of sufficient funding for compensatory mitigation.</p> <p><u>Bald and Golden Eagle</u></p> <p>Potential impacts to individuals or their habitat during construction due to loss or disturbance of an active nest. Any future reuse would be required to avoid and minimize potential impacts to the species and compensate for impacts to the species' habitat per the protections afforded by the MBTA, BGEPA, and CDFG Codes.</p>	
Cultural Resources	<p>Native American Resources: <i>No impact.</i> No Native American resources identified at former NWS Concord by federally recognized Indian tribes consulted for the proposed action.</p>	<p>Native American Resources: <i>No impact.</i> No Native American resources identified at former NWS Concord by federally recognized Indian tribes consulted for the proposed action.</p>	<p>Native American Resources: <i>No impact.</i></p> <p>Mitigation: Not applicable.</p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>NRHP-Listed or -Eligible Historic Properties: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Reuse of former NWS Concord could have an adverse effect on historic properties resulting from disturbance or destruction of two NRHP-eligible archaeological sites during implementation of Alternative 1. <p>Mitigation: Mitigation as part of Section 106 consultation would reduce impacts.</p>	<p>NRHP-Listed or -Eligible Historic Properties: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Reuse of former NWS Concord could have an adverse effect on historic properties resulting from disturbance or destruction of two NRHP-eligible archaeological sites during implementation of Alternative 2. <p>Mitigation: Mitigation as part of Section 106 consultation would reduce impacts.</p>	<p>NRHP-Listed or -Eligible Historic Properties: <i>No impact.</i></p>
<p>Topography, Geology, and Soils</p>	<p>Topography: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Below-grade development and other contour changes would be gradual. 	<p>Topography: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Below-grade development and other contour changes would be gradual. 	<p>Topography: <i>No impact.</i></p>
	<p>Geology: <i>No significant adverse impacts (impacts from seismic hazards would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> High potential for seismically induced ground shaking, ground failure, slope failure, and surface fault rupture due to location in a seismically active area. The Clayton Section Greenville Fault located on the former NWS Concord is an active Holocene fault, but with no history of earthquakes. <p>Mitigation: For ground shaking and ground failure: buildings engineered/ designed per the International Building Code. Design standards are not intended to fully mitigate for liquefaction, some ground failure, slope failure, and surface fault rupture.</p>	<p>Geology: <i>No significant adverse impacts (impacts from seismic hazards would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> High potential for seismically induced ground shaking, ground failure, slope failure, and surface fault rupture due to location in a seismically active area. The Clayton Section Greenville Fault located on the former NWS Concord is an active Holocene fault, but with no history of earthquakes. <p>Mitigation: For ground shaking and ground failure: buildings engineered/ designed per the International Building Code. Design standards are not intended to fully mitigate for liquefaction, some ground failure, slope failure, and surface fault rupture.</p>	<p>Geology: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Soils: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Loss of topsoil, exposure of old fill, and import of new fill during grading, excavation, and other construction activities. <p>Mitigation: Erosion and sediment control measures in accordance with local and state laws, stormwater permit, and Construction General Permit.</p>	<p>Soils: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Loss of topsoil, exposure of old fill, and import of new fill during grading, excavation, and other construction activities. <p>Mitigation: Erosion and sediment control measures in accordance with local and state laws, stormwater permit, and Construction General Permit.</p>	<p>Soils: <i>No impact.</i></p>
<p>Hazards and Hazardous Substances</p>	<p>Environmental Restoration Program Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> ER Program sites are in various stages of completion depending on the site. Compliance with the CERCLA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. <p>Solid Waste Management Unit Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> All SWMU sites at former NWS Concord have been recommended for no further action, except for four sites already transferred to the IRP. Compliance with the RCRA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. 	<p>Environmental Restoration Program Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> ER Program sites are in various stages of completion depending on the site. Compliance with the CERCLA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. <p>Solid Waste Management Unit Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> All SWMU sites at former NWS Concord have been recommended for no further action, except for four sites already transferred to the IRP. Compliance with the RCRA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. 	<p>Environmental Restoration Program Sites: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> ER Program sites are in various stages of completion depending on the site. CERCLA cleanup activities would continue. Compliance with the CERCLA process and adherence to federal laws and regulations would ensure that hazards to the public or environment from hazardous wastes/materials associated with site cleanup would be minimized to the extent possible. <p>Solid Waste Management Unit Sites: <i>No impact.</i></p> <ul style="list-style-type: none"> All SWMU sites at former NWS Concord have been recommended for no further action, except for four sites already transferred to the IRP.

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Radiological Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Radiation surveys are ongoing at sites with low contamination potential as identified by historical radiological assessment. Compliance with the Atomic Energy Act and the CERCLA process, and adherence to federal laws and regulations during construction and operation, would ensure that hazards to the public or environment from radioactive wastes/materials associated with former sites would be minimized to the extent possible. <p>Other Hazardous Waste/Materials Management: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Hazardous wastes would be generated and hazardous materials (e.g., petroleum and other products in belowground and aboveground storage tanks, asbestos, LBP, PCBs, and radioactive materials) would be handled/used during construction and operation activities. Compliance with regulatory framework would minimize hazards to the public and environment. 	<p>Radiological Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Radiation surveys are ongoing at sites with low contamination potential as identified by historical radiological assessment. Compliance with the Atomic Energy Act and the CERCLA process, and adherence to federal laws and regulations during construction and operation, would ensure that hazards to the public or environment from radioactive wastes/materials associated with former sites would be minimized to the extent possible. <p>Other Hazardous Waste/Materials Management: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Hazardous wastes would be generated and hazardous materials (e.g., petroleum and other products in belowground and aboveground storage tanks, asbestos, LBP, PCBs, and radioactive materials) would be handled/used during construction and operation activities. Compliance with regulatory framework would minimize hazards to the public and environment. 	<p>Radiological Sites: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Site evaluation would continue. Compliance with the Atomic Energy Act and the CERCLA process, and adherence to federal laws and regulations, would ensure that hazards to the public or environment from radioactive wastes/materials associated with site cleanup would be minimized to the extent possible. <p>Other Hazardous Waste/Materials Management: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Navy would continue to generate small quantities of hazardous waste and use small quantities of hazardous materials to conduct caretaker activities. Asbestos and LBP would remain in onsite buildings. Compliance with regulatory framework would minimize hazards to the public and environment.
Noise	<p>Construction Noise: <i>No significant adverse impacts (short-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Significant short-term noise impacts to nearby receptors, especially on the western boundary of the property, from the use of heavy equipment and vehicle traffic during construction. <p>Mitigation: City of Concord noise control measures for new developments and construction would reduce impacts.</p> <p>Operational Noise: <i>No significant adverse impacts (long-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Overall increase in ambient noise level from vehicular/rail traffic and operation of the commercial, industrial, recreational, and residential land uses of the development. 	<p>Construction Noise: <i>No significant adverse impacts (short-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Significant short-term noise impacts to nearby receptors, especially on the western boundary of the property, from the use of heavy equipment and vehicle traffic during construction. <p>Mitigation: City of Concord noise control measures for new developments and construction would reduce impacts.</p> <p>Operational Noise: <i>No significant adverse impacts (long-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Overall increase in ambient noise level from vehicular/rail traffic and operation of the commercial, industrial, recreational, and residential land uses of the development. 	<p>Construction Noise: <i>No impact.</i></p> <p>Operational Noise: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<ul style="list-style-type: none"> Long-term increase in traffic noise of generally 1 to 3 dBA at nearby receptors. The 1 dBA increase would not be perceptible. Increase in noise level of 7 dBA near Denkinger Road at site boundary. Short-term moderate impact from increase in noise levels from certain recreational uses. <p>Mitigation: City of Concord noise control measures in MMRP such as noise barriers, low-noise road surfaces, and acoustical analyses would reduce impacts.</p>	<ul style="list-style-type: none"> Long-term increase in traffic noise of generally 1 to 3 dBA at nearby receptors. The 1 dBA increase would not be perceptible. Increase in noise level of 7 dBA near Denkinger Road at site boundary. Short-term moderate impact from increase in noise levels from certain recreational uses. <p>Mitigation: City of Concord noise control measures in MMRP such as noise barriers, low-noise road surfaces, and acoustical analyses would reduce impacts.</p>	
Public Services	<p>Educational Facilities: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Population increase of 32,387 residents would result in 4,577 children requiring educational services. Reuse would include educational facilities adequate for the demand, in compliance with Concord 2030 General Plan. Property taxes and other funding sources would support development of the schools. 	<p>Educational Facilities: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Population increase of 41,642 residents would result in 5,885 children requiring educational services. Reuse would include educational facilities adequate for the demand, in compliance with Concord 2030 General Plan. Property taxes and other funding sources would support development of the schools. 	<p>Educational Facilities: <i>No impact.</i></p>
	<p>Public Safety, Emergency, and Health Care Facilities: <i>No significant adverse impacts (new facilities would be accommodated during incremental, long-term build-out).</i></p> <ul style="list-style-type: none"> Population increase of 32,387 residents and additional workforce would result in need for additional public safety, emergency, and health care facilities. Police staffing and equipment would need to be increased at existing City of Concord Police Department facilities. Fire department staffing and equipment would need to be increased and two additional fire stations would be needed, one of which might be converted from an existing Navy facility. New First Responder Training Center planned under Alternative 1 would support city and county public safety departments. Property taxes and other funding sources would support the increased public safety and 	<p>Public Safety, Emergency, and Health Care Facilities: <i>No significant adverse impacts (new facilities would be accommodated during incremental, long-term build-out).</i></p> <ul style="list-style-type: none"> Population increase of 41,642 residents and additional workforce would result in need for additional public safety, emergency, and health care facilities. An additional 50 police officers and additional facilities and equipment would be needed at the City of Concord Police Department facilities. An additional 29 fire fighters, two fire stations, and additional facilities and equipment would be needed, one of which might be converted from an existing Navy facility. No First Responder Training Center is planned under Alternative 2 to support city and county public safety departments. Property taxes and other funding sources would support the increased public safety and 	<p>Public Safety, Emergency, and Health Care Facilities: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>emergency facilities.</p> <ul style="list-style-type: none"> Additional health care needs would be adequately accommodated by existing hospitals and medical facilities. <p>Open Space, Parks, and Recreation: Significant beneficial impacts (long term).</p> <ul style="list-style-type: none"> Population increase of 32,387 residents and additional workforce would result in need for additional recreational space and facilities. Alternative 1 provides for 786 acres of greenways, citywide parks, and active recreational areas in the reuse area. 2,537 acres of the former NWS Concord would be managed by the East Bay Regional Park District for passive recreation and open space uses. Ratio of dedicated parkland space to residents would exceed Concord 2030 General Plan requirements, leading to a long-term beneficial impact. 	<p>emergency facilities.</p> <ul style="list-style-type: none"> Additional health care needs would be adequately accommodated by existing hospitals and medical facilities. <p>Open Space, Parks, and Recreation: Significant beneficial impacts (long term).</p> <ul style="list-style-type: none"> Population increase of 41,642 residents and additional workforce would result in need for additional recreational space and facilities. Alternative 2 provides for 786 acres of greenways, citywide parks, and active recreational areas in the reuse area. 2,537 acres of the former NWS Concord would be managed by the East Bay Regional Park District for passive recreation and open space uses. Ratio of dedicated parkland space to residents would exceed Concord 2030 General Plan requirements, leading to a long-term beneficial impact. 	<p>Open Space, Parks, and Recreation: No impact.</p>
<p>Transportation, Traffic and Circulation</p>	<p>Traffic Volumes and Level of Service (LOS) on Surrounding Roadway Network: Significant adverse impacts.</p> <ul style="list-style-type: none"> New roadways on property and connections with existing network. Projected to add 203,205 daily trips to the new and existing road network. Ten intersections, two roadway segments, seven freeway segments, and 16 freeway ramps in study area would operate at LOS E or worse and would exceed performance standards. One roadway segment, three freeway segments, and six freeway ramps exceeding performance standards would not change or improve operations over No Action Alternative. Unavoidable adverse impacts even with proposed mitigation at four intersections. Minor increase in traffic on roadways adjacent to property during construction. 	<p>Traffic Volumes and LOS on Surrounding Roadway Network: Significant adverse impacts.</p> <ul style="list-style-type: none"> New roadways on property and connections with existing network. Projected to add 229,301 daily trips to the new and existing road network. Ten intersections, two roadway segments, seven freeway segments, and 16 freeway ramps in study area would operate at LOS E or worse and would exceed performance standards. One roadway segment, two freeway segments, and two freeway ramps exceeding performance standards would not change or improve operations over No Action Alternative. Unavoidable adverse impacts even with proposed mitigation at four intersections. Minor increase in traffic on roadways adjacent to property during construction. 	<p>Significant adverse impacts to traffic due to background growth.</p> <ul style="list-style-type: none"> Eight intersections, one roadway segment, six freeway segments, and 13 freeway ramps in study area would operate at LOS E or worse and would exceed performance standards. <p>Mitigation: None proposed.</p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Mitigation: Traffic demand management (TDM) strategies, site management plans, implementation of minimization and mitigation measures identified in the Area Plan, and BMPs would reduce impacts.</p>	<p>Mitigation: TDM strategies, site management plans, implementation of minimization and mitigation measures identified in the Area Plan, and BMPs would reduce impacts.</p>	
<p>Utilities and Infrastructure</p>	<p>Water: <i>Moderate adverse impact due to increase in water demand and need for new infrastructure.</i></p> <p><u>Water Supply and Demand</u></p> <ul style="list-style-type: none"> • Estimated demand of 3.2 million gallons per day (mgd) at full build-out, excluding irrigational needs. • Development would fall within the level of growth assumed for the CCWD service area. <p><u>Water Treatment and Distribution</u></p> <ul style="list-style-type: none"> • Moderate impact on Randall-Bold Water Treatment Plant (WTP) capacity because upgrades would be needed to serve new development. • Moderate impact on distribution facilities; reuse would include construction of a new water distribution system comprised of both potable water and recycled water components. 	<p>Water: <i>Moderate adverse impact due to increase in water demand and need for new infrastructure.</i></p> <p><u>Water Supply and Demand</u></p> <ul style="list-style-type: none"> • Estimated demand of 3.5 mgd at full build-out, excluding irrigational needs. • Due to similarities to Alternative 1, development would fall within the level of growth assumed for the CCWD service area. <p><u>Water Treatment and Distribution</u></p> <ul style="list-style-type: none"> • Moderate impact on Randall-Bold WTP capacity because upgrades would be needed to serve new development under Alternative 2. • Moderate impact on distribution facilities; reuse would include construction of a new water distribution system comprised of both potable water and recycled water components. 	<p>Water: <i>No impact.</i></p>
	<p>Stormwater and Collection Systems: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> • Reuse would result in a total of approximately 1,442 acres of impervious area, an increase of 301 percent above existing conditions. • Reuse would require new stormwater infrastructure to manage increased flows. <p>Mitigation: Grading permit, stormwater control plan, compliance with stormwater permit, low-impact development strategies, and BMPs would reduce impacts.</p>	<p>Stormwater and Collection Systems: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> • Reuse would result in a total of approximately 1,369 acres of impervious area, an increase of 281 percent above existing conditions. • Reuse would require new stormwater infrastructure to manage increased flows. <p>Mitigation: Grading permit, stormwater control plan, compliance with stormwater permit, low-impact development strategies, and BMPs would reduce impacts.</p>	<p>Stormwater and Collection Systems: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Sanitary Collection and Treatment Systems: <i>Minor/moderate adverse impacts (increase in demand and need for infrastructure).</i></p> <ul style="list-style-type: none"> Minor impact on Central Contra Costa Sanitary District (CCCSD) Wastewater Treatment Plant (WWTP); estimated demand of approximately 3.7 mgd at full build-out would fall within projected future effluent discharge limitations. Moderate impact on collection system because upgrades to existing City of Concord and CCCSD collection systems are possible. 	<p>Sanitary Collection and Treatment Systems: <i>Minor/moderate adverse impacts (increase in demand and need for infrastructure).</i></p> <ul style="list-style-type: none"> Minor impact on CCCSD WWTP; estimated demand of approximately 5.5 mgd would fall within projected future effluent discharge limitations. Moderate impact on collection system because upgrades to existing City of Concord and CCCSD collection systems are possible. 	<p>Sanitary Collection and Treatment Systems: <i>No impact.</i></p>
	<p>Other Utilities and Infrastructure: <i>No significant adverse impacts</i></p> <p><u>Solid Waste and Recycling Management:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Fifty percent of solid waste generated from construction and operation activities would be recycled or otherwise diverted from landfills in accordance with state law. Approximately 90,500 tons of construction and demolition (C&D) waste from construction activities would require landfilling following applicable recycling measures. Approximately 25,000 tons per year of non-C&D solid waste from operation of the new development (residential, commercial, and industrial activities) would require landfilling following applicable recycling measures. Due to long build-out period, local landfills are projected to have the capacity to accommodate the waste. <p><u>Electricity:</u> <i>Minor to moderate impact on regional demand.</i></p> <ul style="list-style-type: none"> Future coordination with PG&E is needed. New electric connections/infrastructure required, including an onsite 5-acre distribution substation. 	<p>Other Utilities and Infrastructure: <i>No significant adverse impacts</i></p> <p><u>Solid Waste and Recycling Management:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Fifty percent of solid waste generated from construction and operation activities would be recycled or otherwise diverted from landfills in accordance with state law. Approximately 97,000 tons of C&D waste from construction activities would require landfilling following applicable recycling measures. Approximately 28,000 tons per year of non-C&D solid waste from operation of the new development (residential, commercial, and industrial activities) would require landfilling following applicable recycling measures. Due to long build-out period, local landfills are projected to have the capacity to accommodate the waste. <p><u>Electricity:</u> <i>Minor to moderate impact on regional demand.</i></p> <ul style="list-style-type: none"> Future coordination with PG&E is needed. New electric connections/infrastructure required, including an onsite 5-acre distribution substation. 	<p>Other Utilities and Infrastructure: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p><u>Natural Gas:</u> <i>Negligible impact on regional demand.</i></p> <ul style="list-style-type: none"> Sufficient capacity in the adjacent existing gas transmission systems to serve new development. New gas connections/distribution system required, including 1-acre gas regulating station. <p><u>Telecommunications:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Additional services and the development of new facilities to service new development would be required. 	<p><u>Natural Gas:</u> <i>Negligible impact on regional demand.</i></p> <ul style="list-style-type: none"> Sufficient capacity in the adjacent existing gas transmission systems to serve new development. New gas connections/distribution system required, including 1-acre gas regulating station. <p><u>Telecommunications:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Additional services and the development of new facilities to service new development would be required. 	
<p>Visual Resources and Aesthetics</p>	<p>Scenic Quality and Views: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Potential impacts were assessed at a programmatic level because specific plans for development have not yet been approved by the City of Concord. Scenic quality contrast between current conditions and proposed development would range from none to strong, depending on the key observation point (KOP). Views of hills, ridgelines, and open space could be substantially changed from some KOPs. <p>Mitigation: City of Concord mitigation measures such as best management practices, light-reducing measures, and light-controlling measures required for development plans would reduce impacts.</p>	<p>Scenic Quality and Views: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Potential impacts were assessed at a programmatic level because specific plans for development have not yet been approved by the City of Concord. Scenic quality contrast between current conditions and proposed development would range from none to strong, depending on the KOP. Views of hills, ridgelines, and open space could be substantially changed from some KOPs. <p>Mitigation: City of Concord mitigation measures such as best management practices, light-reducing measures, and light-controlling measures required for development plans would reduce impacts.</p>	<p><i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
<p>Water Resources</p>	<p>Surface Water: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> • Disturbance of Mt. Diablo Creek and its riparian corridor. • Temporary increase in erosion and sedimentation rates. • Drainage patterns on the site could be temporarily altered. • Temporary impact associated with new culvert installation and permanent loss of natural drainage course. • Approximately 8,716 linear feet of jurisdictional waters permanently impacted through fill because of the development footprint. • Total impervious surface area of 1,442 acres, resulting in increase in quantity of sheet flow (stormwater drainage) and higher peak stream discharges. <p>Mitigation: Compliance with local, state, and federal laws regarding stormwater management, including the General Construction Permit, Section 86-39 of the City of Concord’s Stormwater Management and Discharge Control Ordinance, and USACE- and EPA-issued regulations governing compensatory mitigation for impacts to streams (40 CFR Part 230) as part of the Section 401/404 permitting process would reduce impacts.</p>	<p>Surface Water: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> • Disturbance of Mt. Diablo Creek and its riparian corridor. • Temporary increase in erosion and sedimentation rates. • Drainage patterns on the site could be temporarily altered. • Temporary impact associated with new culvert installation and permanent loss of natural drainage course. • Approximately 8,639 linear feet of jurisdictional waters permanently impacted through fill because of the development footprint. • Total impervious surface area of 1,369 acres, resulting in increase in quantity of sheet flow (stormwater drainage) and higher peak stream discharges. <p>Mitigation: Compliance with local, state, and federal laws regarding stormwater management, including the General Construction Permit, Section 86-39 of the City of Concord’s Stormwater Management and Discharge Control Ordinance, and USACE- and EPA-issued regulations governing compensatory mitigation for impacts to streams (40 CFR Part 230) as part of the Section 401/404 permitting process would reduce impacts.</p>	<p>Surface Water: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Wetlands: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Impacts from direct filling or alteration of hydrology. Approximately 22.1 acres of jurisdictional (16.1 acres) and non-jurisdictional (6.1 acres) wetlands impacted. <p>Mitigation: Compliance with CWA Section 404 and USACE and EPA regulations governing compensatory mitigation for impacts to wetlands (40 CFR Part 230), in coordination with the USACE as part of the City of Concord’s Master 404 Permit for the Area Plan would reduce impacts.</p>	<p>Wetlands: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Impacts from direct filling or alteration of hydrology. Approximately 22 acres of jurisdictional (16.1 acres) and non-jurisdictional (5.9 acres) wetlands impacted. <p>Mitigation: Compliance with CWA Section 404 and USACE and EPA regulations governing compensatory mitigation for impacts to wetlands (40 CFR Part 230), in coordination with the USACE as part of the City of Concord’s Master 404 Permit for the Area Plan would reduce impacts.</p>	<p>Wetlands: <i>No impact.</i></p>
	<p>Groundwater: <i>Minor adverse impacts from construction (temporary).</i></p> <ul style="list-style-type: none"> Low likelihood of impacts associated with temporary construction activities that could extend below ground surface to a depth that would directly impact the underlying water table. Increase in imperviousness of site could result in less infiltration of rainfall and limit the potential for groundwater recharge. <p>Mitigation: If necessary, use of standard dewatering techniques; compliance with storm water permits and management plans and erosion and sediment control plans as required by the San Francisco Bay Regional Water Quality Control Board and other agencies; and implementation of BMPs would reduce impacts.</p>	<p>Groundwater: <i>Minor adverse impacts from construction (temporary).</i></p> <ul style="list-style-type: none"> Low likelihood of impacts associated with temporary construction activities that could extend below ground surface to a depth that would directly impact the underlying water table. Increase in imperviousness of site could result in less infiltration of rainfall and limit the potential for groundwater recharge. <p>Mitigation: If necessary, use of standard dewatering techniques; compliance with storm water permits and management plans and erosion and sediment control plans as required by the San Francisco Bay Regional Water Quality Control Board and other agencies; and implementation of BMPs would reduce impacts.</p>	<p>Groundwater: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Water and Groundwater Quality: <i>Minor adverse impacts (temporary).</i></p> <ul style="list-style-type: none"> • Clearing and grading activities would cause short-term exposure of soils, leading to erosion and sedimentation. • Temporary impacts during construction and implementation of the in-stream conceptual restoration design concepts due to short-term increases in sediment loads and turbidity in Mt. Diablo Creek. • Additional impervious surface area could lead to accumulation of pollutants picked up by stormwater flows and additional sources of non-point pollution reaching receiving waters such as Mt. Diablo Creek. • Proposed new development would be located within a highly developed area; stormwater runoff would be collected into a stormwater management system. <p>Mitigation: Compliance with local and state permit requirements, including the General Construction Permit, City of Concord’s Stormwater Management and Discharge Control Ordinance and Grading and Erosion Control Ordinance, and CWA Section 404 permit and Section 401 Water Quality Certification; and implementation of BMPs would reduce impacts.</p> <p>Floodplains: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> • Approximately 7.3 acres of Zone A floodplain and 1.3 acres of Zone AE floodplain would be impacted by road construction. • Approximately 57.7 acres of 100-year floodplains would be impacted by implementation of Alternative 1. • FEMA hydraulic model of Mt. Diablo Creek would be developed and used to delineate and map the 100-year floodplain within the former NWS Concord. 	<p>Water and Groundwater Quality: <i>Minor adverse impacts (temporary).</i></p> <ul style="list-style-type: none"> • Clearing and grading activities would cause short-term exposure of soils, leading to erosion and sedimentation. • Temporary impacts during construction and implementation of the in-stream conceptual restoration design concepts due to short-term increases in sediment loads and turbidity within Mt. Diablo Creek. • Additional impervious surface area could lead to accumulation of pollutants picked up by stormwater flows and additional sources of non-point pollution reaching receiving waters such as Mt. Diablo Creek. • Proposed new development would be located within a highly developed area; stormwater runoff would be collected into a stormwater management system. <p>Mitigation: Compliance with local and state permit requirements, including the General Construction Permit, City of Concord’s Stormwater Management and Discharge Control Ordinance and Grading and Erosion Control Ordinance, and CWA Section 404 permit and Section 401 Water Quality Certification; implementation of BMPs would reduce impacts.</p> <p>Floodplains: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> • Approximately 8.3 acres of Zone A floodplain and 1.3 acres of Zone AE floodplain would be impacted by road construction. • Approximately 57 acres of 100-year floodplains would be impacted by implementation of Alternative 2. • FEMA hydraulic model of Mt. Diablo Creek would be developed and used to delineate and map the 100-year floodplain within the former NWS Concord. 	<p>Water and Groundwater Quality: <i>No impact.</i></p> <p>Floodplains: <i>No impact.</i></p>

Table ES-2 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Mitigation: Once delineated floodplains within the former NWS Concord are completed, they would be compared to modeled post-development hydrologic and hydraulic conditions to determine whether any modifications to the floodplain would result. City of Concord will require a Conditional Letter of Map Revisions from FEMA to demonstrate that 100-year design flow is contained within Mt. Diablo Creek. Conceptual design elements for Mt. Diablo Creek and 40-acre detention basin would address 100-year flood event would reduce impacts.</p>	<p>Mitigation: Once delineated floodplains within the former NWS Concord are completed, they would be compared to modeled post-development hydrologic and hydraulic conditions to determine whether any modifications to the floodplain would result. City of Concord will require a Conditional Letter of Map Revisions from FEMA to demonstrate that 100-year design flow is contained within Mt. Diablo Creek. Conceptual design elements for Mt. Diablo Creek and 40-acre detention basin would address 100-year flood event would reduce impacts.</p>	

1 Purpose and Need

1.1 Introduction

This Environmental Impact Statement (EIS) presents an analysis of the U.S. Department of the Navy's (Navy's) disposal of surplus property at the former Naval Weapons Station Seal Beach Detachment Concord (NWS Concord), in the City of Concord, Contra Costa County, California, and the subsequent reuse of the property by the local community.

The Navy closed the former NWS Concord on September 30, 2008, in accordance with Public Law (P. L.) 101-510, the Defense Base Closure and Realignment Act of 1990, as amended in 2005 (DBCRA). NWS Concord included two major land holdings: (1) the Tidal Area along the Suisun Bay; and (2) the Inland Area. Approximately 60 percent of the land area has been transferred to other Department of Defense (DOD) and federal agencies. This includes the entirety of the Tidal Area along with 115 acres of the Inland Area that was transferred to the U.S. Army and approximately 59 acres of the Inland Area that was transferred to the U.S. Coast Guard. The remaining 5,028 acres of the Inland Area was determined surplus to the needs of the federal government on March 6, 2007 (72 *Federal Register* [FR] 9935). The Navy, in accordance with the DBCRA, is now preparing for disposal of the surplus property.

Base closure under the DBCRA includes multiple steps from the decision to close an installation to the final disposal or transfer of surplus property from federal ownership. Under the DBCRA, a Local Redevelopment Authority (LRA) is designated by the local community and recognized by the Secretary of Defense as the entity responsible for developing the reuse plan for a former installation or for directing the implementation of such a plan. On February 7, 2006, the City of Concord was designated as the LRA for redevelopment of the former NWS Concord (71 FR 6274).

The City of Concord initiated a community planning process in 2006 and evaluated seven alternatives for reuse of the surplus property. The city evaluated these alternatives in a Draft Environmental Impact Report (DEIR), prepared in compliance with the California Environmental Quality Act (CEQA). The DEIR was initially published in 2008 and underwent extensive public review and comment. In response to comments received, the city eliminated all but two reuse alternatives. Those two alternatives, called "Clustered Villages" and "Concentration and Conservation," were subjected to further environmental review in a second DEIR and a Final EIR (FEIR). The Concord City Council adopted the preferred, Clustered Villages alternative and certified the FEIR, Findings of Significance, and a Mitigation Monitoring and Reporting Plan in 2010.² The "Clustered Villages" approach envisioned in the adopted Reuse Plan included a series of villages connected by transit, allowing for a diverse development mix of residential, commercial, industrial, and recreational land uses, and conservation open space. In 2012, the City of Concord refined the Reuse Plan, adopted the resulting *Concord Reuse Project (CRP) Area Plan* (the Area Plan, hereafter), certified an addendum to the FEIR, and amended Concord's citywide Concord 2030 General Plan (City of Concord 2012) to include the Area Plan. By incorporating the Area Plan into the General Plan, the community's state-required "constitution for future development," the City of Concord institutionalized its policies and guidance for reuse of the former NWS Concord. As such, the City of Concord has completed the environmental impact analysis of its local reuse planning processes under CEQA to support implementation of the Area Plan.

² Measures identified in the certified FEIR and its addendum and the associated Mitigation Monitoring and Reporting Plan (MMRP) that will avoid or mitigate potential environmental impacts are the responsibility of future developers or owners of the property. Compliance with these measures would take place under the jurisdiction and review of the City of Concord and federal, state, and local agencies with regulatory authority over and responsibility for such resources.

Prior to disposal of surplus property, the Navy must complete the federal environmental review process required by the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [U.S.C.] 4321 et seq); the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); and Navy procedures for implementing NEPA (32 CFR 775) to evaluate the potential environmental consequences of disposal and reasonably foreseeable impacts associated with the reuse of the property. Preparation of this EIS will support the Navy's decision-making on disposal of the surplus property.

After completing the EIS and issuing a decision on the disposal of surplus property in a Record of Decision (ROD), the Navy can dispose of the property.

1.2 The NEPA Process

Under NEPA, an EIS is prepared for those federal actions that may significantly affect the quality of the human environment. The EIS is intended to help public officials make decisions that are based on an understanding of environmental consequences and take actions that protect, restore, and enhance the environment (40 CFR 1500.1). NEPA provides the means to carry out these goals by:

- Mandating that every federal agency prepare a detailed statement of the effects of “major Federal actions significantly affecting the quality of the human environment;”
- Establishing the need for agencies to consider alternatives to those actions;
- Requiring the use of an interdisciplinary process to develop alternatives and analyze environmental effects;
- Requiring that each agency consult with and obtain comments from any federal agency that has jurisdiction, either by law or special expertise, with respect to any environmental impact involved; and
- Requiring that detailed statements, comments, and views of the appropriate federal, state, tribal, and local agencies be made available to the public.

The Navy is the lead agency for the proposed action, with the U.S. Army Corps of Engineers (USACE) serving as a cooperating agency for the preparation of this EIS.

The decision to close the former NWS Concord is exempt from the requirements of NEPA and will not be part of the evaluation in this EIS. Similarly, transfer of property to other federal agencies was evaluated as part of previous NEPA assessments and will not be included in this EIS analysis. The Navy's disposal of the surplus former NWS Concord property into non-federal ownership and the subsequent reuse of the property following disposal by the Navy is the focus of the EIS.

The NEPA process also includes opportunities for public involvement and review of the EIS. Public involvement opportunities are discussed in Section 1.9.

1.3 Purpose and Need for Action

The purpose of the proposed action is to dispose of surplus property at the former NWS Concord for subsequent reuse in a manner consistent with the policies adopted by the City of Concord during reuse planning that took place between 2008 and 2012. The need for the proposed action is to provide the local community the opportunity for economic development and job creation.

1.4 Project Area Description

The surplus property of the former NWS Concord is located entirely within the City of Concord, Contra Costa County, California (see Figure 1-1). The total area of the surplus property, which will be used throughout this EIS, is approximately 5,038 acres. This acreage is based on a recent property survey completed since the surplus property determination by the Navy and includes approximately 6 acres of noncontiguous property 500 feet to the west of the installation and west of Olivera Road. This total area being evaluated for disposal and reuse in this EIS is smaller than that of the Area Plan (5,046 acres) because the city’s plan included some areas, such as the North Concord/Martinez Bay Area Rapid Transit (BART) Station and the Diablo Creek Golf Course, that are not part of the Navy’s surplus property.

The former NWS Concord is located approximately 35 miles northeast of the City of San Francisco. The unincorporated communities of Clyde and Bay Point are located to the north, the City of Pittsburg is located to the east, and the City of Clayton is located to the southeast. The property is surrounded by primarily low-density residential development within the City of Concord, consisting of detached single-family homes, neighborhood retail, schools, and parks. The Pittsburg Bay Point line of the BART system and State Route (SR) 4/Port Chicago Highway cross the northern end of the property, with the North Concord/Martinez BART Station adjacent to the northwestern edge of the property.

Most of the surplus property is within a valley that extends from Mt. Diablo to the Suisun Bay. Mt. Diablo Creek crosses the length of the site from southeast to northwest. West of Mt. Diablo Creek, the site is relatively flat, with its lowest point at approximately 30 feet above mean sea level (amsl). East of Mt. Diablo Creek, flat grasslands rise to form the Los Medanos Hills. The site’s highest point, which is east of Mt. Diablo Creek and on the ridgeline of the Los Medanos Hills, is approximately 1,130 feet amsl. The 6-acre parcel that is non-contiguous to the installation consists of Little League baseball fields that are leased from the Navy and maintained by the Concord Little League. A general inventory of the existing development located at the former NWS Concord is provided in Table 1-1.

Table 1-1 NWS Concord Existing Development Inventory

Structure	Number	Approximate Total Area/Length
Explosive ordnance magazines	217	879,000 SF
Maintenance, storage, administrative, and miscellaneous structures	77	296,000 SF
Railroad track	NA	55 miles
Airfield runway and other paved areas (roads, parking lots, etc.)	NA	781,519 SY
Utilities: telephone, electric, water, sewer, gas, storm drainage, and fire protection systems	NA	N/A

Source: 72 FR 9935

Key:

NA = Not available

SF = Square feet

SY = Square yards

1.5 History of Former NWS Concord

NWS Concord was one of the oldest naval ordnance³ bases and for a time was the Navy’s primary ammunition port on the Pacific Coast. From its establishment in 1942 during World War II through its closure in 2005, the mission of NWS Concord had been to receive, store, and issue ammunition, explosives, and technical ordnance material. Initially constructed along the Suisun Bay in 1942 as the U.S. Naval Magazine, Port Chicago, the Concord facility was a major munitions depot for the Pacific

³ Ordnance refers to military weapons, ammunition, and associated equipment.

Coast during World War II. High-explosive magazines, gun ammunition magazines, a weapons laboratory, military barracks, administration buildings, a rail system, and two runways were built at the site during World War II. In 1944, the Navy acquired more land and expanded the station inland. Administration and support functions were consolidated in the Inland Area; however, its primary use was storage of ammunition. A road and rail corridor adjacent to Port Chicago Highway linked the Inland Area to the original port location along the Suisun Bay (the Tidal Area).

The Concord facility continued to be the principal ammunition depot for the Pacific Coast through the Korean and Vietnam wars. Depots at Mare Island and Tiburon were consolidated with the Concord facility, which became the Naval Ammunition Depot (NAD) Concord in 1957. The Navy acquired additional land area, and the facility grew. With an increased role in inspections and monitoring, and with more advanced weapons systems, NAD Concord was renamed NWS Concord in 1963, at which time it supplied 95 percent of the ammunition to all the services in the Pacific area (Herbert and Allen 2013).

NWS Concord's mission activities, such as supplying ammunition, loading and unloading ships, re-arming ships, and maintaining and assembling missiles, continued until the end of the Cold War in 1989. The volume of ammunition processed and stored at NWS Concord declined steadily after a peak attained during the Vietnam War. In 1998, NWS Concord became a detachment of NWS Seal Beach in Orange County, California, and by 1999 a minimal contingent of military personnel was stationed at NWS Concord. In 1999, the Navy formally placed the facility into a reduced operational status, and in 2005 NWS Concord was designated for closure by the Defense Base Closure and Realignment (BRAC) Commission.

Approximately 6,304 acres along the Suisun Bay (within the Tidal Area) and an additional 115 acres in the Inland Area was transferred to the U.S. Army in 2008 and is now the Military Ocean Terminal Concord (MOTCO; 6,419 acres in total). Approximately 59 acres of the former NWS Concord that supported military housing within the Inland Area was transferred to the U.S. Coast Guard in April 2007.

The former NWS Concord was closed on September 30, 2008, and is currently in Navy caretaker status.

1.6 Community Reuse Planning Process

The City of Concord's 2010 FEIR for the *Concord Community Reuse Project* includes a summary of the city's multi-phase, multi-year process to develop the reuse plan for the former NWS Concord. During all phases of this effort, the city received input from residents, community leaders, and agency representatives regarding the issues and priorities to be addressed while planning for reuse of the site. In the beginning of the reuse planning process, the city drafted a vision statement, which called for the reuse to be economically viable and sustainable, and to maintain and enhance the quality of life in the City of Concord and the region. The city also drafted a set of overarching goals to direct the planning effort, which included:

- **World Class Project**
 - Adopt a long-term view in creating a plan that benefits all future generations and engenders a sense of community pride.
 - Encourage creativity and innovation in the plan.
 - Develop a high-quality project that shall be recognized internationally for its innovative planning and development concepts.

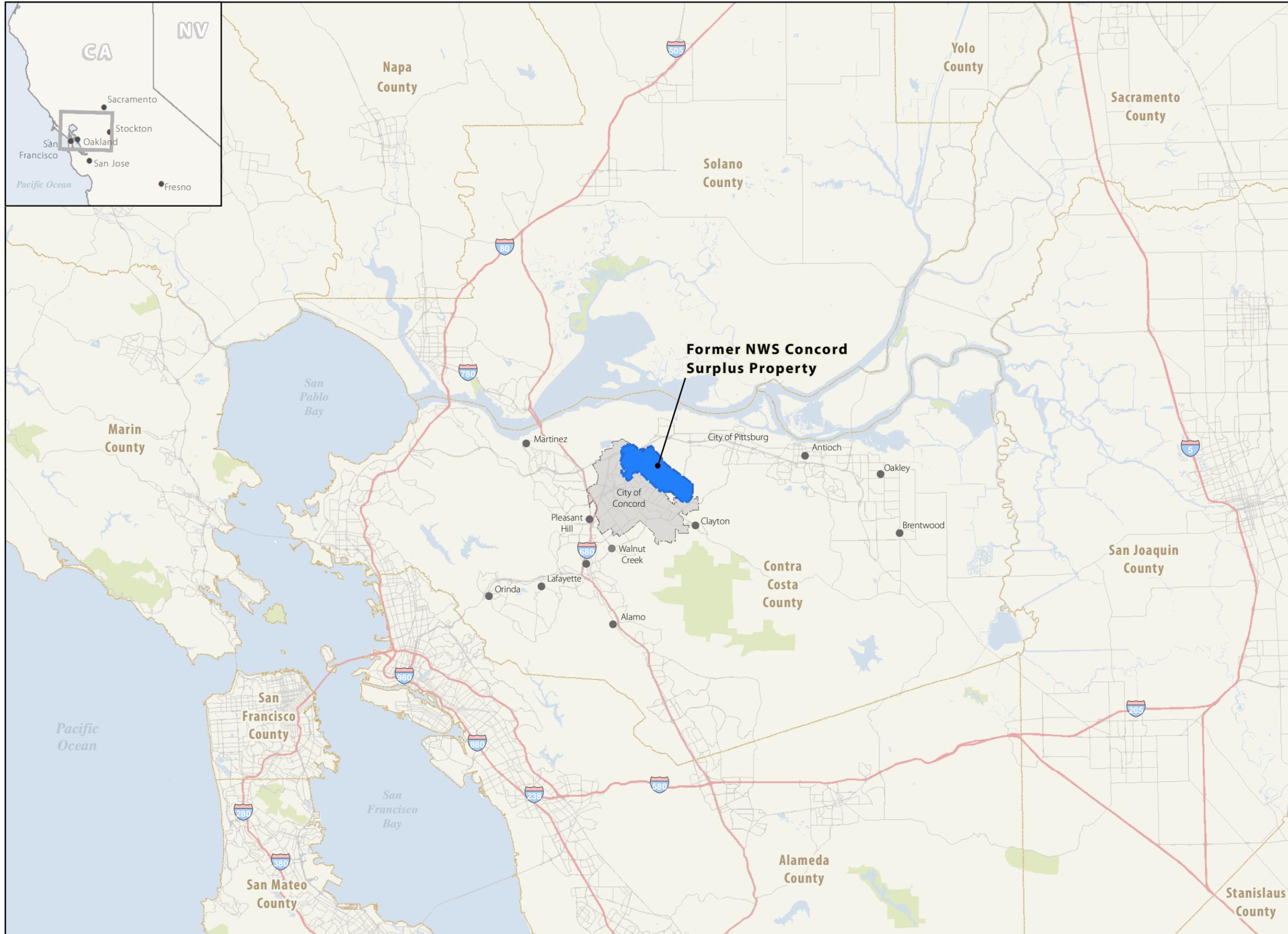


Figure 1-1
Vicinity Map
Former NWS Concord Surplus Property
Concord, California

Legend

-  Freeway
-  Major Road
-  Former NWS Concord Surplus Property
-  County Boundary
-  Park



SCALE



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- **Balanced Approach**
 - Balance multiple interests including a broad range of community needs, regional as well as local requirements, and the need for parks and open space with the need for jobs, housing, and community facilities.
- **Economically Viable and Sustainable Development**
 - Maintain long-term economic viability of the project by ensuring that capital costs and future operations and maintenance costs are satisfied on a self-sustaining basis.
- **Quality of Life**
 - Ensure that the plan builds on community assets and opportunities, addresses critical needs and issues, creates net positive benefits, and provides new opportunities to live, work, and play in Concord (City of Concord 2010).

These goals were further refined into a set of extensive guiding principles for the planning effort and are available for viewing at the city’s website for the reuse planning effort (www.concordreuseproject.org), along with other materials from the reuse planning process.

The guiding principles provided an articulation of the community’s goals for future land use at the base and also specified areas of constraint where physical, environmental, or economic issues would restrict development. The city’s reuse planning process also included the formation of a 21-member Community Advisory Committee (CAC) and technical advisory groups. A series of open houses, workshops, and formal public meetings with the CAC and other city boards and commissions addressed key issues such as the level of intensity of use, the arrangement of land uses and transit, the distribution of open space throughout the site, and buffers and transitions between the site and surrounding land uses. The results of this process were used by city staff and its consultants to develop seven alternative concepts for reuse of the site. The seven alternatives fell into one of three themes: “Extending the Neighborhoods,” “Clustered Villages,” and “Concentration and Conservation.” These broad themes are described below:

- **Extending the Neighborhoods.** Maintaining consistency with the recent history of development in Concord and maximizing compatibility with the existing neighborhoods that border the site.
- **Clustered Villages.** Concentrating uses in neighborhood “villages” that are linked together by high-quality transit service and intensifying some uses to gain space for parks, recreation, and open space.
- **Concentration and Conservation.** Exploring opportunities to maximize parks, recreation, and open space and focusing the remainder of uses around the North Concord/Martinez BART Station and the area adjacent to or north of Willow Pass Road (City of Concord 2008).

The environmental impacts of all seven alternatives were evaluated at an equal level of detail in the 2008 *Concord Community Reuse Project DEIR*.

After assessment of the environmental impacts of the alternatives in the DEIR and additional public meetings, the CAC narrowed the range of alternatives to two—one each from the “Clustered Villages” and “Concentration and Conservation”-themed alternatives—and refined them, modifying aspects of these scenarios such as the density or intensity of development and the location of major land uses. The anticipated financial performance of each alternative was also evaluated. The CAC identified the

Clustered Villages Alternative as the preferred reuse alternative and recommended its adoption by the city council.

The LRA adopted Resolution 09-5 in 2009, confirming the CAC recommendation. In 2012, the City of Concord refined the Reuse Plan into an Area Plan, adopted the resulting *Concord Reuse Project Area Plan*, certified an addendum to the FEIR, and amended Concord's citywide Concord 2030 General Plan (City of Concord 2012) to include the Area Plan.

1.7 Scope of the EIS

This EIS evaluates the potential direct, indirect, short-term, and long-term impacts on the human and natural environments resulting from the disposal of the former NWS Concord and the subsequent reuse of the property by the local community. This EIS also addresses potential cumulative impacts that may result from past, present, and reasonably foreseeable future projects in the region. Resource areas examined in this EIS and potentially impacted include:

- Land Use and Zoning
- Socioeconomics and Environmental Justice
- Air Quality and Greenhouse Gases
- Biological Resources
- Cultural Resources
- Topography, Geology, and Soils
- Hazards and Hazardous Substances
- Noise
- Public Services
- Transportation, Traffic, and Circulation
- Utilities and Infrastructure
- Visual Resources and Aesthetics
- Water Resources

This EIS addresses impacts based on a 25-year build-out and other assumptions made regarding foreseeable reuse of the property. The assumptions were based on the current property use, existing and proposed land use and zoning regulations, and the build-out timeline and development mix represented in the Area Plan and the city's reuse planning process.

The disposal of surplus property at the former NWS Concord is the responsibility of the Navy. As the LRA, the City of Concord is responsible for the implementation of its reuse plan. The future developer or owner of the property will be responsible for acquiring applicable building permits, development approvals, and environmental permits for development of the property.

1.8 Agency Coordination

NEPA requires that federal agencies responsible for preparing NEPA analyses and documentation do so "in cooperation with State and local governments" and other agencies with jurisdiction by law or special expertise (42 U.S.C. §§ 4331[a], 4332[2]). The Navy worked closely with the community, local and state agencies, and other federal agencies during the preparation of this EIS.

Implementation of the proposed action would require multiple approvals from federal, state, regional, and local agencies. The major regulatory requirements and federal permits, licenses, and other entitlements that must be obtained to implement the proposed action are presented in the individual resource sections in Chapters 3 and 4. Copies of agency consultation letters and responses are included in Appendix A.

On March 5, 2013, the USACE, San Francisco District, requested cooperating agency status in the preparation of the EIS for the disposal of the former NWS Concord because the USACE will be the lead federal agency for review of proposed development under Section 404 of the Clean Water Act (CWA) following Navy transfer. The USACE will incorporate this EIS into a future USACE NEPA analysis to support issuance of a CWA Section 404 permit. On April 1, 2013, the Navy concurred with the USACE's request. As a cooperating agency, the USACE has participated in the review of draft versions of the EIS and provided technical expertise.

1.9 Public Involvement under NEPA

The NEPA process incorporates public involvement at several points. The public is afforded opportunity to comment during scoping and after the DEIS is completed. In addition, agencies are consulted as appropriate during development of the EIS.

1.9.1 Public Notification and Scoping

The first step in the NEPA process is publication of a Notice of Intent (NOI), which provides an overview of the proposed action and the scope of the EIS, and opens the public scoping period to allow for members of the public to comment on the scope of the EIS. A notice of the Navy's intent to prepare an EIS and to conduct scoping was published in the *Federal Register* on March 14, 2013 (78 FR 16255). The NOI described the proposed action and alternatives and provided information on the Navy's scoping period, including the date, location, and times of two public scoping open house sessions to be held in the vicinity of the former NWS Concord. Notices were also published on March 17, 29, 30, and 31, 2013, as display ads in the *East County Times* and the *Contra Costa Times*, two local newspapers, and posted to the Navy BRAC Project Management Office (PMO) website, <http://www.bracpmo.navy.mil/>.

A mailer announcing the Navy's intent to prepare an EIS and announcing the public scoping process was distributed on March 14, 2013, to 2,600 federal, state, and local agencies, elected representatives, tribal entities, neighborhood alliances, and other stakeholders, including residents and businesses within 500 feet of the former NWS Concord. An email address was available for approximately 1,184 residents and businesses within 500 feet of the former NWS Concord in lieu of the postal address, and for these stakeholders, an email notification was provided. Copies of the notification material are included in the *Final Scoping Process Summary* report (see Appendix B).

During the scoping period, federal, state, and local elected officials and agencies and members of the public were encouraged to review information about the proposed action and express their concerns and issues to be addressed in the EIS by submitting comments to the Navy. Comments received during this period were used to determine the scope of issues to be addressed in the EIS. The elements of the scoping period are summarized below.

1.9.1.1 Scoping Meetings

Two scoping meetings were held in the City of Concord at the Concord Senior Citizens Center, located at 2727 Parkside Circle, to inform the public about the proposed action, enable community members to ask questions, and solicit written comments regarding issues to be addressed in the EIS. The public and agency stakeholders were invited to attend and provide comments either at the meetings or via mail, fax, or email to the Navy point-of-contact (POC) for this EIS.

The public scoping meetings were conducted in an open-house format open to the general public. The meetings featured displays, fact sheets, and interaction between Navy staff and the public. Both meetings took place on April 4, 2013, at 4:00 p.m. and again at 7:00 p.m.

1.9.1.2 Summary of Scoping Comments

The scoping comment period concluded on April 19, 2013. All of the comments received from the public and from state, local, or federal agencies were identified and tabulated by topic. Table 1-2 categorizes the comments received by frequency and topic. Issues related to the proposed action and alternatives received the most comments, followed by traffic and transportation, and, finally, by land use, open space, and community facility/services. A number of comments indicated various permit requirements or included recommendations for agency consultation prior to construction.

Table 1-2 Quantity of Comments by Topic

Topic	Number of Comments
Proposed Action and Alternatives	22
Traffic and Transportation	13
Land Use, Open Space, and Community Services	11
Natural Resources	9
Socioeconomics	7
Quality of Life	6
Air Quality	5
Water Resources/Quality	3
Cultural Resources	3
Environmental Management	3
Infrastructure/Energy	2
Noise	1
Required Consultations or Permit Requirements	8
Miscellaneous Comments	8
Total	101

A summary of all comments submitted during the public scoping process is presented in the *Final Scoping Process Summary* report (see Appendix B).

1.9.2 Public Review of the Draft EIS

A Notice of Availability (NOA) has been published in the *Federal Register*, initiating a minimum 45-day public review and public comment period. A notice of public hearing, which includes information on the date, time, and location of the public open house, as well as the availability of the DEIS for review, has also been published in the *Federal Register*, the *East County Times*, and the *Contra Costa Times*. The NOA and DEIS have been posted to the Navy BRAC PMO website and distributed to local government agencies, elected officials, organizations, and potentially interested persons. Copies of the DEIS have also been made available in local libraries.

The Navy invites the public to review the DEIS and provide comments and attend the open house about the DEIS. Members of the public may provide comments at the open house or mail, fax, or email comments to the Navy POC. The public open house will be held at the Concord Senior Citizens Center in Concord, California, in November 2014.

1.9.3 Final EIS and Record of Decision

The Navy will respond to all substantive public comments on the DEIS. Public comments and responses will be published with the FEIS. When the FEIS has been completed, a NOA of the FEIS will be published in the *Federal Register*. Notices will also be published in the *East County Times* and the *Contra Costa Times*. The notices and copies of the FEIS will be posted to the Navy BRAC PMO website and will be distributed to local government agencies, elected officials, organizations, and potentially interested persons.

After the FEIS has been completed, the Navy will prepare a ROD that indicates which action has been selected, the alternatives that were considered, the potential environmental impacts, and any specific mitigation activities to support the decision. A minimum of 30 days is required before the Navy can make a decision on its proposed action. The 30-day period is specified in the CEQ regulations to allow agency decision-makers to consider purpose and need, weigh alternatives, balance objectives, and make a decision. A summary of the ROD will be published in the *Federal Register* and local newspapers. A copy of the ROD will be posted to the Navy BRAC PMO website and distributed to local government agencies, elected officials, organizations, and potentially interested persons.

The proposed schedule for completion of the EIS is presented in Table 1-3.

Table 1-3 Proposed Schedule for Completion of EIS

Milestone	Timeline
Prepare DEIS	April 2013–September 2014
Release DEIS/Public Comment Period/Open House	October–November 2014
Prepare FEIS	November 2014–August 2015
Release FEIS	August–September 2015
Record of Decision	October 2015

1.10 Document Organization

This EIS contains ten chapters and seven appendices, as described below, and is organized as follows:

Chapter 1: Purpose and Need. Provides a discussion of the purpose and need of the Navy’s proposed action, as well as a summary of the location and history of the former NWS Concord. The City of Concord’s community reuse planning process, the scope of the EIS, agency coordination, and public involvement under NEPA are also presented.

Chapter 2: Proposed Action and Alternatives. Provides a detailed description of the proposed action and alternatives, as well as a comparison of the environmental consequences of the alternatives in a comparative format.

Chapter 3: Affected Environment. Provides a discussion of the affected environment (setting) for each environmental resource that may be impacted (e.g., Land Use, Socioeconomics and Environmental Justice, and Air Quality and Greenhouse Gases).

Chapter 4: Environmental Consequences. Provides a comprehensive analysis and assessment of the environmental consequences for each resource by alternative and discusses minimization and mitigation measures adopted by the City of Concord in its Area Plan and as required under federal, state, or local regulatory authority.

Chapter 5: Cumulative Effects. Identifies cumulative projects and provides an analysis of cumulative effects. The purpose of the cumulative effects analysis is to identify impacts from the proposed action that might not be significant when considered alone but may contribute to significant impacts when considered in conjunction with impacts from past, current, and reasonably foreseeable future projects.

Chapter 6: Other Considerations. Includes discussions of consistency with plans, policies, and regulations; unavoidable adverse environmental effects and considerations that offset adverse effects; relationships between local short-term uses of the environment and the enhancement of long-term productivity; and irreversible and irretrievable commitment of resources.

Chapter 7: Mitigation and Recommendations for Planning and Management. Provides a summary of the effects of the proposed action and a discussion of minimization and mitigation measures adopted by the City of Concord in its Area Plan and as required under federal, state, or local regulatory authority to avoid or reduce those impacts.

Chapter 8: List of Preparers. Lists the authors who prepared this EIS.

Chapter 9: References. Lists the references used in preparing the analysis and identifies public agencies and other persons that were consulted.

Chapter 10: Distribution List. Lists federal, state, and local agencies and elected representatives and organizations that received a copy of the EIS.

Appendix A presents correspondence between the Navy and other agencies related to the preparation of this EIS.

Appendix B presents the scoping process summary report.

Appendix C presents supporting information regarding the air quality analysis.

Appendix D presents supporting information for biological resources.

Appendix E presents supporting information for the hazards and hazardous substances analysis.

Appendix F presents supporting information for the infrastructure and utilities analysis.

Appendix G presents the Record of Non-applicability (RONA) of the Clean Air Act General Conformity Rule.

2 Proposed Action and Alternatives

This chapter provides a detailed description of the proposed action and alternatives. The proposed action is the disposal of surplus property at the former NWS Concord and the subsequent reuse of the property by the local community. This EIS evaluates two action alternatives for reuse of the surplus property at the former NWS Concord and a No Action Alternative.

Alternative 1 (the Preferred Alternative) is reuse of the surplus property consistent with the City of Concord's Area Plan, as adopted. As discussed in Chapter 1, the Area Plan upon which Alternative 1 is based was the result of an extensive reuse planning process undertaken by the City of Concord, during which seven alternatives were evaluated. In accordance with NEPA, the Navy is also evaluating an alternative to the proposed action, Alternative 2 (Intensified Reuse). Alternative 2 is also consistent with the policies developed by the City of Concord during the reuse planning process but represents a higher intensity of use overall, resulting from a slightly different land use pattern and increased residential development. In addition, the Navy is evaluating a No Action Alternative, as required by the CEQ regulations implementing NEPA. The No Action Alternative is the retention of surplus property at the former NWS Concord by the U.S. government in caretaker status. Under the No Action Alternative, no reuse or redevelopment would occur at the surplus property.

2.1 Components of the Proposed Action

This EIS evaluates the direct, indirect, short-term, and long-term impacts, as well as the cumulative effects associated with the following components of the proposed action:

1. Disposal of the property;
2. Foreseeable reuse of the surplus property, which will include but not be limited to:
 - i. Construction of a mix of office, retail, residential, community facilities, parks, light industrial, and research and development uses;
 - ii. Development of new infrastructure, including utilities and transportation networks;
 - iii. Habitat restoration and management; and
 - iv. Creation and improvement of a new regional park.
3. Establishment of a permanent residential population and creation of new jobs; and
4. Interim land uses and activities that do not conflict with the proposed reuse of the property.

Although it would not retain control of the surplus property after disposal, the Navy is required, in accordance with NEPA, to evaluate the reasonably foreseeable impacts arising from reuse. CEQ regulations require evaluation of reasonably foreseeable actions regardless of who implements the actions. Accordingly, reuse of the federal property is evaluated in this EIS as a secondary action in time, following the Navy's primary action of disposal. Consequently, the action evaluated in this EIS includes the reasonably foreseeable reuse of the former NWS Concord property, and the federal action of disposal of the surplus property at the former NWS Concord is assumed to be part of each reuse alternative.

The City of Concord's reuse planning process is the primary factor in defining the reuse scenarios considered in this EIS. However, implementation of the Area Plan will be dynamic, long-term, and dependent on market and general economic conditions beyond the control of both the Navy and the City of Concord. Specific activities and uses that may be developed at the former NWS Concord site cannot be

predicted precisely at this time; nonetheless, the reuse of the former NWS Concord is expected to take place in a manner generally consistent with the nature of uses described in the adopted Area Plan.

While the Navy is responsible for the disposal of the surplus property, the City of Concord will be responsible for implementing the reuse of it. Therefore, any measures identified to avoid or mitigate potential impacts would be the responsibility of the future developer or owners of the property per the City of Concord's planning, zoning, and other regulatory authority and the requirements of federal, state, and local agencies with regulatory authority over and responsibility for such resources.

Following adoption of the Area Plan, the city approved a zoning designation of "S" (Study District) for the site. More detailed development standards and requirements will be applied to the site in the future, as part of more detailed planning activities, and may include the use of one or more specific plans (City of Concord 2012).

2.2 Alternatives

Alternative 1 as identified in this EIS is the reuse of the property in a manner consistent with the City of Concord's Area Plan (Figure 2-1). The Area Plan consists of three documents:

- Book One, Vision and Standards, provides an overview of the vision for the site, including site development standards, land use and circulation plan, principles for community design and mobility, and summaries of technical topics addressed in Book Two and Book Three;
- Book Two, Technical Chapters, provides background information and policy guidance on topics addressed by elements of the Concord 2030 General Plan. The detailed principles and policies provide direction to realize the community vision for the reuse of the property; and
- Book Three, Climate Action Plan, provides strategies and an implementation timeline for reducing Greenhouse Gas (GHG) emissions associated with the reuse of the property.

Following the adoption of the Area Plan, the City of Concord certified an addendum to the FEIR, adopted a Mitigation Monitoring and Reporting Plan (MMRP), and amended the Concord 2030 General Plan to include the Area Plan. Measures identified in the certified FEIR and its addendum and the associated MMRP that will avoid or mitigate potential environmental impacts are legally binding and are the responsibility of future developers or owners of the property. Likewise, the policy guidance detailed in the Area Plan Books Two and Three will minimize potential environmental impacts associated with the reuse of the former NWS Concord. Therefore, Alternative 1 represents the City of Concord's Area Plan as a whole, including:

- Books One, Two, and Three and the policy guidance contained within the documents to minimize potential environmental impacts; and
- The MMRP's mitigation measures.

Alternative 2 is generally consistent with the policies adopted by the City of Concord during the reuse planning process that took place between 2008 and 2012, including the policy guidance provided in Area Plan documents, but represents a higher intensity of use overall, resulting from a slightly different land use pattern and increased residential development (Figure 2-2). Alternative 2 also has a slightly smaller development footprint than the Area Plan. The maximum total number of dwelling units (du) and square feet of commercial floor space that can be built within the planning area, known as the Maximum

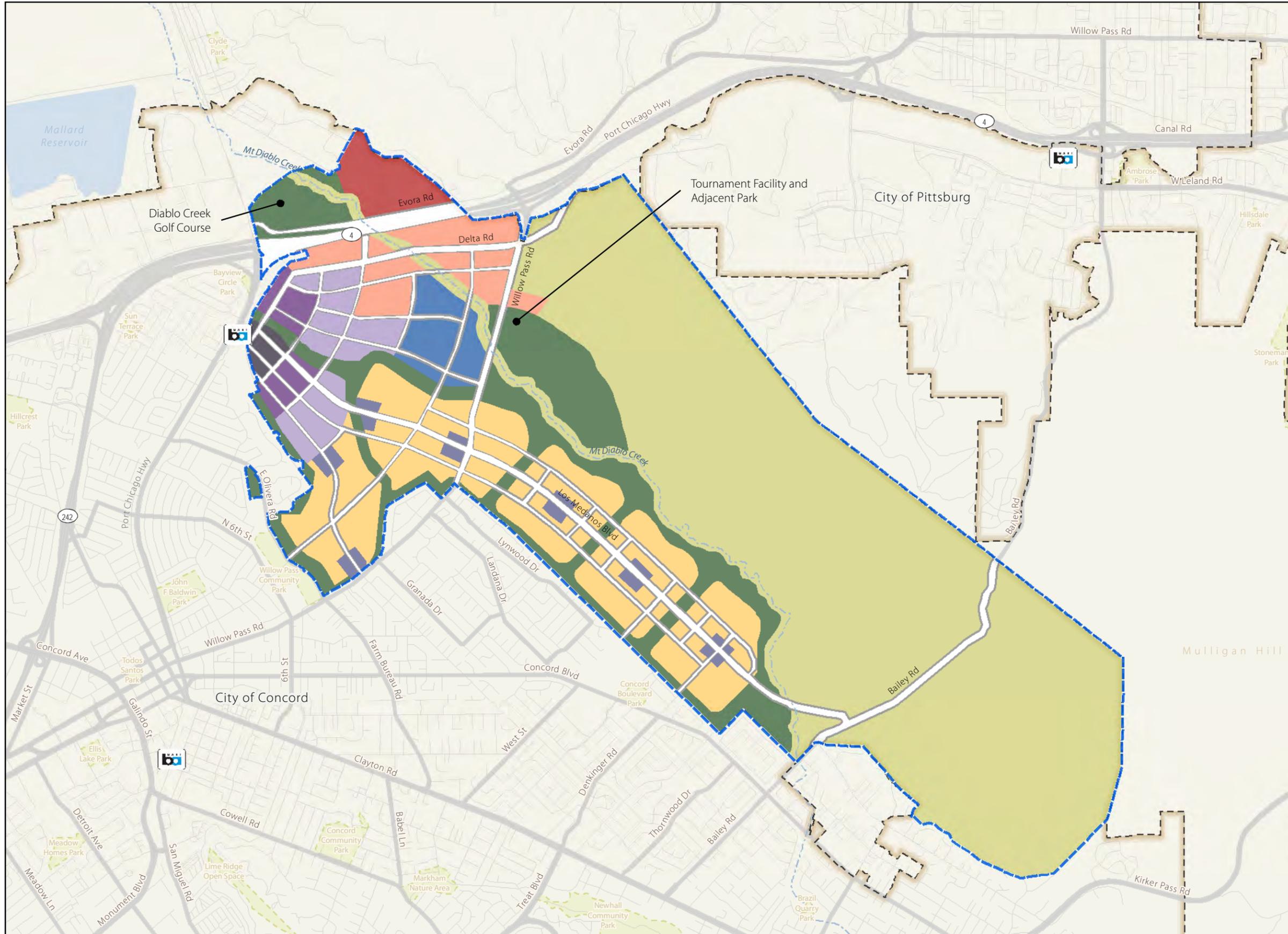


Figure 2-1
Alternative 1: Preferred Alternative
 Former NWS Concord
 Concord, California

Legend

- Former NWS Concord
- City Limits
- Waterbody

***Alternative 1 Development Districts**

- Campus
- Central Neighborhood
- Commercial Flex
- Conservation Open Space
- First Responder Training Center
- Greenways, Citywide Parks and Tournament Facilities
- North Concord TOD Core
- North Concord TOD Neighborhood
- Roadways
- Village Center
- Village Neighborhood

*Development district areas shown on this map are representative, and reflect a total developable area rather than precise locations of the areas that would be subject to ground disturbance during construction activities.



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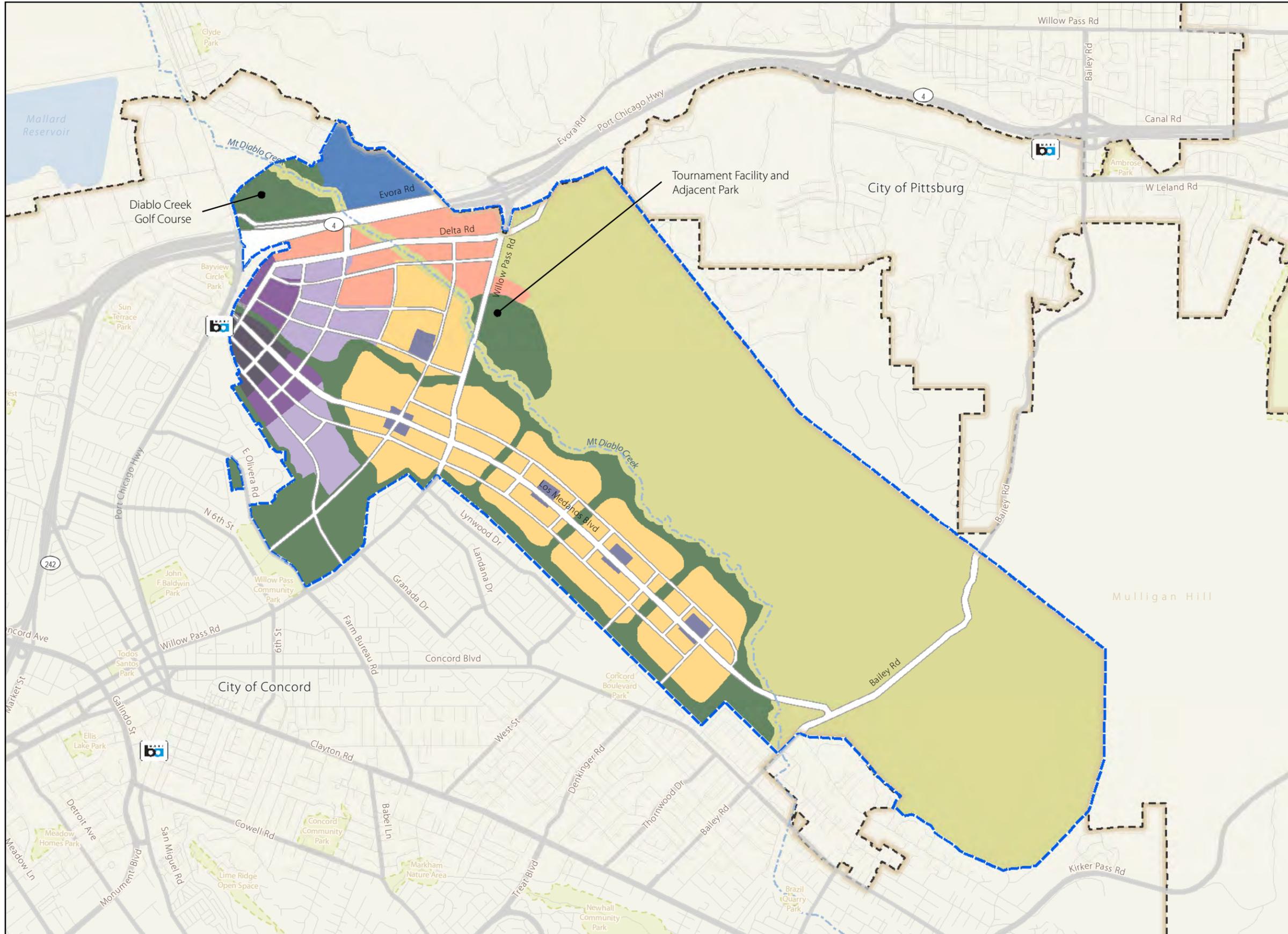


Figure 2-2
Alternative 2: Intensified Reuse
 Former NWS Concord
 Concord, California

Legend

- Former NWS Concord
- City Limits
- Waterbody
- Local Park

***Alternative 2 Land Use Categories**

- Campus
- Central Neighborhood
- Commercial Flex
- Conservation Open Space
- Greenways, Citywide Parks and Tournament Facilities
- North Concord TOD Core
- North Concord TOD Neighborhood
- Roads
- Village Center
- Village Neighborhood

*Development district areas shown on this map are representative, and reflect a total developable area rather than precise locations of the areas that would be subject to ground disturbance during construction activities.



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Planning Area-wide Total, is defined in the Area Plan. The total number of dwelling units proposed in Alternative 2 would exceed the Maximum Planning Area-wide Total and require an amendment to the City of Concord's 2030 General Plan. Both Alternative 1 and Alternative 2 assume full build-out over a 25-year period; the period of analysis for this EIS is during construction and when full build-out has been completed.

Alternative 2, "Intensified Reuse" as presented in this document, is different from Alternative 2, "Connected Villages" as presented in the NOI circulated during the public scoping period in March and April 2013. Alternative 2 was revised by the Navy in response to comments received during the public scoping period to be more consistent with the land use planning policies adopted by the City of Concord as well as known and foreseeable market conditions. Comments on the Connected Villages alternative received during scoping addressed the smaller area designated for conservation and open space in this alternative, as well as concerns regarding higher levels of traffic, noise, and air impacts. Accordingly, the revised Alternative 2 is similar to the adopted policy of the City of Concord as expressed in the Area Plan, reflecting a similar but slightly smaller development footprint and representing a realistic reuse scenario.

2.2.1 Key Planning Concepts

Key planning concepts articulated by the community were incorporated into both Alternative 1 and Alternative 2. These planning concepts include:

- Locate higher-intensity uses around the North Concord/Martinez BART Station;
- Support transit-oriented development around the North Concord/Martinez BART Station, transit service in other developed areas of the site, and a broad range of transportation choices (including mass transit, walking, and biking);
- Integrate the site with the existing City of Concord to improve the quality of life for residents in currently established areas of Concord, and avoid creating "two ConCORDs";
- Create balance in housing types and housing choices;
- Provide community and cultural facilities, including a library/performing arts center/community center, adequate schools for the K-12 onsite population, and a tournament-level sports facility;
- Preserve a minimum 300-foot-wide riparian corridor along the centerline of Mt. Diablo Creek;
- Preserve the hills and ridgelines on the eastern side of the site;
- Limit development in areas of 30-percent slope or greater;
- Avoid and/or minimize intrusion into wetlands and into breeding areas and habitat for threatened and endangered animal species;
- Avoid roads and development east of Mt. Diablo Creek, especially in resource areas containing habitat for threatened and endangered species;
- Maximize open space with facilities and trails that will serve the public;
- Set aside lands and designate them as open space in order to provide onsite mitigation for any unavoidable loss of habitat or wetlands on other portions of the site; and
- Balance onsite mitigation activities and habitat protection with the provision of public access and passive recreation activities (City of Concord 2010).

2.2.2 Areawide Components of Reuse

Both alternatives would be generally consistent with the policies adopted by the City of Concord during the reuse planning process that took place between 2008 and 2012. Both alternatives focus on the preservation of a significant area of open space and conservation areas, and sustainable development characterized by walkable neighborhoods, TOD, and “complete streets” that balance multiple types of transportation. Both alternatives would also be characterized by a series of “villages” connected by transit, allowing for significant new development while maintaining more than half of the site as parks, recreation land, and open space. Under both alternatives, the western side of the property would be developed as a series of mixed-use “development districts,” with a higher concentration of development at the north end, near SR 4 and the North Concord/Martinez BART Station.

The “development districts” in both alternatives are an expression of each alternative’s development program. The development districts designate the site areas that are planned for future development. The alternatives provide flexibility because they describe an approximate number of housing units and amount of commercial square footage within each development district. A land-use mix is identified at the district level, but the specific location of the uses within each district is not prescribed. The exact location of the land uses would be determined during future planning and design efforts.

Both alternatives would also include the development of new infrastructure, including utilities and transportation networks; community facilities; and parks, open space, and recreation. Utility infrastructure is discussed in Section 4.12, and transportation networks; community facilities; and parks, open space, and recreation are discussed further below.

Development terms used in the rest of this section are defined in Table 2-1. A description of each alternative is presented in the following sections.

Table 2-1 Definitions of Development Terms

Term	Definition
Community Facility	A facility where public services are provided, such as recreational and cultural activities, and can be operated by public, non-profit, or private organizations.
Joint-Use Facilities	A building, park, or other resource that is shared by two or more entities.
Live/Work Units	Residential units that also serve as home-based offices/businesses.
Local-Serving	Businesses and services frequented primarily by residents of nearby neighborhoods.
Multi-Unit Housing	Residential buildings with common entrances and shared walls between dwellings.
Neighborhood Park	Open spaces within neighborhoods with small-scale facilities, such as play equipment, shaded seating areas, sports fields, and tennis or basketball courts.
Plazas	A small open space that provides an outdoor gathering space with features such as shaded seating.
Pocket Parks	Very small open spaces or green spaces that have amenities such as tot-lots, shaded game tables, and outdoor dining.
Public Gathering Space	Publicly owned buildings and outdoor spaces such as libraries, parks, schools, municipal buildings, community centers, or plazas where groups can interact.

Table 2-1 Definitions of Development Terms

Term	Definition
Single-Unit Housing - Attached	A dwelling that has its own entrance and shares one or more walls with another dwelling.
Single-Unit Housing - Detached	A dwelling that has its own entrances and does not share walls with another dwelling (except when joined to a second unit as defined by the Concord General Plan Housing Element Policy 1.3, Duplexes and Second Unit).
Special Needs Housing	Housing that incorporates special design features and services to meet the needs of a group for which conventional housing may be unsuitable.

Source: City of Concord 2012

2.2.3 Alternative 1 (Preferred Alternative)

Alternative 1 (see Figure 2-1) is the disposal and reuse of surplus property at the former NWS Concord in a manner consistent with the Area Plan. Under Alternative 1, approximately 70 percent of the property would be maintained as conservation, parks, or recreational land uses, and 30 percent would be mixed-use development, including a mix of office, retail, residential, community facilities, light industrial, and research and development/educational land uses within eight “development districts.” Development on the site would allow for up to a maximum of 12,272 housing units and 6.1 million square feet of commercial space within the development footprint. Two major conservation areas proposed include a 2,537-acre regional park, which would encompass the east side of the property along the ridgeline of Los Medanos Hills, and the Mt. Diablo Creek corridor.

2.2.3.1 Development Districts

The eight development districts would be serviced by collector streets and two new through-streets, Los Medanos Boulevard to the south and Delta Road to the north. A description of each of the eight development districts is provided below.

North Concord Transit-Oriented Development (TOD) Core (One District)

The North Concord TOD Core would be located in close proximity to the North Concord/Martinez BART Station. This development district would have the highest intensity employment and mixed-use development within the plan area and would serve as a regional employment center. The mixed-use development would include offices and retail shops, and may include multi-unit housing.⁴ The transit-oriented focus of the district around the BART station is intended to encourage pedestrian over vehicle traffic. All destinations within the district would be within 0.25 mile of the BART station. Los Medanos Boulevard, a through street, would be located on the northern side of the district.

Development in this district is envisioned to include higher density offices that would be focused around the BART station. Offices would be primarily located in mixed-use buildings that have retail shops on their ground floor or have ground-floor lobbies with street-facing windows. A mix of mid-rise office and multi-unit residential buildings (approximately three- to six-story) may be located at the northern edge of the district. The building height would decrease in the areas adjacent to the existing City of Concord’s Sun Terrace and Holbrook neighborhoods.

The TOD Core district’s open spaces would include the North Concord Plaza, a public plaza framed by commercial buildings that would be located across from the BART station. Pocket parks would also be located throughout the district.

⁴ Housing is optional in the North Concord TOD Core Development District.

Additional appropriate uses for this district that are not mandatory but are in line with the overall vision of the development plan include dining and entertainment, multi-unit housing, special needs housing, a performing arts facility, one or more hotels, community facilities, and cultural/civic facilities.

North Concord TOD Neighborhoods (Two Districts)

Located on the outskirts of the North Concord TOD Core, this development district would be a mixed-use residential district. Development would be within approximately 0.5 mile of the North Concord/Martinez BART Station to encourage pedestrian over vehicle traffic. This mixed-use residential development would consist of mid-rise multi-unit housing (approximately three- to six-story), community facilities such as libraries and schools, and commercial uses such as retail and grocery stores. A portion of the mid-rise multi-unit housing buildings would contain ground-floor retail shops. The North Concord TOD Neighborhoods would also include a mix of rental and owner housing. The southern North Concord TOD Neighborhood would transition from a dense mixed-use residential development to a low- to mid-rise residential area located adjacent to the City of Concord's existing Holbrook neighborhood.

Los Medanos Boulevard and Delta Road would link the North Concord TOD Neighborhoods with the North Concord TOD Core and the other development districts.

The Central Greenway discussed below would traverse the North Concord TOD Neighborhoods. In addition, neighborhood parks, pocket parks, and plazas would be located throughout the district.

Additional appropriate uses for the North Concord TOD Neighborhoods include attached single-unit housing, dining and entertainment, special needs housing, live/work units, and small-scale offices.

Central Neighborhoods (Two Districts)

Located on the outskirts of the North Concord TOD Neighborhoods, extending 0.5 to 1 mile from the North Concord/Martinez BART Station, this development district would be a moderate density, mixed-use residential district serving a range of household types and sizes. A mix of housing types, including mid-rise (approximately three- to six-story) multi-unit homes, low- to mid-rise multi-unit homes, and attached single-unit housing, would be located throughout the district. The Central Neighborhoods would also include a mix of rental and ownership housing to accommodate various levels of income. Housing would be in close proximity to retail shops, community facilities, and transit service, with the highest density of development envisioned to be around transit stops. Commercial uses would include convenience retail and grocery stores. Mid-rise buildings (approximately three- to six-story) would be located along Los Medanos Boulevard, a through street that would bisect the southern Central Neighborhood. The Central Neighborhoods would also transition in scale and density in the areas adjacent to existing neighborhoods and the lower-density districts such as the Village Neighborhoods.

The two Central Neighborhood districts are located on both sides of the Central Greenway, which is centered along Mt. Diablo Creek. Los Medanos Boulevard and connector roads would link the Central Neighborhoods with the other development districts.

In addition, neighborhood parks, pocket parks, and plazas would be located throughout the district.

Additional appropriate uses for the Central Neighborhoods include joint use facilities, live/work units, home-based businesses, dining and entertainment, and special needs housing.

Village Centers (Seven Districts)

The Village Centers would act as anchors for the Village Neighborhoods (discussed below). Five districts would be located along the new through street, Los Medanos Boulevard, and two districts would be located in the southwestern portion of the former NWS Concord property. Local-serving retail and

services, community facilities, and public gathering spaces would be located within the districts. A mix of housing types, including multi-unit and attached single-unit housing in the form of apartments, townhomes, and condominiums, would also be located within the Village Centers. The character, scale, density, and mix of uses would vary in each Village Center. For example, the anchoring development within a Village Center could range from a grocery store or a similar local service to an elementary school, library, or other community facility.

Each center would also include open spaces such as pocket parks, plazas, and public gathering spaces.

Additional appropriate uses for the Village Centers include joint-use facilities, dining and entertainment, live/work units, and special needs housing. Mixed-use buildings with local retail shops on the ground floor and multi-unit housing above would also be consistent with the Area Plan.

Village Neighborhoods (Five Districts)

The Village Neighborhoods would be residential districts located around the Village Centers. These low-to moderate-density districts would serve a range of household types and sizes through rental and ownership units. Overall development would include low-rise attached single-unit housing in the areas surrounding the Village Centers and detached single-unit homes along the neighborhood edges where the housing density would gradually decrease to transition to adjacent neighborhoods.

The circulation network would consist of local streets with sidewalks, and the district open spaces would include neighborhood parks, pocket parks, and plazas.

Additional appropriate uses for the Village Neighborhoods include multi-unit housing and special needs housing along with live/work and home-based businesses that would allow residents to reduce commute times and automobile travel.

Commercial Flex (One District)

Located in proximity to SR 4 and the new through street to the north, Delta Road, this retail and/or workplace district would serve the region.

Because of its proximity to SR 4 and Willow Pass Road, the Commercial Flex District is situated for uses that require high-capacity road access or high volumes of passby trips. Market demand would dictate the exact proportion of light industrial, large-format retail, research and development, and office uses that would be developed in this district.

Overall development would include low-rise buildings with larger block sizes to accommodate larger building footprints typically associated with this type of development. The highest density uses would be located along Delta Boulevard, while complementary uses would be located adjacent to the Campus District and Tournament Facilities (discussed below).

Additional appropriate uses for the Commercial Flex District include public utility facilities and ancillary uses such as dining and lodging that would be defined once commercial uses are established.

Campus (One District)

Located south of the Commercial Flex District, this development district would be a campus environment that could accommodate a range of uses such as educational, research and development, cultural, and health care, and may include a university serving a student population of approximately 10,000 full-time students. These land uses may support complementary uses in the Commercial Flex District. Overall development would include clusters of buildings sited around public spaces. Community facilities, such as a library, could also be part of the Campus District.

Additional appropriate uses for the Campus District include campus-serving retail, a conference center, a performing arts facility, and dormitories.

First Responder Training Center (One District)

Located north of SR 4, this development district would include 80 acres of training grounds and related facilities to support regional first responders such as the Contra Costa County sheriff's and fire departments.

Greenways, Citywide Parks, and Tournament Facilities

The Greenways, Citywide Parks, and Tournament Facilities development district consists of parks, recreational areas, and linear open spaces. The Central Greenway would be a minimum of 100 feet wide and would extend throughout the site along Mt. Diablo Creek and adjacent to the northern boundaries of the Village Neighborhoods, as well as through the Central Neighborhood, TOD, and Campus districts. This greenway would occupy approximately 380 acres of the site.

Neighborhood frame greenways would also be located along the southwest perimeter of the site, mostly adjacent to the Village Centers. These greenways would provide a transition space between development districts and existing neighborhoods adjacent to the site. The neighborhood frame greenways would range between 275 feet and 425 feet wide between existing Concord neighborhoods and villages, and between 150 feet and 500 feet wide between proposed villages, for a total of approximately 98 acres.

Three citywide parks would be created. These parks would be located adjacent to the proposed Campus District, adjacent to the existing Willow Pass Park, and at the location of the existing municipal Diablo Creek Golf Course. Each proposed citywide park would be approximately 45 to 175 acres, for an approximate total of 308 acres.

The citywide park adjacent to the Campus District would include an approximately 75-acre tournament sports facility. This facility would provide space for regional adult and youth tournaments, and may include softball, baseball, and soccer fields, as well as volleyball courts, batting cages, and other sports facilities. The adjacent Commercial Flex District would provide opportunities for shared parking and uses that would support the facility, which may include retail, hotel or motel accommodations, and restaurants.

Smaller pocket parks between 0.25 and 2 acres would be located throughout the plan area, as would neighborhood parks between 2 and 10 acres in size. The North Concord Plaza would be located at the entryway to the North Concord/Martinez BART Station and would provide pedestrian connections between the BART station and other modes of transportation. The plaza would range between 0.5 acre and 5 acres.

Conservation Open Space

The Conservation Open Space District consists of a large, regional open space occupying approximately 2,537 acres, which would be located on the eastern portion of the former NWS Concord. The land within this district is anticipated to be designated for open space and regional park uses and would be managed by the East Bay Regional Park District (EBRPD). This district would include some limited recreational uses, including trails, picnic areas, an interpretive area, and shaded seating areas.

2.2.3.2 Community Facilities

The Area Plan does not identify specific sites for community facilities in most cases; facilities would generally be clustered in or near Village Centers, Central Neighborhoods, the TOD area, and other areas suitable or desired for public assembly. Development of Alternative 1 is projected to require the development of four elementary schools, one middle school, and one high school to meet the demand

generated by new residents. Some students may be accommodated by existing schools outside the former NWS Concord site. The City of Concord will consult with the community and the Mount Diablo Unified School District (MDUSD) to coordinate decision-making about school facilities and capacity as planning and development progresses on the former NWS Concord site.

Community facilities such as a library, schools, police and fire facilities, community centers, and places of worship would serve the increased population and workforce in the area of the reuse site. Some facilities would serve people living and working in the immediate areas and neighborhoods, while others would serve people from throughout Concord or the wider Bay Area. Locations of community facilities would be specified as development proposals for the site are advanced. Facilities such as schools, libraries, and community centers may be developed as joint use facilities.

Some facilities may be developed and operated by agencies other than the City of Concord, such as the Contra Costa County Sheriff, MDUSD, and the EBRPD. Some sites may be transferred through public benefit conveyances.⁵ Uses that have been introduced through the public benefit conveyance (PBC) request process and that may be developed on the site include a sheriff's, fire department, and first-responder training center, and large, open-space areas for habitat protection, regional park, restoration, and recreational opportunities. Should the proposed conservation open space area be conveyed to the EBRPD for regional park uses, future planning and design efforts would be completed in accordance with the EBRPD Master Plan and could include an interpretive center within the proposed regional park developed collaboratively with the U.S. National Park Service.

A field office for the City of Concord Police Department would likely be included in the reuse of the former NWS Concord to serve the additional population and workforce that would be established in the area. Two or more new fire stations, one of which could be converted from an existing, fully operational Navy facility, are also likely to be developed.

Permanent supportive housing and other homeless facilities, including job training programs, a homeless employment center, and a new countywide food bank, are included in the Area Plan.³ The total number and location of housing units for the homeless would be determined as the site is developed and would comprise at least 1 percent of the total number of residential units developed in the area.

2.2.3.3 Transportation

The proposed transportation system is based on a "complete streets" concept. The complete streets concept means that the needs of all transportation users, including mass transit, motor vehicle, bicycle, and pedestrian, are balanced on the physical transportation network. On-street parking is also provided to create a buffer between vehicle traffic and pedestrians. The balance among each mode of transportation varies depending on the size of the street and its purpose.

Complete Streets

Five types of complete streets would be developed on the former NWS Concord site: through, collector, community, yield, and alley.

Through streets would be the widest streets in the transportation network and would include dedicated space for mixed flow (i.e., lanes that include both buses and personal motor vehicles), mass transit (only

⁵ Under base closure law, property may be conveyed through a number of different mechanisms. The Navy may dispose of the former NWS Concord property in parcels, using a number of different methods, including but not limited to economic development conveyance, conservation conveyance, or PBC. For a PBC, state or local government entities obtain property when sponsored by a federal agency for uses that would benefit the public, such as education, public roads, parks and recreation, wildlife conservation, or public health.

on Los Medanos Boulevard), bicycle traffic, and wide sidewalks. Parking lanes and sidewalks would be provided on both sides of the street. The desired speed limit would be between 25 and 35 miles per hour (mph). Proposed through streets include Los Medanos Boulevard, Delta Road, Willow Pass Road, and Evora Road.

Collector streets would connect internal areas of development districts with through streets. Dedicated lanes for mixed-flow vehicles and bicycle traffic would be provided. Parking lanes and sidewalks would be located on both sides of the street. The desired speed limit would be 20 to 25 mph.

Community streets would connect internal areas of development districts to collector streets. Dedicated lanes would only be provided for shared (mass transit, motor vehicle, and bicycle) traffic. Parking lanes and sidewalks would be located on both sides of the street. The desired speed limit would be 15 to 25 mph. Community streets would generally be located in the internal areas of development districts, between through streets and collector streets.

Yield streets would connect internal areas of development districts between through, collector, and community streets. One lane would be dedicated to shared traffic, and a parking lane would be located on one side of the street. The shared lane would be wide enough for two vehicles to pass, but it is intended for individual cars to yield while another car passes. Sidewalks would be located on both sides of the street, except when adjacent to a conservation, open space, or neighborhood district. The desired speed limit would be 10 to 15 mph.

Alleys would be the narrowest streets in the transportation system. One shared lane would be provided for mass transit, automobile, and bicycle traffic to allow access to rear building entrances. Sidewalks would not be provided. The desired speed limit would be 5 to 10 mph. Alleys would be located in the interior blocks of development districts.

Mass Transit

Several forms of mass transit are planned under the Area Plan. The BART line would be directly accessible from the North Concord/Martinez BART Station, located adjacent to proposed transit-oriented development. A high-frequency transit (bus) service would have two dedicated lanes along Los Medanos Boulevard. The high-frequency transit service would have stops every 0.5 mile, with approximately 7.5 minutes between stops during peak hours and 15 minutes between stops during off-peak hours. Local bus and shuttle service would travel in mixed-flow lanes along collector streets in the eastern portion of the planning area. Local bus and shuttle service would have stops every 0.25 mile, with approximately 15 minutes between stops. Paratransit⁶ would be offered as an on-demand service.

Bicycle Network

The bicycle network would consist of Class I, Class II, and Class III routes. Class I bicycle paths would have two lanes divided by a centerline stripe and would be located on separate rights-of-way from surface streets. Class II routes would have two dedicated lanes (one traveling in each direction) on through and collector streets. Class III routes would be located on community and yield streets, would not have a dedicated lane, and would share the road with automobiles. Several proposed bicycle paths would connect to existing and proposed bicycle paths located adjacent to the former NWS Concord site.

⁶ Paratransit is defined as transportation service without fixed routes or timetables that supplements larger public transit services. Paratransit services typically include vehicles such as minibuses and can include taxis that are shared among several riders.

2.2.4 Alternative 2 (Intensified Reuse)

Alternative 2 has a slightly smaller development footprint than the Area Plan and is generally consistent with the policies adopted by the City of Concord during the reuse planning process but represents a higher intensity of use overall, resulting from a slightly different land use pattern and increased residential development (Figure 2-2).

Under Alternative 2, development and conservation would take place in largely the same locations and according to the same development program, concepts, and principles, with some differences. Approximately 70 percent of the property would be maintained as conservation, parks, or recreational land uses, and 30 percent would be mixed-use development, including a mix of office, retail, residential, community facilities, light industrial, and research and development/educational land uses. Development on the site would allow for up to a maximum of 15,872 housing units and 6.1 million square feet of commercial space within the development footprint. (The total area of commercial uses would be the same for Alternative 2 as Alternative 1.) Two major conservation areas proposed include a regional park, which would encompass the east side of the property along the ridgeline of the Los Medanos Hills and the Mt. Diablo Creek corridor, similar to Alternative 1.

The overall development program for Alternative 2 differs from Alternative 1 in the following ways:

- Alternative 2 does not include the First Responder Training Center District.
- In Alternative 2, the Campus District is located in the area occupied by the First Responder Training Center District in Alternative 1 (north of SR 4). The size of the Campus District is also smaller than in Alternative 1 (80 acres rather than 120 acres). The Campus District in Alternative 2, however, retains the same total area of commercial uses within this smaller area.
- An additional Village Neighborhood and Village Center are located in the area occupied in Alternative 1 by the Campus District.
- The TOD Core, TOD Neighborhood, and Central Neighborhood development districts surrounding the BART station are somewhat expanded in Alternative 2.
- The total number (and corresponding area) of Village Centers is smaller in Alternative 2 because, in this alternative, Village Neighborhood districts are closer in proximity to other commercial areas on the site and may rely on these areas to provide the services that would otherwise be provided by the Village Centers.
- The overall number of residential units in Alternative 2 (15,872) is greater than in Alternative 1 (12,272). Most of this increase is planned within the North Concord TOD Core, North Concord TOD Neighborhood, and Central Neighborhood districts rather than the Village Neighborhood districts.
- The area occupied in Alternative 1 with the Village Neighborhood District south of the proposed Los Medanos Boulevard and west of Willow Pass Road and a portion of one of the two Central Neighborhood districts would be developed as an additional citywide park under Alternative 2. This new citywide park area would include an expanded wetlands restoration component.
- The citywide park that includes the tournament sports facility in Alternative 1 would be smaller in size in Alternative 2.

Similar to Alternative 1, Alternative 2 allocates a fixed number of housing units and commercial development to specific development district areas. A summary comparison of Alternatives 1 and 2 is provided in Table 2-2.

Table 2-2 Summary Comparison of Proposed Alternatives

District	Approximate Acres		Approximate Housing Units		Approximate Commercial Floor Space	
	Alt 1	Alt 2	Alt 1	Alt 2	Alt 1	Alt 2
Development Program						
North Concord TOD Core	55	80	700	2,113	3,000,000	3,000,000
North Concord TOD Neighborhoods	90	85	2,200	4,209	150,000	150,000
Central Neighborhoods	180	200	2,600	2,908	100,000	100,000
Village Centers	70	50	500	500	350,000	350,000
Village Neighborhoods	740	730	6,200	6,143	N/A	N/A
Commercial Flex	210	210	N/A	N/A	1,700,000	1,700,000
Campus	120	80	TBD	TBD	800,000	800,000
First Responder Training Center	80	–	N/A	N/A	N/A	N/A
Greenways, Citywide Parks, and Tournament Facilities	786	786	N/A	N/A	N/A	N/A
Conservation Open Space	2,715	2,825	N/A	N/A	N/A	N/A
Total¹	5,046	5,046	12,200	15,872	6,100,000	6,100,000
Maximum Planning Area-wide Total²	5,046		12,272		6,115,718	

¹ The total area of the surplus property is approximately 5,038 acres. This total area being evaluated for disposal and reuse in this EIS is smaller than that of the Area Plan (5,046 acres) because the city’s plan included some areas, such as the North Concord/Martinez BART Station and the Diablo Creek Golf Course, that are not part of the Navy’s surplus property.

² The Maximum Planning Area-wide Total is defined in the City of Concord’s Area Plan and represents the maximum total number of dwelling units and square feet of commercial floor space that can be built within the planning area. Future planning phases will determine the precise acreage, number of dwelling units, and square feet of commercial space in each district; therefore, the final development program may differ from the one represented in this table as long as the Maximum Planning Area-wide Total is not exceeded. The total number of dwelling units proposed in Alternative 2 would exceed the Maximum Planning Area-wide Total and require an amendment to the City of Concord’s General Plan.

Another difference between the two alternatives is in total area of lateral ground disturbance (“developable area footprint”) represented by each. For both alternatives as discussed in this document, this area represents a maximum developable area rather than a precise calculation of total ground disturbance and has been estimated based on the assumption that the areas of all development districts except for open space and conservation could be subject to up to 100-percent disturbance (in other words, within these districts, ground disturbance could take place anywhere within the district during construction of residential and other uses). Up to 5 percent of the total area of open space and conservation in both alternatives is also assumed to be up to 100-percent disturbed by the construction of such features as trails, picnic areas, and parking areas. Under these assumptions, Alternative 1 would have a 2,540-acre developable area footprint, which represents approximately 49 percent of the total land area of the former NWS Concord, and Alternative 2 would have a 2,200-acre developable area footprint, which represents approximately 44 percent of the total land area.

It is important to note that calculations of disturbance under these assumptions are conservative: under either alternative, some areas within the development districts would be avoided during construction; however, precise construction footprints will not be known until specific development projects are proposed for the reuse site. For the purposes of the analysis in this EIS, impact acreages throughout this document are described as “up to” a certain amount of disturbance, depending on the resource under evaluation.

2.2.5 No Action Alternative

The No Action Alternative is retention of the former NWS Concord property by the U.S. government in caretaker status. No reuse or redevelopment of the property would occur. Any current approved uses on the property would continue until remaining leases expire or the Navy decides to renew the lease. No new leases would be created under the No Action Alternative. Facilities would be maintained in accordance with the *BRAC Program Management Office (PMO) Building Vacating, Facility Layaway, and Caretaker Maintenance Guidance*, published in March 2007. In accordance with the *BRAC PMO Building Vacating, Facility Layaway, and Caretaker Maintenance Guidance*, only conditions adversely affecting public health, the environment, and safety would be corrected in nonresidential areas. Any remedial activities underway would continue until environmental cleanup is complete.

The No Action Alternative, if implemented, would not satisfy the purpose of or need for action and would not provide the local community with an opportunity for economic development. Although the No Action Alternative would not meet the purpose of or need for the proposed action, it is evaluated as required by CEQ regulations (40 CFR Section 1502.14[d]) implementing NEPA. For the purposes of this EIS, a No Action Alternative provides a comparison point against which the environmental consequences of the other alternatives can be measured.

2.2.6 Alternatives Considered and Eliminated

According to CEQ regulations implementing NEPA (40 CFR 1502.14), all reasonable alternatives to a proposed action must be “rigorously explored and objectively evaluated” in an EIS. In addition, an EIS is required to include a brief discussion of potential alternatives that have been identified but eliminated from detailed study, as well as the reasons for eliminating them.

The following provides a brief summary of the reuse alternatives that were developed through the integration of an extensive community involvement process by the City of Concord; considered in public meetings and workshops by the City of Concord, the CAC, and the community; and evaluated through the CEQA environmental review process. As a result of the environmental review and planning process that eventually eliminated alternatives, none of these alternatives are considered reasonable alternatives for reuse of the former NWS Concord in this EIS.

Between 2006 and 2007, the City of Concord conducted extensive community outreach, which resulted in the development of seven alternatives for reuse of the former NWS Concord. Based on a communitywide survey of attitudes toward reuse of the site conducted in 2006, most of the community favored mixed-use development throughout the site (City of Concord 2008). Therefore, the seven alternatives were all variations on mixed-use development. Other common elements of the seven alternatives included: highest density uses at the north end of the site near SR 4 and the North Concord/Martinez BART Station; conservation land on the east side of Mt. Diablo Creek; a greenway along Mt. Diablo Creek; allocation of land for community facilities; and a similar transportation network. The seven alternatives differed in the density of development, distribution of development across the site, number of housing units, amount of commercial space, and land for conservation, open space, and recreation (see Table 2-3).

Each of the seven alternatives fell into one of three themes: “Extending the Neighborhoods,” “Clustered Villages,” and “Concentration and Conservation,” as described in Section 1.6. The specific elements of each alternative are described below:

Table 2-3 Summary of Alternatives Considered in the CEQA Environmental Review Process

	Extending the Neighborhood	Clustered Villages			Concentration and Conservation		
	Alternative 1 Extending the Neighborhood	Alternative 2 Connected Villages	Alternative 3 Creek Park Village	Alternative 6 West Side Villages	Alternative 4 Concord Park	Alternative 5 Concentration and Conservation	Alternative 7 Conservation First
Development Footprint in acres (%)	2,778 (53%)	2,528 (48%)	2,378 (45%)	1,528 (29%)	2,228 (42%)	1,578 (29%)	1,128 (19%)
Conservation, Open Space, and Recreation in acres (%)	2,250 (47%)	2,500 (52%)	2,650 (55%)	3,500 (71%)	2,800 (58%)	3,450 (71%)	3,900 (81%)
Residential Units	7,900	13,000	11,300	8,000	8,900	10,000	6,250
High Density	525	3,800	2,275	2,700	2,250	3,525	1,775
Moderate Density	650	4,000	4,400	2,900	1,775	3,825	1,975
Low Density	6,725	5,200	4,625	2,400	4,875	2,650	2,500
Average Residential Density (dwellings per acre)	5.0	11.5	11.1	13.9	9.1	16.5	12.6
Commercial Square Footage	5,050,000	7,900,000	6,300,000	5,800,000	5,750,000	6,200,000	5,200,000

Extending the Neighborhoods

Alternative 1: Extending the Neighborhoods. Development would be primarily low-density, single-family homes, extending the pattern of development adjacent to the western boundary of the former NWS Concord. This alternative would have the highest development footprint (53 percent of the site) but the second lowest number of housing units (7,900 units) and the lowest square footage of commercial development. Commercial development would be limited to an area located near the North Concord/Martinez BART Station.

Clustered Villages

Alternative 2: Connected Villages. This alternative would have an equal mix of low-, medium-, and high-density residential development, with most of the medium- and high-density residential development north of Willow Pass Road, and most of the low-density development in neighborhood villages south of Willow Pass Road and both east and west of Mt. Diablo Creek. Alternative 2 also has the highest amount of commercial development, primarily to the north of the site, and job growth. Approximately 13,000 housing units would be constructed, and approximately 52 percent of the site would be conservation, parks, and recreation.

Alternative 3: Creek Park Villages. This alternative is similar to Alternative 2, but it has an expanded city-wide Creek Park with the neighborhood villages linking to and surrounding the park. Approximately 11,300 housing units would be constructed, and approximately 55 percent of the site would be conservation, parks, and recreation.

Alternative 6: West Side Villages. This alternative would concentrate most of the development west of Mt. Diablo Creek and north of Willow Pass Road, allowing for a greater area of conservation land. South of Willow Pass Road would be two neighborhood villages. The transportation network would not extend east of Mt. Diablo Creek. This alternative would also include a linear park on the west side of the site between the new development and existing neighborhoods. Approximately 8,000 housing units would be constructed, and approximately 72 percent of the site would be conservation, parks, and recreation.

Concentration and Conservation

Alternative 4: Concord Park. Development would be concentrated north of Willow Park Road, with residential areas south of Bailey Road. A large city park would be located in the middle and along the southern boundary of the site. Approximately 8,900 housing units would be constructed, and approximately 58 percent of the site would be conservation, parks, and recreation.

Alternative 5: Concentration and Conservation. Most of the development would be north of Willow Pass Road. Most of the housing units would be moderate to high density, with only 27 percent low density. Approximately 10,000 housing units would be constructed, and approximately 71 percent of the site would be conservation, parks, and recreation.

Alternative 7: Conservation First. This alternative has the largest amount of area to be used for conservation. Approximately 81 percent of the site would be conservation, parks, and recreation. A large park would be developed south of Willow Pass Road. All of the development would be north of Willow Pass Road.

As discussed in Section 1.6, after assessment of the environmental impacts of the alternatives in the DEIR and additional public meetings conducted as part of the city's planning and public outreach, the range of alternatives evaluated in the CEQA environmental review process was narrowed, and, ultimately, the

modified version of the Clustered Villages alternative was selected and identified as the city's preferred development program.

The alternatives selection process included an evaluation of each theme and the alternative(s) under each one, in an attempt to narrow the range of alternatives. The "Extending the Neighborhoods" alternative (Alternative 1) was eliminated during evaluation due to the lack of housing variety (heavily weighted toward low-density residential) it offered, as well as the associated lack of transportation options for residents and employees. Under Alternative 1, private vehicles would be the primary mode of transportation due to the low-density development, which tends to create challenges for other modes of transportation, including walking, biking, and public transit (City of Concord 2007a).

For the "Clustered Villages" and "Concentration and Conservation" themes, one alternative was selected to represent each theme. The three alternatives within the "Clustered Villages" theme were very similar to each other: each incorporated a high-capacity bus transit system that would connect the villages to downtown Concord and other areas, a good balance of residential housing options, a strong focus on mixed-use development, and an open space and parks system designed to link to neighborhoods and other city parks while also highlighting accessibility. Because of the similarity of Alternatives 2, 3, and 6, they were combined with some modification to yield a higher density of land uses near the North Concord/Martinez BART Station.

The three alternatives within the "Concentration and Conservation" theme were also similar. Each balanced conservation and open space areas with a concentration of development to the north of Willow Pass Road, with a similar proportion of residential, commercial, and community/institutional facility development. Because of the similarity of Alternatives 4, 5, and 7, they were combined with some modifications to reduce the overall amount of commercial development and to reduce the remediation required for passive open space areas (City of Concord 2012).

The two remaining alternatives, one "Clustered Villages" and one "Concentration and Conservation," were provided to the LRA by the CAC, with a recommendation that the Clustered Villages alternative be selected as the preferred reuse alternative, as previously indicated in Section 1.6. This selection was made because of the strong desire of the community to balance development with conservation—concentrating development on the west side of Mt. Diablo Creek while facilitating the preservation of the east side of the creek as open space, parks, and recreational uses. The LRA confirmed the CAC recommendation, formally designating the Clustered Villages alternative as the preferred reuse alternative, and used it as the basis for the development of the Area Plan and subsequently as the Preferred Alternative (Alternative 1) in this EIS.

2.3 Comparison of Environmental Consequences

Table 2-4 presents a summary of the environmental consequences associated with disposal and reuse of the former NWS Concord property under each alternative.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Land Use and Zoning	<p>Onsite Land Use: <i>Significant beneficial impacts (changes in land use; integration of mixed-use development into City of Concord, with public access to previously inaccessible military property).</i></p> <ul style="list-style-type: none"> Redevelopment of 5,038-acre property into eight development districts and 2,715 acres of conservation open space. Specific development proposals will follow a planning and permitting process administered by the City of Concord. 	<p>Onsite Land Use: <i>Significant beneficial impacts (changes in land use; integration of mixed-use development into City of Concord, with public access to previously inaccessible military property).</i></p> <ul style="list-style-type: none"> Redevelopment of 5,038-acre property into seven development districts and 2,825 acres of conservation open space. Specific development proposals will follow a planning and permitting process administered by the City of Concord. 	<p>Onsite Land Use: <i>Significant adverse impact.</i></p> <ul style="list-style-type: none"> Existing land uses not consistent with Area Plan and other plans (also see Consistency with Land Use Plans and Zoning below).
	<p>Regional/Adjacent Land Use: <i>No direct impact; indirect beneficial impact (relieving development pressure on sensitive land resources in county).</i></p> <ul style="list-style-type: none"> Consistent with local/regional land uses and land use plans. Reduced offsite development pressure with mixed-use development planned onsite. 	<p>Regional/Adjacent Land Use: <i>No direct impact; indirect beneficial impact (relieving development pressure on sensitive land resources in county).</i></p> <ul style="list-style-type: none"> Consistent with local/regional land uses and land use plans. Reduced offsite development pressure with mixed-use development planned onsite. 	<p>Regional/Adjacent Land Use: <i>No impact.</i></p> <ul style="list-style-type: none"> Compatible with regional/adjacent land uses.
	<p>Consistency with Land Use Plans and Zoning: <i>No adverse impact.</i></p> <ul style="list-style-type: none"> Consistent with regional plans – BART Strategic Plan, ABAG Strategic Plan, Plan Bay Area: Strategy for a Sustainable Region, and Bay Area Joint Policy Committee’s FOCUS strategy. Consistent with local plans – Concord Reuse Project Area Plan, Concord 2030 General Plan, Contra Costa (County) General Plan, and Pittsburg General Plan. 	<p>Consistency with Land Use Plans and Zoning: <i>Moderate adverse impact (higher number of residential units than included in General Plan).</i></p> <ul style="list-style-type: none"> Consistent with regional plans – BART Strategic Plan, ABAG Strategic Plan, Plan Bay Area: Strategy for a Sustainable Region, and Bay Area Joint Policy Committee’s FOCUS strategy. Consistent with local plans – Concord Reuse Project Area Plan, Concord 2030 General Plan, Contra Costa (County) General Plan, and Pittsburg General Plan. Number of dwelling units would exceed total planned for the area and require amendment to Concord 2030 General Plan. 	<p>Consistency with Land Use Plans and Zoning: <i>Significant adverse impact.</i></p> <ul style="list-style-type: none"> Not consistent with regional plans – BART Strategic Plan, ABAG Strategic Plan, Plan Bay Area: Strategy for a Sustainable Region, and Bay Area Joint Policy Committee’s FOCUS strategy. Not consistent with local plans – Concord Reuse Project Area Plan, Concord 2030 General Plan, Contra Costa (County) General Plan, and Pittsburg General Plan.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Socioeconomics and Environmental Justice	Economy, Employment, and Income: <i>Significant beneficial short-term and long-term impacts.</i> <ul style="list-style-type: none"> • \$6.3 billion in total construction expenditures. • Beneficial direct, indirect, and induced impacts from increased output, earnings, and employment in the area. • 22,714 jobs (direct, indirect, and induced) from construction expenditures. • 24,594 jobs (direct, indirect, and induced) at full build-out. 	Economy, Employment, and Income: <i>Significant beneficial short-term and long-term impacts.</i> <ul style="list-style-type: none"> • Greater total construction expenditures than Alternative 1. • Beneficial direct, indirect, and induced impacts from increased output, earnings, and employment in the area; slightly greater than Alternative 1 during construction phase. • More jobs from construction expenditures and at full build-out (direct, indirect, and induced) than Alternative 1. 	Economy, Employment, and Income: <i>No impact.</i> <ul style="list-style-type: none"> • No new economic activity in the form of construction expenditures or increased output, earnings, and employment.
	Population (impact on City of Concord population and demographics): <i>No significant adverse impact.</i> <ul style="list-style-type: none"> • Construction of 12,200 residential units would increase population in City of Concord by 32,387 persons. Regional population growth forecasted from other factors not related to proposed action. 	Population (impact on City of Concord population and demographics): <i>No significant adverse impact.</i> <ul style="list-style-type: none"> • Construction of 15,872 residential units would increase population in City of Concord by 41,642 persons. Regional population growth forecasted from other factors not related to proposed action. 	Population: <i>No impact.</i> <ul style="list-style-type: none"> • No change in local population.
	Housing and Commercial Property: <i>Minor beneficial impact.</i> <ul style="list-style-type: none"> • 12,200 new residential units would increase housing stock consistent with anticipated local and regional demand. • Consistent with City of Concord Homeless Assistance Plan and affordable housing goals. • Short-term impact on commercial property market from addition of 6.1 million square feet of commercial space when much vacant commercial space is already available. Impacts expected to decrease as anticipated regional growth occurs. 	Housing and Commercial Property: <i>Minor beneficial impact.</i> <ul style="list-style-type: none"> • 15,872 new residential units would increase housing stock consistent with anticipated local and regional demand. • Consistent with City of Concord Homeless Assistance Plan and affordable housing goals. • Short-term impact on commercial property market from addition of 6.1 million square feet of commercial space when much vacant commercial space is already available. Impacts expected to decrease as anticipated regional growth occurs. 	Housing and Commercial Property: <i>No impact.</i> <ul style="list-style-type: none"> • No change in housing and commercial property markets.
	Taxes and Revenue: <i>Significant beneficial impact.</i> <ul style="list-style-type: none"> • \$88 million increase in property tax and sales/use tax revenue from implementation of Alternative 1. 	Taxes and Revenue: <i>Significant beneficial impact.</i> <ul style="list-style-type: none"> • Greater increase in property tax and sales/use tax revenue from implementation of Alternative 2 than from implementation of Alternative 1. 	Taxes and Revenue: <i>No impact.</i> <ul style="list-style-type: none"> • No change in local government tax receipts.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Environmental Justice and Protection of Children: <i>No significant adverse impact.</i></p> <ul style="list-style-type: none"> Potential minority or low-income populations exist within the study area. However, they would not experience a disproportionately high or adverse human health or environmental effect because no significant unmitigated impacts are expected to occur in surrounding communities as a result of Alternative 1. No unique environmental health or safety issues would impact children in the affected communities. 	<p>Environmental Justice and Protection of Children: <i>No significant adverse impact.</i></p> <ul style="list-style-type: none"> Potential minority or low-income populations exist within the study area. However, they would not experience a disproportionately high or adverse human health or environmental effect because no significant unmitigated impacts are expected to occur in surrounding communities as a result of Alternative 2. No unique environmental health or safety issues would impact children in the affected communities. 	<p>Environmental Justice and Protection of Children: <i>No impact.</i></p> <ul style="list-style-type: none"> No change from current conditions.
<p>Air Quality</p>	<p>Criteria Pollutants: <i>Significant adverse impacts. (Daily and annual emission totals indicate significant adverse impacts due to the size of the project.)</i></p> <p><u>Population and Vehicle Miles Traveled (VMT):</u></p> <ul style="list-style-type: none"> Population increases would be consistent with the Concord 2030 General Plan. The rate of increase in VMT would be less than the rate of increase in population. <p><u>Criteria pollutants:</u> Because of the size of the project, daily and annual emission estimates of criteria air pollutants from construction and operations would exceed BAAQMD significance thresholds, resulting in significant impacts.</p> <p><u>GHG Emissions:</u> Annual per capita GHG emissions resulting from the implementation of the Area Plan would be consistent with local and state GHG emission planning goals.</p>	<p>Planning Standards and Criteria Pollutants: <i>Significant adverse impacts. (Daily and annual emission totals would be higher than Alternative 1 and indicate significant adverse impacts due to the size of the project.)</i></p> <p><u>Population and VMT:</u></p> <ul style="list-style-type: none"> Population increases would exceed estimates in the Area Plan and would therefore not be consistent with the Concord 2030 General Plan, resulting in the potential for significant impacts. The rate of increase in VMT would be less than the rate of increase in population. <p><u>Criteria pollutants:</u> Because of the size of the project, daily and annual emission estimates of criteria air pollutants from construction and operations would exceed BAAQMD significance thresholds, resulting in significant impacts.</p> <p><u>GHG Emissions:</u> Annual per capita GHG emissions resulting from the implementation of Alternative 2 would be higher than Alternative 1 but would be consistent with local and state GHG emission planning goals.</p>	<p><i>No significant impact.</i></p> <p>No new emissions would be generated by the proposed action, which would not occur. However, the improvements and mitigations planned for the City of Concord would not be implemented and, given the growth of population anticipated for the region, criteria pollutants and GHG emissions would continue to increase.</p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Mitigation: Planned mitigation measures defined in the Area Plan, and evaluated in Book 3, the Area Plan Climate Action Plan (Area Plan CAP), would reduce the impacts of GHG and criteria pollutant emissions. Mitigation measures include transportation diversity and demand management, onsite photovoltaic installations, building design to meet energy efficiency standards, and use of best management practices (BMPs) such as proper maintenance of equipment and idling-reduction measures.</p>	<p>Mitigation: Planned mitigation measures defined in the Area Plan, and evaluated in the Area Plan CAP, would reduce the impacts of GHG and criteria pollutant emissions in Alternative 2. Mitigation measures include transportation diversity and demand management, onsite photovoltaic installations, building design to meet energy efficiency standards, and use of BMPs such as proper maintenance of equipment and idling-reduction measures.</p>	
<p>Biological Resources</p>	<p>Vegetation Communities and Habitats: <i>No significant adverse impacts.</i></p> <p><u>California Annual Grassland</u></p> <ul style="list-style-type: none"> • Permanent removal of existing vegetation communities and associated habitats, most of which is California annual grassland. Approximately 1,720 acres of grassland would be permanently impacted; however, approximately 2,045 acres of grassland habitat would remain onsite. • Potential adverse impacts to remaining grasslands due to invasive and non-native species would be addressed through implementation of the Area Plan, including the MMRP. • Temporary disturbance on areas to be maintained as conservation/open space during construction. <p><u>Coyote Brush Scrub/Coastal Sage Scrub</u></p> <ul style="list-style-type: none"> • Removal of 92 percent (4.6 acres) of this limited onsite habitat that does not provide suitable habitat for unique species. 	<p>Vegetation Communities and Habitats: <i>No significant adverse impacts.</i></p> <p><u>California Annual Grassland</u></p> <ul style="list-style-type: none"> • Permanent removal of existing vegetation communities and associated habitats, most of which is California annual grassland. Approximately 1,650 acres of grassland would be permanently impacted; however, approximately 2,115 acres of grassland habitat would remain onsite. • Potential adverse impacts to remaining grasslands due to invasive and non-native species would be addressed through implementation of the Area Plan, including the MMRP. • Temporary disturbance on areas to be maintained as conservation/open space during construction. <p><u>Coyote Brush Scrub/Coastal Sage Scrub</u></p> <ul style="list-style-type: none"> • Removal of all 5 acres of this limited onsite habitat that does not provide suitable habitat for unique species. 	<p>Vegetation Communities and Habitats: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p><u>Oak Woodland/Savannah</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 9 acres of this habitat type, leaving 92 percent (99 acres) undisturbed. Proposed removal would trigger the City of Concord Heritage Tree Ordinance and developer would be required to comply with the mitigation provisions of this ordinance. <p><u>Riparian Woodlands</u></p> <ul style="list-style-type: none"> Removal of 5 acres of this habitat type, leaving 84 percent (26 acres) undisturbed. Loss of riparian woodlands along Willow Pass Creek would be mitigated through the Section 401/404 process, and the establishment of a 300-foot riparian buffer along Mt. Diablo Creek would increase overall riparian woodland communities onsite. <p><u>Wetlands and Non-Wetland Waters</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 22.1 acres of jurisdictional and non-jurisdictional wetlands. Approximately 8,408 linear feet of jurisdictional waters would be permanently impacted. <p><u>Orchards and Plantations</u></p> <ul style="list-style-type: none"> Approximately 113 acres would be permanently removed from the site, leaving approximately 27 percent (43 acres) onsite. <p>Fish and Wildlife: <i>No significant adverse impacts. Moderate beneficial impacts from restoration of Mt. Diablo Creek and creation of 300-foot buffer.</i></p> <ul style="list-style-type: none"> Temporary impacts in the form of disturbance during construction may include displacement and minor impacts due to mortality of a small proportion of less-mobile species. Loss of existing habitat due to permanent habitat conversion to developed areas but there is a regional availability of these habitats coupled with the preservation of the Conservation/Open Space District. 	<p><u>Oak Woodland/Savannah</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 9 acres of this habitat type, leaving 92 percent (99 acres) undisturbed. Proposed removal would trigger the City of Concord Heritage Tree Ordinance and developer would be required to comply with the mitigation provisions of this ordinance. <p><u>Riparian Woodlands</u></p> <ul style="list-style-type: none"> Removal of 5 acres of this habitat type, leaving 84 percent (26 acres) undisturbed. Loss of riparian woodlands along Willow Pass Creek would be mitigated through the Section 401/404 process, and the establishment of a 300-foot riparian buffer along Mt. Diablo Creek would increase overall riparian woodland communities onsite. <p><u>Wetlands and Non-Wetland Waters</u></p> <ul style="list-style-type: none"> Permanent loss of approximately 22 acres of jurisdictional and non-jurisdictional wetlands. Approximately 8,639 linear feet of jurisdictional waters would be permanently impacted. <p><u>Orchards and Plantations</u></p> <ul style="list-style-type: none"> Approximately 112 acres would be permanently removed from the site, leaving approximately 28 percent (44 acres) onsite. <p>Fish and Wildlife: <i>No significant adverse impacts. Moderate beneficial impacts from restoration of Mt. Diablo Creek and creation of 300-foot buffer.</i></p> <ul style="list-style-type: none"> Temporary impacts in the form of disturbance during construction may include displacement, and minor impacts due to mortality of a small proportion of less-mobile species. Loss of existing habitat due to permanent habitat conversion to developed areas but there is a regional availability of these habitats coupled with the preservation of the Conservation/Open Space District. 	<p>Fish and Wildlife: <i>No impact.</i></p> <ul style="list-style-type: none"> Overall abundance of wildlife may increase because of the lack of human activity.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<ul style="list-style-type: none"> Loss of nesting areas for breeding birds, stopover areas for breeding birds, and stopover areas for migratory birds during construction would be minimized through the preservation of the conservation area and creation of a 300-foot buffer along Mt. Diablo Creek. Potential introduction of non-native wildlife species. Permanent loss of stream and wetland habitats would permanently displace aquatic biota; however, restoration of Mt. Diablo Creek and the creation of a 300-foot buffer would result in beneficial impacts. 	<ul style="list-style-type: none"> Loss of nesting areas for breeding birds, stopover areas for breeding birds, and stopover areas for migratory birds during construction would be minimized through the preservation of the conservation area and creation of a 300-foot buffer along Mt. Diablo Creek. Potential introduction of non-native wildlife species. Permanent loss of stream and wetland habitats would permanently displace aquatic biota; however, restoration of Mt. Diablo Creek and the creation of a 300-foot buffer would result in beneficial impacts. 	
	<p>Special Status Species: <i>No significant adverse impacts with mitigation.</i></p> <p><u>California Red-Legged Frog</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Removal of 2,315 acres of this species' habitat, including direct impacts to non-breeding aquatic habitat, upland, and dispersal habitats. Direct effects through harassment or mortality could occur during both construction and operation. <p><u>California Tiger Salamander</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Total of 957 acres of direct California tiger salamander habitat impacts estimated, including approximately 19 acres of high-quality habitat, 119 acres of medium-quality habitat, and 819 acres of low-quality habitat. Direct effects through harassment or mortality could occur during both construction and operation. 	<p>Special Status Species: <i>No significant adverse impacts with mitigation.</i></p> <p><u>California Red-Legged Frog</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Removal of 2,234 acres of this species' habitat, including direct impacts to non-breeding aquatic habitat, upland, and dispersal habitats. Direct effects through harassment or mortality could occur during both construction and operation. <p><u>California Tiger Salamander</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. Total of 898 acres of direct California tiger salamander habitat impacts estimated. Direct effects through harassment or mortality could occur during both construction and operation. 	<p>Special Status Species: <i>No impact.</i></p> <ul style="list-style-type: none"> California red-legged frog and California tiger salamander populations would likely continue on the site.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p><u>Alameda Whipsnake</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. No individuals have been previously documented onsite; however, suitable habitat exists. Permanent adverse impacts to Alameda whipsnake habitat through loss of suitable habitat and direct mortality of individuals during construction and post-development recreational use. <p>Mitigation for frog, salamander, and snake: The city's proposed master permitting framework that would be developed in coordination with the USFWS would ultimately be the basis for specific, adequate, and binding language for conservation of threatened and endangered species, explicitly establishing the city as the responsible party for mitigation required by the USFWS and USACE, and providing assurances of sufficient funding for compensatory mitigation.</p> <p><u>Bald and Golden Eagle</u></p> <p>Potential impacts to individuals or their habitat during construction due to loss or disturbance of an active nest. Any future reuse would be required to avoid and minimize potential impacts to the species and compensate for impacts to the species' habitat per the protections afforded by the MBTA, BGEPA, and CDFG Codes.</p>	<p><u>Alameda Whipsnake</u></p> <ul style="list-style-type: none"> Reuse may affect and is likely to adversely affect this species. No individuals have been previously documented onsite; however, suitable habitat exists. Permanent adverse impacts to Alameda whipsnake habitat through loss of suitable habitat and direct mortality of individuals during construction and post-development recreational use. <p>Mitigation for frog, salamander, and snake: The city's proposed master permitting framework that would be developed in coordination with the USFWS would ultimately be the basis for specific, adequate, and binding language for conservation of threatened and endangered species, explicitly establishing the city as the responsible party for mitigation required by the USFWS and USACE, and providing assurances of sufficient funding for compensatory mitigation.</p> <p><u>Bald and Golden Eagle</u></p> <p>Potential impacts to individuals or their habitat during construction due to loss or disturbance of an active nest. Any future reuse would be required to avoid and minimize potential impacts to the species and compensate for impacts to the species' habitat per the protections afforded by the MBTA, BGEPA, and CDFG Codes.</p>	
Cultural Resources	<p>Native American Resources: <i>No impact.</i></p> <p>No Native American resources identified at former NWS Concord by federally recognized Indian tribes consulted for the proposed action.</p>	<p>Native American Resources: <i>No impact.</i></p> <p>No Native American resources identified at former NWS Concord by federally recognized Indian tribes consulted for the proposed action.</p>	<p>Native American Resources: <i>No impact.</i></p> <p>Mitigation: Not applicable.</p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>NRHP-Listed or -Eligible Historic Properties: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Reuse of former NWS Concord could have an adverse effect on historic properties resulting from disturbance or destruction of two NRHP-eligible archaeological sites during implementation of Alternative 1. <p>Mitigation: Mitigation as part of Section 106 consultation would reduce impacts.</p>	<p>NRHP-Listed or -Eligible Historic Properties: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Reuse of former NWS Concord could have an adverse effect on historic properties resulting from disturbance or destruction of two NRHP-eligible archaeological sites during implementation of Alternative 2. <p>Mitigation: Mitigation as part of Section 106 consultation would reduce impacts.</p>	<p>NRHP-Listed or -Eligible Historic Properties: <i>No impact.</i></p>
<p>Topography, Geology, and Soils</p>	<p>Topography: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Below-grade development and other contour changes would be gradual. 	<p>Topography: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Below-grade development and other contour changes would be gradual. 	<p>Topography: <i>No impact.</i></p>
	<p>Geology: <i>No significant adverse impacts (impacts from seismic hazards would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> High potential for seismically induced ground shaking, ground failure, slope failure, and surface fault rupture due to location in a seismically active area. The Clayton Section Greenville Fault located on the former NWS Concord is an active Holocene fault, but with no history of earthquakes. <p>Mitigation: For ground shaking and ground failure: buildings engineered/designed per the International Building Code. Design standards are not intended to fully mitigate for liquefaction, some ground failure, slope failure, and surface fault rupture.</p>	<p>Geology: <i>No significant adverse impacts (impacts from seismic hazards would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> High potential for seismically induced ground shaking, ground failure, slope failure, and surface fault rupture due to location in a seismically active area. The Clayton Section Greenville Fault located on the former NWS Concord is an active Holocene fault, but with no history of earthquakes. <p>Mitigation: For ground shaking and ground failure: buildings engineered/designed per the International Building Code. Design standards are not intended to fully mitigate for liquefaction, some ground failure, slope failure, and surface fault rupture.</p>	<p>Geology: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Soils: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Loss of topsoil, exposure of old fill, and import of new fill during grading, excavation, and other construction activities. <p>Mitigation: Erosion and sediment control measures in accordance with local and state laws, stormwater permit, and Construction General Permit.</p>	<p>Soils: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Loss of topsoil, exposure of old fill, and import of new fill during grading, excavation, and other construction activities. <p>Mitigation: Erosion and sediment control measures in accordance with local and state laws, stormwater permit, and Construction General Permit.</p>	<p>Soils: <i>No impact.</i></p>
<p>Hazards and Hazardous Substances</p>	<p>Environmental Restoration Program Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> ER Program sites are in various stages of completion depending on the site. Compliance with the CERCLA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. <p>Solid Waste Management Unit Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> All SWMU sites at former NWS Concord have been recommended for no further action, except for four sites already transferred to the IRP. Compliance with the RCRA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. 	<p>Environmental Restoration Program Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> ER Program sites are in various stages of completion depending on the site. Compliance with the CERCLA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. <p>Solid Waste Management Unit Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> All SWMU sites at former NWS Concord have been recommended for no further action, except for four sites already transferred to the IRP. Compliance with the RCRA process and adherence to federal laws and regulations during construction and operation would ensure that hazards to the public or environment from hazardous wastes/materials associated with former sites would be minimized to the extent possible. 	<p>Environmental Restoration Program Sites: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> ER Program sites are in various stages of completion depending on the site. CERCLA cleanup activities would continue. Compliance with the CERCLA process and adherence to federal laws and regulations would ensure that hazards to the public or environment from hazardous wastes/materials associated with site cleanup would be minimized to the extent possible. <p>Solid Waste Management Unit Sites: <i>No impact.</i></p> <ul style="list-style-type: none"> All SWMU sites at former NWS Concord have been recommended for no further action, except for four sites already transferred to the IRP.

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Radiological Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Radiation surveys are ongoing at sites with low contamination potential as identified by historical radiological assessment. Compliance with the Atomic Energy Act and the CERCLA process, and adherence to federal laws and regulations during construction and operation, would ensure that hazards to the public or environment from radioactive wastes/materials associated with former sites would be minimized to the extent possible. <p>Other Hazardous Waste/Materials Management: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Hazardous wastes would be generated and hazardous materials (e.g., petroleum and other products in belowground and aboveground storage tanks, asbestos, LBP, PCBs, and radioactive materials) would be handled/used during construction and operation activities. Compliance with regulatory framework would minimize hazards to the public and environment. 	<p>Radiological Sites: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Radiation surveys are ongoing at sites with low contamination potential as identified by historical radiological assessment. Compliance with the Atomic Energy Act and the CERCLA process, and adherence to federal laws and regulations during construction and operation, would ensure that hazards to the public or environment from radioactive wastes/materials associated with former sites would be minimized to the extent possible. <p>Other Hazardous Waste/Materials Management: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Hazardous wastes would be generated and hazardous materials (e.g., petroleum and other products in belowground and aboveground storage tanks, asbestos, LBP, PCBs, and radioactive materials) would be handled/used during construction and operation activities. Compliance with regulatory framework would minimize hazards to the public and environment. 	<p>Radiological Sites: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Site evaluation would continue. Compliance with the Atomic Energy Act and the CERCLA process, and adherence to federal laws and regulations, would ensure that hazards to the public or environment from radioactive wastes/materials associated with site cleanup would be minimized to the extent possible. <p>Other Hazardous Waste/Materials Management: <i>Minor adverse impact.</i></p> <ul style="list-style-type: none"> Navy would continue to generate small quantities of hazardous waste and use small quantities of hazardous materials to conduct caretaker activities. Asbestos and LBP would remain in onsite buildings. Compliance with regulatory framework would minimize hazards to the public and environment.
Noise	<p>Construction Noise: <i>No significant adverse impacts (short-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Significant short-term noise impacts to nearby receptors, especially on the western boundary of the property, from the use of heavy equipment and vehicle traffic during construction. <p>Mitigation: City of Concord noise control measures for new developments and construction would reduce impacts.</p> <p>Operational Noise: <i>No significant adverse impacts (long-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Overall increase in ambient noise level from vehicular/rail traffic and operation of the commercial, industrial, recreational, and residential land uses of the development. 	<p>Construction Noise: <i>No significant adverse impacts (short-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Significant short-term noise impacts to nearby receptors, especially on the western boundary of the property, from the use of heavy equipment and vehicle traffic during construction. <p>Mitigation: City of Concord noise control measures for new developments and construction would reduce impacts.</p> <p>Operational Noise: <i>No significant adverse impacts (long-term impacts on nearby receptors would be reduced through mitigation).</i></p> <ul style="list-style-type: none"> Overall increase in ambient noise level from vehicular/rail traffic and operation of the commercial, industrial, recreational, and residential land uses of the development. 	<p>Construction Noise: <i>No impact.</i></p> <p>Operational Noise: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<ul style="list-style-type: none"> • Long-term increase in traffic noise of generally 1 to 3 dBA at nearby receptors. The 1 dBA increase would not be perceptible. • Increase in noise level of 7 dBA near Denkinger Road at site boundary. • Short-term moderate impact from increase in noise levels from certain recreational uses. <p>Mitigation: City of Concord noise control measures in MMRP such as noise barriers, low-noise road surfaces, and acoustical analyses would reduce impacts.</p>	<ul style="list-style-type: none"> • Long-term increase in traffic noise of generally 1 to 3 dBA at nearby receptors. The 1 dBA increase would not be perceptible. • Increase in noise level of 7 dBA near Denkinger Road at site boundary. • Short-term moderate impact from increase in noise levels from certain recreational uses. <p>Mitigation: City of Concord noise control measures in MMRP such as noise barriers, low-noise road surfaces, and acoustical analyses would reduce impacts.</p>	
Public Services	<p>Educational Facilities: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> • Population increase of 32,387 residents would result in 4,577 children requiring educational services. • Reuse would include educational facilities adequate for the demand, in compliance with Concord 2030 General Plan. • Property taxes and other funding sources would support development of the schools. 	<p>Educational Facilities: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> • Population increase of 41,642 residents would result in 5,885 children requiring educational services. • Reuse would include educational facilities adequate for the demand, in compliance with Concord 2030 General Plan. • Property taxes and other funding sources would support development of the schools. 	<p>Educational Facilities: <i>No impact.</i></p>
	<p>Public Safety, Emergency, and Health Care Facilities: <i>No significant adverse impacts (new facilities would be accommodated during incremental, long-term build-out).</i></p> <ul style="list-style-type: none"> • Population increase of 32,387 residents and additional workforce would result in need for additional public safety, emergency, and health care facilities. • Police staffing and equipment would need to be increased at existing City of Concord Police Department facilities. • Fire department staffing and equipment would need to be increased and two additional fire stations would be needed, one of which might be converted from an existing Navy facility. • New First Responder Training Center planned under Alternative 1 would support city and county public safety departments. • Property taxes and other funding sources would support the increased public safety and 	<p>Public Safety, Emergency, and Health Care Facilities: <i>No significant adverse impacts (new facilities would be accommodated during incremental, long-term build-out).</i></p> <ul style="list-style-type: none"> • Population increase of 41,642 residents and additional workforce would result in need for additional public safety, emergency, and health care facilities. • An additional 50 police officers and additional facilities and equipment would be needed at the City of Concord Police Department facilities. • An additional 29 fire fighters, two fire stations, and additional facilities and equipment would be needed, one of which might be converted from an existing Navy facility. • No First Responder Training Center is planned under Alternative 2 to support city and county public safety departments. • Property taxes and other funding sources would support the increased public safety and 	<p>Public Safety, Emergency, and Health Care Facilities: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>emergency facilities.</p> <ul style="list-style-type: none"> Additional health care needs would be adequately accommodated by existing hospitals and medical facilities. <p>Open Space, Parks, and Recreation: Significant beneficial impacts (long term).</p> <ul style="list-style-type: none"> Population increase of 32,387 residents and additional workforce would result in need for additional recreational space and facilities. Alternative 1 provides for 786 acres of greenways, citywide parks, and active recreational areas in the reuse area. 2,537 acres of the former NWS Concord would be managed by the East Bay Regional Park District for passive recreation and open space uses. Ratio of dedicated parkland space to residents would exceed Concord 2030 General Plan requirements, leading to a long-term beneficial impact. 	<p>emergency facilities.</p> <ul style="list-style-type: none"> Additional health care needs would be adequately accommodated by existing hospitals and medical facilities. <p>Open Space, Parks, and Recreation: Significant beneficial impacts (long term).</p> <ul style="list-style-type: none"> Population increase of 41,642 residents and additional workforce would result in need for additional recreational space and facilities. Alternative 2 provides for 786 acres of greenways, citywide parks, and active recreational areas in the reuse area. 2,537 acres of the former NWS Concord would be managed by the East Bay Regional Park District for passive recreation and open space uses. Ratio of dedicated parkland space to residents would exceed Concord 2030 General Plan requirements, leading to a long-term beneficial impact. 	<p>Open Space, Parks, and Recreation: No impact.</p>
<p>Transportation, Traffic and Circulation</p>	<p>Traffic Volumes and Level of Service (LOS) on Surrounding Roadway Network: Significant adverse impacts.</p> <ul style="list-style-type: none"> New roadways on property and connections with existing network. Projected to add 203,205 daily trips to the new and existing road network. Ten intersections, two roadway segments, seven freeway segments, and 16 freeway ramps in study area would operate at LOS E or worse and would exceed performance standards. One roadway segment, three freeway segments, and six freeway ramps exceeding performance standards would not change or improve operations over No Action Alternative. Unavoidable adverse impacts even with proposed mitigation at four intersections. Minor increase in traffic on roadways adjacent to property during construction. 	<p>Traffic Volumes and LOS on Surrounding Roadway Network: Significant adverse impacts.</p> <ul style="list-style-type: none"> New roadways on property and connections with existing network. Projected to add 229,301 daily trips to the new and existing road network. Ten intersections, two roadway segments, seven freeway segments, and 16 freeway ramps in study area would operate at LOS E or worse and would exceed performance standards. One roadway segment, two freeway segments, and two freeway ramps exceeding performance standards would not change or improve operations over No Action Alternative. Unavoidable adverse impacts even with proposed mitigation at four intersections. Minor increase in traffic on roadways adjacent to property during construction. 	<p>Significant adverse impacts to traffic due to background growth.</p> <ul style="list-style-type: none"> Eight intersections, one roadway segment, six freeway segments, and 13 freeway ramps in study area would operate at LOS E or worse and would exceed performance standards. <p>Mitigation: None proposed.</p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Mitigation: Traffic demand management (TDM) strategies, site management plans, implementation of minimization and mitigation measures identified in the Area Plan, and BMPs would reduce impacts.</p>	<p>Mitigation: TDM strategies, site management plans, implementation of minimization and mitigation measures identified in the Area Plan, and BMPs would reduce impacts.</p>	
<p>Utilities and Infrastructure</p>	<p>Water: Moderate adverse impact due to increase in water demand and need for new infrastructure.</p> <p><u>Water Supply and Demand</u></p> <ul style="list-style-type: none"> • Estimated demand of 3.2 million gallons per day (mgd) at full build-out, excluding irrigational needs. • Development would fall within the level of growth assumed for the CCWD service area. <p><u>Water Treatment and Distribution</u></p> <ul style="list-style-type: none"> • Moderate impact on Randall-Bold Water Treatment Plant (WTP) capacity because upgrades would be needed to serve new development. • Moderate impact on distribution facilities; reuse would include construction of a new water distribution system comprised of both potable water and recycled water components. 	<p>Water: Moderate adverse impact due to increase in water demand and need for new infrastructure.</p> <p><u>Water Supply and Demand</u></p> <ul style="list-style-type: none"> • Estimated demand of 3.5 mgd at full build-out, excluding irrigational needs. • Due to similarities to Alternative 1, development would fall within the level of growth assumed for the CCWD service area. <p><u>Water Treatment and Distribution</u></p> <ul style="list-style-type: none"> • Moderate impact on Randall-Bold WTP capacity because upgrades would be needed to serve new development under Alternative 2. • Moderate impact on distribution facilities; reuse would include construction of a new water distribution system comprised of both potable water and recycled water components. 	<p>Water: No impact.</p>
	<p>Stormwater and Collection Systems: No significant adverse impacts with mitigation.</p> <ul style="list-style-type: none"> • Reuse would result in a total of approximately 1,442 acres of impervious area, an increase of 301 percent above existing conditions. • Reuse would require new stormwater infrastructure to manage increased flows. <p>Mitigation: Grading permit, stormwater control plan, compliance with stormwater permit, low-impact development strategies, and BMPs would reduce impacts.</p>	<p>Stormwater and Collection Systems: No significant adverse impacts with mitigation.</p> <ul style="list-style-type: none"> • Reuse would result in a total of approximately 1,369 acres of impervious area, an increase of 281 percent above existing conditions. • Reuse would require new stormwater infrastructure to manage increased flows. <p>Mitigation: Grading permit, stormwater control plan, compliance with stormwater permit, low-impact development strategies, and BMPs would reduce impacts.</p>	<p>Stormwater and Collection Systems: No impact.</p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Sanitary Collection and Treatment Systems: <i>Minor/moderate adverse impacts (increase in demand and need for infrastructure).</i></p> <ul style="list-style-type: none"> Minor impact on Central Contra Costa Sanitary District (CCCSD) Wastewater Treatment Plant (WWTP); estimated demand of approximately 3.7 mgd at full build-out would fall within projected future effluent discharge limitations. Moderate impact on collection system because upgrades to existing City of Concord and CCCSD collection systems are possible. 	<p>Sanitary Collection and Treatment Systems: <i>Minor/moderate adverse impacts (increase in demand and need for infrastructure).</i></p> <ul style="list-style-type: none"> Minor impact on CCCSD WWTP; estimated demand of approximately 5.5 mgd would fall within projected future effluent discharge limitations. Moderate impact on collection system because upgrades to existing City of Concord and CCCSD collection systems are possible. 	<p>Sanitary Collection and Treatment Systems: <i>No impact.</i></p>
	<p>Other Utilities and Infrastructure: <i>No significant adverse impacts</i></p> <p><u>Solid Waste and Recycling Management:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Fifty percent of solid waste generated from construction and operation activities would be recycled or otherwise diverted from landfills in accordance with state law. Approximately 90,500 tons of construction and demolition (C&D) waste from construction activities would require landfilling following applicable recycling measures. Approximately 25,000 tons per year of non-C&D solid waste from operation of the new development (residential, commercial, and industrial activities) would require landfilling following applicable recycling measures. Due to long build-out period, local landfills are projected to have the capacity to accommodate the waste. <p><u>Electricity:</u> <i>Minor to moderate impact on regional demand.</i></p> <ul style="list-style-type: none"> Future coordination with PG&E is needed. New electric connections/infrastructure required, including an onsite 5-acre distribution substation. 	<p>Other Utilities and Infrastructure: <i>No significant adverse impacts</i></p> <p><u>Solid Waste and Recycling Management:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Fifty percent of solid waste generated from construction and operation activities would be recycled or otherwise diverted from landfills in accordance with state law. Approximately 97,000 tons of C&D waste from construction activities would require landfilling following applicable recycling measures. Approximately 28,000 tons per year of non-C&D solid waste from operation of the new development (residential, commercial, and industrial activities) would require landfilling following applicable recycling measures. Due to long build-out period, local landfills are projected to have the capacity to accommodate the waste. <p><u>Electricity:</u> <i>Minor to moderate impact on regional demand.</i></p> <ul style="list-style-type: none"> Future coordination with PG&E is needed. New electric connections/infrastructure required, including an onsite 5-acre distribution substation. 	<p>Other Utilities and Infrastructure: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p><u>Natural Gas:</u> <i>Negligible impact on regional demand.</i></p> <ul style="list-style-type: none"> Sufficient capacity in the adjacent existing gas transmission systems to serve new development. New gas connections/distribution system required, including 1-acre gas regulating station. <p><u>Telecommunications:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Additional services and the development of new facilities to service new development would be required. 	<p><u>Natural Gas:</u> <i>Negligible impact on regional demand.</i></p> <ul style="list-style-type: none"> Sufficient capacity in the adjacent existing gas transmission systems to serve new development. New gas connections/distribution system required, including 1-acre gas regulating station. <p><u>Telecommunications:</u> <i>Minor impact</i></p> <ul style="list-style-type: none"> Additional services and the development of new facilities to service new development would be required. 	
<p>Visual Resources and Aesthetics</p>	<p>Scenic Quality and Views: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Potential impacts were assessed at a programmatic level because specific plans for development have not yet been approved by the City of Concord. Scenic quality contrast between current conditions and proposed development would range from none to strong, depending on the key observation point (KOP). Views of hills, ridgelines, and open space could be substantially changed from some KOPs. <p>Mitigation: City of Concord mitigation measures such as best management practices, light-reducing measures, and light-controlling measures required for development plans would reduce impacts.</p>	<p>Scenic Quality and Views: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Potential impacts were assessed at a programmatic level because specific plans for development have not yet been approved by the City of Concord. Scenic quality contrast between current conditions and proposed development would range from none to strong, depending on the KOP. Views of hills, ridgelines, and open space could be substantially changed from some KOPs. <p>Mitigation: City of Concord mitigation measures such as best management practices, light-reducing measures, and light-controlling measures required for development plans would reduce impacts.</p>	<p><i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
Water Resources	<p>Surface Water: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> • Disturbance of Mt. Diablo Creek and its riparian corridor. • Temporary increase in erosion and sedimentation rates. • Drainage patterns on the site could be temporarily altered. • Temporary impact associated with new culvert installation and permanent loss of natural drainage course. • Approximately 8,716 linear feet of jurisdictional waters permanently impacted through fill because of the development footprint. • Total impervious surface area of 1,442 acres, resulting in increase in quantity of sheet flow (stormwater drainage) and higher peak stream discharges. <p>Mitigation: Compliance with local, state, and federal laws regarding stormwater management, including the General Construction Permit, Section 86-39 of the City of Concord’s Stormwater Management and Discharge Control Ordinance, and USACE- and EPA-issued regulations governing compensatory mitigation for impacts to streams (40 CFR Part 230) as part of the Section 401/404 permitting process would reduce impacts.</p>	<p>Surface Water: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> • Disturbance of Mt. Diablo Creek and its riparian corridor. • Temporary increase in erosion and sedimentation rates. • Drainage patterns on the site could be temporarily altered. • Temporary impact associated with new culvert installation and permanent loss of natural drainage course. • Approximately 8,639 linear feet of jurisdictional waters permanently impacted through fill because of the development footprint. • Total impervious surface area of 1,369 acres, resulting in increase in quantity of sheet flow (stormwater drainage) and higher peak stream discharges. <p>Mitigation: Compliance with local, state, and federal laws regarding stormwater management, including the General Construction Permit, Section 86-39 of the City of Concord’s Stormwater Management and Discharge Control Ordinance, and USACE- and EPA-issued regulations governing compensatory mitigation for impacts to streams (40 CFR Part 230) as part of the Section 401/404 permitting process would reduce impacts.</p>	<p>Surface Water: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Wetlands: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Impacts from direct filling or alteration of hydrology. Approximately 22.1 acres of jurisdictional (16.1 acres) and non-jurisdictional (6.1 acres) wetlands impacted. <p>Mitigation: Compliance with CWA Section 404 and USACE and EPA regulations governing compensatory mitigation for impacts to wetlands (40 CFR Part 230), in coordination with the USACE as part of the City of Concord’s Master 404 Permit for the Area Plan would reduce impacts.</p>	<p>Wetlands: <i>No significant adverse impacts with mitigation.</i></p> <ul style="list-style-type: none"> Impacts from direct filling or alteration of hydrology. Approximately 22 acres of jurisdictional (16.1 acres) and non-jurisdictional (5.9 acres) wetlands impacted. <p>Mitigation: Compliance with CWA Section 404 and USACE and EPA regulations governing compensatory mitigation for impacts to wetlands (40 CFR Part 230), in coordination with the USACE as part of the City of Concord’s Master 404 Permit for the Area Plan would reduce impacts.</p>	<p>Wetlands: <i>No impact.</i></p>
	<p>Groundwater: <i>Minor adverse impacts from construction (temporary).</i></p> <ul style="list-style-type: none"> Low likelihood of impacts associated with temporary construction activities that could extend below ground surface to a depth that would directly impact the underlying water table. Increase in imperviousness of site could result in less infiltration of rainfall and limit the potential for groundwater recharge. <p>Mitigation: If necessary, use of standard dewatering techniques; compliance with storm water permits and management plans and erosion and sediment control plans as required by the San Francisco Bay Regional Water Quality Control Board and other agencies; and implementation of BMPs would reduce impacts.</p>	<p>Groundwater: <i>Minor adverse impacts from construction (temporary).</i></p> <ul style="list-style-type: none"> Low likelihood of impacts associated with temporary construction activities that could extend below ground surface to a depth that would directly impact the underlying water table. Increase in imperviousness of site could result in less infiltration of rainfall and limit the potential for groundwater recharge. <p>Mitigation: If necessary, use of standard dewatering techniques; compliance with storm water permits and management plans and erosion and sediment control plans as required by the San Francisco Bay Regional Water Quality Control Board and other agencies; and implementation of BMPs would reduce impacts.</p>	<p>Groundwater: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Water and Groundwater Quality: <i>Minor adverse impacts (temporary).</i></p> <ul style="list-style-type: none"> Clearing and grading activities would cause short-term exposure of soils, leading to erosion and sedimentation. Temporary impacts during construction and implementation of the in-stream conceptual restoration design concepts due to short-term increases in sediment loads and turbidity in Mt. Diablo Creek. Additional impervious surface area could lead to accumulation of pollutants picked up by stormwater flows and additional sources of non-point pollution reaching receiving waters such as Mt. Diablo Creek. Proposed new development would be located within a highly developed area; stormwater runoff would be collected into a stormwater management system. <p>Mitigation: Compliance with local and state permit requirements, including the General Construction Permit, City of Concord’s Stormwater Management and Discharge Control Ordinance and Grading and Erosion Control Ordinance, and CWA Section 404 permit and Section 401 Water Quality Certification; and implementation of BMPs would reduce impacts.</p> <p>Floodplains: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Approximately 7.3 acres of Zone A floodplain and 1.3 acres of Zone AE floodplain would be impacted by road construction. Approximately 57.7 acres of 100-year floodplains would be impacted by implementation of Alternative 1. FEMA hydraulic model of Mt. Diablo Creek would be developed and used to delineate and map the 100-year floodplain within the former NWS Concord. 	<p>Water and Groundwater Quality: <i>Minor adverse impacts (temporary).</i></p> <ul style="list-style-type: none"> Clearing and grading activities would cause short-term exposure of soils, leading to erosion and sedimentation. Temporary impacts during construction and implementation of the in-stream conceptual restoration design concepts due to short-term increases in sediment loads and turbidity within Mt. Diablo Creek. Additional impervious surface area could lead to accumulation of pollutants picked up by stormwater flows and additional sources of non-point pollution reaching receiving waters such as Mt. Diablo Creek. Proposed new development would be located within a highly developed area; stormwater runoff would be collected into a stormwater management system. <p>Mitigation: Compliance with local and state permit requirements, including the General Construction Permit, City of Concord’s Stormwater Management and Discharge Control Ordinance and Grading and Erosion Control Ordinance, and CWA Section 404 permit and Section 401 Water Quality Certification; implementation of BMPs would reduce impacts.</p> <p>Floodplains: <i>No significant adverse impacts.</i></p> <ul style="list-style-type: none"> Approximately 8.3 acres of Zone A floodplain and 1.3 acres of Zone AE floodplain would be impacted by road construction. Approximately 57 acres of 100-year floodplains would be impacted by implementation of Alternative 2. FEMA hydraulic model of Mt. Diablo Creek would be developed and used to delineate and map the 100-year floodplain within the former NWS Concord. 	<p>Water and Groundwater Quality: <i>No impact.</i></p> <p>Floodplains: <i>No impact.</i></p>

Table 2-4 Comparison of Environmental Consequences

Resource	Alternative 1	Alternative 2	No Action Alternative
	<p>Mitigation: Once delineated floodplains within the former NWS Concord are completed, they would be compared to modeled post-development hydrologic and hydraulic conditions to determine whether any modifications to the floodplain would result. City of Concord will require a Conditional Letter of Map Revisions from FEMA to demonstrate that 100-year design flow is contained within Mt. Diablo Creek. Conceptual design elements for Mt. Diablo Creek and 40-acre detention basin would address 100-year flood event would reduce impacts.</p>	<p>Mitigation: Once delineated floodplains within the former NWS Concord are completed, they would be compared to modeled post-development hydrologic and hydraulic conditions to determine whether any modifications to the floodplain would result. City of Concord will require a Conditional Letter of Map Revisions from FEMA to demonstrate that 100-year design flow is contained within Mt. Diablo Creek. Conceptual design elements for Mt. Diablo Creek and 40-acre detention basin would address 100-year flood event would reduce impacts.</p>	

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3 Affected Environment

3.1 Introduction

Chapter 3 provides a description of the existing environment for human and natural environmental resources that may be potentially affected by the proposed action. The following resource areas are evaluated in Chapter 3: land use and zoning (3.2); socioeconomics and environmental justice (3.3); air quality and greenhouse gases (3.4); biological resources (3.5); cultural resources (3.6); topography, geology, and soils (3.7); hazards and hazardous substances (3.8); noise (3.9); public services (3.10); transportation, traffic, and circulation (3.11); utilities and infrastructure (3.12); visual resources and aesthetics (3.13); and water resources (3.14).

Data used to describe the existing environment are from government agency websites or publicly available documents, published literature, personal contacts, field surveys, and other references, as cited in this chapter. To the extent feasible, data presented are current as of 2012, when data collection began for preparation of the EIS. The data presented in Chapter 3 may differ from the data presented in the City of Concord's FEIR (City of Concord 2010) and FEIR Addendum (City of Concord 2012a). The Navy's EIS is based on an independent analysis and relies on baseline information that may have changed since the city's FEIR and FEIR Addendum were prepared. However, field surveys, including wetland delineations and surveys for threatened and endangered species, conducted for the preparation of the city's FEIR are still considered relevant and have been cited where used to describe the existing natural environment.

The former NWS Concord was closed in 2008 and is currently in Navy caretaker status. Therefore, the existing environment of the former NWS Concord does not include the time period when NWS Concord was operational.

An analysis of the potential impacts on the resources described in this chapter is presented in Chapter 4.

3.2 Land Use and Zoning

This section summarizes land use designations of the communities located adjacent to the former NWS Concord at the regional scale, land uses that border the former NWS Concord site, and existing land uses onsite. Regional and local land use plans and regulations, including general plans and zoning ordinances of localities adjacent to the installation, are also discussed.

3.2.1 Onsite Land Use

Land Use and Existing Development

The former NWS Concord was closed in 2008 and is currently in Navy caretaker status. The total area of the surplus property is approximately 5,038 acres. Approximately 90 percent of the former NWS Concord site is currently being used for livestock grazing. Several agricultural research areas are located onsite, north of Bailey Road, and consist of plots dedicated to the cultivation of non-native trees, eucalyptus, and pine. Trees were planted on approximately 90 acres by the U.S. Forest Service (USFS) Institute of Forest Genetics as experimental plantings (Tetra Tech 2002). As further discussed in Section 3.5, these research areas are no longer maintained by the USFS due to a loss of sponsorship funding.

Existing development on the site includes ammunition bunkers (also known as magazines), buildings, and other infrastructure, such as access roads and rail lines, that supported the former naval operations onsite. Development is not distributed equally across the site. The large area south of SR 4 and northwest of Bailey Road includes unused warehouses and other former military buildings along with an extensive

network of roadways and rail lines. The decommissioned earth-covered ammunition bunkers (known as “Bunker City”) are primarily located in the southern portion of the installation, northwest of Bailey Road. An abandoned concrete runway is located in the area bordered by Willow Pass Road and Olivera Road. Little League baseball fields are located on a 6-acre parcel west of Olivera Road.

Naval administration, maintenance, and storage buildings along with portions of the Diablo Creek Golf Course are located north of SR 4 in an area known as the former Administrative Area. The existing main entrance is located in this area, and the majority of buildings are not in use. A portion of the Diablo Creek Golf Course, a total of 75 acres, is located on Navy-owned land and is leased to the City of Concord.

A chain link security fence topped with barbed wire surrounds the installation, and security and livestock fencing are located throughout the site.

The primary roadways that traverse or provide access to the former NWS Concord site include Bailey Road, Willow Pass Road, Port Chicago Highway, and SR 4. Bailey Road traverses the southern portion of the installation and connects Clayton Road to the City of Pittsburg. Willow Pass Road traverses the northern portion of the site and connects downtown Concord with SR 4. The North Concord/Martinez BART Station is located along Port Chicago Highway, at the western edge of the site. SR 4 bisects the northern portion of the installation. Kinne Boulevard, which is located onsite along the east bank of Mt. Diablo Creek, runs from the northern portion of the site to Bailey Road in the south.

Easements

The property is encumbered by several easements that provide for 20- to 25-foot-wide pipeline rights of way. These easements are owned by Shell Pipeline Company for a 20-inch pipeline, Kinder Morgan for a 10-inch pipeline, and ConocoPhillips for a 16-inch pipeline.

Canals

Two canals owned by the U.S. Bureau of Reclamation also traverse the former NWS Concord site. The Contra Costa Canal, which was constructed in 1948, is a primary component of the Contra Costa Water District (CCWD) and delivers water from the San Francisco Bay Delta to the district’s treatment facilities and water customers. This active canal is 48 miles long and extends from Rock Slough in eastern Contra Costa County to the Terminal Reservoir in Martinez (CCWD 2006). The portion of the Contra Costa Canal that traverses the former NWS Concord site is approximately 3.7 miles long. The Contra Costa Canal enters the site north of SR 4 before crossing under the highway and the BART rail line through a culvert. The canal traverses a hilly area on the former NWS Concord south of SR 4 and exits the site west of the intersection of Willow Pass Road and St. Vincente Drive. The canal has a bottom width of 24 feet (U.S. Bureau of Reclamation 1994).

The Clayton Canal branches off of the Contra Costa Canal south of Willow Pass Road and extends through the site north of Kinne Boulevard, exiting the former NWS Concord at Denkinger Road (see Section 3.14, Water Resources, and Figure 3.14-1). This canal was also constructed in 1948, has a length of 4.8 miles, and has a bottom width of 4 feet (U.S. Bureau of Reclamation 1994). The Clayton Canal is abandoned and has not been used to convey water for more than 20 years, but, similarly to the Contra Costa Canal, it is monitored and maintained by the CCWD (Navy April 2006; City of Concord 2013c). See Figure 3.2-1 for the locations of land uses, existing development, roadways, and easements.

3.2.2 Regional Land Use

The former NWS Concord lies within the City of Concord’s northeast quadrant (see Figure 3.2-2). The City of Concord is located in Contra Costa County and is bordered by the City of Walnut Creek to the

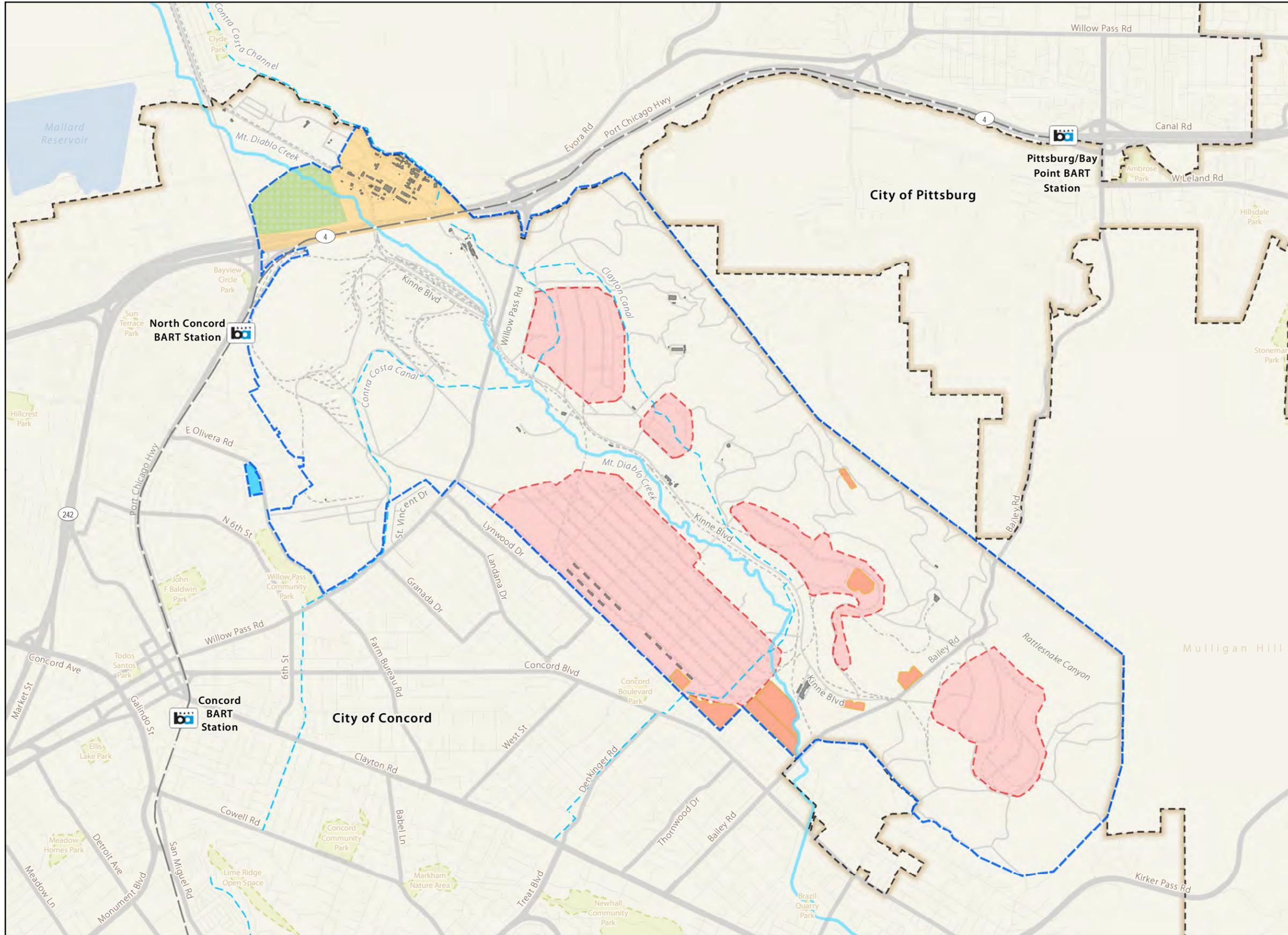


Figure 3.2-1
Existing Land Use
 Former NWS Concord
 Concord, California

Legend

- Bay Area Rapid Transit (BART) Station
- Bay Area Rapid Transit (BART) Line
- Canal/Channel
- Mt. Diablo Creek
- Former NWS Concord
- City Limits
- Waterbody

On-Site Land Uses

- Installation Railroad
- Agricultural Research Area
- Ball Field
- Golf Course
- Magazine Area Operational / Administrative / Housing
- Buildings



0 0.5 1 Miles

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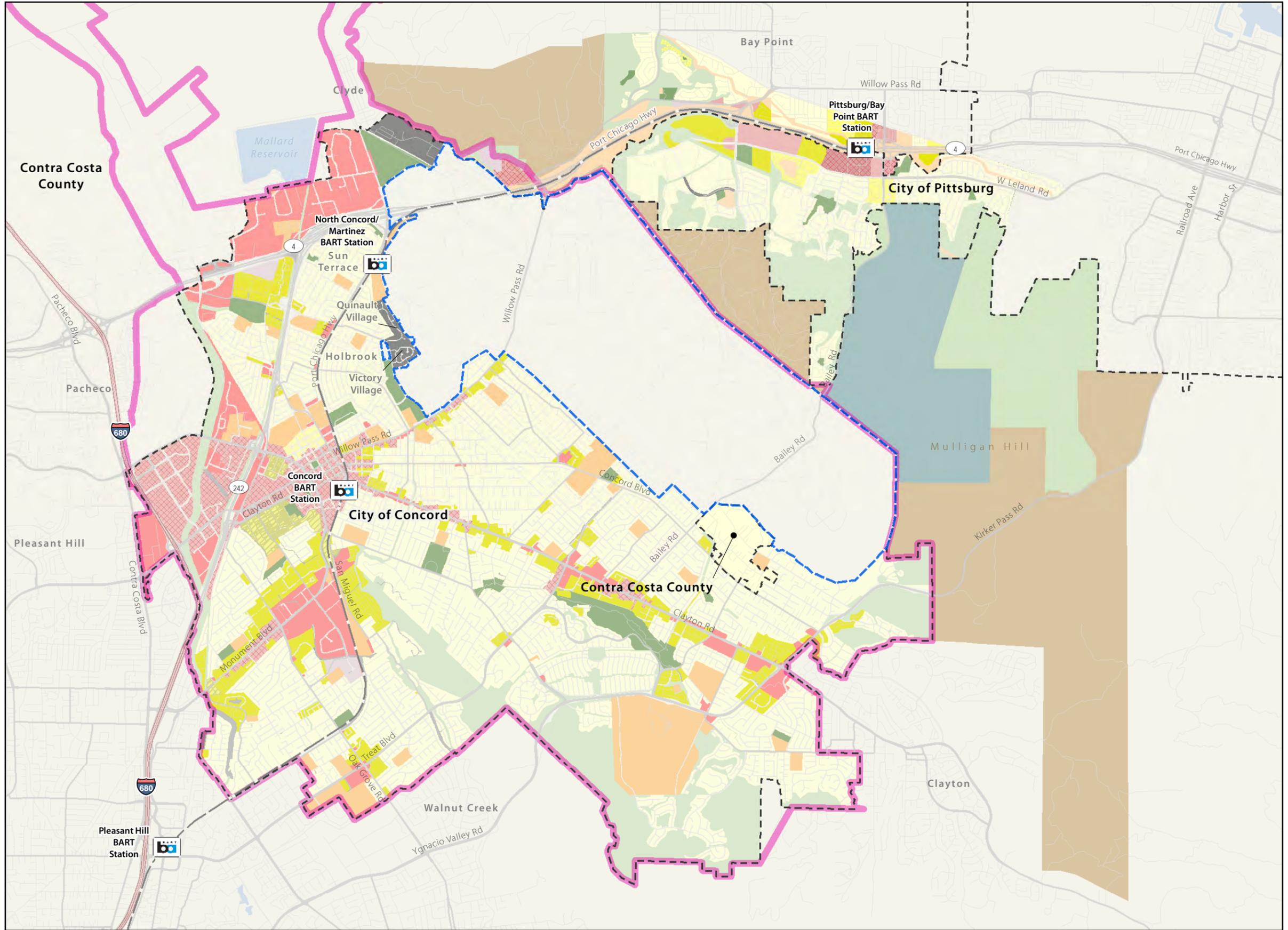


Figure 3.2-2
Regional Land Use Designations
 Former NWS Concord
 Concord, California

Legend

- BART Station
- Bay Area Rapid Transit (BART) Line
- Former NWS Concord
- City Limits
- Urban Limit Line
- Roadway

Land Use

Agriculture Lands	Commercial
Low Density Residential	Landfill
Medium Family Residential	Industrial
High Density Residential	Military
Very High Density Residential	Open Space
Mixed Use	Parks and Recreation
	Public/Semi-Public /Institutional
	Unclassified

SCALE
 0 0.5 1 Miles

SOURCE: ESRI, 2010; Contra Costa County, 2012; City of Pittsburg, 2008; City of Concord, 2014.

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south, the City of Clayton to the southeast, the City of Pittsburg and the unincorporated community of Bay Point to the northeast, the unincorporated community of Clyde to the north, and the cities of Martinez and Pleasant Hill to the west. The City of Concord is connected to the cities of Pittsburg, Pleasant Hill, Walnut Creek, Lafayette, Orinda, and other communities in the Bay Area through the BART system. The BART system has two stations in the City of Concord, the North Concord/Martinez BART Station located on Port Chicago Highway adjacent to the northwest border of the former NWS Concord site and the Concord BART Station, located on Oakland Avenue south of downtown Concord. Interstate Highway (I-) 680, SR 242, and SR 4 are the three main highways that serve the former NWS Concord site directly or indirectly.

Single-family residential is the primary existing land use in the City of Concord, accounting for approximately 32 percent of land in the City. Military land use, including the former NWS Concord, accounts for the next largest percentage of land use within the City, at 25 percent. Mixed-use development and commercial land uses are located in the City of Concord's downtown near the Concord BART Station and along transportation routes that connect to downtown such as Clayton Road, Monument Boulevard, Willow Pass Road, and the intersection of SR 242 and I-680 (City of Concord 2012). The downtown Concord BART Station area is surrounded by mixed-use, higher density, transit-oriented development (City of Concord 2010.) Industrial uses are located north of SR 4 and south of Monument Boulevard. According to the Concord 2030 General Plan, at Plan build-out, low-density residential will remain the primary land use designation within the City of Concord's Planning Area⁷, followed by open space, rural conservation, and wetlands/resource conservation (City of Concord 2012).

The City of Pittsburg is located northeast of the site, with single-family residences and open space comprising the area of the city closest to the former NWS Concord (see Figure 3.2-2). The installation is separated from the City of Pittsburg's city limits by a strip of unincorporated land.

Contra Costa County surrounds the City of Concord on the city's northern, eastern, and southeastern boundaries and includes a diverse mix of land uses including areas of agricultural, industrial, public and semi-public, single-family residential, multiple-family residential, and open space uses (see Figure 3.2.-2). Industrial uses, including two refineries, are located in the waterfront area along the Suisun Bay north of the City of Concord. Parks and recreation land uses, including public and semi-public land uses, and the U.S. Army Military Ocean Terminal Concord (formerly part of NWS Concord) are also situated along the Suisun Bay waterfront (City of Concord 2014). Mount Diablo is located southeast of the City of Concord. Therefore, agriculture and parks and recreation are the primary land uses located east and southeast of the city. The City of Clayton, a small residential community, borders the City of Concord to the southeast, at the base of Mount Diablo. The City of Clayton's land use consists of a mix of low- and high-density single-family residential, low-density multiple family residential, commercial, open space, and parks and recreation (City of Concord 2010).

The City of Walnut Creek, located south of the City of Concord, and the cities of Pleasant Hill and Martinez, located west of the City of Concord, have a development pattern that is concentrated along regional transportation routes. Light industrial parks, commercial uses, and office land uses are located along main transportation corridors in the region such as I-680 and SR 4. The BART station areas in Pleasant Hill and Walnut Creek have experienced some mixed-use, higher-density transit-oriented development. On the whole, high-, medium-, and low-density multiple family residential and high-density single-family residential uses are located closer to the transportation corridors in these cities. Medium to very low-density single-family residential is located farther away from the main transportation corridors.

⁷ The City of Concord's Planning Area is defined in the Concord 2030 General Plan as land outside its boundaries which, in the planning agency's judgment, bears relation to its planning.

Areas of open space and parks and recreation land uses, such as the John Muir National Historic Site and Briones Regional Park, are also located west of the City of Concord.

3.2.3 Adjacent Land Use

The installation is surrounded by primarily low-density residential development consisting of detached single-family homes, auto-oriented commercial uses, and agricultural/grazing land uses. The following description provides an overview of land uses in the City of Concord and Contra Costa County located adjacent to the former NWS Concord.

North

The predominant land uses north of SR 4 include office and light industrial along Port Chicago Highway, and a portion of Diablo Creek Golf Course. The Arnold Industrial Area, a series of light industrial buildings built over the last few decades, is located west of the Diablo Creek Golf Course and north of SR 4 in the City of Concord. Clyde, a small unincorporated residential community, is located north of the installation along Port Chicago Highway. Several small neighborhood parks are located in Clyde, including Clyde Park, Rail Trail Park, and Maybeck Park. The community is mostly built out, with single-family homes accounting for the majority of the development. The few vacant properties that remain in Clyde are being developed at a density of less than six units per acre.

The Willow Pass Business Park is located north of SR 4 on the east side of the former Administrative Area in unincorporated Contra Costa County. The business park can accommodate approximately 350,000 square feet of commercial and light industrial buildings and business condominiums. A gas station and retail use are also located in the business park. Agricultural lands are located north of the business park and east of the former Administrative Area and Clyde. In addition, 115 acres of the former Administrative Area located east of the golf course was transferred to the Army in 2008. This area will be developed as an administrative support area for the Military Ocean Terminal Concord, located along the Suisun Bay (City of Concord 2014, Contra Costa County 2010).

East

Undeveloped open space along the highlands of the Los Medanos Hills and agricultural land are the primary land uses adjacent to the eastern boundary of the installation. Contra Costa County is the main jurisdiction to the east of the former NWS Concord, along with the southwestern portion of the City of Pittsburg. A portion of the Los Medanos Hills east of the installation is also part of the official Planning Area of the City of Concord and the City of Pittsburg. Single-family residences and open space areas are located in the area of the City of Pittsburg closest to the former NWS Concord. The active Keller Canyon Landfill is located east of Bailey Road and borders the eastern edge of the former NWS Concord. The landfill is approximately 2,600 acres with 244 acres permitted for disposal (City of Concord 2010, City of Pittsburg 2001).

South

Land uses adjacent to the southern boundary of the installation include residential (including community uses such as churches) and undeveloped open space. Most of the undeveloped open space is located in the Los Medanos Hills. Residential areas are located between the base of the Los Medanos Hills and Myrtle Drive. Kirker Pass Road, a major arterial, is also located south of the site. The Sleep Train Pavilion, a major outdoor concert amphitheater, is located off of Kirker Pass Road. As described in Section 3.2.3, Regional Land Use, the small City of Clayton, a residential community, is located southeast of the installation. Land uses in the City of Clayton that border the installation include parks and recreation, commercial, and high-, low-, and very low-density single-family residential land uses. An unincorporated area along the southern edge of the installation known as the County Island is located along Myrtle Drive between Bailey Road and Kirker Pass Road. This area consists primarily of single-family residential (City of Concord 2010).

West

Single- and multi-family residential areas dominate the western boundary of the installation, with schools and parks interspersed throughout. The primary land use bordering the western edge of the installation is low-density residential (2.5 to 10 du per acre). Bayview Circle Park is located northwest of the North Concord/Martinez BART Station. One commercial shopping area is located on Concord Boulevard north of Concord High School. In addition, Victory Village and Quinault Village are former Navy multi-family residential areas located along the western edge of the installation and adjacent to Olivera Road, and are now owned and maintained by the U.S. Coast Guard (City of Concord 2010).

3.2.4 Regulatory Framework

3.2.4.1 Regional

Bay Area Rapid Transit District

BART is a regional public transportation system that serves the San Francisco Bay Area. The BART Strategic Plan was adopted in 2008 to increase mobility and accessibility to public transit services, strengthen economic prosperity, and preserve the environment. The BART Strategic Plan identifies the following implementation strategies related to the proposed reuse of the former NWS Concord (BART 2008):

- Develop alliances with our transit partners and the community to maximize connectivity and to facilitate multi-modal access including transit, bicycling, and walking.
- Work with community partners to maximize support for TODs [transit oriented developments], to enhance the livability and vitality at our [BART] stations, and to support regional goals.

In addition to the strategic plan, BART developed a transit-oriented development policy to promote more intensive, higher-density development near BART-owned properties, such as light rail stations. The policy includes the following goals related to land use (BART 2005):

- Increase transit ridership and enhance quality of life at and around BART stations by encouraging and supporting high-quality transit-oriented development within walking distance of BART stations.
- Increase transit-oriented development projects on and off BART property through creative planning and development partnerships with local communities.

Association of Bay Area Governments

The Association of Bay Area Governments (ABAG) includes cities, counties, and special service districts in the Bay Area, including Contra Costa County, the City of Concord, and the City of Pittsburg. In 2008, ABAG adopted its Strategic Plan, which identifies the following goals that are applicable to land use at the former NWS Concord (ABAG 2008):

- Foster a regional growth pattern that creates complete communities with ready, close, and safe access to employment, shopping, amenities and services and where transit is in place, well coordinated, and available.
- Protect, conserve, and restore critical habitats, working landscapes, recreational areas, and networks, and other regionally significant resource areas.

Plan Bay Area: Strategy for a Sustainable Region

The Plan Bay Area outlines a strategy for future growth in the region—in a manner that accommodates future growth while doing so in a sustainable manner. The Plan Bay Area was triggered by the California Sustainable Communities and Climate Protection Act of 2008, which requires each of the state’s metropolitan areas to reduce GHG emissions from cars and light trucks. This law requires that the Bay Area and other regions develop a Sustainable Communities Strategy to help to reach the GHG reduction target. The Plan Bay Area, as developed by the ABAG and Metropolitan Transportation Commission (MTC), includes the region’s Sustainable Communities Strategy and the 2040 Regional Transportation Plan, two key elements of the plan (ABAG and MTC 2013).

The land use pattern outlined in the Plan Bay Area seeks to achieve four primary objectives, each of which is applicable to what is envisioned for reuse at the former NWS Concord (ABAG and MTC 2013):

1. Create a network of complete Communities. Building on the Priority Development Areas framework of complete communities that include housing and transportation choices, the plan envisions neighborhoods where transit, jobs, schools, services, and recreation are conveniently located near people’s homes.
2. Increase the accessibility, affordability, and diversity of housing. The distribution of housing in the Bay Area is critical, given its importance to individuals, communities, and the region as a whole. The Bay Area needs sufficient housing options to attract the businesses and talented workforce needed for a robust future economy.
3. Create jobs to maintain and expand a prosperous and equitable regional economy. The plan seeks to reinforce the Bay Area’s role as one of the most dynamic regional economies in the U.S. It focuses on expanding the existing concentration of knowledge-based and technology industries in the region, which is a key to the Bay Area’s economic competitiveness.
4. Protect the Region’s unique natural environment. The Bay Area’s greenbelt of agricultural, natural resource, and open space lands is a treasured asset that contributes to residents’ quality of life and supports regional economic development.

Bay Area Joint Policy Committee

The Bay Area Joint Policy Committee coordinates planning efforts between ABAG, the Bay Area Air Quality Management District, Bay Conservation and Development Commission, and Metropolitan Transportation Commission. The committee, led by ABAG and the Metropolitan Transportation Commission, prepared FOCUS, a development and conservation strategy that promotes compact development. FOCUS includes the following goals and strategies that are applicable to the proposed reuse of the former NWS Concord (Bay Area Joint Policy Committee 2009):

- Encourage infill and the efficient use of land capacity within existing communities.
- Provide for compact, complete, resource-efficient communities near existing or planned transit and other infrastructure.
- Encourage a mix of land uses with jobs, housing, retail, schools, parks, recreation, and services in proximity.
- Locate development in areas served and likely to be served by frequent passenger rail, bus, and/or ferry service.
- Protect and enhance significant open space and recreation areas and networks.

East Bay Regional Park District

The EBRPD manages 65 regional parks and 114,000 acres of land in Contra Costa and Alameda counties. Overall, the goal of the EBRPD is “to preserve and provide access to the best remaining open lands in the East Bay through a connected system of regional parklands that preserve water resources, native plants, wildlife habitat, traces of the history of human occupation and use of this area” (EBRPD 2013a). It is governed by a publicly elected board of directors, which approved the EBRPD Master Plan 2013 in July 2013. The EBRPD Master Plan 2013 provides the mission and vision for the EBRPD, and outlines policies for resource management, natural resource management, cultural resource management, public access, interpretation and recreation services, regional facilities and areas, balanced parkland distribution, and planning for regional parks and trails, as well as key elements of the planning process, acquisition, public service, human resources, financial resources, and the annual budget.

One of the EBRPD’s policies is to classify existing and potential parklands as one of the following: 1) regional park, 2) regional preserve, 3) regional recreation area, 4) regional shoreline, or 5) regional trail. The EBRPD Master Plan 2013 recognizes the “Concord Hills Regional Park,” formerly the NWS Concord, as a potential new regional park within the district. Policies applicable to the development of regional parks include:

- A regional park must be 500 acres or more, including land and water. It must have scenic or natural resources in at least 70 percent of its area. A regional park must have the capacity to accommodate a variety of recreational activities; however, these activities, in a designation Recreation/Staging Unit, may not take place in more than 30 percent of its area.
- To protect park resource while providing for regional recreational use and access, the EBRPD will prepare plans that describe the various levels of resource protection and recreational intensity in the parks.
- Land use plans will identify future resource management strategies and recreational use for entire parks.
- All EBRPD planning documents will be developed and approved in compliance with CEQA and, when appropriate, NEPA.

3.2.4.2 Local

Contra Costa County

General Plan. The Contra Costa General Plan was adopted in 2005 to guide decisions pertaining to the future development and conservation of resources in the county through 2020. The land use element divides the county into several different land use designations to provide for the orderly development of the unincorporated areas of the county. County land use designations adjacent to the installation include the following (Contra Costa County 2010) (see Figure 3.2-2):

- Single-Family Residential, Low Density
- Single-Family Residential, High Density
- Agriculture Lands
- Landfill
- Public and Semi-Public

- Willow Pass Business Park Mixed-Use
- Open Space
- Light Industrial

In addition, the land use element identifies several goals and policies that guide development in unincorporated areas of the county. The following goals and policies are applicable to the proposed reuse of the former NWS Concord (Contra Costa County 2010):

3-E: To recognize and support existing land use densities in most communities, while encouraging higher densities in appropriate areas, such as near major transportation hubs and job centers.

3-11: Urban uses shall be expanded only within an Urban Limit Line where conflicts with the agricultural economy will be minimal.

3-12: Preservation and buffering of agricultural land should be encouraged as it is critical to maintaining a healthy and competitive agricultural economy and assuring a balance of land uses. Preservation and conservation of open space, wetlands, parks, hillsides and ridgelines should be encouraged as it is crucial to preserve the continued availability of unique habitats for wildlife and plants, to protect unique scenery, and to provide a wide range of recreational opportunities for County residents.

An integral component of the general plan and land use element is the establishment of an urban limit line to preserve agricultural land, open space, and other sensitive areas. The urban limit line is the primary policy that enforces the 65/35 Land Preservation Standard⁸. Urban land uses and development within the urban limit line are allowed and subject to the goals and policies of the general plan, whereas urban development outside of the line is prohibited. Figure 3.2-2 shows the location of the urban limit line in relation to the installation. As shown on the figure, the installation is located entirely within the urban limit line and the City of Concord.

Zoning Ordinance. The Contra Costa County zoning ordinance was adopted to guide the physical development of the unincorporated portions of the county and to protect the public health, safety, and welfare. The zoning ordinance establishes zoning districts wherein land uses are regulated to provide for the orderly development of the county. Each zone establishes density and permitted, conditionally permitted, and prohibited uses, and regulates the building height and footprint of allowed structures. The installation is located adjacent to the following zones in Contra Costa County (Contra Costa County n.d.[a]):

- A-2 (General Agricultural District)
- A-3 (Heavy Agricultural District)
- A-4 (Agricultural Preserve District)
- L-1 (Light Industrial District)
- R-6 (Single-family Residential District, 6,000 square feet per du)
- R-10 (Single-family Residential District, 10,000 square feet per du)

⁸ The 65/35 Land Preservation Standard maintains that 65 percent of the county shall be preserved as open space, agriculture, or other non-urban land uses, and 35 percent shall be limited to urban development within and beyond the urban limit line (Contra Costa County 2010).

- R-15 (Single-family Residential District, 15,000 square feet per du)
- R-20 (Single-family Residential District, 20,000 square feet per du)
- R-40 (Single-family Residential District, 40,000 square feet per du)
- P-1 (Planned Unit District)
- H-1 (Heavy Industrial District)

City of Concord

General Plan. The Concord 2030 General Plan was adopted by the City of Concord in 2010 to be the city’s long-range vision for maintaining the quality of life and promoting economic development through the year 2030. The land use element is an integral component of the general plan and the primary component that guides future development. The land use element divides the city into several land use designations to guide future development within the city. In 2012, the general plan was amended to incorporate changes reflecting the city’s increased growth potential attributable to the Navy’s disposal of the former NWS Concord. The general plan was amended to incorporate the Area Plan and to reflect its inclusion in all citywide elements. Land use designations identified for the former NWS Concord in the Area Plan are summarized in the Concord 2030 General Plan as shown in Table 3.2-1.

Table 3.2-1 Former NWS Concord Development Districts

Category (General Plan Citywide Land Use Map)	Development District (Area Plan District)
Transit-Oriented Development (TOD)	North Concord TOD Core
	North Concord TOD Neighborhood
Neighborhoods	Central Neighborhood
	Village Center
	Village Neighborhood
Civic and Institutional	Campus
	First Responder Training Center
Commercial	Commercial Flex
Conservation, Open Space, and Recreation Lands	Conservation Open Space
	Greenways, Citywide Parks, and Tournament Facilities
Primary Circulation Network	Through Streets
	Collector Streets

Source: City of Concord 2012

Land use designations, as identified in the Concord 2030 General Plan, adjacent to the installation include the following (City of Concord 2012) (see Figure 3.2-2):

- Rural Residential
- Low-Density Residential
- Medium-Density Residential
- Commercial Mixed-Use
- Public/Quasi-Public
- Parks and Recreation

- Business Park
- Transportation
- Military
- Open Space
- Wetlands/Resource Conservation
- West Concord Mixed-Use

In addition, the land use element identifies several principles and policies that guide development in the city. The following principles and policies for citywide development are applicable to the reuse of the former NWS Concord (City of Concord 2012):

Principles:

Principle LU-1.3: Encourage Infill Residential Development.

Principle LU-11.1: Protect Ridgelines and Visible Hillsides.

Policies:

Policy LU-1.1.9: Preserve visible hillsides and open space areas through techniques such as cluster development or density transfers.

Policy LU-1.2.4: Encourage neighborhood retail and service uses within convenient walking distance of all residential neighborhoods, where feasible.

Policy LU-1.3.1: Encourage a variety of housing types on infill development sites.

Policy LU-5.1.3: Provide sites for professional, administrative, and headquarters office space in Central Concord and other TOD locations.

Policy LU-11.1.10: Recognize the Los Medanos Hills between Concord and Pittsburg/Bay Point as an essential part of the City’s character and open space “frame”, and take steps to preserve this area as permanent open space.

Policy POS-2.1.4: Incorporate portions of the Concord Reuse Project site into the regional open space network, and provide trail and greenway connections between this area and developed Concord neighborhoods.

Policy POS-2.2.3: Strive to preserve open space in northeast Concord in order to maintain the visual profile of the Los Medanos Hills.

The following principles and policies are specific to the reuse of the former NWS Concord (City of Concord 2012):

Principles:

Principle LU-8.1: Achieve a complete and diverse community that provides well-connected neighborhoods and districts with high-quality urban design and convenient access to open space, daily necessities, and regional transit.

Principle LU-8.2: Provide for a balance between development and open space on the CRP [Concord Reuse Project] site.

Policies:

Policy LU-8.1.1: Provide diverse housing choices on the CRP site, including ownership and rental housing, a variety of unit types and densities, and a mix of price levels. Multiple housing types (including ownership and rental housing) should be located on individual or adjacent blocks where possible, helping to fulfill the vision of a mixed-income community serving many different household types.

Policy LU-8.1.2: Create multiple distinct neighborhoods within the CRP site, organized around village centers or transit-oriented development areas with neighborhood services, open spaces, and community facilities.

Policy LU-8.1.3: On the portions of the CRP site that adjoin existing Concord neighborhoods, design open spaces and new buildings to be compatible in scale with adjacent established uses.

Policy LU-8.1.4: Provide a variety of workplaces and shopping areas on the CRP site, designed for easy access by transit, pedestrians, and bicycles.

Policy LU-8.1.6: Design built features and the circulation system to respond to the CRP site's natural form. Where slopes of 30% or greater occur within planned development areas on the CRP site, they should generally be set aside as open space.

Policy LU-8.1.7: Follow community design principles which reduce greenhouse gas emissions and support environmental sustainability. These principles include an emphasis on pedestrian and bicycle travel, easy access to transit from all new development, mixing of land uses to reduce trip generation, higher densities near the BART station, and the creation of attractive streetscapes which make walking or bicycling comfortable and safe.

Policy LU-8.1.8: Maximize views from public rights of way and public spaces on the CRP site to natural features, including but not limited to Mount Diablo, the California Delta, and the Los Medanos Hills, provided the resulting design is consistent with the climate action program.

Policy LU-8.1.9: Provide street and open space connections between the CRP site and established Concord neighborhoods at appropriate locations to improve accessibility and create a more cohesive and connected city.

Policy LU-8.2.1: Designate the most environmentally sensitive portions of the CRP site, including the Los Medanos Hills and the Mt. Diablo Creek corridor, as permanent open space.

Policy LU-8.2.2: Incorporate a network of greenways within the CRP site that help define neighborhood edges, connect residents to services and workplaces, and provide access to recreational features and open space.

Policy LU-8.2.3: Develop new community and neighborhood parks within proposed CRP development areas which complement and expand the citywide park system.

Policy LU-8.2.4: Include small-scale open spaces such as pocket parks and plazas in the CRP site's community gathering places, such as Village Centers and the transit-oriented district around the BART station.

Similar to Contra Costa County, the City of Concord established an urban limit line in the general plan that is largely coterminous with the city boundary (see Figure 3.2-2). The urban limit line is intended to concentrate future growth where existing and future city services are available. The urban limit line

emphasizes infill and mixed-use development (City of Concord 2012). The former NWS Concord is located entirely within the urban limit line.

Development Code. The Concord City Development Code was revised and adopted in 2012 to be consistent with the 2030 General Plan. The development code classifies and regulates land uses and building dimensions in the city and promotes the public health, safety, and welfare. The development code implements the goals and policies of the general plan by guiding the physical development of the city through the use of zoning districts. Each zoning district establishes building density and permitted, conditionally permitted, and prohibited uses, and regulates the building height and footprint of allowed structures. The former NWS Concord is zoned Study Area (S), which is an interim zoning district for the installation. Detailed development standards for the former NWS Concord will be developed prior to adoption of a specific plan or regulatory document that conforms to the general plan. The installation is located adjacent to the following zones in the City of Concord (City of Concord 2012):

- PD (Planned District)
- PQP (Public/Quasi-Public)
- CMX (Commercial Mixed-Use)
- RS6 (Residential Single-Family, Low Density [2.5-10 du/net acre])
- RS7 (Residential Single-Family, Low Density [2.5-10 du/net acre])
- RS12 (Residential Single-Family, Low Density [2.5-10 du/net acre])
- RR15 (Rural Residential [<2.5 du/net acre])
- RR20 (Rural Residential [< 2.5 du/net acre])
- RR40 (Rural Residential [< 2.5 du/net acre])
- RM (Residential Medium Density)
- PR (Parks and Recreation)
- OBP (Office Business Park)
- Transportation
- Transit Station Overlay District

City of Pittsburg

General Plan. Pittsburg 2020: A Vision for the 21st Century was adopted in 2001 as the city's general plan to respond to growth and planning challenges. The general plan provides the long-range vision of the physical and economic development of the city and the conservation of hillsides and sensitive resources. Similar to Contra Costa County and the City of Concord, the land use element of the general plan divides the city into various land use designations to guide future development of the city. The following land use designations are located adjacent to NWS Concord (City of Pittsburg 2001) (see Figure 3.2-2):

- Hillside Low-Density Residential
- Low-Density Residential
- Open Space
- Park

- Public/Institutional

The former NWS Concord is located adjacent to the Southwest Hills planning area in the City of Pittsburg. The following land use goals and policies are applicable to the proposed reuse of the former NWS Concord (City of Pittsburg 2001):

2-G-33: Maintain the general character of the hill forms

2-G-34: Encourage development of higher-end, low-density residential neighborhoods.

2-P-95: Development in the Concord Naval Weapons Station Restricted Federal Easement⁹ area may be allowed when that Easement is abandoned.

Zoning Ordinance. The Zoning Ordinance of the City of Pittsburg was adopted to guide the physical development of the city, ensure compatibility between adjacent land uses, and protect the public health, safety, and welfare. The zoning ordinance divides the city into zoning districts in which land uses are regulated to provide for the orderly development of the city. Each zone establishes building density and permitted, conditionally permitted, and prohibited uses, and regulates the building height and footprint of allowed structures. The installation is located adjacent to the following zones in the City of Pittsburg (City of Pittsburg n.d.):

- RS-6 (Single-family residential district, 6,000-square-foot minimum lot size)
- OS-0 (Open space with a limited overlay district)
- HPD (Hillside Planned District)

3.3 Socioeconomics and Environmental Justice

This section provides an overview of the terms used to describe the socioeconomic environment in the communities surrounding the former NWS Concord and provides a discussion of the executive orders that pertain to environmental justice issues and environmental health and safety risks to children associated with a federal action. In addition, existing socioeconomic conditions in the City of Concord and Contra Costa County, California, which are defined as the area of impact for the disposal and reuse of the former NWS Concord, are described in this section.

Discussions of the San Francisco-Oakland-Fremont Metropolitan Statistical Area (the MSA) are also included below for comparison. An MSA is defined by the federal Office of Management and Budget as a metropolitan area with a core urban area of 50,000 or more population, consisting of one or more counties as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core. The San Francisco-Oakland-Fremont MSA includes Alameda, Contra Costa, Marin, San Francisco, and San Mateo counties in California.

Socioeconomics is defined as the demographic and economic characteristics of a specific geographic area such as a town, city, county, or state. Factors evaluated in the assessment of socioeconomics in this EIS include population; economy, employment, and income; housing and commercial property; and taxes and revenue, as described below.

⁹ The phrase “Restricted Federal Easement” is used in the City of Pittsburg General Plan (City of Pittsburg 2001) to refer to an area surrounding weapons bunkers with the potential for critical damage, where development is prohibited due to the incompatibility of development near weapon storage facilities.

- **Population.** Population is defined as the number of persons residing within a geographic area defined by the U.S. Census Bureau and canvassed in the *2010 Census of Population and Housing* or in the *2007-2011 American Community Survey*.
- **Economy, employment, and income.** Employment by industry sector is described using data from the U.S. Census Bureau, annual labor force and unemployment statistics are described using data from the U.S. Bureau of Labor Statistics, and median household and per capita income are described using data from the U.S. Census Bureau.

Employment by industry sector refers to the way employment is distributed across companies producing similar products or providing similar services. *Labor force* is defined as the number of persons currently employed or actively searching for work within an area. *Median household income* is the midpoint of a range of household incomes. Half of the households in the range earn less than the median household income, and half of the households earn more. *Per capita income* is a measure of the total income from all income sources for all residents divided by the total number of residents in an area.

- **Housing property.** The number and characteristics of housing units within a defined geographic area as recorded by the U.S. Census Bureau in the *2010 Census of Population and Housing* and the *2007-2011 American Community Survey* are described.
- **Commercial property.** The characteristics of commercial space for rent or purchase as recorded by the local municipality, chamber of commerce, or economic development organization.
- **Taxes and revenue.** Property taxes and other revenue sources for the municipalities are also addressed in this analysis.

Other than several small, ongoing leases (such as leases for grazing) that do not generate more than a minimal amount of revenue, no economic activity takes place at the former NWS Concord. Housing previously located on the former NWS Concord and maintained by the Navy was transferred to the U.S. Coast Guard; no military or other personnel currently live on the installation.

3.3.1 Regulatory Framework

No specific federal statutes provide protection for or guide the assessment of impacts on socioeconomic conditions of a defined area with implementation of the proposed action. However, two executive orders do address issues related to environmental justice and the protection of children, which are closely aligned with socioeconomics. The U.S. Environmental Protection Agency (EPA) specifically defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, sex, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies” (EPA 2013d).

3.3.1.1 Executive Order 12898

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was signed by the president on February 11, 1994. This EO requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental impacts of its programs, policies, and activities on minority and low-income populations, including Native American populations. The EPA and CEQ emphasize the importance of incorporating environmental justice review in the analyses conducted by federal agencies under NEPA and of developing protective measures that avoid disproportionate impacts on minority and low-income populations.

The CEQ has issued guidance to federal agencies on the terms used in EO 12898, as follows:

- **Low-income Population.** Low-income populations in an affected area are those with incomes under the poverty threshold and are identified using the annual statistical poverty thresholds from the U.S. Census Bureau.
- **Minority.** A minority individual is one who is a member of one or more of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.
- **Minority Population.** Minority populations are identified where either (a) the minority population of the study area exceeds 50 percent, or (b) the minority population percentage of the study area is meaningfully greater than the minority population percentage in the general population or another appropriate unit of geographic analysis.
- **Disproportionately High and Adverse Environmental Effects.** When determining whether environmental effects are disproportionately high and adverse, agencies consider the following three factors to the extent practicable:
 1. Whether there is or will be an impact on the natural or physical environment that significantly (as employed by NEPA) and adversely affects a minority population, low-income population, or Native American tribe. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Native American tribes when those impacts are interrelated to impacts on the natural or physical environment.
 2. Whether environmental effects are significant (as employed by NEPA) and are having or would have adverse impacts on minority populations, low-income populations, or Native American tribes that appreciably exceed or are likely to appreciably exceed those on the general population or other appropriate comparison group.
 3. Whether the environmental effects occur or would occur in a minority population, low-income population, or Native American tribe affected by cumulative or multiple adverse exposures from environmental hazards (CEQ 1997a, b).

3.3.1.2 Executive Order 13045

The president issued EO 13045, Environmental Health Risks and Safety Risks to Children, on April 21, 1997. This order requires each federal agency to “make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and . . . ensure that its policies, programs, activities, and standards address disproportionate risks to children.” This order was issued because a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks.

3.3.2 Economy, Employment, and Income

In 2011, 30 of the companies on the U.S. Fortune 500 List had offices located within the San Francisco Bay Area. According to the Bay Area Council Economic Institute, industry in the region is heavily concentrated in sectors that require either a highly skilled labor force or sectors that are related to tourism. One of the region’s largest employment sectors is the professional, scientific, and technical services (PSTS) industry and the information industry, which attract highly educated workers. Specifically, employment in professional, scientific, and technical services and information is led by computer systems design and related services and scientific research and development. In general, businesses requiring skilled employees benefit from the Bay Area’s highly educated labor force. Many also benefit from the

region's high concentration of research universities, private and federal laboratories, and investment capital (Bay Area Council Economic Institute 2012).

Other important employment sectors in the Bay Area are related to the tourism industry and include arts, entertainment, and recreation and accommodation and food services. Manufacturing in the Bay Area is heavily focused on advanced equipment design and development, such as that required for semiconductor-based electronic technology (Bay Area Council Economic Institute 2012).

According to data from the *2007-2011 American Community Survey*, the largest industry sector in the MSA was the educational services, health care, and social assistance industry during this time period. The second-largest industry was the professional, scientific, management, administrative, and waste-management services industry (see Table 3.3-1). It should be noted that the data presented on Table 3.3-1 were collected by the U.S. Census Bureau and, therefore, utilize the Census Bureau's industry categories and definitions. In contrast, the study by the Bay Area Council Economic Institute (2012) cited above relies on data from the U.S. Bureau of Labor Statistics, which uses its own industry categories and definitions. These data sources are not directly comparable. However, both data sets show the importance of academic and highly technical, highly skilled industries to the regional economy.

As shown on Table 3.3-1, employment by industry sector in the City of Concord and Contra Costa County is similar to that in the MSA. The educational services, health care, and social assistance sector employed the largest number of workers in these areas in 2011. About 20 percent of all employed civilian workers in these communities worked in this industry sector (see Table 3.3-1). Professional, scientific, management, administrative, and waste-management services were the second-largest industry sector in these areas as well, followed by retail trade (see Table 3.3-1).

In Contra Costa County and the City of Concord, the finance, insurance, real estate, rental, and leasing industry sector accounts for approximately 10 percent of the employed civilian workforce. About 8 percent of the employed in the City of Concord, and 7 percent of the employed in Contra Costa County, worked in construction in 2011. These industry sectors include a larger percentage of the workforce in Contra Costa County and the City of Concord than in the MSA as a whole (see Table 3.3-1).

Table 3.3-1 Civilian Employment by Industry Sector (2011)

	City of Concord		Contra Costa County		MSA	
	Employees	% of Total	Employees	% of Total	Employees	% of Total
Agriculture, forestry, fishing and hunting, and mining	247	0.4	2,669	0.6	9,374	0.4
Construction	5,130	8.4	35,919	7.4	125,346	5.9
Manufacturing	3,925	6.4	34,917	7.2	176,710	8.3
Wholesale trade	1,655	2.7	13,296	2.7	58,485	2.7
Retail trade	7,704	12.6	53,806	11.1	216,002	10.1
Transportation and warehousing, and utilities	2,967	4.9	25,187	5.2	104,287	4.9
Information	1,460	2.4	14,749	3.0	75,269	3.5
Finance and insurance, and real estate and rental and leasing	6,162	10.1	48,139	10.0	179,182	8.4

Table 3.3-1 Civilian Employment by Industry Sector (2011)

	City of Concord		Contra Costa County		MSA	
	Employees	% of Total	Employees	% of Total	Employees	% of Total
Professional, scientific, and management, and administrative and waste-management services	8,708	14.3	70,367	14.6	356,173	16.7
Educational services, and health care and social assistance	11,127	18.3	102,391	21.2	452,979	21.2
Arts, entertainment, and recreation, and accommodation and food services	6,212	10.2	36,815	7.6	191,734	9.0
Other services, except public administration	3,681	6.0	24,422	5.1	110,239	5.2
Public administration	1,956	3.2	20,910	4.3	80,806	3.8

Source: U.S. Census Bureau 2011a.

Tables 3.3-2 and 3.3-3 list the top 10 largest employers in Contra Costa County and the City of Concord, respectively. In 2010, the largest employer in Contra Costa County was AT&T Corporation, employing 8,570 persons, or 1.6 percent of the labor force in the county. In the City of Concord, the largest employer in 2012 was the Mt. Diablo Unified School District, employing 6 percent of the city's workforce.

Table 3.3-2 Top Ten Largest Employers, Contra Costa County, California (2010)

Company Name	Description	Total Employment (2010)
AT&T Corporation	Telecommunications resellers	8,570
Summerville Management LLC	Nursing care facilities	4,000
Pacpizza LLC	Limited-service restaurants	3,620
AT&T Services, Inc.	Telecommunications resellers	3,500
John Muir Health	General medical and surgical hospitals	3,100
Safeway, Inc.	Supermarkets and other grocery stores	2,529
West Contra Costa Unified Schools	Elementary and secondary schools	2,452
Convenience Retailers LLC	Convenience stores	2,000
Kaiser Foundation Hospitals	General medical and surgical hospitals	2,000
Diablo Valley College Foundation	Educational fundraising foundation	2,000

Source: East Bay Economic Development Alliance 2010.

Table 3.3-3 Top Ten Largest Employers, City of Concord, California (2012)

Company Name	Description	Total Employment (2012)
Mt. Diablo Unified School District	Elementary, secondary, and adult education schools	4,320
Wells Fargo Credit Center	Banking and financial (loans and credit) services	1,500
Chevron Corporation	Multinational energy corporation	1,500
PG&E	Investor-owned electricity and natural gas utility	1,450

Table 3.3-3 Top Ten Largest Employers, City of Concord, California (2012)

Company Name	Description	Total Employment (2012)
Bank of America Technology Center	Banking and financial (information technology) services	1,300
John Muir Medical Center	Healthcare services (hospital and regional trauma center)	1,100
Conco Cement	Construction contractor	549
Safeway, Inc.	Supermarket chain stores	460
Adecco Employment Services	Staffing and recruiting agency	400
Macy's Concord	Department chain store	400

Source: City of Concord, Finance Department, 2012.

The City of Concord experienced higher unemployment rates between 2010 and 2012 than Contra Costa County and the MSA as a whole during the same time period. However, the city, county, and MSA all experienced unemployment rates that were less than the statewide rates of 12.4 percent in 2010; 11.8 percent in 2011; and 10.4 percent in 2012 (U.S. Bureau of Labor Statistics 2014). During this period, the highest unemployment in the region occurred in 2010. As shown in Table 3.3-4, the average unemployment rates in the City of Concord decreased from 12.0 percent in 2010 to 9.7 percent in 2012. During the same time period, unemployment decreased in Contra Costa County from 11.1 percent in 2010 to 9.0 percent in 2012. The MSA as a whole had lower unemployment rates than both the county and the city during this same time period and also experienced a decrease in unemployment. While unemployment percentages decreased from 2010 to 2012, the total labor force increased in all the municipalities during the same time period (see Table 3.3-4).

Table 3.3-4 Regional and Local Annual Average Labor Force and Unemployment Rates (2010 to 2012)

	2010		2011		2012	
	Labor Force	Unemployment Rate	Labor Force	Unemployment Rate	Labor Force	Unemployment Rate
MSA	2,251,286	10.3	2,279,641	9.4	2,323,877	8.1
Contra Costa County	523,805	11.1	528,909	10.1	535,782	9.0
City of Concord	70,026	12.0	70,661	11.2	71,490	9.7

Source: U.S. Bureau of Labor Statistics 2013

In 2011, per capita income in the City of Concord was \$31,338 and \$38,141 in Contra Costa County. In comparison, the MSA's per capita income was \$40,786. In contrast, the median household income in Contra Costa County was higher than the median household income for the MSA and the City of Concord. Per capita income in the city and county between 1999 and 2011 has grown at a rate faster than the statewide total of 30.5 percent. In 2011, the median household income was estimated to be \$79,135 in Contra Costa County, \$76,911 in the MSA, and \$65,769 in the City of Concord. Median household income in Contra Costa County grew by 24.3 percent between 1999 and 2011, exceeding the statewide growth of 22.9 percent. In contrast, median household income grew by 18.3 percent in the City of Concord during this time period (see Table 3.3-5).

Table 3.3-5 Regional and Local Per Capita and Median Household Income (1999 and 2011)

	1999 ¹		2011		Percent Change From 1999 to 2011	
	Per Capita Income	Median Household Income	Per Capita Income	Median Household Income	Per Capita Income	Median Household Income
MSA	NA	NA	\$40,786	\$76,911	NA	NA
Contra Costa County	\$30,615	\$63,675	\$38,141	\$79,135	24.6	24.3
City of Concord	\$24,727	\$55,597	\$31,338	\$65,769	26.7	18.4

Source: U.S. Census Bureau 1999, 2011a.

Note:

¹ In 1999, the San Francisco-Oakland-Fremont MSA had not yet been identified.

3.3.3 Population

Total populations in Contra Costa County and the City of Concord have been increasing for the past two decades, with a greater increase between 1990 and 2000 than between 2000 and 2010. Table 3.3-6 shows total population levels from 1990 to 2010 for Contra Costa County and the City of Concord. The San Francisco-Oakland-Fremont MSA was not defined until the 2010 census; therefore, no historical data exist for the MSA. In 2010, the City of Concord, with 122,067 residents, comprised 11.6 percent of Contra Costa County's population (see Table 3.3-6).

Table 3.3-6 Regional and Local Total Population (1990 to 2010)

	1990 ¹	2000 ¹	2010	Percent Change	Percent Change
				1990 to 2000	2000 to 2010
MSA	NA	NA	4,335,391	NA	NA
Contra Costa County	803,732	948,816	1,049,025	18.1	10.6
City of Concord	111,348	121,780	122,067	9.4	0.2

Source: U.S. Census Bureau 1990a, 1990b, 2000, 2010a.

Note:

¹ In 1990 and 2000, the San Francisco-Oakland-Fremont MSA had not yet been identified.

Total population in the city, county and region as a whole is expected to continue to grow. According to population projections made by the Association of Bay Area Governments, the total population of City of Concord is expected to grow to 153,000 persons; the total population of Contra Costa County is expected to grow to 1,322,900 persons; and the total population of the MSA is expected to grow to 5,425,500 persons by 2035 (see Table 3.3-7). The Association of Bay Area Governments developed these projections based on assumptions concerning fertility and births, mortality rates, migration rates, job creation, and future development projects. For projections for the City of Concord and Contra Costa County the reuse of NWS Concord was included as a possible future project. However, it should be noted that at the time of analysis the Area Plan had not yet been finalized (ABAG n.d.).

Table 3.3-7 Regional and Local Population Forecast (2010 to 2035)

Jurisdiction	2010 Actual	2015 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	Percent Change (2010 to 2035)
City of Concord	122,067	131,800	135,700	141,500	147,100	153,000	25.3
Contra Costa County	1,049,025	1,130,700	1,177,400	1,225,500	1,273,700	1,322,900	26.1
MSA	4,335,391	4,621,500	4,815,700	5,013,000	5,216,800	5,425,500	23.6

Source: U.S. Census Bureau 2010a; ABAG n.d.

3.3.4 Housing and Commercial Property

According to the 2007-2011 American Community Survey (U.S. Census Bureau 2011b), there were 1,736,110 housing units in the MSA, 398,915 housing units in Contra Costa County, and 48,012 housing units in the City of Concord in 2011. Table 3.3-8 shows the total number of housing units by type of structure. Of the housing units in Contra Costa County, 66.6 percent were classified as single-family detached units, 7.9 percent were considered single-family attached units, 1.8 percent were mobile homes, and the remaining 23.7 percent were considered multi-family units (e.g., housing units with two or more attached units). The City of Concord accounts for 12.0 percent of the housing stock in Contra Costa County. In the City of Concord, 31.7 percent of the housing stock is multi-unit. In comparison, 39.4 percent of the housing units in the MSA as a whole are multi-unit (see Table 3.3-8).

In 2011, approximately 31.7 percent and 36.8 percent of the occupied housing units in Contra Costa County and the City of Concord, respectively, were rented accommodations. For comparison, 44.5 percent of the occupied units in the MSA as a whole were renter-occupied in 2011 (see Table 3.3-9).

Table 3.3-8 Total Housing Stock by Type of Structure (2011)

	MSA	Percent of Total	Contra Costa County	Percent of Total	City of Concord	Percent of Total
Single family, detached	862,215	49.7	265,608	66.6	27,991	58.3
Attached, 1 unit	168,003	9.7	31,378	7.9	3,107	6.5
Attached, 2 units	80,323	4.6	7,736	1.9	567	1.2
Attached, 3 to 9 units	235,125	13.5	39,816	10.0	6,200	12.9
Attached, 10 or more units	369,257	21.3	47,041	11.8	8,456	17.6
Mobile homes and others	21,187	1.2	7,336	1.8	1,691	3.5
Total Number of Housing Units	1,736,110		398,915		48,012	

Source: U.S. Census Bureau 2011b.

Table 3.3-9 Regional and Local Housing Vacancy Rates, Median Value, and Median Contract Rent (2011)

	Owner-Occupied Units			Renter-Occupied Units		
	Total Occupied Units (%)	Vacancy Rate (%)	Median Value	Total Occupied Units (%)	Vacancy Rate (%)	Median Contract Rent
MSA	55.5	1.9	\$627,000	44.5	4.9	\$1,344
Contra Costa County	68.3	2.7	\$490,200	31.7	5.9	\$1,309
City of Concord	63.2	1.9	\$418,500	36.8	5.7	\$1,208

In 2011, the demand for owner-occupied homes was strong throughout the region. The MSA, county, and city all experienced low homeowner vacancy rates, with the City of Concord and the MSA both experiencing homeowner vacancy rates of less than 2 percent, as shown in Table 3.3-9. Contra Costa County had a homeowner vacancy rate of 2.7 percent in 2011. Rental vacancy rates were higher in Contra Costa County and the City of Concord than in the MSA as a whole. In 2011, the City of Concord had a 5.7-percent rental vacancy rate, while Contra Costa County had a rate of 5.9 percent and the MSA had a rate of 4.9 percent (see Table 3.3-9).

In 2011, the median value of owner-occupied units was higher in the MSA than in the county or city, and the lowest median value of owner-occupied housing was found in the City of Concord. The median value of owner-occupied units in the MSA was \$627,000, while the median value of owner-occupied housing

units was \$490,200 in Contra Costa County and \$418,500 in the City of Concord. Likewise, median contract rent was highest in the MSA, at \$1,344, while median contract rent was \$1,309 in Contra Costa County and \$1,208 in the City of Concord (see Table 3.3-9).

Existing available office, industrial, and retail space in the City of Concord is reported by the City of Concord Economic Development Department and is summarized in Table 3.3-10. As of July 11, 2013, 1,251,513 square feet of office space; 861,831 square feet of industrial space; and 176,748 square feet of retail space were available for lease or purchase in the City of Concord. Based on the total inventory of office space reported in the City of Concord Area Plan, 1,251,513 square feet of office space represents approximately 29 percent of the total office space inventory in the City of Concord. Similarly, 861,831 square feet of industrial space represents approximately 15 percent of the total industrial space inventory in the City of Concord. The total inventory of retail space was not reported in the Area Plan.

Table 3.3-10 Available Office, Industrial, and Retail Space in the City of Concord (2013)¹

Area	Type of Space (in square feet) ¹		
	Office	Industrial	Retail
City of Concord	1,251,513	861,831	176,748

Source: City of Concord Economic Development Department 2013

Note:

¹ The square footage totals listed in the table are sums of available properties for lease or for sale as of July 11, 2013.

3.3.5 Taxes and Revenue

Taxes provide a large source of revenue for Contra Costa County and the City of Concord. Table 3.3-11 shows general expenditures and revenues for the City of Concord and Contra Costa County for the Fiscal Year (FY) ending June 30, 2012. In Contra Costa County, 27 percent of total revenue in 2012 was collected through taxes, while 76 percent of the City of Concord's revenue was collected through taxes. The largest revenue source for Contra Costa County was intergovernmental revenue (i.e. revenues transferred from other local, state, and federal entities). Public safety, protection, and assistance was the largest expenditure in 2012 for both the City of Concord and Contra Costa County, and accounted for 63.1 percent and 44.1 percent of the total expenditures for the county and city, respectively (see Table 3.3-11).

Table 3.3-11 Revenues and Expenditures for Contra Costa County and the City of Concord (FY Ending June 30, 2012)

	Contra Costa County (in thousands)	City of Concord (in thousands)
Revenue		
Taxes	\$ 443,281	\$ 74,875
Licenses, permits, and franchise fees	\$ 21,662	\$ 1,365
Fines, forfeitures, and penalties	\$ 21,754	\$923
Intergovernmental	\$ 664,600	\$11,135
Charges for service	\$ 253,648	\$ 4,866
Other sources of revenue ¹	\$ 233,714	\$ 5,229
Total Revenue	\$ 1,638,569	\$ 98,393
Expenditures		
General government	\$ 135,497	\$ 12,408
Public safety, protection, and assistance	\$ 1,022,009	\$ 42,205
Public works ²	\$ 304,147	\$ 9,942
Education	\$ 22,692	N/A

Table 3.3-11 Revenues and Expenditures for Contra Costa County and the City of Concord (FY Ending June 30, 2012)

	Contra Costa County (in thousands)	City of Concord (in thousands)
Capital outlay	N/A	\$ 11,755
Debt service	\$ 133,603	\$ 9,303
Other expenditures ³	\$ 1,121	\$ 10,008
Total Expenditures	\$ 1,619,069	\$ 95,624

Source: Contra Costa County 2012a and City of Concord Finance Department 2012.

Notes:

- ¹ For the City of Concord, other sources of revenue include parks and recreation, special assessment collection, use of money and property, and other. For Contra Costa County, other sources of revenue include other revenue.
- ² For the City of Concord, public works includes public works and building, engineering, and neighborhood service. For Contra Costa County, public works includes health and sanitation and public ways and facilities
- ³ For the City of Concord, other expenditures include community and economic development, parks and recreation, and non-departmental expenditures. For Contra Costa County, other expenditures include recreation and culture.

Table 3.3-12 shows the breakdown of tax revenue for Contra Costa County and the City of Concord. In Contra Costa County, 94.4 percent of tax revenue was collected from property taxes; in the City of Concord, 41.9 percent of tax revenue was collected from property taxes (see Table 3.3-12).

Table 3.3-12 Tax Revenue by Type for Contra Costa County and the City of Concord (FY Ending June 30, 2012).

	Contra Costa County (in thousands)	City of Concord (in thousands)
Total Tax Revenue	\$ 443,281	\$ 74,875
Property Tax	\$ 418,472	\$ 31,385
Sales and Use Tax	\$ 10,282	\$ 33,855
Other Taxes	\$ 14,527	\$ 9,635

Source: Contra Costa County 2012a and City of Concord Finance Department 2012.

In 1978, California voters passed Proposition 13, which decreased property taxes by assessing property at its 1975 value until that property is sold and restricting the maximum amount of tax on real property to 1 percent or less of the full assessed value of such property. The 1-percent tax is shared by all taxing agencies that the property is located within (i.e., the City of Concord and Contra Costa County). In addition to the 1-percent fixed amount, property owners can be charged taxes as a percentage of assessed property values for the payment of other voter-approved bonds from various agencies. Voters in the City of Concord have approved bonds for the BART District, East Bay Regional Park District, and Mt. Diablo Unified School District and Community College (City of Concord Finance Department 2012).

The California State Constitution requires that all property be assessed at full-market value, defined as 100 percent of the most recent purchase price, plus an annual incremental increase of no more than 2 percent per year from the time of the last sale as well as any local over-rides. In 2012, the estimated full market value of all properties within the City of Concord was \$12,492,649,957 (City of Concord Finance Department 2012).

In Contra Costa County, 2.3 percent of all tax revenues were collected as sales and use tax, whereas sales and use tax comprised 45.2 percent of total tax revenue collected in the City of Concord (see Table 3.3-12). In 2013, the sales and use tax rate in Contra Costa County was 8.5 percent. Any purchases made within the City of Concord included an additional 0.5-percent sales and use tax (State of California, Board of Equalization 2013).

3.3.6 Environmental Justice and Protection of Children

Table 3.3-13 presents demographic and economic data that characterize the communities in which the potential for disproportionately high and adverse human health or environmental effects will be assessed in accordance with EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. In addition, in conformance with EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, information on the percentage of children in these communities is presented on the table.

As shown in the table, minorities accounted for 48.3 percent of the MSA's total population in 2010, while Hispanics or Latinos accounted for 37.6 percent of the MSA's total population. Minorities accounted for 41.4 percent of the total population in Contra Costa County and 35.5 percent of the total population in the City of Concord. Contra Costa County and the City of Concord have lower percentages of Hispanics or Latinos than the MSA overall; however, the proportion of Hispanic or Latino residents in the county and city is 21.7 percent and 24.4 percent, respectively. In 2011, approximately 9.9 percent of the total population in Contra Costa County had income levels that placed them below the poverty level, and an estimated 10.4 percent of the residents in the MSA and 11.2 percent of the residents in the City of Concord had incomes that placed them below the poverty level (see Table 3.3-13).

Table 3.3-13 Environmental Justice Population Characteristics

	Total Population	Percent Minority	Percent Hispanic or Latino	Percent Children	Percent below Poverty
MSA	4,335,391	48.3	37.6	21.2	10.4
Contra Costa County	1,049,025	41.4	21.7	24.8	9.9
City of Concord	122,067	35.5	24.4	22.9	11.2

Source: U.S. Census Bureau 2010a, 2010b, 2010c, 2010d, 2011c.

Note: The categories "Total Population," "Percent Minority," "Percent Hispanic," and "Percent Children" are all based on 2010 data from the *2010 Census of Population and Housing*; the category "Percent below Poverty" is based on 2011 data from the *2007-2011 American Community Survey*.

3.4 Air Quality and Greenhouse Gases

This section describes the existing conditions and regulatory framework associated with air quality and GHG emissions for the proposed action and alternatives.

The proposed action is located in the City of Concord, Contra Costa County, California. The following counties (or parts of counties) that surround the San Francisco Bay form the San Francisco Bay Area Air Basin (SFBAAB): Alameda County, Contra Costa County, Marin County, Napa County, San Francisco County, San Mateo County, Santa Clara County, the southern portion of Sonoma County, and the southwestern portion of Solano County. In general, the parts of the SFBAAB share common geographical features, weather patterns, and air pollution burdens. Air quality in the basin is determined by such natural factors as topography, meteorology, and climate, and by air pollution sources.

Air quality in the SFBAAB is regulated at the federal level by the EPA, at the state level by the California Air Resources Board (CARB), and at the local level by the Bay Area Air Quality Management District (BAAQMD). Each of these agencies develops rules, regulations, and policies for regulating air quality in accordance with applicable legislation. The BAAQMD also has issued guidelines to address and mitigate GHG emissions.

3.4.1 Climate, Topography, and Air Pollution Potential

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distorts normal wind flow patterns. The climate is dominated by the strength and location of a semi-permanent, subtropical high pressure cell. During the summer, the Pacific high pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of this northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. During most of the year, weak inversions coupled with moderate winds result in a low air pollution potential (BAAQMD 2012).

The City of Concord is located in the Diablo Valley, which has a northwest-to-southeast orientation. The mountains on the west side of this valley block much of the marine air from reaching the valley. During the daytime, two predominant flow patterns are present: an up-valley flow from the north and a westerly flow (wind from the west) across the lower elevations of the Coast Range. On clear nights, surface inversions separate the flow of air into two layers: the surface flow and the upper layer flow. When this happens, drainage surface winds often flow down valley toward the Carquinez Strait. Wind speeds in the valleys generally are low. Winds can increase in the afternoon near San Ramon because it is located at the eastern edge of the Crow Canyon gap. Through this gap, polluted air from cities near San Francisco Bay travels to the valley in the summer months (BAAQMD 2012).

Air temperatures in the Diablo Valley are cooler in the winter and warmer in the summer than are temperatures further west, as this valley is far from the moderating effect of San Francisco Bay and the ocean. Mean summer maximum temperatures are in the low- to mid-80s Fahrenheit. Mean winter minimum temperatures are in the high 30s to low 40s. Pollution potential is relatively high in the valley. On winter evenings, light winds combined with surface-based inversions and terrain that restricts air flow can cause pollutant levels to increase. In the summer months, ozone and ozone precursors are often transported into the valley from both the central SFBAAB and the Central Valley (BAAQMD 2012).

3.4.2 Air Pollutants

3.4.2.1 Criteria Air Pollutants

The EPA focuses on the following criteria air pollutants as indicators of ambient air quality throughout the U.S.:

- carbon monoxide (CO);
- lead;
- nitrogen dioxide (NO₂);
- ozone;
- particulate matter with diameters less than or equal to 10 microns (PM₁₀);
- particulate matter with diameters less than or equal to 2.5 microns (PM_{2.5}); and
- sulfur dioxide (SO₂).

These criteria air pollutants, described below, are prevalent in many regions of the U.S. and are known to be deleterious to human health and/or the environment:

CO is a colorless, odorless gas produced by the incomplete combustion of fossil fuels, primarily from gasoline-fueled equipment and vehicles. CO impacts are localized in nature. Since a primary source of CO occurs from motor vehicles operating at slow speeds, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

Lead primarily occurs in the atmosphere in particulate form. The elimination of leaded gasoline from use in on-road motor vehicles significantly reduced lead in ambient air in most regions of the U.S. Current sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and secondary lead smelters.

NO₂ is a brownish, highly reactive gas present in urban environments. The primary sources of NO₂ are fossil fuel combustion devices, such as boilers and internal combustion engines. Combustion devices emit primarily nitric oxide (NO), with smaller amounts of NO₂. However, NO oxidizes in the atmosphere to form additional NO₂. NO and NO₂ are collectively referred to as oxides of nitrogen (NO_x).

Ozone is a gas that is not directly emitted into the atmosphere but is formed when reactive organic gases (ROG)¹⁰ and NO_x undergo photochemical reactions in the presence of sunlight. Thus, ROG and NO_x are referred to as ozone precursors. NO_x and ROG originate from a variety of sources, including fuel combustion and chemical evaporation. Ozone concentrations are generally highest during the summer months, when maximum solar isolation and warm temperatures are conducive to ozone formation. Because of the reaction time involved in forming ozone, peak concentrations are often found many miles downwind of ozone precursor emissions. Ozone is a regional pollutant that has concentrations that are typically somewhat homogeneous throughout an airshed.

PM₁₀ and PM_{2.5} consist of extremely small, suspended particulate matter (PM). Natural sources include pollen, forest fires, and windblown dust. In populated areas, most man-made sources include road dust, combustion sources (including diesel equipment and vehicles), abrasion of tires and brakes, and construction activities. PM₁₀ and PM_{2.5} can also be formed in the atmosphere by chemical conversion of NO_x, SO₂, and ROG.

SO₂ enters the atmosphere as a pollutant mainly as a result of burning sulfur contained in fuel oils and coal and from chemical processes occurring at chemical plants and refineries. SO₂ is also converted to sulfates in the atmosphere.

The EPA has established primary and secondary National Ambient Air Quality Standards (NAAQS) for these criteria pollutants. The primary standards are established to protect public health, and the secondary standards are established to protect public welfare and the environment.

CARB has established California Ambient Air Quality Standards (CAAQS) for the criteria air pollutants, as well as for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter. The NAAQS and CAAQS are listed in Table 3.4-1.

3.4.2.2 Hazardous Air Pollutants/Toxic Air Contaminants

Pollutants that are known or suspected to cause cancer or that can cause other serious health effects or adverse environmental effects are regulated by the EPA and CARB. The EPA has established a list of hazardous air pollutants (HAPs) subject to additional air quality regulations/requirements. Similarly, CARB has established a list of toxic air contaminants (TACs) that require additional analysis in

¹⁰ ROG is often also referred to as volatile organic compounds (VOCs).

California. In most cases, ambient air quality standards have not been established for HAPs or TACs. These pollutants are generally addressed through statutes and rules that require screening analyses, risk assessment, and/or the use of the maximum or best available control technologies to limit emissions.

Table 3.4-1 Summary of NAAQS and CAAQS

Pollutant	Averaging Time	NAAQS		CAAQS
		Primary	Secondary	
CO	8-hour	9.0 ppm ^(a)	—	9.0 ppm ^(b)
	1-hour	35 ppm ^(a)	—	20 ppm ^(b)
Lead	3-month (rolling avg.)	0.15 µg/m ^{3(c)}	0.15 µg/m ^{3(c)}	—
	30-day	—	—	1.5 µg/m ^{3(c)}
NO ₂	Annual	0.053 ppm	0.053 ppm	0.030 ppm
	1-hour	0.100 ppm ^(d)	—	0.18 ppm ^(b)
Ozone	8-hour	0.075 ppm ^(e)	0.075 ppm ^(e)	0.070 ppm ^(b)
	1-hour	—	—	0.09 ppm ^(b)
PM ₁₀	Annual	—	—	20 µg/m ³
	24-hour	150 µg/m ^{3(f)}	150 µg/m ^{3(f)}	50 µg/m ^{3(b)}
PM _{2.5}	Annual	12 µg/m ^{3(g)}	15 µg/m ^{3(g)}	12 µg/m ³
	24-hour	35 µg/m ^{3(h)}	35 µg/m ^{3(h)}	—
SO ₂	24-hour	—	—	0.04 ppm ^(b)
	3-hour	—	0.5 ppm ^(a)	—
	1-hour	0.075 ppm ⁽ⁱ⁾	—	0.25 ppm ^(b)
Sulfates	24-hour	—	—	25 µg/m ^{3(c)}
Hydrogen Sulfide	1-hour	—	—	0.03 ppm ^(c)
Vinyl Chloride	24-hour	—	—	0.01 ppm ^(c)
Visibility-Reducing Particles	8-hour	—	—	See note (j) below

Sources: 40 CFR 50, 17 CCR 70200

Notes:

- ^a Standard not to be exceeded more than once per year.
- ^b Standards not to be exceeded.
- ^c Standards not to be equaled or exceeded.
- ^d To attain this standard, the 3-year average of the 98th percentile must not exceed the standard.
- ^e To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average concentration over a year must not exceed the standard.
- ^f Standard not to be exceeded more than once per year on average over 3 years.
- ^g Standard is annual mean averaged over 3 years.
- ^h To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations must not exceed the standard.
- ⁱ To attain this standard, the 99th percentile of the 1-hour daily maximum 8-hour average concentration averaged over 3 years must not exceed the standard.
- ^j The state-wide 10-mile visibility standard is extinction of 0.23 per kilometer. Standard not to be exceeded.

Key:

ppm = parts per million
 µg/m³ = micrograms per cubic meter

HAPs/TACs are emitted by a variety of sources, such as stationary and mobile combustion sources, solvent/chemical manufacturing and use, gasoline stations, and dry cleaners. Important sources of HAPs/TACs are motor vehicles and off-road equipment. Diesel engines emit a complex mix of pollutants, the most visible of which are very small carbon particles, or “soot,” known as diesel PM. CARB has identified diesel PM as a TAC because it contains various pollutants with the potential to cause cancer or other health problems.

3.4.2.3 Nuisance Odors

Some air pollutants are not associated with serious health or environmental effects but do have odors that create a nuisance to the public, making areas unpleasant or uncomfortable. Some typical odor sources include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing plants, and painting/coating operations.

3.4.3 Greenhouse Gases

Climate change, or global warming, represents an average increase in the temperature of the atmosphere near the earth's surface and in the troposphere, which can contribute to changes in global climate patterns. The global distribution of temperature increase is varied, and in some locations average temperatures have actually decreased. Climate change has been attributed to a variety of causes, including both natural and human activity (EPA 2013b). Current scientific research indicates that potential effects of climate change include variations in temperature and precipitation, sea-level rise, impacts on biodiversity and habitat, impacts on agriculture and forestry, and human health and social impacts (California Natural Resources Agency 2009).

GHGs are gases that allow solar radiation to pass through the earth's atmosphere but prevent heat from escaping, resulting in atmospheric warming. Certain GHGs occur naturally and help balance the earth's temperature; however, research indicates that since the advent of the Industrial Revolution, human activity has resulted in an elevation of the concentration of some of these gases in the atmosphere. In particular, concentrations of carbon dioxide (CO₂) emitted from the burning of fossil fuels has increased significantly. Much of the carbon in the atmosphere is absorbed by natural "carbon sinks," such as forests or ocean kelp. CO₂ is then emitted back into the atmosphere through natural processes such as animal and plant respiration, and oceanic and geological processes. These natural processes represent "sources" of CO₂. When balanced, the amount of CO₂ emitted from sources and absorbed by carbon sinks is roughly equal; this process is known as the "carbon cycle." As emission levels rise from human activity, carbon sinks are becoming overwhelmed and are unable to sequester the increasing amounts of CO₂. Further, other human activity, such as deforestation, can lead to the reduction of sinks. The resulting increase in GHGs in the atmosphere is now considered one of the key causes of global climate change.

The California Global Solutions Warming Act of 2006 (Assembly Bill [AB] 32) requires a reduction in GHG emissions in California. AB 32 targets the following GHGs:

- CO₂;
- methane (CH₄);
- nitrous oxide (N₂O);
- sulfur hexafluoride (SF₆);
- hydrofluorocarbons (HFCs); and
- perfluorocarbons (PFCs)

Carbon dioxide, CH₄, and N₂O are generated from both natural and human activity. SF₆, HFCs, and PFCs are man-made compounds. These GHGs are described below:

CO₂ is a colorless, odorless gas. Natural sources of CO₂ include respiration by bacteria, fungus, and animals; decomposition of organic matter; evaporation of ocean water; and geological processes. The primary human-induced sources of CO₂ are combustion of fossil fuels, natural gas, and wood.

CH₄ is a highly flammable gas that is a primary component of natural gas. Natural sources of CH₄ include anaerobic decay of organic matter; geological deposits (e.g., natural gas fields); and cattle. Human-induced sources include emissions generated by the decay of organic material in landfills and fermentation of manure and other organic material.

N₂O is produced by natural sources, including microbial action in soil and water, particularly at tropical latitudes. Human-induced sources include emissions from manufacturing facilities, fossil fuel power plants, and motor vehicles.

SF₆ is a colorless, odorless, non-flammable, non-toxic gas used mainly as an insulator (when mixed with other gases, such as argon) in the manufacture of electronics.

HFCs are compounds consisting of carbon, hydrogen, and fluorine atoms. HFCs were introduced as replacements for atmospheric ozone-depleting chemicals in various industrial and commercial applications. They are used in solvents, refrigerants, firefighting agents, and aerosol sprays.

PFCs are chemicals consisting of carbon and fluorine atoms. PFCs were also introduced as an alternative to atmospheric ozone-depleting chemicals and are used in similar industrial and commercial applications.

The effect of a particular GHG on global climate change depends on its global warming potential (GWP). The GWP for other GHGs is calculated relative to CO₂. Thus, GHG emissions to the atmosphere are typically reported in terms of CO₂ equivalency (CO₂e). By multiplying the mass of a GHG emitted by its GWP, an equivalent amount of CO₂ is calculated (e.g., with a GWP of 21, one pound of CH₄ is equivalent to 21 pounds of CO₂e). GWP is determined by a number of factors, including molecular structure, a compound's ability to absorb infrared radiation, and the amount of time the compound can exist in the atmosphere before breaking down. Table 3.4-2 shows the GWP for the six GHGs described above.

Table 3.4-2 Global Warming Potential For Greenhouse Gases

Greenhouse Gas	Global Warming Potential
CO ₂	1
CH ₄	21
N ₂ O	310
SF ₆	23,900
HFCs	140–11,700
PFCs	6,500–9,200

Source: IPCC 2007

3.4.4 Existing Air Emission Sources

The City of Concord is within an urbanized part of Contra Costa County, within the SFBAAB. The existing emission sources within the county and the region include stationary, area-wide, and mobile sources. A summary of criteria air pollutant emission inventories for Contra Costa County and SFBAAB from 2008 are presented in Table 3.4-3.

3.4.5 Greenhouse Gas Emission Sources

The latest GHG inventory from the EPA indicates that the U.S. emitted 6.5 billion metric tons of GHGs in 2012 (EPA 2014). The State of California contributes substantially to those GHG emissions: California generated 458.7 million metric tons of CO₂e in 2012, according to the most recent inventory (CalEPA 2014). The largest source of GHG emissions in California was on-road vehicles, which accounted for approximately 36 percent of GHG emissions for the state.

Table 3.4-3 County and Regional Emission Inventory

Source Type	Average Daily Emissions (tons/day)					
	CO	NO _x	PM ₁₀	PM _{2.5}	ROG	SO _x
Contra Costa County						
Stationary Sources						
Ind./Commercial Fuel Combustion	13	18	3.0	2.9	1.7	10
Waste Disposal	0.2	0.2	0.01	0.01	1.2	0.01
Cleaning and Surface Coatings	-	-	-	-	3.2	-
Petroleum Production and Marketing	0.2	0.6	0.7	0.6	11	8.6
Industrial Processes	1.3	2.3	2.4	1.7	2.9	7.2
Total	15	21	5.4	4.6	20	26
Area-Wide Sources						
Solvent Evaporation	-	-	-	-	10	-
Residential Fuel Combustion	41	2.6	5.8	5.6	2.4	0.1
Farming Operations	-	-	1.7	0.9	0.8	-
Fugitive/Construction/Road Dust	-	-	19	2.5	-	-
Other Miscellaneous Processes	2.3	0.09	0.9	0.6	0.2	0.01
Total	43	2.7	27	10	14	0.1
Mobile Sources						
On-Road Vehicles	165	30	1.5	1.1	17	0.1
Off-Road Equipment	41	18	1	0.9	5.7	0.01
Other Mobile Sources	25	9.3	0.8	0.8	5	8.5
Total	232	57	3.4	2.7	28	8.6
SFBAAB						
Stationary Sources						
Ind./Commercial Fuel Combustion	40	45	5.4	5.4	3.2	12
Waste Disposal	1.9	0.6	0.1	0.1	36	0.2
Cleaning and Surface Coatings	-	-	-	-	35	-
Petroleum Production and Marketing	0.3	0.6	1	0.9	21	26
Industrial Processes	1.9	4.1	10	5.8	11	8.1
Total	44	51	16	12	107	46
Area-Wide Sources						
Solvent Evaporation	-	-	-	-	71	-
Residential Fuel Combustion	149	16	22	21	9.2	0.6
Farming Operations	-	-	18	10	5.6	-
Fugitive/Construction/Road Dust	-	-	129	17	-	-
Other Miscellaneous Processes	13	0.5	7.3	4.9	1.7	0.05
Total	162	17	176	53	88	0.6
Mobile Sources						
On-Road Vehicles	1,067	207	10	7.1	112	0.9
Off-Road Equipment	336	103	6.2	5.6	38	0.08
Other Mobile Sources	139	71	4	3.6	33	14
Total	1,541	381	20	16	183	15

Source: CARB 2013a

3.4.6 Existing Air Quality

As the local air quality agency, the BAAQMD has primary responsibility for monitoring the air quality within the SFBAAB, including Contra Costa County. The BAAQMD operates a 28-station monitoring network throughout the basin. The monitoring network provides the data required to determine whether the SFBAAB is in compliance with state and federal air quality standards. Air monitoring data are also used for air quality forecasts, air quality plan modeling, permit modeling, and environmental assessment.

The nearest monitoring station to the former NWS Concord is located approximately 3.5 miles away, at 2975 Treat Boulevard in the City of Concord. The station monitors for the following criteria air pollutants: CO, NO₂, ozone, PM₁₀, PM_{2.5}, and SO₂. A summary of historical air pollutant monitoring data from this station is provided in Table 3.4-4.

Table 3.4-4 Historical Air Quality Data at the 2975 Treat Boulevard Monitoring Station

Pollutant	Averaging Time	Standard ^a	Parameter	2010	2011	2012
CO	8-hour	NAAQS	Highest Concentration	0.95 ppm	1.24 ppm	0.82 ppm
			Days above Standard	0	0	0
		CAAQS	Highest Concentration	0.94 ppm	1.24 ppm	0.82 ppm
			Days above Standard	0	0	0
	1-hour	NAAQS/CAAQS	First High Concentration	1.2 ppm	1.6 ppm	1.2 ppm
			Days above Standard	0	0	0
NO ₂	Annual	NAAQS/CAAQS	Annual Concentration	0.008 ppm	0.009 ppm	-
	1-hour	NAAQS/CAAQS	Highest Concentration	0.042 ppm	0.042 ppm	0.040 ppm
			Days above Standard	0	0	0
			Days above Standard	0	0	0
Ozone	8-hour	NAAQS	Highest Concentration	0.087 ppm	0.078 ppm	0.085 ppm
			Days above Standard	1	2	2
		CAAQS	Highest Concentration	0.087 ppm	0.079 ppm	0.086 ppm
			Days above Standard	4	5	3
	1-hour	CAAQS	Highest Concentration	0.103 ppm	0.099 ppm	0.093 ppm
			Days above Standard	2	2	0
PM ₁₀	Annual	CAAQS	Annual Concentration	13.7 µg/m ³	15.7 µg/m ³	12.6 µg/m ³
	24-hour	NAAQS	Highest Concentration	39.7 µg/m ³	55.9 µg/m ³	33.7 µg/m ³
			Estimated Days above Standard	0	0	0
		CAAQS	Highest Concentration	41.3 µg/m ³	58.8 µg/m ³	35.4 µg/m ³
			Estimated Days above Standard	0	0	0
	PM _{2.5}	Annual	NAAQS	Annual Concentration	7.0 µg/m ³	7.8 µg/m ³
CAAQS			Annual Concentration	7.1 µg/m ³	7.9 µg/m ³	6.6 µg/m ³
24-hour		NAAQS	98 th Percentile Concentration	26.8 µg/m ³	24.4 µg/m ³	20.2 µg/m ³
			Estimated Days above Standard	1	2	0
SO ₂	24-hour	CAAQS	Highest Concentration	0.002 ppm	0.003 ppm	0.003 ppm
	1-hour	NAAQS/CAAQS	99 th Percentile Concentration	0.008 ppm	0.008 ppm	0.007 ppm

Sources: EPA 2013e, CARB 2013b

Notes:

^a Indicates to which standard the data apply. In some instances, the concentration for a pollutant was calculated differently for comparison to the standards because of differing state and federal procedures.

The EPA compares ambient air monitoring data for criteria air pollutants to NAAQS to assess air quality in regions within the U.S. Similarly, CARB compares monitoring data for criteria air pollutants to CAAQS to assess air quality in regions within California. Based on these comparisons, areas are designated as one of the following categories:

Attainment. A region is designated as “attainment” if monitoring shows that ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. In addition, an area that has been re-designated from “nonattainment” to attainment for a NAAQS is classified as a “maintenance area” for a finite period to ensure that the air quality improvements are sustained.

Nonattainment. If the NAAQS or CAAQS are exceeded for a pollutant, the region is designated as nonattainment for that pollutant.

Unclassifiable/Unclassified. An area is designated as “unclassifiable (or unclassified)” if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

A summary of air quality designations for the portion of the SFBAAB in which the former NWS Concord is located is presented in Table 3.4-5.

Table 3.4-5 Air Quality Attainment Status for Bay Area Air Quality Management District

Pollutant	Attainment Status	
	NAAQS	CAAQS
CO	Attainment – Maintenance Area	Attainment
Lead	Unclassifiable/Attainment	Attainment
NO ₂	Attainment	Attainment
Ozone	Nonattainment – Moderate	Nonattainment
PM ₁₀	Attainment	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
SO ₂	Attainment	Attainment
Sulfates	—	Attainment
Hydrogen Sulfide	—	Unclassified
Visibility-Reducing Particles	—	Unclassified

Sources: 40 CFR 85, CARB 2013c

3.4.7 Regulatory Framework: Air Quality

3.4.7.1 Federal

The EPA is the principal federal agency responsible for air quality management in the U.S.

Clean Air Act

The Clean Air Act (CAA) is the law that defines EPA’s responsibilities for protecting and improving the nation’s air quality and the stratospheric ozone layer. Under the CAA, the EPA has established NAAQS for criteria air pollutants; designates the status of areas relative to NAAQS; develops schedules and strategies to meet the NAAQS; and oversees implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources.

As part of the CAA, the EPA 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 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 requires that states develop an operating permit program for all major sources of pollutants. Under the CAA, state and/or local agencies may be delegated authority to administer the requirements of the CAA.

General Conformity Rule

In order to ensure that federal activities do not hamper local efforts to control air pollution, the General Conformity Rule prohibits federal agencies, departments, or instrumentalities from engaging in, supporting, providing financial assistance for, licensing, permitting, or approving any action that does not conform to an approved SIP or federal implementation plan. The purpose of the General Conformity Rule is to ensure that federal activities do not cause or contribute to a new or existing violation of any NAAQS and to ensure that attainment of any of the NAAQS is not delayed. The General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas and covers direct and indirect emissions of criteria pollutants or their precursors that are caused by a federal action, are reasonably foreseeable, and can be controlled practically by the federal agency through its continuing program responsibility. The SFBAAB, including Contra Costa County, is currently designated as nonattainment for the ozone and PM_{2.5} NAAQS and is a maintenance area for CO.

Since this action is a land transfer and the Navy will not maintain continuing responsibility over the completion of the action (i.e., the implementation of the City of Concord's Area Plan), the action is not subject to the General Conformity Rule under the provisions of 40 CFR 93.153(c)(2)(xix), which indicates the conformity rule does not apply to federal actions that involve the transfer of ownership, interests, and titles of land, facilities, and real and personal properties, regardless of the form or method of transfer. A Record of Non-Applicability of the Clean Air Act General Conformity Rule is included in Appendix G.

3.4.7.2 State

The California Clean Air Act (CCAA) outlines a statewide air pollution control program in California. CARB is the primary administrator of the CCAA, while local air quality districts administer air rules and regulations at the regional level. CARB is responsible for establishing the CAAQS, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and preparing the SIP. Many of the pertinent state air regulations are codified in Title 13 and Title 17 of the California Code of Regulations (CCR).

3.4.7.3 Local

Local air districts in California are responsible for issuing stationary source air permits, developing emissions inventories, maintaining air quality monitoring stations, and reviewing air quality environmental documents required by CEQA. The CCAA also designates air districts as lead air quality planning agencies, requires them to prepare air quality plans, and grants them authority to implement transportation control measures. The BAAQMD is the administrator of air pollution rules and regulations for the SFBAAB and is responsible for implementing measures and local air pollution rules that ensure NAAQS and CAAQS are achieved and maintained. The BAAQMD prepares air quality plans to be submitted for inclusion in the California SIP. These plans include assessments of air quality at a regional

level and region-wide attenuation methods and policies to achieve attainment levels with respect to air quality standards. The BAAQMD has established local rules and regulations to address air pollution control and air quality management.

Air Quality Plans

The BAAQMD periodically prepares and updates plans in order to attain NAAQS and CAAQS, comply with quality planning requirements, and improve air quality. The technical analyses in these plans provide the basis for developing emissions reduction strategies to achieve air quality standards. Air quality plans usually define control strategies to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources. Control strategies are typically implemented through a combination of regulations adopted and enforced by the BAAQMD, grant and incentive programs, public education and outreach, and partnerships with other agencies and stakeholders. BAAQMD air quality plans are prepared in cooperation with MTC and ABAG.

The most recent BAAQMD ozone plan prepared in response to federal air quality planning requirements is the 2001 Ozone Attainment Plan. In addition, the BAAQMD prepared the Bay Area 2005 Ozone Strategy as a roadmap for how the district will achieve compliance with the 1-hour ozone CAAQS as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins.

The most recent state ozone plan is the Bay Area 2010 Clean Air Plan, adopted in September 2010. The 2010 Clean Air Plan was developed as a multi-pollutant plan that serves to:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the CCAA to implement “all feasible measures” to reduce ozone;
- Provide a control strategy to reduce ozone, PM, TACs, and GHGs in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented.

In 1998, the EPA approved the “Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas” as part of the SIP and redesignated 10 areas in California to CO attainment, including the SFBAAB. In 2004, CARB approved an update to the SIP that shows how the 10 areas will maintain the CO NAAQS through 2018, revises emission estimates, and establishes new on-road motor vehicle emission budgets for transportation conformity purposes.

3.4.8 Regulatory Framework: GHGs

3.4.8.1 International

In 1988, the World Meteorological Organization and United Nations formed the Intergovernmental Panel on Climate Change (IPCC) as a joint effort to assess the impact of human activity on the global climate. In 1990, the IPCC issued its first assessment report, which helped identify climate change as a serious issue and laid the groundwork for the formation of the United Nations Framework Convention on Climate Change (UNFCCC). The second assessment report, issued by the IPCC in 1995, contributed to the drafting of the Kyoto Protocol to the UNFCCC, adopted in 1997. The Kyoto Protocol asked signatories to the UNFCCC to commit to reducing emissions of four primary GHGs (CO₂, CH₄, N₂O, and SF₆) and two secondary groups of GHGs (HFCs and PFCs) to 5 percent below 1990 emission levels by 2012. At the time of this writing, the U.S. remains the only signatory to the UNFCCC that has not ratified the Kyoto Protocol. The IPCC issued its most recent, fifth assessment report in draft form in 2013 (IPCC 2014) and

is currently working on the final version of the fifth assessment report, which will be completed in 2014 (IPCC 2014).

3.4.8.2 Federal

According to the EPA, “the United States government has established a comprehensive policy to address climate change” that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation (EPA 2013b). To implement this policy, “the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science” (EPA 2013c). The federal government’s goal was to reduce the GHG intensity (a measurement of GHG emissions per unit of economic activity) of the U.S. economy by 18 percent over the 10-year period from 2002 to 2012 (General Accounting Office [GAO] 2003). The EPA also administers several programs that encourage voluntary GHG reductions, including ENERGY STAR, a joint program with the U.S Department of Energy to encourage energy efficient products and practices; Climate Leaders, an industry-government partnership to develop climate change strategies; and methane reduction voluntary programs (EPA 2013c; EPA 2013a).

The CEQ issued draft guidance to federal agencies on February 18, 2010, on addressing the effects of climate change and GHG emissions under NEPA (CEQ 2010). The guidance states that for an agency’s analysis of the direct effects of a project with respect to GHG emissions, it would be appropriate to quantify cumulative emissions over the life of the project; discuss measures to reduce emissions, including consideration of reasonable alternatives; and qualitatively discuss the link between such emissions and climate change (CEQ 2010).

3.4.8.3 State

EO S-3-05, issued in 2005, sets a statewide GHG emission reduction target of 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. In 2006, AB 32, the Global Warming Solutions Act, in which the state’s GHG emissions are capped at 1990 levels by 2020, was signed. This is the first statewide program in the country to mandate an economy-wide emissions cap that includes enforceable penalties. The Climate Change Scoping Plan, approved by CARB in 2008 to fulfill AB 32, is the state’s roadmap to reach GHG reduction goals (CARB 2013d). The scoping plan has a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The scoping plan must be updated every five years to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal. In 2013, CARB will initiate activities to update the Climate Change Scoping Plan.

3.4.8.4 Local

In 2005, the BAAQMD adopted a resolution establishing a climate protection program and acknowledging the link between climate protection and programs to reduce air pollution in the Bay Area. The BAAQMD also formed a standing committee on climate protection to provide direction to local governments on climate protection activities. A central element of the climate protection program is the integration of climate protection activities into existing programs. The climate protection program also emphasizes collaboration with ongoing climate protection efforts at the local and state level, public education and outreach, and technical assistance to cities and counties.

In December 2012, a Contra Costa County Draft Climate Action Plan was completed and released for public review and comment (Contra Costa County 2012b). The Draft Climate Action Plan identifies specific measures for how Contra Costa County can achieve a GHG reduction target of 15 percent below baseline levels by the year 2020. In addition to reducing GHGs, the Draft Climate Action Plan includes

proposed policies and actions to improve public health and provide additional community benefits, and it lays the groundwork for achieving long-term GHG reduction goals for 2020 and 2035.

The City of Concord has also prepared a Citywide Climate Action Plan (Citywide CAP) in response to state mandates and regional guidance on reducing GHG emissions. The plan supports local economic development by providing streamlined environmental review for development projects consistent with the Citywide CAP. A public review draft of the Citywide CAP was issued in March 2013, and the CAP was adopted on July 23, 2013 (City of Concord 2013a).

Much of the growth in Concord over the coming decades will be associated with the reuse of the former NWS Concord. The Area Plan features new, sustainable development and includes its own climate action plan (i.e., Book 3 of the Area Plan), specifically focused on reducing GHG emissions

3.5 Biological Resources

This section describes the affected environment within the former NWS Concord with respect to biological resources. Biological resources include plants and wildlife as well as their habitats, such as the grasslands and wetlands communities that are present at the former NWS Concord. The region of influence (ROI) for biological resources is the former NWS Concord and an area within a 5-mile radius of the installation, for those wildlife species (birds, in particular) with home ranges that extend to this radius.

In this document, the term “special status species” refers to any of the following:

Federally Listed

- Threatened (FT) or endangered (FE) species listed under the federal Endangered Species Act (ESA) (Title 50, CFR Section 17.11 or 17.12); no species that are candidates for listing under the ESA were identified by the U.S. Fish and Wildlife Service (USFWS) Sacramento Field Office in the ROI;
- USFWS “Birds of Conservation Concern,” including birds that are protected under the Bald and Golden Eagle Protection Act (BGEPA); and

State-Listed

- Threatened (ST) or endangered (SE) species under the California Endangered Species Act (CESA) (Sections 670.2 or 670.5, Title 14, California Code of Regulations).

3.5.1 Regulatory Framework

3.5.1.1 Federal

Endangered Species Act

The ESA was enacted to protect threatened and endangered species from extinction throughout all or a portion of their known ranges. The ESA makes it unlawful for any governmental agency to act in a way that could result in a “take” (i.e., to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or any attempt at such conduct”) of a listed threatened or endangered species by organizing, funding, or performing actions that may affect the species itself or its known habitat without a permit. The USFWS maintains a list of protected species that occur in the U.S. and also acts as regulator and consultant with regard to protected species.

Provisions under the ESA allow for an authorized “incidental” take of listed species under certain terms and conditions while conducting otherwise lawful activities. The ESA has two processes through which an applicant may procure an Incidental Take Permit (ITP):

- **Section 7:** Applies to a project or action with a federal nexus, or where a federal agency is authorizing, funding, or granting a permit for an activity that may affect listed species; and
- **Section 10:** Applies to a project or action for which there is no federal nexus.

Migratory Bird Treaty Act

The MBTA of 1918 (16 U.S.C. 703–712) provides protection for the majority of bird species occurring in the U.S. because it applies to nearly all migratory species. The MBTA implements treaties with several other nations and was enacted in response to the declines of migratory bird populations from uncontrolled commercial uses. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, possess, or sell birds listed under the MBTA without appropriate permits. Some very common or exotic species are not covered under the MBTA, including the European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), rock pigeon (*Columba livia*), and non-migratory species such as grouse, turkey, and ptarmigan. Several amendments have been made to the original law (including the Migratory Bird Treaty Reform Act of 1998). The statute does not discriminate between live or dead birds and grants full protection to any bird parts, including feathers, eggs, and nests, regardless of conservation status.

Bald and Golden Eagle Protection Act

The BGEPA prohibits any form of possession or taking of either the bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*). A “take” has been broadly interpreted to include altering or disturbing nesting habitat. A 1962 amendment created a specific exemption for possession of an eagle or eagle parts (e.g., feathers) for religious purposes of Indian tribes. Rule changes made in September 2009 (74 FR 175) finalized permit regulations to authorize a limited take of these species associated with otherwise lawful activities. These new regulations establish permit provisions for an intentional take of eagle nests under particular, limited circumstances (50 CFR 13 and 22). The regulations include a USFWS program that will allow issuance of two new types of permits: one addressing a take in the form of disturbance or an actual physical take of eagles (50 CFR 22.26) and the other providing for removal of nests (50 CFR 22.27). Most permits issued under the new regulations are expected to be those that would authorize disturbance, as opposed to a physical take (i.e., a take resulting in mortality). Permits for a physical take will be issued in very limited cases only, where every precaution has been implemented to avoid a physical take and where other restrictions and requirements will apply. In an effort to implement the new regulations, the USFWS has recently published technical guidance, which includes recommendations for applicants to prepare and submit an avian protection plan for USFWS review.

Clean Water Act Section 404

The CWA of 1977 regulates restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. The CWA authorizes the USACE to regulate the discharge of dredged or fill material into the waters of the U.S. and adjacent wetlands. A discussion of the wetlands and waters of the U.S. on the former NWS Concord is included in Section 3.14.

3.5.1.2 State

California Endangered Species Act

The CESA is similar to the federal ESA and is administered by the CDFW under California Fish and Game Code Section 2050, *et seq.* The CESA was enacted to protect sensitive resources and their habitats

and prohibits take (defined under this act as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”) of CESA-listed species unless specifically provided for under another state law. This act does allow for an incidental take associated with otherwise lawful development projects. The CDFW is the agency with overall responsibility for administering the California Fish and Game Code. A project applicant is responsible for consulting with the CDFW, if required, to address activities that are likely to affect any CESA-listed threatened or endangered species or destroy or adversely affect habitat essential for such species. If take may occur, an Incidental Take Permit (California Fish and Game Code Section 2081) or Consistency Determination (i.e., with USFWS Section 7 consultation) (California Fish and Game Code Section 2080.1) is required.

California Fish and Game Code, Sections 1600–1616

Under Sections 1600-1616 of the California Fish and Game Code, any entity that proposes to substantially modify a river, stream, or lake is required to notify CDFW and may be required to obtain a Lake and Streambed Alteration Agreement. An activity that will: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; and/or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake is likely to require a Lake and Streambed Alteration Agreement.

California Fish and Game Code, Sections 3503 and 3503.5

California Fish and Game Code Section 3503 specifies the following general provision for birds: “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season that results in the incidental loss of fertile eggs or nestlings, or otherwise leads to nest abandonment, may be considered a take. Disturbance that causes nest abandonment and/or loss of reproductive effort may also be considered a take by the CDFW.

California Fish and Game Code, Sections 3511, 4700, 5050, and 5515

These code sections prohibit the taking and possession of birds, mammals, fish, and reptiles listed as “fully protected.”

California Fish and Game Code, Section 3513

This code section provides for the adoption of the MBTA provisions. As with the MBTA, this state code offers no statutory or regulatory mechanism for obtaining an ITP for the loss of non-game migratory birds. The CDFW is the administering agency.

California Native Plant Protection Act of 1977; California Fish and Game Code, Section 1900

This law includes provisions that prohibit the taking of listed rare or endangered plants from the wild. The law also includes a salvage requirement for landowners. Furthermore, it gives the CDFW the authority to designate native plants as endangered or rare and provides specific protection measures for identified populations. Under Section 1913(B) of the California Fish and Game Code, actions undertaken by an agency or publicly or privately owned public utility to fulfill its obligation to provide service to the public are exempted from take prohibitions under the Native Plant Protection Act.

California Code of Regulations, Sections 670.2 and 670.5

These code sections list wildlife and plant species that are threatened or endangered in California or by the federal government under the ESA. Species that are likely to become threatened or endangered in the foreseeable future are designated California Species of Special Concern (SSC) by the CDFW.

3.5.1.3 Regional and Local

City of Concord Municipal Code (Heritage Trees, CMC 1965, § 4301)

The Concord Municipal Code includes a tree-protection ordinance for heritage trees, which are defined by size, relationship to historical significance, or designation by the planning commission. The tree protection ordinance specifies permit requirements, including protective measures for construction work in the vicinity of heritage trees, removal of heritage trees, and replacement requirements.

East Bay Regional Park District Master Plan

The EBRPD manages 65 regional parklands on approximately 113,000 acres of land in Contra Costa and Alameda counties. The EBRPD Master Plan (2013a) defines policies intended to guide the stewardship and development of the parks with the goal of balancing environmental concerns with provisions for outdoor recreational opportunities. Most of the parklands managed by the EBRPD are wildland areas and maintained as undeveloped, open spaces. Passive recreational uses, such as hiking, are supported by the network of trail systems developed and maintained by the EBRPD in open-space parkland areas (EBRPD 2013a, Holt 2014).

3.5.2 Background/Methodology

Existing conditions related to biological resources were characterized by reviewing current aerial photography, as well as recent and historical studies related to biological resources at NWS Concord and additional data published by federal and state natural resource agencies. Specific literature and reports considered are presented in Table 3.5-1.

Literature Review

The literature review included a search for special status plant and wildlife species and sensitive vegetation community occurrences on the former NWS Concord and ROI, as recorded in the California Natural Diversity Data Base (CNDDDB). CNDDDB records of occurrences were reviewed for the U.S. Geological Survey (USGS) 7.5-minute Clayton quadrangle (quad), where a majority of the proposed action area is located. The surrounding 11 USGS 7.5-minute quads—Benicia, Briones Valley, Oakland East, Vine Hill, Walnut Creek, Las Trampas Ridge, Diablo, Tassajara, Antioch South, Antioch North, and Honker Bay—were also reviewed for CNDDDB occurrences. In addition to the CNDDDB, the following sources were reviewed to describe the biological resources:

- USFWS list of endangered, threatened, and proposed species obtained from the USFWS Sacramento Field Office (USFWS 2014a);
- USFWS' online Critical Habitat Portal (USFWS 2014b);
- The California Native Plant Society (CNPS) 2014 online *Inventory of Rare and Endangered Plants of California* (CNPS 2014);
- The City of Concord's EIR, which reviewed and incorporated an extensive database of information related to the former NWS Concord; and
- The City of Concord's Biological Assessment (BA) for the Concord Reuse Project – Area Plan (City of Concord 2013c).

Surveys Conducted

Table 3.5-1 summarizes the biological resource reports and surveys conducted at the former NWS Concord by the Navy, and in support of the City of Concord's CEQA EIR.

Table 3.5-1 Biological Resource Surveys Completed in the Proposed Action Area

Citation	Survey Type	Survey Description	Dates Completed	Project Components Surveyed
1990 - 2000				
Downard et al. (1999)	Natural resources surveys by University of Arizona Advanced Resources Technology Group	Site-wide inventory of common and special status bird, mammal, amphibian, reptile, and plant species and a comparative analysis of 1982 survey results.	1998-1999	Former NWS Concord
2001 - 2010				
Tetra Tech, Inc. (2002)	Integrated natural resources management plan and environmental assessment by the Navy	Summary of biological survey data since 1982.	2002	No field survey
Ecorp Consulting, Inc. (2004)	Federally listed brachiopods	90-day report of findings of dry season and wet season aquatic invertebrate surveys	2004	Within 145 acres of the former NWS Concord
Smallwood and Morrison (2007)	Amphibian surveys by Smallwood and Morrison on behalf of Navy	Assessment of population and distribution of California tiger salamander (<i>Ambystoma californiense</i>) and California red-legged frog (<i>Rana draytonii</i>).	2005-2006	Potential aquatic habitat identified in previous surveys
CH2M Hill (2007, 2008a, 2008b, 2008c, 2008d, 2008e, and 2008f)	Stream assessment and presence of sensitive natural resources or special status species on behalf of City of Concord; verification by H.T. Harvey & Associates	Assessment of Mt. Diablo Creek, including corridor conveyance, stream flow, sediment transport, water temperature, and fish passage. Presence and distribution of vegetation types, wildlife habitat, special status species, wetlands, and mature native trees.	2007-2009	Mt. Diablo Creek watershed and former NWS Concord
Vollmar Natural Lands Consulting (2008)	Special status plant surveys on behalf of City of Concord	Presence of general plant communities, special status plants, and noxious weeds.	2008	Former NWS Concord

Table 3.5-1 Biological Resource Surveys Completed in the Proposed Action Area

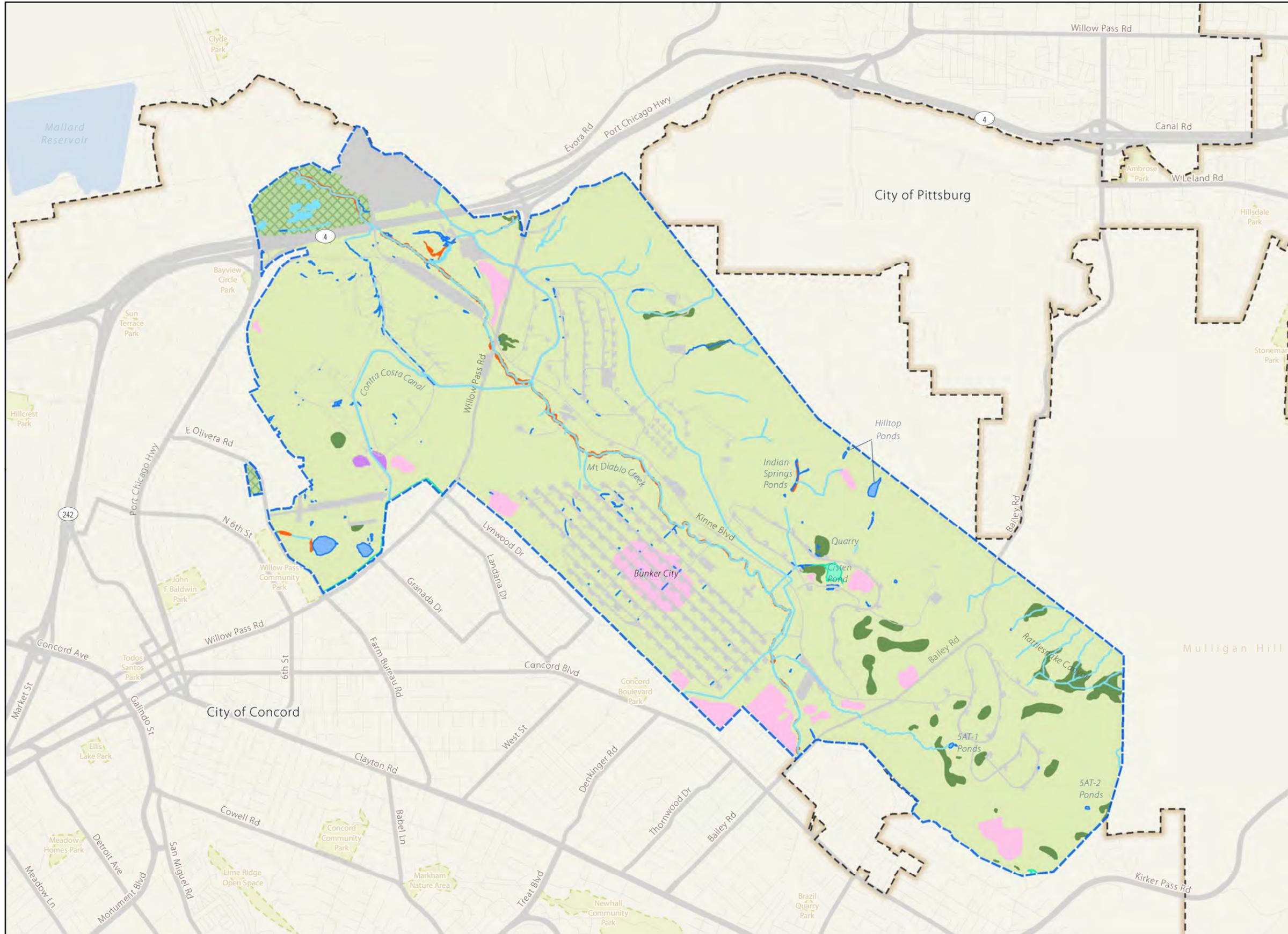
Citation	Survey Type	Survey Description	Dates Completed	Project Components Surveyed
EDAW (2008); Ecology and Environment, Inc., Swaim Biological, Inc. (2009); Ecology and Environment Inc., and Foothill Associates (2009).	Focused resource assessments on behalf of Navy	California tiger salamander habitat value, dispersal capabilities; habitat assessment for Alameda whipsnake (<i>Masticophis lateralis</i>) and least Bell's vireo (<i>Vireo bellii pusillus</i>); protocol surveys for vernal pool brachiopods and least Bell's vireo	2008-2009	Former NWS Concord
City of Concord (2010)	H.T. Harvey & Associates conducted habitat and verification surveys during 2008 and 2009 in conjunction with the preparation and analyses of the EIR	Plants, habitats, amphibians, reptiles, mammals, and birds.	2008-2009	Former NWS Concord
Hicks 2011; City of Concord (2013c)	Wetland mapping and monitoring by Vollmar Natural Lands Consulting and H.T. Harvey & Associates on behalf of City of Concord	Determination of the location and precise boundaries of potential jurisdictional wetlands and other aquatic features.	2008-2009	Former NWS Concord

3.5.3 Vegetation Communities and Habitats

As shown on Figure 3.5-1 and listed in Table 3.5-2, the former NWS Concord comprises a total of eight vegetation communities: California annual grassland, coyote brush/coastal sage scrub, oak savannah/woodland, riparian woodland, wetlands and non-wetland waters (e.g., freshwater marsh; seasonal wetlands; and creeks, drainages, canals, and ponds), orchards and plantations, and a vegetated recreational area (the golf course). In addition, approximately 467 acres of the former NWS Concord is defined as “developed” or previously disturbed by development and is therefore categorized as ruderal/urban. A description of each of the vegetation communities follows.

California Annual Grassland

The predominant plant community within the former NWS Concord is California annual grassland. Approximately 4,125 acres (82 percent of the total vegetative cover) of this community type is located within the site. On the lower hills and flatlands of the site, much of the native vegetation within this community has been altered by farming, which took place from the late 1800s through the 1940s, and grazing, which has taken place since 1975 (City of Concord 2010). Invasion by exotic annual grasses, drought, and grazing have led to a decline in annual grassland species and an increase in disturbance-tolerant species. For example, the highly invasive yellow star-thistle (*Centaurea solstitialis*) accounts for nearly 25 percent of the vegetative cover in approximately two-thirds of the former NWS Concord (City of Concord 2010). Other non-native species present include wild oats (*Avena fatua*), ripgut grass (*Bromus diandrus*), and Italian ryegrass (*Lolium multiflorum*).



**Figure 3.5-1
Vegetation Communities
and Habitats**
Former NWS Concord
Concord, California

Legend

- Former NWS Concord
- City Limits
- Waterbody

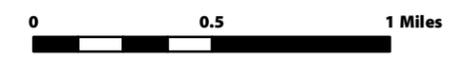
Vegetation Type

- Seasonal Wetlands
- Ruderal/Urban
- Creeks / Drainages / Canals / Ponds
- California Annual Grassland
- Freshwater Marsh
- Coyote Brush / Coastal Sage Scrub
- Golf Course / Recreation
- Oak Woodland / Savannah
- Orchards and Plantations
- Riparian Woodland

Vegetation Type	Existing Area Acreage
California Annual Grassland	4,124.61
Coyote Brush / Coastal Sage	4.77
Creeks / Drainages / Canals / Ponds	20.63
Freshwater Marsh	5.77
Golf Course / Recreation	101.48
Oak / Savannah Woodland	108.18
Orchards and Plantations	156.13
Riparian Woodland	31.15
Ruderal / Urban	466.97
Seasonal Wetlands	17.87
Total	5,037.56



SCALE



SOURCE: ESRI, 2010; H. T. Harvey & Associates, 2009.

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Table 3.5-2 Summary of Vegetation Communities and Habitats within the Former NWS Concord

Vegetation Community Type	Approximate Acreage	Percent Site Coverage
California Annual Grassland	4,125	81.9
Coyote Brush Scrub/Coastal Sage Scrub	5	0.1
Oak Woodland/Savannah	108	2.1
Riparian Woodland	31	0.6
Wetlands and Non-Wetland Waters (approximately 48.9 acres):		
• Freshwater Marsh	6	0.1
• Seasonal Wetlands (including seeps and springs)	18	0.4
• Creeks, Drainages, Canals, and Ponds	21	0.4
Ruderal/Urban	467	9.3
Orchards and Plantations	156	3.1
Recreation	101	2.0
Total	5,038	100

Source: Ecology and Environment, Inc. GIS analysis based on data provided by H.T. Harvey & Associates 2012

While the California annual grassland community on the former NWS Concord is dominated by non-native species, small, remnant stands of native, perennial grasslands are present. These stands consist of purple needlegrass (*Nassella pulchra*), Sandberg bluegrass (*Poa secunda*), California fescue (*Festuca californica*), California melic (*Melica californica*), California poppy (*Eschscholzia californica*), purple owl's clover (*Castilleja exserta*), blue-eyed grass (*Sisyrinchium bellum*), and creeping wildrye (*Leymus triticoides*).

Coyote Brush Scrub/Coastal Sage Scrub

Two areas of shrub-dominated plant communities cover a total of approximately five acres, or 0.1 percent, of the former NWS Concord. The first area is near the unused airfield in the western portion of the site and is dominated by mature stands of coyote brush (*Baccharis pilularis*). Although there is a relatively sparse understory composed largely of non-native annual grasses and forbs interspersed throughout this community, the relatively dense overstory provided by the coyote brush affords few opportunities for other species to become widely established. The second scrub-dominated community occurs on a northwest-facing slope within Rattlesnake Canyon in the southeast corner of the site. This is best described as California sage scrub (also classified as Diablan sage scrub in areas from Mount Diablo south to the Cholame Hills, well inland from the coastal fog incursion zone [Holland 1986]) as it is dominated by California sagebrush (*Artemisia californica*). Although there is a limited distribution and size of the coyote brush scrub/coastal sage scrub habitat association on the former NWS Concord, the community type is abundant in surrounding areas.

Oak Woodland/Savannah

Oak woodland is defined as grassland with a tree canopy cover of 10 percent or greater, whereas oak savannah is defined as grassland with a tree canopy cover of 5 percent to 10 percent (East Contra Costa County Habitat Conservancy 2006). The majority of oak woodland found at the site is in the form of small, clustered pockets of trees occurring on more mesic sites within the larger oak savannah/grassland. Approximately 108 acres of oak woodland/savannah is present within the former NWS Concord.

Riparian Woodland

Woody riparian plant communities on the former NWS Concord include vegetation directly associated with Mt. Diablo Creek, along Willow Pass Creek and its alluvial fan, and in two areas located south of the old airfield. Riparian woodland within the former NWS Concord is very limited in extent, occupying less

than 1 percent of the site (approximately 31 acres). These areas are dominated by a variety of trees and shrubs, including red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), California buckeye (*Aesculus californica*), California black walnut (*Juglans californica*), and Oregon ash (*Fraxinus latifolia*). Other species present include poison oak (*Toxicodendron diversilobum*), mulefat (*Baccharis salicifolia*), Himalayan blackberry (*Rubus discolor*), California rose (*Rosa californica*), and tree-of-heaven (*Ailanthus altissima*).

Riparian woodlands are often associated with transition zones between wetlands or ponds and upland areas. Riparian vegetation associated with Willow Pass Creek at the north end of the site is largely composed of a narrow and poorly developed riparian corridor supporting small trees and shrubs located in and directly adjacent to the deeply incised and actively eroding banks of the stream. The poorly developed riparian woodlands within the station are partially a result of the incision of the channel and the unstable banks along the majority of Willow Pass Creek.

Wetlands and Non-wetland Waters

Wetlands on the former NWS Concord include freshwater marsh and seasonal wetlands; non-wetland waters include creeks, drainages, canals, and ponds. A detailed discussion of the wetland cover types and wetland functions and values is described in Section 3.14 (Water Resources).

Ruderal/Urban

Approximately 467 acres (9 percent of the site) is developed with urban and industrial areas, including roadways, parking lots, runways, railroad yards, and asphalt aprons surrounding buildings. Such areas often contain patches of ruderal vegetation as well as landscaped trees and shrubs. Also included are a wide variety of structures, including buildings, bridges, and bunkers. The roofs of the bunkers are covered with soil and provide some grassland habitat.

Orchards and Plantations

Several eucalyptus groves and tree plantations are located on the former NWS Concord. Approximately 156 acres of orchards and plantations are found within the installation. The eucalyptus trees were originally planted by homesteaders in the early 1880s for windbreaks; more recently, the University of California Cooperative Extension planted eucalyptus trees to evaluate the cost of eucalyptus energy production. Abandoned walnut (*Juglans* spp.) orchards are also present north and south of Bunker City. The USFS also maintained eucalyptus plantations located north of Bailey Road at Mt. Diablo Creek. The USFS program lost sponsorship several years ago, and the plots are no longer maintained. For fire protection purposes, the Navy has required the USFS to thin the eucalyptus groves to reduce fuel loads as a requirement for termination of their lease (City of Concord 2010)

Recreation (Golf Course)

Recreational areas within former NWS Concord include the golf course and ball fields located west of East Olivera Road. These areas comprise approximately 101 acres, or 2 percent of former NWS Concord. As illustrated in Figure 3.5-1, the Diablo Creek Golf Course is located at the northwestern end of the former NWS Concord, and it is bisected by Mt. Diablo Creek. Plant species located within the recreational areas includes elm (*Ulmus* sp.), palm (*Phoenix canariensis*), blue gum eucalyptus (*Eucalyptus globulus*), beefwood (*Casuarina* sp.), and pine (*Pinus* sp.). Cattails (*Typha* sp.) and bulrushes (*Schoenoplectus* sp.) have become established in shallow portions of the golf course ponds and a drainage ditch located along the south side of the golf course. The remainder of the golf course is planted with a variety of horticultural grass species used within the active play areas, including bluegrass (*Poa* sp.) and fescue (*Festuca* sp.).

3.5.4 Fish and Wildlife

A variety of regionally abundant wildlife species is likely to occur throughout the former NWS Concord. Approximately 155 bird species, 23 mammal species, 15 reptile species, and seven amphibian species were observed during surveys conducted between July 1998 and September 1999 (City of Concord 2010). More common bird species observed include the western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), killdeer (*Charadrius vociferous*), American kestrel (*Falco sparverius*), California towhee (*Pipilo crissalis*), Brewer's blackbird (*Euphagus mexicanus*), and red-tailed hawk (*Buteo jamaicensis*). Mammals include the house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), and striped skunk (*Mephitis mephitis*). The most common reptile and amphibian species observed include the western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pitophis catenifer*), western rattlesnake (*Crotalus viridis*), and western toad (*Bufo boreas*).

Common amphibians and reptiles observed in aquatic habitats include the Pacific treefrog (*Pseudacris regilla*), western toad, and common garter snake (*Thamnophis sirtalis*). Birds that breed in aquatic habitat include the mallard duck (*Anas platyrhynchos*), red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), and American coot (*Fulica americana*). The creeks, drainages, canals, and ponds within the former NWS Concord have been extensively and adversely affected by human activities that have altered their hydrology, function, and quality as aquatic wildlife habitat. Mt. Diablo Creek experiences seasonal flows and is generally degraded in character. However, the creek may support several fish species, such as the common carp (*Cyprinus carpio*), three-spined stickleback (*Gasterosteus aculeatus*), and California roach (*Lavinia symmetricus*) during periods of high flows.

3.5.5 Special Status Species

The following discussion addresses special status plant and wildlife species that may occur at the former NWS Concord. To address species covered under Section 7 of the ESA, the Navy reviewed the USFWS's Sacramento Field Office website (USFWS 2014a), as well as the USACE's BA for CWA Section 404 permitting associated with implementation of the Area Plan (City of Concord 2013c). In addition, the Navy reviewed the CNDDDB and additional literature described in Section 3.5.2 to identify state-listed species protected under the CESA. Once the greater species lists were compiled, biologists who were familiar with existing vegetation communities and habitats at the site, as well as the historical biological studies for the former NWS Concord, eliminated a number of species from the list that were believed to be absent from the site. Those included species that were absent during prior surveys, species whose extirpation from the region is presumed or confirmed, or species for which essential habitats or microhabitats are not present at the site. A complete list of the species identified through the USFWS and CNDDDB search are located in Appendix D, Table D-1 for plants and Table D-2 for wildlife. Species that have been previously documented at the former NWS Concord or that have suitable habitat and the likelihood to occur are discussed in additional detail in this section of the EIS.

3.5.5.1 Special Status Plant Species

Federally Listed Species

The Navy conducted a review of the current listing (April 2014) for the federally listed plant species by the USFWS, as well as federally listed species identified in a CNNDDB search for the former NWS Concord. The USFWS listing of species was determined utilizing the USFWS's defined action area (e.g., USGS 7.5-minute quads located within and surrounding the former NWS Concord). The USGS quads searched include Vine Hill, Honker Bay, Walnut Creek, and Clayton, which encompass the former NWS Concord, and eight surrounding land-based quadrangles from northwest to the northeast (i.e., Antioch North, Antioch South, Tassajara, Diablo, Las Trampas, Oakland East, Briones Valley, and Benicia). A species also was considered for occurrence if CNDDDB records and/or professional expertise specific to

the former NWS Concord showed that the species is known to occur within 5 miles of the former NWS Concord and there is ideal habitat for it within the site. A species was determined unlikely to occur if it had been identified in the CNDDDB records but the recorded observations were over 10 years old, key habitat requirements were absent, or the habitat on the former NWS Concord is so degraded, small, or isolated that it would be very unlikely for the species to inhabit the area.

A total of 16 species of plants listed under the federal ESA or the CESA (11 federally listed and 13 state-listed species) were identified for the former NWS Concord and the surrounding region. A complete list of the species is presented in Appendix D, Table D-1. Based on a review of the existing vegetation communities and habitats for the former NWS Concord, none of the 11 federally listed plants identified by the USFWS or the CNDDDB searches are present or suitable habitat conditions for them are not found on the site. Indeed, no federally listed plants have been identified during past botanical surveys on the former NWS Concord (Vollmar Natural Lands Consulting 2008, City of Concord 2010). This finding was consistent with the listing of species presented by the City of Concord in its draft BA submitted to the USFWS (City of Concord 2013c) in May 2013; no federally listed plants were identified.

State-Listed Species

The CNDDDB database contained 13 plants that are listed as threatened or endangered under the CESA for the former NWS Concord and the surrounding region. A complete list of the species is presented in Appendix D, Table D-1. According to existing studies, none of the species listed on the CESA have been observed at the former NWS Concord, and, for the majority of the species, suitable habitat does not exist at the site. These findings are primarily based upon botanical surveys conducted throughout various blooming periods during the 2008 field season (Vollmar Natural Lands Consulting 2008), as well as additional field surveys during the 2009 field season (City of Concord 2010).

Although past surveys did not document any federally or state-listed species, two species of concern were identified as having suitable habitat at the site and were described as having the potential for occurrence. The big tarplant (*Blepharizonia plumosa*) is listed as 1B.1 (extremely endangered in California) by CNPS and has been documented within 3 miles of the site in foothill grasslands, similar to habitat conditions at the former NWS Concord (Vollmar Natural Lands Consulting 2008). The round-leaved filaree (*California macrophylla*) is listed as 1B.2 (fairly endangered) by CNPS and has been documented in similar habitats within 1 mile of the site. However, climatic conditions were noted as unusually dry during the spring blooming period in 2008, possibly preventing the detection of this species. Subsequent surveys during the spring of 2009 also failed to detect these species, but the City of Concord FEIR (2010) did not rule out their potential to occur based on the suitability of habitat at the former NWS Concord.

3.5.5.2 Special Status Wildlife Species

Federal and state listed wildlife species are included in Table 3.5-3.

Federally Listed Species

The Navy conducted a review of the current listing (April 2014) for the federally listed wildlife species by the USFWS, as well as federally listed species identified in a CNDDDB search for the former NWS Concord. The procedure was consistent with the process used to identify listed plants as described in Section 3.5.4.1.

A total of 29 species of wildlife listed under the federal ESA were identified for the former NWS Concord and the surrounding region. A complete list of these species is presented in Appendix D, Table D-2. Based on a review of the existing vegetation communities and habitats for the former NWS Concord, as well as past survey efforts, only three federally listed species inhabit or have the potential to occur at the former NWS Concord: the California red-legged frog (*Rana draytonii*), California tiger salamander

Table 3.5-3 Federal and State Listed Wildlife with Potential to Occur on the Former NWS Concord

Species	Scientific Name	Federal/State Listing Status	Habitat	Potential to Occur
California red-legged frog	<i>Rana draytonii</i>	FT/SSC	This large, aquatic frog requires deep seasonal pools with riparian vegetation for breeding. Individuals are known to move long distances between water bodies. Lack of access to upland refugia, such as small mammal burrows, is considered a limiting factor for this species.	Present. Individuals were observed in Cistern Pond, upper Cistern Pond, and several locations along Mt. Diablo Creek.
California tiger salamander	<i>Ambystoma californiense</i>	FT/ST	Occurs primarily in grassland habitats. Requires seasonal pools, especially those that retain water until May or June, for breeding and egg-laying. This species spends most of its life underground in small mammal burrows.	Present. Individuals were observed in nine seasonal wetlands and ponds within the southeastern portion of the former NWS Concord, according to surveys conducted in 1999. No suitable habitat is present northwest of Willow Pass Road.
Alameda whipsnake	<i>Masticophis lateralis euryxanthus</i>	FT/ST	Found in coastal scrub and chaparral communities but will forage in grasslands and open woodlands. Requires access to rock crevices or small mammal burrows for refuge.	Unlikely. No suitable breeding habitat exists within the former NWS Concord. However, small areas of suitable foraging habitat occur southeast and northwest of Bailey Road.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	None/SE	Large, distinctive eagle. Nests in mature and old growth forest adjacent to large bodies of water.	Unlikely. A single juvenile bald eagle was observed in historic surveys; individuals are considered transient in nature, with the potential to forage over the former NWS Concord, but this species is not expected to breed onsite.

Table 3.5-3 Federal and State Listed Wildlife with Potential to Occur on the Former NWS Concord

Species	Scientific Name	Federal/State Listing Status	Habitat	Potential to Occur
Swainson's hawk	<i>Buteo swainsoni</i>	None/ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, grasslands, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields with abundant rodents.	Unlikely. Suitable foraging habitat exists on the site, but potential breeding habitat is likely limited. This species has not been documented during previous bird surveys.

Sources: City of Concord 2010, City of Concord 2013c, CNDDDB 2014, and USFWS 2014a.

Status explanations:

Federal

FT = Listed as threatened under the federal Endangered Species Act.

BGEPA = Protected under the Bald and Golden Eagle Protection Act.

ESA Candidate Species = Species being considered for listing as threatened or endangered under the federal Endangered Species Act.

State

SE = Listed as endangered under the California Endangered Species Act.

ST = Listed as threatened under the California Endangered Species Act.

SSC = California Department of Fish and Wildlife species of special concern.

(*Ambystoma californiense*), and the Alameda whipsnake (*Masticophis lateralis euryxanthus*); all three have a federal listing status of “threatened.” Additional information regarding each of these species is provided below as a description of the baseline condition for the former NWS Concord.

California Red-legged Frog. The California red-legged frog inhabits perennial freshwater pools, streams, and ponds in the Central California Coast Ranges. The persistence of this species depends on the availability of emergent vegetation to provide refugia and a lack of aquatic predators, such as crayfish, bullfrogs, and fish. California red-legged frog tadpoles were introduced into Cistern Pond within the former NWS Concord in 1982 by the California Department of Fish and Wildlife (CDFW, formerly known as the California Department of Fish and Game [CDFG]) and have expanded their range since then to occupy Cistern Pond, upper Cistern Pond, and several locations along Mt. Diablo Creek. During surveys in 2009, the population at Cistern Pond was found to be extremely healthy. Although the species has not been recorded breeding at the Diablo Creek Golf Course, the course ponds provide potential breeding habitat. Due to the absence of suitable breeding pools, Mt. Diablo Creek does not provide suitable breeding habitat. In addition, no California red-legged frogs were observed at the freshwater marsh and seasonal pools near the old airfield, where crayfish were observed. The former NWS Concord contains upland areas with small mammal burrows adjacent to aquatic habitat that could be utilized by this species as refugia. In addition, grasslands within the former NWS Concord have the potential to support upland habitat for the California red-legged frog.

California Tiger Salamander. The California tiger salamander is a large-bodied salamander native to vernal pool habitats and their associated uplands in Central California from Yolo to Santa Barbara counties. California tiger salamander larvae are fully aquatic and rely on seasonal pools lacking predatory species such as fish, crayfish, and bullfrogs. Adults are highly dependent on small mammal burrows in upland areas adjacent to vernal pools (Loredo et al. 1996, Trenham 2001). Within the former NWS Concord, this species breeds in the southeastern half of the site in a number of seasonal pools or small ponds and was observed at nine site locations during surveys in 1999. Cistern Pond and lower Indian Springs Pond represent the highest-quality habitat for this species onsite; consequently, the largest number of individuals were observed at these locations. According to recent studies, upland habitat for 95 percent of the population extends to up to 2,200 feet from occupied breeding habitat (Trenham and Shaffer 2005). Thus, grassland areas within the former NWS Concord have the potential to support the California tiger salamander. However, available data suggest that the California tiger salamander is absent from the northwest portion of the station. More recent survey efforts on the station have failed to detect any California tiger salamanders northwest of Willow Pass Road, including during the 2011 breeding season, which had above-average rainfall and suitable hydrology to promote the dispersal of breeding adults into this area (City of Concord 2013c).

Alameda Whipsnake. The Alameda whipsnake is a subspecies of the California whipsnake that occurs in partially open, low-growing shrub communities in the inner Coast Ranges of Contra Costa, Alameda, San Joaquin, and Santa Clara counties. The presence of this species on the former NWS Concord is unlikely because of the lack of extensive shrub-scrub habitats on the site and the site’s distance from potential source populations of the snake. However, potential foraging habitat was determined to be present in the small patches of sage scrub in upper Rattlesnake Canyon and in grassland with rock outcrops in the areas southeast and just northwest of Bailey Road (City of Concord 2013c; Ecology and Environment, Inc., and Swaim Biological, Inc., 2009).

The City of Concord included two additional species in the BA for the Area Plan, the Central California coast steelhead (*Oncorhynchus mykiss*) and the San Joaquin kit fox (*Vulpes macrotis mutica*). The steelhead is an anadromous species (i.e., it migrates from saltwater to freshwater for reproduction) and is believed to be absent from the site, based on the inability of a fish to migrate from the Suisun Bay to streams on the site. In addition to a number of culverts and bridge crossings on the site, a known utility

line berm containing several buried pipelines crosses Mt. Diablo Creek north of the site before the creek's confluence with the Suisun Bay and prohibits routine fish migration from the bay to the site. Past studies regarding the San Joaquin kit fox have failed to detect the fox onsite, or even in the areas adjacent to the site (Smith et al. 2006). In addition, available range maps for the kit fox predominately show its distribution east of the site in the grasslands on the east side of the Los Medanos Hills (East Contra Costa County Habitat Conservancy 2006, Smith et al. 2006, and USFWS 1998). Additional discussion regarding the absence of these two species is provided in the BA (City of Concord 2013c), as well as the FEIR for the Reuse Plan (City of Concord 2010).

The remaining species identified as federally endangered or threatened were determined to be absent or unlikely to be present onsite based on lack of suitable habitat or absence during past surveys. These species include the endangered California freshwater shrimp (*Syncaris pacifica*), Callippe silverspot butterfly (*Speyeria callippe callippe*), Conservancy fairy shrimp (*Branchinecta conservatio*), Lange's metalmark butterfly (*Apodemia mormo langei*), longhorn fairy shrimp (*Branchinecta longiantenna*), San Bruno butterfly (*Callophrys mossii bayensis*), vernal pool tadpole shrimp (*Lepidurus packardii*), central California coast coho salmon (*Oncorhynchus kisutch*), Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), tidewater goby (*Eucyclogobius newberryi*), California clapper rail (*Rallus longirostris obsoletus*), California least tern (*Stenula antillarum browni*), and the salt marsh harvest mouse (*Reithrodontomys raviventris*). Federally threatened species determined to be absent or unlikely to be present onsite based on lack of suitable habitat or absence during past surveys include the bay checkerspot butterfly (*Euphydryas editha bayensis*), delta green ground beetle (*Elaphrus viridis*), valley elderberry longhorn beetle (*Desmocercus californicus dimorphus*), vernal pool fairy shrimp (*Branchinecta lynchi*), Central Valley steelhead, Central Valley spring-run and winter run Chinook salmon, delta smelt (*Hypomesus transpacificus*), green sturgeon (*Acipenser medirostris*), longfin smelt (*Spirinchus thaleichthys*), giant garter snake (*Thamnophis gigas*), and western snowy plover (*Charadrius alexandrinus nivosus*). Appendix D, Table D-2, provides a summary of the habitat requirements of each of these species and reasoning for their assumed absence or unlikely presence at the former NWS Concord.

Bald and Golden Eagle Protection Act. The bald eagle (*Haliaeetus leucocephalus*) is no longer a listed species under the federal ESA but still has regulatory protection under the BGEPA. As its name implies, the golden eagle (*Aquila chrysaetos*) is also protected under the BGEPA. The bald eagle is also listed as a state endangered species, while the golden eagle has no additional state designation.

No known bald eagle nests are located in the vicinity of the former NWS Concord, and only one immature bald eagle siting is known, from the 1980s (City of Concord 2010). However, bald eagles have the potential to be considered transients and may occasionally forage in the grasslands over the former NWS Concord. A known golden eagle nest is located along the eastern border of the station in the Los Medanos Hills area. The nest has been located in a eucalyptus grove along the eastern boundary of the site and has been active for a number of years, resulting in the Navy placing a fence and signage around the nest to minimize disturbance to the area (City of Concord 2010). Based on breeding bird atlas data, several known golden eagle nests are also found to the south of the site (Flyingemu 2014a). These nesting pairs likely use the former NWS Concord as foraging habitat.

State-Listed Species

The CNDDDB database contained 15 wildlife species that are listed as threatened or endangered under the CESA for the former NWS Concord and the surrounding region. A complete list of the species is presented in Appendix D, Table D-2. According to existing studies, the majority of the species listed on the CESA do not have suitable habitat conditions at the station. Five state-listed species have the potential to be present on the site: the California tiger salamander, Alameda whipsnake, bald eagle, peregrine falcon (*Falco peregrinus anatum*), and Swainson's hawk (*Buteo swainsoni*). As previously discussed, the

California tiger salamander and the Alameda whipsnake are federally listed species with presence or potential presence on the site, and the bald eagle has the potential to be a transient.

The peregrine falcon, a state-listed endangered species, may forage on the site, but no suitable nesting habitat exists for it; there are confirmed nesting pairs to the south of the station. The Swainson's hawk is a state-listed threatened species that may forage in the grasslands on the station. This species requires grasslands with scattered woodlands throughout for breeding and forages primarily in grassland areas. While no confirmed breeding by the species has been documented on the station, Swainson's hawks are known to breed in eastern Contra Costa County (Flyingemu 2014b), and these breeding pairs and their offspring could potentially forage in suitable habitats at the former NWS Concord. One state-listed species—the California black rail (*Laterallus jamaicensis coturniculus*) does not have federal protection and was determined to be absent because of the lack of suitable habitat on the station.

The State of California also classifies species as “fully protected” or “species of special concern” based on their sensitivity and potential as indicator species or for listing under the CESA. Several of these species have the potential to occur on the former NWS Concord: the fully protected golden eagle, peregrine falcon, and white-tailed kite (*Elanus leucurus*). The white-tailed kite has been documented nesting in trees along the riparian corridors within the station. Several species of special concern are also known to inhabit the site, including the western pond turtle (*Actinemys marmorata*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), tricolored blackbird (*Agelaius tricolor*), American badger (*Taxideus taxus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Some special status wildlife species may occur within the former NWS Concord only as migrants or transients, or they may forage within the former NWS Concord in low numbers while breeding in adjacent areas. However, these species are not expected to breed within the former NWS Concord or to be substantially affected by the proposed action. These species include the coast horned lizard (*Phrynosoma coronatum frontale*), bald eagle, Swainson's hawk, peregrine falcon (*Falco peregrinus anatum*), short-eared owl (*Asio flammeus*), long-eared owl (*Asio otus*), Vaux's swift (*Chaetura vauxi*), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), olive-sided flycatcher (*Conopus cooperi*), yellow warbler (*Dendroica petechial*), grasshopper sparrow (*Ammodramus savannarum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), and western red bat (*Lasiurus blossevilli*).

3.6 Cultural Resources

This section describes the regulatory setting, cultural setting, and cultural resources identified for the proposed action.

3.6.1 Regulatory Framework

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources (both prehistoric and historic), historic architectural/engineering resources (buildings, structures, and other built resources), and traditional resources (resources important to living Native Americans for religious, spiritual, ancestral, or traditional reasons). Cultural resources that are eligible for listing in the National Register of Historic Places (NRHP) are called historic properties and are evaluated for potential adverse effects from an action. In addition, some cultural resources, such as Native American sacred sites or traditional resources, may not be historic properties, but they are also evaluated under NEPA for potential adverse effects from a major federal action. These resources are identified through consultation with appropriate Native American or other interested groups.

Implementation of the proposed action is subject to compliance with a number of federal regulations for the protection of cultural resources and historic properties because the former NWS Concord is federally

owned property. These federal regulations include Section 106 of the National Historic Preservation Act (NHPA), as amended, and its implementing regulations at 36 CFR Part 800 and the federal Archaeological Resources Protection Act (ARPA).

3.6.1.1 Section 106 of the National Historic Preservation Act of 1966

Section 106 of the NHPA, as amended, and its implementing regulations at 36 CFR Part 800 require that federal agencies take into account the effects of their actions (referred to as “undertakings” under Section 106) on properties that may be eligible for or listed in the NRHP and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (i.e., archaeological, historical, and architectural properties) that could be affected by the undertaking must be inventoried and evaluated for inclusion in the NRHP.

The NRHP is a register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. The NRHP is maintained by the Secretary of the Interior. A property may be listed in the NRHP if it meets criteria for evaluation defined in 36 CFR 60.4. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and one or more of the following four criteria:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history.

Under Section 106 of the NHPA, only cultural resources that have been determined to be eligible for listing in the NRHP or that are listed in the NRHP need to be considered when evaluating an action’s effects on cultural resources.

The regulations implementing Section 106 require consultation by the lead federal agency with the State Historic Preservation Office (SHPO), federally recognized Indian tribes, representatives of local governments, additional consulting parties with a demonstrated interest in the undertaking and its effects on historic properties, and the public throughout the process (36 CFR 800.2). The ACHP is also invited to participate. The purpose of consultation is to facilitate the lead federal agency’s evaluation of an undertaking’s effects on historic properties.

The four principal steps for the Section 106 process are:

1. Initiation of the Section 106 process: establishes undertaking (36 CFR 800.3);
2. Identification of historic properties, consisting of those resources within an Area of Potential Effect (APE) that are eligible for inclusion in the NRHP (36 CFR 800.4);
3. Assessment of the effects of the undertaking on historic properties in the APE (36 CFR 800.4(d) (1) and (2) and 36 CFR 800.5); and

4. Resolution of adverse effects (36 CFR Part 800.6).

Adverse effects on historic properties may be resolved through preparation of a memorandum of agreement or a programmatic agreement developed in consultation between the lead federal agency, the SHPO, federally recognized Indian tribes, and other consulting parties to the Section 106 process.

Consistent with implementing regulations for Section 106 of the NHPA, the Navy has determined that the proposed disposal of property, and subsequent reuse by the City of Concord as the LRA, is an undertaking that has the potential to affect historic properties. Therefore, the following impact analysis focuses on the potential impacts and effects of disposal and reuse of former NWS Concord on cultural resources and historic properties pursuant to both NEPA and Section 106 of the NHPA.

3.6.1.2 Archaeological Resources Protection Act

ARPA, enacted October 31, 1979, amended the Antiquities Act of 1906 (16 U.S.C. 431–433) and set a broad policy that archaeological resources are important to the nation and should be protected, and required special permits before the excavation or removal of archaeological resources from public or tribal lands. The purpose of ARPA was to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites that are on public lands and tribal lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979.

ARPA prohibits unauthorized archaeological excavation on federal and Indian lands. It establishes standards for permissible excavation, encourages cooperation between federal agencies and private individuals with regard to archaeological resources, and prescribes civil and criminal penalties for unauthorized excavation (Far Western Anthropological Research Group, Inc. [Far Western] and JRP Historical Consulting Services, Inc. [JRP] 2002).

3.6.2 Cultural Setting

The cultural setting of the former NWS Concord was developed through a series of cultural resources investigations, including a Phase I archaeological survey, Phase II archaeological site evaluation, ethnographic study, historic building survey and evaluation, and rural historic landscape study. Results of these cultural resources investigations documented the prehistoric and historic Native American contexts and the historic Euro-American contexts for NWS Concord. These contexts are summarized briefly below and are based on more detailed discussions in the following primary technical studies: *Naval Weapons Station, Seal Beach, Detachment Concord, Integrated Cultural Resources Management Plan for the years 2002-2007, Volume I of II* (Far Western and JRP 2002); *Final Reevaluation of Eligibility for Listing in the National Register of Historic Places: World War II Munitions Depots at Seal Beach, Fallbrook, and Concord, California* (Manley 2003); *Final Report for Concord Inland BRAC Disposal Archaeological Survey, Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California* (Garcia-Herbst and Hale 2008); *Final Historic Building Inventory and Evaluation Update Report, Inland Area, Concord Naval Weapons Station, Contra Costa County, California* (Herbert and Allen 2013); and *Final National Register of Historic Places Evaluation of 21 Archaeological Sites in Support of the Environmental Impact Statement for Disposal and Reuse of the Former Naval Weapons Station, Seal Beach, Detachment Concord, Contra Costa County, California* (ASM Affiliates, Inc., 2014).

3.6.2.1 Prehistoric Context

The general prehistoric context for NWS Concord is based on a prehistoric cultural chronology for archaeological sites in Contra Costa County that date from the Lower Archaic (10,000 to 6,000 before

present [B.P.]); the Initial Middle Archaic (6,000 to 4,500 B.P.), the Terminal Archaic (4,500 to 2,500 B.P.), the Upper Archaic (2,500 to 1,300 B.P.), and the Emergent Period (1,300 to 200 B.P.).

The Lower Archaic period is the oldest prehistoric cultural context identified in Contra Costa County. Two archaeological sites from this period have been recorded in the county, although not at NWS Concord. The artifact assemblages from these sites indicate that a wide variety of animal and plant species were utilized, although large nuts, wild cucumber, and berries (manzanita) were the dominant plant resources utilized at the sites (Far Western and JRP 2002, Garcia-Herbst and Hale 2008).

The Initial Middle Archaic period is represented in Contra Costa County by isolated human burials and one archaeological site in the county, although not at NWS Concord. These sites contained a diverse artifact assemblage comprised of habitation debris, several human burials, residential and resource-processing features, and one of the oldest dated shell bead lots in central California (dating to 4,160 B.P.) and a unique type of pestle apparently used with a wooden mortar (Far Western and JRP 2002, Garcia-Herbst and Hale 2008). This cultural period is characterized by the emergence of new technologies that reflect increased sedentism, mortuary complexity, and regional trade, with a gradual decrease in overall foraging territories and a narrowing focus on lowland environments.

The Terminal Archaic period is represented in Contra Costa County by a number of archaeological sites in the county, although not at NWS Concord. These sites include buried sites, surface sites, and shell mounds. The artifact assemblages, including lithic, floral, and faunal assemblages, indicate that a wide variety of resources were utilized. Nuts (acorn and pine) and berries (manzanita) appear to be the primary plant resources utilized at sites from this cultural period. Sites in bayshore environmental settings indicate utilization of marine shellfish species, marine fishes, and marine mammals; sites in inland environmental settings indicate utilization of freshwater fish and shellfish and terrestrial mammals (Far Western and JRP 2002, Garcia-Herbst and Hale 2008).

The Upper Archaic Period is represented in Contra Costa County by archaeological sites in the county, although not at NWS Concord. These sites include buried sites and shell mounds characterized by well-developed midden deposits containing human remains and residential features, and indicative of long-term residential villages. Typically located along freshwater streams in bayshore and interior environmental settings, the combined artifact assemblages from these sites indicate that a wide variety of resources were utilized. Acorns and other large nuts and seeds were important food resources, although there was a growing emphasis on small-seeded resources. Faunal food resources reflected either marine or terrestrial species, depending on bayshore or interior site location, although marine shellfish began to appear in increasingly larger amounts at interior valley sites (Far Western and JRP 2002, Garcia-Herbst and Hale 2008). Studies of human burials from this cultural period identified warfare-related trauma that could reflect the emergence of more hierarchical social systems (ASM Affiliates, Inc., 2014).

The Emergent Period is represented in Contra Costa County by archaeological sites in the county, although not at NWS Concord. These sites include surface and buried sites characterized by well-developed midden deposits containing human burials and residential features, including house floors, and represent both habitation sites and task-specific sites. Located in bayshore, interior valley and upland environmental settings, large villages composed of hundreds of people appear to have been located in the delta region of the county, while smaller hamlets composed of one or two extended families were located in some of the smaller valleys. The artifact assemblages, including lithic, floral, and faunal assemblages, indicate that a wide variety of resources were utilized during this time period, with small-seeded plant resources and large mammals becoming a more prominent part of the diet, along with marine shellfish and marine fish that were transported inland in larger quantities (Far Western and JRP 2002, Garcia-Herbst and Hale 2008). This cultural period generally is characterized by continuing technological and adaptive changes that reflect a substantial rise in sedentism and social complexity and the continuation of

adaptive and social changes that began in earlier periods until interruption by contact with the Spanish (ASM Affiliates, Inc., 2014).

3.6.2.2 Ethnographic Context

The ethnographic context for former NWS Concord is associated with the Chupcan, a Bay Miwok tribe occupying territory that included former NWS Concord at the time of European contact in 1772 (Far Western and JRP 2002, Garcia-Herbst and Hale 2008). The bayshore marshland and inland valley environmental settings at the former NWS Concord would have been important subsistence environments for the Chupcan, where nuts and seed crops, forbs, bulbs, and roots would have been collected, deer and rabbits would have been hunted in the interior valley and uplands, and elk and pronghorn would have been hunted on the lowland plains along Mt. Diablo Creek and the borders of marshland (Far Western and JRP 2002, Garcia-Herbst and Hale 2008, ASM Affiliates, Inc., 2014).

Spanish mission records suggest that at the time of Spanish contact, the Bay Miwok tribes consisted of the ethnographic Chupcan, Saclan, Tatcan, Volvon (or Bolbon), and Julpun tribes, which were linguistically related (Far Western and JRP 2002, Garcia-Herbst and Hale 2008, ASM Affiliates, Inc., 2014). Initial European contact with the Bay Miwok tribes in the area was in the spring of 1772, when a Spanish expedition passed through Chupcan territory on its way east from San Francisco, then south through the San Ramon Valley and home to its new settlement at Monterey. Some 20 to 30 years later, between 1795 and 1804, the majority of Chupcan had moved to Mission San Francisco or Mission San Jose. Records for Mission San Jose and Mission San Francisco in the 1810s and 1820s indicate that Chupcans married into other Bay Miwok tribes, as well as non-Bay Miwok tribes, including Patwan-speaking tribes from areas further north and Plains Miwok-speaking tribes. When the missions were closed as Indian agricultural communes in 1836, surviving Chupcans and their descendants would have gone to work for Mexican ranch owners throughout the east bay area (Far Western and JRP 2002, Garcia-Herbst and Hale 2008, ASM Affiliates, Inc., 2014).

No present-day Indian person traces his or her ancestry back to the Chupcan people, although the closest living genetic relatives would be the descendants of other Bay Miwok groups who went to missions San Jose, San Francisco, and San Francisco Solano during the mission period (Far Western and JRP 2002, Garcia-Herbst and Hale 2008). However, several present-day Plains Miwok tribes maintain an interest in the general area, including the present-day California Valley Miwok Tribe, the Ione Band of Miwok Indians, and the Shingle Spring Band of Miwok Indians. Ethnographic information provided by these present-day Miwok tribes has been summarized in studies conducted for NWS Concord (ASM Affiliates, Inc., 2014).

3.6.2.3 Historic Context

The general historic context for NWS Concord is based on a historic cultural chronology for archaeological sites in Contra Costa County that date from the Euro-American Occupation, Exploration, and Initial Settlement Period (1769-1845); the Early American Mining and Farming Period (1846-1880); the Era of Transportation and Industry (1880-1945); and the Military and Recent Past Period (1941-present).

The Euro-American Occupation, Exploration, and Initial Settlement Period began with the Spanish, who first settled California in 1769 but did not explore the vicinity of the region, including what became Contra Costa County, until the 1770s. As indicated above, initial European exploration was in the spring of 1772, and the next exploration by the Spanish was in April of 1776 by Spanish leader Juan Bautista de Anza (Far Western and JRP 2002, Garcia-Herbst and Hale 2008). Permanent Spanish settlement in the vicinity of the former NWS Concord began with the establishment of the mission and presidio of San Francisco in 1776 and Mission San Jose in 1789, and it is possible that land at or near the former NWS

Concord was used by Mission San Jose for grazing purposes. The missions were closed in the 1820s, and, by the late 1820s, individuals began to petition for land grants in what is now Contra Costa County. Much of the land that is now the former NWS Concord was included within two large *ranchos* used primarily for livestock grazing, which were granted by the Spanish government after the mission closed: the Monte del Diablo in 1834, and Rancho Los Maganos in 1835 (Far Western and JRP 2002, Garcia-Herbst and Hale 2008, ASM Affiliates, Inc., 2014).

The Early American Mining and Farming Period began with the American takeover of California in 1846 and the discovery of gold in 1849 and the subsequent Gold Rush that combined to dramatically accelerate the pace of settlement. The Army's arsenal at Benicia (established in 1851) and the Navy Station at Mare Island (established in 1854) also influenced the development pattern for much of northern Contra Costa County and helped to establish the Benicia-Martinez area as a major shipping point for goods going to and from inland areas (Far Western and JRP 2002, Garcia-Herbst and Hale 2008). In 1852, Major Robert Allen, who was attached to the Benicia Arsenal, purchased much of the Monte del Diablo *ranch*, and other settlers claimed land in what is now the former NWS Concord that was in the public domain through the Homestead Act, Swamp and Overflowed Land Act, and other legal devices (Far Western and JRP 2002, Garcia-Herbst and Hale 2008).

As settlers arrived in California during the Gold Rush years, they acquired agricultural land from ranch owners. Open-range grazing lands of the Mexican period of settlement in California were fenced and cultivated, and individual ranches were reduced in size from many thousands of acres to parcels varying from several hundred acres to several thousand acres. Finding wheat farming for export more lucrative per acre than cattle ranching, farmers dry-farmed wheat and transported it to the nearest shipping point, although hay and other livestock forage were also grown on ranches in combination with livestock grazing (ASM Affiliates, Inc., 2014). After the wheat boom of the 1860s and 1870s, farmers shifted to the cultivation of other grains and began to experiment with a wider range of crops. By the end of the 19th century, much of the Diablo Valley had transitioned into a mix of vineyards and orchards, interspersed with the occasional dairy or poultry farm (Far Western and JRP 2002, Garcia-Herbst and Hale 2008, ASM Affiliates, Inc., 2014). By the early 20th century, the western side of the Diablo Valley was subdivided and intensively developed as small irrigated parcels ranging from 5 to 80 acres with cultivated orchards and vegetable gardens, while the eastern side of the Diablo Valley, including land along the foothills or eastern side of the former NWS Concord, continued to produce hay and grain but was increasingly devoted to raising cattle and horses on ranches and dairy farms (ASM Affiliates, Inc., 2014).

The Era of Transportation and Industry occurred between the later 1870s and World War I, with major transportation developments and other improvements in the vicinity of the former NWS Concord. Developments consisted of the completion of two major lines for the Southern Pacific Railroad in the 1870s, construction of short lines associated with the Bay Point & Clayton Railroad and the Sacramento Northern Railroad at the turn of the 20th century, opening roads east from Clayton to reach the mining regions south of Mount Diablo at the turn of the 20th century, improvement to the highway that became SR 4 and other roads in the area to be suitable for automobile traffic, and channelization of Mt. Diablo Creek that was finalized after 1937 with the construction of the Contra Costa Canal through the northern portion of the former NWS Concord (Far Western and JRP 2002, Garcia-Herbst and Hale 2008, Herbert and Allen 2013, ASM Affiliates, Inc., 2014).

The Military and Recent Past Period began with the onset of World War II in Europe, when the Navy began looking for a Bay Area site for a new and larger ammunition depot to serve Navy stations in northern California as early as 1940. In 1942, the Navy acquired 640 acres of land for NWS Concord that was called the Tidal Area, and in 1944 and 1945, the Navy expanded the facility by acquiring more than 5,000 acres for NWS Concord and constructed the bulk of its munitions facilities, including barricade sidings, magazines, storehouses, and auxiliary buildings, as well as a small air facility (Far Western and

JRP 2002, Garcia-Herbst and Hale 2008, Herbert and Allen 2013, ASM Affiliates, Inc., 2014). By the close of World War II, NWS Concord had become the principal ammunition-loading port and storage point for ammunition and high explosives on the West Coast (Herbert and Allen 2013, ASM Affiliates, Inc., 2014).

The importance of the installation's role in supplying the Pacific Fleet throughout World War II assured it a continued strategic place in the years following the war, and it remained a powerful and fully functioning station as the U.S. entered into the Cold War period. However, as a direct result of the end of the Cold War in 1989 and the subsequent cessation of the military's strong demands for personnel and materiel, the station saw a reduction in workforce and volumes of ordnance shipped and stored. In 1998, NWS Concord became a detachment of NWS Seal Beach in Orange County, California, and by 1999 a minimal contingent of military personnel was stationed at NWS Concord. In 1999, the Navy formally placed the facility into a reduced operational status. In November 2005, NWS Concord was recommended for the partial closure and realignment that has resulted in the current proposed action (Herbert and Allen 2013).

3.6.3 Existing Cultural Resources on the Former NWS Concord

This section describes the existing cultural resources identified within the APE for the proposed action at the former NWS Concord. The boundary of the APE is the same as the boundary of the property that will be disposed, delineated as the former NWS Concord on Figure 2-1. Archaeological and architectural resources are discussed in sections 3.6.3.1 and 3.6.3.2, respectively. Those resources that have been determined historic properties are discussed in Section 3.6.4.

3.6.3.1 Archaeological Resources

In 2008, a Phase I archaeological survey of the APE was conducted by ASM Affiliates, Inc. The purpose of the 2008 Phase I archaeological survey was to document archaeological resources within the APE for the proposed action. The 2008 Phase I report presented a discussion of previously recorded archaeological resources in the APE as well as the results of the 2008 archaeological survey (Garcia-Herbst and Hale 2008).

The 2008 Phase I archaeological survey of the APE confirmed the presence of five previously recorded archaeological sites and identified 17 newly identified archaeological sites and four isolated artifact finds (see Table 3.6-1) (Garcia-Herbst and Hale 2008). As indicated in Table 3.6-1, three of the 22 identified archaeological sites were prehistoric and 19 were historic. Three of the isolated artifact finds were prehistoric; one was historic.

In 2013, ASM Affiliates, Inc., conducted NRHP-eligibility evaluations of 21 of the 22 archaeological sites (NRHP-eligibility evaluations were not conducted for one historic archaeological site, Site CCO-792H). Four of the 21 archaeological sites (prehistoric sites CA-CCO-680, P-07-00861, and CA-CCO-786 and historic site CA-CCO-791H) underwent Phase II archaeological investigations to determine their NRHP-eligibility. Eighteen historic sites (CA-CCO-791H and 17 additional historic archaeological sites) were evaluated collectively as a potential Rural Historic Landscape (RHL) to determine their NRHP-eligibility (ASM Affiliates, Inc., 2014).

As a result of NRHP-eligibility evaluations, two of the four archaeological sites (CA-CCO-680 and P-07-00861) were recommended NRHP eligible (ASM Affiliates, Inc., 2014) (see Section 3.6.4). The other two archaeological sites (CA-CCO-786 and CA-CCO-791H) were recommended not NRHP eligible. Results of the RHL study indicated that the remaining 19 historic archaeological sites, including CA-CCO-791H, were recommended not NRHP eligible individually or as an element of an RHL (ASM Affiliates, Inc., 2014).

Table 3.6-1 Archaeological Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Site Number	Description	Archaeological Investigations	NRHP-Eligibility Determination
CA-CCO-680 (P-07-00003)	Prehistoric archaeological site consisting of surface and subsurface artifacts and features, including human remains. May be associated with the Maltby Site (CA-CCO-250).	Phase I archaeological investigations by Busby et al. 1996 and Garcia-Herbst and Hale 2008; Phase II archaeological evaluation by ASM Affiliates, Inc., 2014	NRHP eligible
P-07-00860	Historic archaeological site consisting of a stone cistern and including a windmill, pond, and surface glass scatter	Phase I archaeological investigations by Self et al. 1993, JRP 1998, and Garcia-Herbst and Hale 2008; recorded by Kiebel 2001; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
P-07-00485	Historic archaeological site consisting of a corral	Phase I archaeological investigations by Busby et al. 1996 and Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
P-07-02683	Historic mine shaft with nearby windmill	Phase I archaeological investigations by JRP 1998 and Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
P-07-00861	Prehistoric archaeological site consisting of a bedrock milling facility, including two bedrock milling features and one cupule rock art boulder	Recorded by Kiebel 2001; Phase I archaeological investigations by Garcia-Herbst and Hale 2008; Phase II archaeological evaluation by ASM Affiliates, Inc., 2014	NRHP eligible
CCO-777H	Historic archaeological site consisting of remains of a residence, associated outbuildings and hardscaping, and orchards	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-778H	Historic archaeological site consisting of a well	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-779H	Historic archaeological site consisting of remains of a residence, concrete pads, water trough, and culvert	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL

Table 3.6-1 Archaeological Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Site Number	Description	Archaeological Investigations	NRHP-Eligibility Determination
CCO-780H	Historic archaeological site consisting of remains of a residence, associated outbuildings, a well, and decorative landscaping	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-781H	Historic archaeological site consisting of remains of a water facility, including foundations, a water tank, windmill, earthen dam, and a walnut orchard	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-782H	Historic archaeological site consisting of remains of a concrete wall and a water facility	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-783H	Historic archaeological site consisting of remains of a concrete wall and a water facility	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-784H	Historic archaeological site consisting of remains of a residence, including foundations, surface artifact scatters, and orchard remnants	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-785H	Historic archaeological site consisting of remains of a residence/ranch, including foundations, a well cap, surface artifact scatters, and decorative landscaping	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-786	Prehistoric archaeological site, consisting of surface ground and flaked-stone artifacts, including a millingstone and handstones	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; Phase II archaeological evaluation by ASM Affiliates, Inc., 2014	Not NRHP eligible
CCO-787H	Historic archaeological site consisting of remains of a complex of non-residential structures that predate railroad and canal	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL

Table 3.6-1 Archaeological Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Site Number	Description	Archaeological Investigations	NRHP-Eligibility Determination
CCO-788H	Historic/modern archaeological site consisting of an outhouse, pumphouse, earthen pond, light surface artifact scatter, and modern sprinkler system	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-789H	Historic archaeological site consisting of remains of an industrial structure	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-791H	Historic archaeological site consisting of the remains of a water facility, corral, trees, and a dense surface artifact scatter	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study and Phase II archaeological evaluation by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-792H	Historic archaeological site consisting of a surface scatter of artifacts on the margin of an old dump that extends out of the APE and an old corral facility	Phase I archaeological investigations by Garcia-Herbst and Hale 2008	Not NRHP eligible
CCO-793H	Historic archaeological site consisting of a water trough, cobble foundation pillars, and a surface glass artifact scatter	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
CCO-794H	Historic archaeological site consisting of a quarry	Phase I archaeological investigations by Garcia-Herbst and Hale 2008; RHL Study by ASM Affiliates, Inc., 2014	Not NRHP eligible individually or as an element of an RHL
AI-1	Prehistoric isolated artifact consisting of a basalt flake	Phase I archaeological investigations by Garcia-Herbst and Hale 2008	Not NRHP eligible
AI-2	Historic isolated find consisting of an axe head	Phase I archaeological investigations by Garcia-Herbst and Hale 2008	Not NRHP eligible
AI-3	Prehistoric isolated artifact consisting of a basalt flake	Phase I archaeological investigations by Garcia-Herbst and Hale 2008	Not NRHP eligible
AI-4	Prehistoric isolated artifact consisting of a quartz biface	Phase I archaeological investigations by Garcia-Herbst and Hale 2008	Not NRHP eligible

Source: Garcia-Herbst and Hale 2008; ASM Affiliates, Inc., 2014; Roland-Nawi 2014.

The Navy consulted with the California SHPO regarding the results of the 2013 NRHP-eligibility evaluations of the 21 archaeological resources in the APE for the proposed action and with 11 other consulting parties (the City of Concord, the East Bay Regional Park District, the Contra Costa County Fire Protection District, the California Valley Miwok Tribe, the Ione Band of Miwok Indians, the Shingle Springs Band of Miwok Indians, the Trina Marine Ruano Family, the Concord Historical Society, Save Mt. Diablo, the U.S. Bureau of Reclamation, and the Contra Costa Water District (see Appendix A). On January 23, 2014, the California SHPO concurred with the Navy's determination that archaeological sites CA-CCO-680 and P-07-00861 are NRHP-eligible and that the remaining 19 archaeological resources are not eligible for listing in the NRHP (Roland-Nawi 2014). The Concord Historical Society and the East Bay Regional Park District concurred with the NRHP-eligibility conclusions for the 21 archaeological resources (see Appendix A). None of the 10 other consulting parties had comments on the NRHP-eligibility conclusions for the 21 archaeological resources.

3.6.3.2 Architectural Resources

In 2013, the Navy updated the results of previously conducted historic building inventories and evaluations for architectural or built resources in the APE at former NWS Concord (Herbert and Allen 2013). The purpose of the 2013 update, *Historic Building Inventory and Evaluation Update Report*, was to revisit buildings and structures in the APE for the proposed action that were surveyed in prior cultural resources studies for former NWS Concord and assess whether any of them now meet the criteria for listing in the NRHP. The 2013 *Historic Building Inventory and Evaluation Update Report* presented a discussion of previously recorded architectural and built resources in the APE as well as the results of the 2013 update (Herbert and Allen 2013).

Previously conducted inventories and evaluations of the historic buildings and structures at NWS Concord were conducted in the 1990s and included both the Inland and Tidal areas. In 1993, William Self Associates inventoried and evaluated a total of 506 World War II-era building and structures at NWS Concord. In 1998, JRP inventoried and evaluated 375 Cold War-era buildings and structures and several World War II-era buildings and structures at NWS Concord.

Of the 506 World War II-era buildings and structures inventoried and evaluated by William Self Associates, one (the Port Chicago National Memorial located in the Tidal Area of NWS Concord) appeared eligible for listing in the NRHP. None of the 375 Cold War- or World War II-era buildings or structures inventoried and evaluated by JRP was found eligible for listing in the NRHP. According to the 2002-2007 Integrated Cultural Resources Management Plan for NWS Concord, the California SHPO concurred with the findings of both the 1993 William Self Associates report and the 1998 JRP report (Far Western and JRP 2002, Herbert and Allen 2013).

Subsequent to the 1993 and 1998 inventories and evaluations, additional information was prepared for architectural or built resources at NWS Concord. In 2001, John A. Kiebel of the Concord Historical Society prepared a DPR 523 form evaluating the historic cistern (P-07-00860), which concluded that the structure appeared eligible for inclusion in the NRHP (Herbert and Allen 2013). In 2003, William R. Manley conducted a study of three World War II-era munitions depots in California, including NWS Concord, for the Navy. Conclusions of this study concurred that the World War II-era architectural or built resources at NWS Concord were not eligible for listing in the NRHP (Manley 2003, Herbert and Allen 2013).

In addition to the results of previous inventories and evaluations, the Contra Costa Canal (P-07-002695), including its subsidiary, the Clayton Canal, is a previously recorded built resource traversing the APE that was previously determined eligible for listing in the NRHP by consensus with the California SHPO on March 9, 2005 (Ostrowski 2013, Garcia-Herbst and Hale 2008). While portions of the Contra Costa Canal

and Clayton Canal traverse the APE for the proposed action, they are built resources owned by the U.S. Bureau of Reclamation and operated by the CCWD. Although the canals are not owned by the Navy or included in the proposed property disposal action, updated information for the NRHP-eligibility of bridges and culverts associated with the Contra Costa Canal was included in the 2013 *Historic Building Inventory and Evaluation Update Report* for the proposed action. The updated information addressed eight Navy-owned bridges along the canal and the remaining bridges and culverts that appear to be owned and operated by the U.S. Bureau of Reclamation and CCWD (Ostrowski 2013, Herbert and Allen 2013).

The 2013 *update* revisited a total of 422 architectural or built resources in the APE for the proposed action. These 422 architectural or built resources in the APE included World War II-era buildings or structures, Cold War-era buildings or structures, the stone cistern, and bridges or culverts for the Contra Costa Canal (including its subsidiary, the Clayton Canal). Results of the 2013 *Historic Building Inventory and Evaluation Update Report* confirmed that none of the 422 building or structures appeared eligible for listing in the NRHP (see Table 3.6-2) (Herbert and Allen 2013).

On January 30, 2013, the Navy consulted with the California SHPO regarding the results of the 2013 *Historic Building Inventory and Evaluation Update Report* and with 11 other consulting parties (the City of Concord, the East Bay Regional Park District, the Contra Costa County Fire Protection District, the California Valley Miwok Tribe, the Ione Band of Miwok Indians, the Shingle Springs Band of Miwok Indians, the Trina Marine Ruano Family, the Concord Historical Society, Save Mt. Diablo, the U.S. Bureau of Reclamation, and the Contra Costa Water District (see Appendix A). On February 14, 2013, the California SHPO concurred with the Navy's determination that none of the 422 architectural or built resources in the APE for the proposed action that were included in the 2013 *Historic Building Inventory and Evaluation Update Report* are eligible for listing in the NRHP (Roland-Nawi 2013). The Concord Historical Society, the City of Concord, and the U.S. Bureau of Reclamation concurred with the conclusions of the 2013 *Historic Building Inventory and Evaluation Update Report* (see Appendix A). None of the eight other consulting parties had comments on the NRHP-eligibility conclusions for the 422 architectural or built resources.

3.6.4 Historic Properties on the Former NWS Concord

As a result of NRHP-eligibility evaluations conducted for the proposed action at former NWS Concord, two archaeological sites (CA-CCO-680 and P-07-00861, as described in Section 3.6.3.1) were recommended potentially NRHP eligible. Site CA-CCO-680 was recommended NRHP eligible under Criterion D for its potential to yield additional information important in prehistory. Site P-07-00861 was recommended NRHP eligible under Criterion A for its association with events significant to the broad patterns of prehistory and under Criterion D for its potential to yield additional information important in prehistory. As discussed in Section 3.6.3.1, based on the results of the NRHP-eligibility evaluations, none of the other archaeological resources within the APE for the proposed action at former NWS Concord were recommended NRHP eligible (ASM Affiliates, Inc., 2014).

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
61-71 (11 structures)	High Explosives Magazine (Alpha Area)	1959	Cold War-era at-grade magazine consisting of a reinforced concrete vault with an earth fill cover and designed for rail access	Not NRHP eligible
72-78 (seven structures)	High Explosives Magazine (Alpha Area)	1959	Cold War-era platform magazine consisting of a reinforced concrete arched vault with an earth fill cover and designed for truck access	Not NRHP eligible
79	Guardhouse/Reaction Force Building (Alpha Area)	1959	Cold War-era concrete block building with a gravel-covered pre-cast concrete slab roof, shallow shed-type slope, and earthen barricades. Modified in 1977 with a sleeping area, additional concrete for walls, and doors and gun ports	Not NRHP eligible
81	Weapons Maintenance Building (Building 81 Complex)	1959	Cold War-era rectangular building with concrete foundation and two poured-in-place concrete retaining walls covered with earth fill	Not NRHP eligible
82	Paint Shop (Building 81 Complex)	1959	Cold War-era reinforced concrete vault covered with earth fill	Not NRHP eligible
83	Lunch, Locker, and Boiler Room (Building 81 Complex)	1959	Cold War-era rectangular concrete block structure with concrete slab foundation and pre-cast concrete slab, shallow-sloped roof covered with gravel	Not NRHP eligible
84	Container Shed (Building 81 Complex)	1959	Cold War-era concrete block structure on a concrete pad foundation with a pre-cast concrete slab shed roof	Not NRHP eligible
85	Pump House (Building 81 Complex)	1959	Cold War-era concrete block structure on a concrete pad foundation with a pre-cast concrete slab shed roof	Not NRHP eligible
86	Emergency Generator Building (Building 81 Complex)	1959	Cold War-era concrete block structure on a concrete pad foundation with a pre-cast concrete slab shed roof	Not NRHP eligible
87	Inert Storage and Processing Building (Central Building of Building 87 Complex)	1959	Cold War-era rectangular concrete building, including concrete foundation, cast-in-place columns and pre-cast concrete panels with a steel frame, built-up, shallow gabled roof; a parachute tower sheathed in insulated metal panels rises through the roof at northwest corner	Not NRHP eligible
88	Vehicle Storage Shed (Building 87 Complex)	1959	Cold War-era concrete block structure on concrete pad foundation with pre-cast concrete slab roof	Not NRHP eligible
89	Pumphouse (Building 87 Complex)	1959	Cold War-era concrete block structure on concrete pad foundation with pre-cast concrete slab roof	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
93	Guidance Checkout Facility (Building 93 Complex)	1960	Cold War-era long, rectangular, reinforced concrete, tilt-up slab structure with a steel frame, topped by a shallow pitched side-gable roof, containing eight guidance checkout or test cells and accessible by truck or rail. Additional cells were added in 1980, 1982, 1984, and 1992.	Not NRHP eligible
94	Ready Issue Building (Building 93 Complex)	1960	Cold War-era concrete tilt-up structure	Not NRHP eligible
96	Lunch, Locker, and Boiler Building (Building 93 Complex)	1960	Cold War-era rectangular reinforced concrete block building with a flat roof	Not NRHP eligible
97	Warhead Assembly, Fueling, and Igniter Test Building (Building 97 Complex)	1960	Cold War-era irregularly shaped, reinforced poured-in-place concrete and steel frame structure	Not NRHP eligible
98	Boiler and Sentry House (Building 97 Complex)	1960	Cold War-era rectangular reinforced concrete block building on a concrete slab roof with a flat, gravel-covered roof	Not NRHP eligible
112	Field Toilet (Building IA50 Complex)	1954	Cold War-era concrete block toilet building with a shed roof covered with corrugated cement asbestos	Not NRHP eligible
113	Operational Storage Shed (Building IA50 Complex)	1946	World War II-era small wood frame equipment shelter with a shed roof and horizontal grooved siding. Constructed elsewhere in 1946 and subsequently relocated to the Building IA50 Complex	Not NRHP eligible
114	Fire Station Outbuilding (Security and Safety Buildings)	1946	Cold War-era wood frame building with horizontal wood siding on a timber foundation and with a shed roof covered with composition roll sheeting	Not NRHP eligible
116	Public Works Shop (Public Works)	1946	Cold War-era wood frame structure on a heavy timber foundation with plain plywood siding and a gable roof, covered in composition roll sheeting, extended to form a covered patio	Not NRHP eligible
131	Water Tank (Utilities and Services Building)	1960	Cold War-era metal aboveground water tank with a 225,000-gallon capacity	Not NRHP eligible
132	Water Tank (Utilities and Services Building)	1960	Cold War-era metal aboveground water tank with a 225,000-gallon capacity	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
150	Public Works Maintenance Storage (Public Works)	1963	Cold War-era pre-engineered metal shed on a concrete slab foundation	Not NRHP eligible
151	Guided Missile Facility (Building 97 Complex)	1963	Cold War-era pre-engineered building with metal siding constructed as an addition to the west side of Building 97	Not NRHP eligible
152	Gymnasium (Morale, Welfare, and Recreation)	1966	Cold War-era composite structure consisting of a large multi-purpose hardwood court area and smaller rooms. The court area is a steel-framed structure topped by a shallow built-up side-gabled roof with 20-foot-tall windows formed of pre-cast concrete panels topped by bands of metal industrial sash windows. Additions for smaller rooms are concrete block with corrugated metal roofs.	Not NRHP eligible
159	Enlisted Men's Club/Recreation and Enlisted Men's Open Mess (Morale, Welfare, and Recreation)	1966	Cold War-era building consisting of pre-cast concrete panels, steel enamel panels, and concrete block construction with a built-up gravel-covered roof	Not NRHP eligible
161	Parade Grounds (Monuments)	1945	World War II-era parade ground located in the central administrative area. Includes a flagpole and ceremonial area at its western end and a gazebo or bandstand in the northeastern corner.	Not NRHP eligible
168	Computer/Analysis Lab (WQEC Complex)	1967	Cold War-era two-story building consisting of a concrete block first story and a metal framed, pre-fabricated metal-panel-sheathed second story with a flat built-up roof hidden by an overhang created by asbestos cement board panels hung vertically from the roof edge, creating a box-like awning	Not NRHP eligible
178	Service Station (Utilities and Services Building)	1969	Cold War-era steel-framed metal-sided building on a concrete foundation with a metal shed roof overhang on all sides of the building	Not NRHP eligible
185	Barracks/Administrative Building (Old BEQ)	1972	Cold War-era single-story concrete block building	Not NRHP eligible
186	Company Barracks (Old BEQ)	1972	Cold War-era single-story concrete block building	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
187	BEQ (Old BEQ)	1972	Cold War-era two-story concrete block building	Not NRHP eligible
193	Auto Hobby Shop (Morale, Welfare, and Recreation)	1971	Cold War-era pre-engineered metal-sided building with a shallow-pitch side-gabled metal roof	Not NRHP eligible
252	Warehouse (Morale, Welfare, and Recreation)	1972	Cold War-era pre-engineered end-gabled metal structure	Not NRHP eligible
253	Warehouse (Morale Welfare, and Recreation)	1972	Cold War-era pre-engineered end-gabled metal structure	Not NRHP eligible
254	Storage (Morale, Welfare, and Recreation)	1972	Cold War-era pre-engineered end-gabled metal structure	Not NRHP eligible
256	Hobby Shop (Morale, Welfare, and Recreation)	1973	Cold War-era pre-engineered end-gabled metal structure	Not NRHP eligible
261	Guided Missile Laboratory (WQEC Complex)	1970	Cold War-era trailer	Not NRHP eligible
263	Ammunition Rework Facility (Breakdown Cell area)	1974	Cold War-era rectangular concrete (poured-in-place and block) and wood frame and plywood building topped with a simple shed roof	Not NRHP eligible
264	Special Service Center (Morale, Welfare, and Recreation)	1974	Cold War-era pre-engineered end-gabled metal structure	Not NRHP eligible
265	Special Service Center (Morale, Welfare, and Recreation)	1974	Cold War-era rectangular concrete block structure with a shed roof covered in corrugated metal	Not NRHP eligible
270	Administrative Storage (WQEC Complex)	1973	Cold War-era trailer	Not NRHP eligible
271	Storage (Old BEQ)	1976	Cold War-era concrete block, flat-roofed building	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
275	Sentry House (Security and Safety Buildings)	1976	Cold War-era flat-roofed building	Not NRHP eligible
276	Guided Missile Laboratory (WQEC Complex)	1973	Cold War-era trailer	Not NRHP eligible
277	Administrative Storage (WQEC Complex)	1973	Cold War-era trailer	Not NRHP eligible
282	Computer/Analysis Laboratory (WQEC Complex)	1976	Cold War-era trailer	Not NRHP eligible
291	Missile Magazine West (Bunker City)	1980	Cold War-era earth-covered reinforced concrete vault accessible by truck	Not NRHP eligible
292	Missile Magazine East (Bunker City)	1980	Cold War-era earth-covered reinforced concrete vault accessible by truck	Not NRHP eligible
293	Administrative Storage (WQEC Complex)	1980	Cold War-era pre-engineered end-gabled metal building sheathed in metal panels (walls and roof)	Not NRHP eligible
294	Administrative Storage (WQEC Complex)	1980	Cold War-era pre-engineered end-gabled metal building sheathed in metal panels (walls and roof)	Not NRHP eligible
295	(WQEC Complex)	unidentified	Cold War-era metal storage container	Not NRHP eligible
296	Materials Laboratory (WQEC Complex)	1971	Cold War-era metal storage container	Not NRHP eligible
297	Materials Laboratory (WQEC Complex)	1971	Cold War-era metal storage container	Not NRHP eligible
395	Administration (New BEQ)	1981	Cold War-era concrete block multi-story building covered with cement plaster stucco on concrete slab foundation with cantilevered projections and upper floors that jut abruptly out over lower floors	Not NRHP eligible
396	Lounge (New BEQ)	1981	Cold War-era concrete block multi-story building covered with cement plaster stucco on concrete slab foundation with cantilevered projections and upper floors that jut abruptly out over lower floors	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
397	BEQ (New BEQ)	1981	Cold War-era concrete block multi-story building covered with cement plaster stucco on concrete slab foundation with cantilevered projections and upper floors that jut abruptly out over lower floors	Not NRHP eligible
398	Dining Facility and BEQ (New BEQ) 5	1981	Cold War-era concrete block multi-story building covered with cement plaster stucco on concrete slab foundation with cantilevered projections and upper floors that jut abruptly out over lower floors	Not NRHP eligible
405	Utility Shed (WQEC Complex)	unknown	Cold War-era pre-engineered end-gabled metal building sheathed in metal panels (walls and roof)	Not NRHP eligible
406	RDT&E Storage (WQEC Complex)	1980	Cold War-era pre-engineered end-gabled metal building sheathed in metal panels (walls and roof)	Not NRHP eligible
409	Chapel (Morale, Welfare, and Recreation)	1980	Cold War-era building with vertical-groove wood siding and a side-gabled roof covered in composition shingles, recesses along the south and west walls, stained glass windows, and a pre-engineered Styrofoam steeple that straddles the ridge line of the roof near the western end of the building	Not NRHP eligible
416	Fire Station Outbuilding (Security and Safety Buildings)	1946	Cold War-era wood frame building with horizontal wood siding on timber foundation with shed roof covered with composition roll sheeting	Not NRHP eligible
420	Storage Shed (Building 93 Complex)	c. 1990	Cold War-era metal shed	Not NRHP eligible
421	Storage Shed (Building 93 Complex)	c. 1990	Cold War-era metal shed	Not NRHP eligible
422	Ordnance Operations (Bunker City)	1983	Cold War-era small pre-engineered metal-sided building with a shallow metal-covered gabled roof	Not NRHP eligible
423	Ordnance Operations (Public Works)	1984	Cold War-era pre-engineered metal building with a shallow side-gabled metal roof topped with three ridge vents	Not NRHP eligible
428	Hazardous Waste Storage (Bunker City)	1987	Cold War-era small pre-engineered metal-sided building with a shed roof that is open on the west side	Not NRHP eligible
429	Storage Structure (Building 93 Complex)	1987	Cold War-era pre-engineered metal building topped with a shed-roof form and open on the east side	Not NRHP eligible
430	Hazardous Waste Storage (WQEC Complex)	1987	Cold War-era pre-engineered end-gabled metal building sheathed in metal panels (walls and roof)	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
435	Racquetball Courts Addition (Morale, Welfare, and Recreation)	1989	Cold War-era two-story pre-engineered metal building with a shallow-pitch front-gable roof	Not NRHP eligible
441	Magazine (Bunker City)	c. 1980	Cold War-era structure	Not NRHP eligible
442	Magazine (Bunker City)	c. 1980	Cold War-era structure	Not NRHP eligible
BP1-5 (five structures)	Black Powder Magazines	1945	World War II-era cast-in-place concrete magazine with earth cover and earth berm blast-protection opposite door	Not NRHP eligible
C3	Railroad Barricade (Railroad)	1945	World War II-era earth berm that is approximately 0.5 mile long, 50 feet wide at the base, and about 13 to 15 feet high at the center, constructed to protect a series of railroad sidings	Not NRHP eligible
C3A	Railroad Barricade (Railroad)	1945	World War II-era earth berm that is approximately 0.5 mile long, 50 feet wide at the base, and about 13 to 15 feet high at the center, constructed to protect a series of railroad sidings	Not NRHP eligible
CS1-CS16 (16 structures)	Telephone Sheds	1945	World War II-era one-story, square concrete-block open structures on concrete slabs with three sides and wood frame shed roofs that have been removed	Not NRHP eligible
3FT1-3FT10 (10 structures)	Fuse and Detonator Magazines	1945	World War II-era cast-in-place concrete magazines with earth cover and earth berm blast-protection opposite the door	Not NRHP eligible
E98	Safety and Training Building	1945	World War II-era two-story wood structure with a flat roof, panel siding, and cantilever wood balcony on the west side	Not NRHP eligible
FD11-FD13 (three structures)	Fuse and Detonator Magazine (3FT Area)	1953	Cold War-era earth-covered reinforced concrete arched vault	Not NRHP eligible
FD14	Small Fuse and Detonator Magazine (Alpha Area)	1954	Cold War-era reinforced concrete box vault covered with earth	Not NRHP eligible
GA1-GA93 (93 structures)	Magazines	1945	World War II-era cast-in-place concrete earth-covered structures with vents and glass block transom panels for light	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
GA94-GA116 (23 structures)	Smokeless Powder Magazines (Bunker City)	1953	Cold War-era earth-covered reinforced concrete vaults accessible by truck or rail	Not NRHP eligible
HE1-HE60 (60 structures)	High Explosive Magazines	1945	World War II-era cast-in-place concrete earth-covered structures with metal vents	Not NRHP eligible
IA1	Administration Building	1945	World War II-era one story T-shaped cast-in-place concrete enclosed structure with some two-story elements, a flat built-up roof with minimal overhangs, an addition on the eastern side, the Navy emblem above the main entrance, and an eagle on the rear façade	Not NRHP eligible
IA4	Substation (Utilities and Services Building)	1988	Cold War-era corrugated asbestos cement panels with shed-style roof	Not NRHP eligible
IA5	Warehouse/Supply Department	1945	World War II-era one-story rectangular cast-in-place concrete enclosure structure on a raised concrete slab foundation with loading platforms and a corrugated gable roof with no overhang and several round metal vents.	Not NRHP eligible
IA6	Boiler House	1945	World War II-era one-story rectangular cast-in-place concrete enclosure structure on a concrete slab foundation with a gable corrugated roof with minimal overhang and large vent stacks	Not NRHP eligible
IA7	Inland Firehouse	1945	World War II-era one- and two-story irregularly shaped cast-in-place concrete enclosed structure on a concrete slab foundation with a flat, built-up roof and covered porches on the east and south sides (the south porch is filled in with a wood frame and cement plaster addition)	Not NRHP eligible
IA8	Personnel Offices	1945	World War II-era one-story irregularly shaped cast-in-place concrete enclosed structure on a concrete slab foundation with a porched entry and flat built-up roof with no overhangs	Not NRHP eligible
IA10	Barracks	1945	World War II-era two- and three-story cast-in-place concrete H-shaped structure with exterior stairways and a flat built-up roof with minimal overhang	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
IA11	Offices/Storage	1945	World War II-era rectangular one-story wood-frame enclosed structure on raised wood floor, with low built-up gable roof with short eaves and no end overhangs, metal awnings, and an addition at the east end	Not NRHP eligible
IA12	Heavy Equipment Repair Shop	1945	World War II-era rectangular one-story cast-in-place concrete enclosed structure with a high center bay, a gable and shed corrugated roof with large clerestory at center bay and no overhang, and additions on the east and west sides	Not NRHP eligible
IA13 (two structures)	Water Distribution Facility	1945	World War II-era rectangular one-story cast-in-place concrete enclosed structures with concrete slab foundations and flat built-up roofs with small overhang on all sides.	Not NRHP eligible
IA15	Public Works Shop	1945	World War II-era rectangular one-story cast-in-place concrete enclosed structure with overhangs at loading docks on east and west side and flat built-up roof with overhangs at dock areas only	Not NRHP eligible
IA16	Public Works Shop	1945	World War II-era rectangular one-story cast-in-place concrete enclosed structure with overhangs at loading docks on east and west side and flat built-up roof with overhangs at dock areas only	Not NRHP eligible
IA17	Service Station	1945	World War II-era single-story cast-in-place concrete structure with slab foundation, flat built-up roof, and a post-supported drive-through on one side	Not NRHP eligible
IA18, A-D (one structure)	Base Hospital	1945	World War II-era one-story, rambling, multi-winged enclosed structure. Building IA18 is constructed of cast-in-place concrete with a flat built-up roof. Wings of Building IA18 (IA18A-D) are one-story wood-framed structures with flat built-up roofs.	Not NRHP eligible
IA19	Boiler House	1945	World War II-era square one-story wood-frame enclosed structure on a concrete slab foundation, with shed-style built-up roof and small overhang on front and back	Not NRHP eligible
IA20	Materials Laboratory (WQEC Complex)	1947	Cold War-era one-story building built in 1947 with a side-gabled concrete block element built in 1951 and an adjoining flat-roofed bay built in 1958 and a taller flat-roofed bay sheathed in flat metal panels added in 1964. All roofs are covered in corrugated metal panels, and the entire building sits on concrete slab foundations.	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
IA21	Computer Analysis Laboratory (WQEC Complex)	1953	Cold War-era square one-story poured-in-place concrete building with a basement and a shallow-hipped roof	Not NRHP eligible
IA21A	Physical/Non-Destructive Testing (WQEC Complex)	1953	Cold War-era addition to building IA21 that is 3.5 times its size, designed to house various physical and non-destructive testing functions, consisting of porcelain enamel panels topped by a shallow gabled roof with an overhang, created by asbestos cement board panels hung vertically from the roof edge, creating a box-like awning	Not NRHP eligible
IA22	Evaluation Library	1945	World War II-era irregularly shaped one-story cast-in-place concrete building on a concrete slab foundation with corrugated gable roof and multiple additions, including one connecting Building IA22 with Building IA21	Not NRHP eligible
IA23	Ammunition/Explosives (WQEC Complex)	1947	Cold War-era wood-frame building with unpainted vertical-grooved siding and a shed roof	Not NRHP eligible
IA24, A, B (3 structures)	Battery Charging Building	1945	Building IA24 is a World War II-era irregularly shaped one-story cast-in-place concrete building on a slab foundation with a flat built-up roof with no overhangs. Buildings IA24A and IA24B appear to be contemporaneous separate rectangular concrete structures with shed roofs that are open on one side	Not NRHP eligible
IA25	Ammunitions Rework Building	1945/1993	The original World War II-era structure (a rectangular one-story wood-framed enclosed structure on concrete piers with a covered wood loading dock, built-up gable roof with large metal vents, and side overhangs, surrounded by an earthen, reinforced bunker) has been replaced by a modern pre-engineered building.	Not NRHP eligible
IA27	Car Blocking Shop/Storage	1945	World War II-era rectangular one-story wood-framed enclosed structure with a raised concrete floor, low-slope gable built-up roof with a 6- to 8-foot overhang above the railroad loading area only, and an attached wood awning on the west side that may have been added after initial construction	Not NRHP eligible
IA36	Utility Building (WQEC Complex)	1946	Cold War-era end-gabled wood-frame building with corrugated asbestos cement panels covering the sides and roof	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
IA37	Public Works Shop (Public Works)	1947	Cold War-era Quonset hut	Not NRHP eligible
IA38	Warehouse (Public Works)	1947	Cold War-era Quonset hut	Not NRHP eligible
IA43	Storage (Public Works)	1951	Cold War-era Quonset hut	Not NRHP eligible
IA45	Pumphouse (Former Airport Area)	1954	Cold War-era small concrete block pump house with a flat built-up roof	Not NRHP eligible
IA46	Storage (Public Works)	1952	Cold War-era wood-frame structure with an enclosed portion sheathed in horizontal siding and an open-sided garage portion that comprises approximately two-thirds of the building	Not NRHP eligible
IA48	Storage (Public Works)	1952	Cold War-era wood-frame structure with a stepped shed roof and an open-sided garage portion that comprises approximately one-quarter of the building	Not NRHP eligible
IA49	Maintenance/Storage (Public Works)	1952	Cold War-era wood-frame structure sheathed in horizontal wood siding on the long elevations and shingles on the short elevations, a shed roof, and numerous sliding or overhead doors	Not NRHP eligible
IA50	Ammunition Transfer Facility (Building IA50 Complex)	1953	Cold War-era rectangular metal frame building, sheathed in corrugated cement asbestos siding and roofing, on a concrete foundation	Not NRHP eligible
IA51	Auto Maintenance Facility (Public Works)	1953	Cold War-era reinforced concrete block structure with a flat gravel-covered roof and corrugated metal open-sided shed roof addition on the northwest side	Not NRHP eligible
IA52	Compressor House (Public Works)	1953	Cold War-era reinforced concrete block structure with a flat gravel-covered roof	Not NRHP eligible
IA53	Generator (Utilities and Services Building)	unknown	Generator unit encased in metal and resting on a concrete pad	Not NRHP eligible
IA54	Substation (Utilities and Services Building)	unknown	Generator unit encased in metal and resting on a concrete pad	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
IA55	Inland Field Office/Ordnance Operation (Main Operations Building for Bunker City)	1954	Cold War-era rectangular concrete block building and a parapet-on-gabled shallow roof with a built-up metal decking	Not NRHP eligible
IA56 (three structures)	Field Office/Applied Instruction Building (Former Airport Area)	1954	Cold War-era poured-in-place, board-formed concrete building with an end-gabled roof covered in corrugated metal. Two unnumbered buildings were also present in the Former Airport area, consisting of Cold War-era simple wood-frame structures clad in vertical-groove siding with gabled roofs covered in sheets of composition roofing	Not NRHP eligible
IA57	Pistol Range (MWR Outdoor Court/Field)	1946	Cold War-era range in a depression; several later temporary structures are associated with the range, including a wood-frame observation room and other miscellaneous wood-frame buildings and metal containers of temporary construction quality	Not NRHP eligible
IA58	Materials Laboratory (WQEC Complex)	1957	Cold War-era poured-in-place concrete X-ray facility with railcar access and room for a crane suspended over the railcars or trucks	Not NRHP eligible
IA60	Baseball Field (MWR Outdoor Court/Field)	1957	Cold War-era softball field with two simple wood-frame, shed-roofed dugouts sheathed in vertical-groove wood siding and composition shingles	Not NRHP eligible
IS1	Inert Storehouse Building	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS2	Storehouse Building	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS3	Storehouse Building	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS4	Guided Missile Maintenance Facility	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS5	Guided Missile Air Launch Building	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS6	Inert Storehouse Building	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS7	Guided Missile Container Storage	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
IS8	Inert Storehouse Building	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS9	Inert Storehouse Building	1945	World War II-era rectangular cast-in-place concrete structure with corrugated roofing	Not NRHP eligible
IS10-IS14 (five structures)	Inert Material Storage (Bunker City)	1953	Cold War-era rectangular board-formed concrete warehouses under a side-gabled roof that is covered in corrugated asbestos cement and accessible by truck	Not NRHP eligible
IT1	Water Tank (Utilities and Services Building)	1945	Cold War-era reinforced concrete reservoir with a domed concrete roof approximately 80 feet in diameter	Not NRHP eligible
IT2	Water Tank (Utilities and Services Building)		Cold War-era aboveground steel reservoir, 25 feet in diameter	Not NRHP eligible
IT4	Water Tank (Utilities and Services Building)	1959	Cold War-era aboveground steel reservoir, 38 feet in diameter, with a 2,000,000-gallon capacity	Not NRHP eligible
RBS1-95 (42 structures)	Railroad Barricaded Sidings (RBS1-95)	1945	World War II-era cast-in-place concrete walls and earthen-berm railroad car protective siding	Not NRHP eligible
RS1-RS6	Ready Magazine (WQEC Complex)	1947, 1952	Cold War-era earth-covered “igloo”-type magazines with a single roof ventilator, a concrete head wall, and timber retaining walls. The head wall and two additional concrete walls form a U-shaped barricade around the entrances for the magazines	Not NRHP eligible
SD1	RDT&E Storage (WQEC Complex)	1945	Cold War-era poured-in-place warehouse with a flat roof that can house four tiers of storage space. Railcar access is from tracks located along the southwest side of the building	Not NRHP eligible
	Tunnels (Road System)	c. 1975	Two Cold War-era vehicular tunnels carrying H Street under SR 4, comprised of corrugated metal oval-arch tubes approximately 750 feet long and 20 feet wide, covered with concrete, that run through the earth berm carrying the highway	Not NRHP eligible
	Mine Shaft	c. 1870-1900	Small mine shaft approximately 40 feet deep	Not NRHP eligible

Table 3.6-2 Architectural Resources Identified within the APE for the Proposed BRAC Action at Former NWS Concord

Building Number ¹	Building/Structure Name	Construction Date	Description	NRHP-Eligibility Determination
	Naval Railroad/Rail System (Railroad)	continuous	Navy railroad system consisting of 100.35 miles of standard gauge track consisting of a mix of 75-pound to 115-pound salvaged and new rails	Not NRHP eligible
	Locomotive Washer/Steam Cleaning Facility (Railroad)	1970	Cold War-era rail system support facility, consisting of a concrete pad with a below-grade, reinforced concrete oil separator, covered by a pre-engineered metal-frame shed	Not NRHP eligible
	Gazebo (Old BEQ)	1972	Cold War-era wood superstructure on a concrete slab, sheltering a brick barbecue pit	Not NRHP eligible
	Contra Costa Canal/Clayton Canal Bridges and Culverts	ca. 1937-1948	Bridges (13) are simple, standard-plan farm, road, or railroad bridges designed to solve access and crossing issues within NWS Concord and are constructed variously of: timber beam; concrete slabs with wooden railings and resting on concrete abutments; timber beam plank bridges with wooden railings; concrete tee-beam bridges with wooden railings; steel I-beam wooden plank bridges with metal railings; steel girder bridges with concrete deck and wooden railings; and/or steel girders welded together with timber ties, residing on concrete abutments. Culverts (five) are simple concrete structures designed to carry the canals under roads and railroad spurs	Not NRHP eligible
	Stone Cistern	1880-1900 or 1932-1935	Pre-Navy structure consisting of a single-story mortar-laid buttressed stone structure with wooden truss and corrugated steel roof	Not NRHP eligible

Source: Herbert and Allen 2013, Ostrowski 2013, Roland-Nawi 2013.

Note:

¹ Each row of this table presents information for one structure, unless otherwise indicated.

The Navy submitted the NRHP-eligibility recommendations for the 22 archaeological resources to the California SHPO for review and comment and on January 23, 2014, the California SHPO concurred that archaeological site CA-CCO-680 is eligible for listing in the NRHP under Criterion D and that archaeological site P-07-00861 is eligible for listing in the NRHP under Criteria A and D (Roland-Nawi 2014).

Site CA-CCO-680 is NRHP eligible under Criterion D for its potential to provide additional information about prehistoric burial and/or ceremonial practices. This information would be useful in determining the chronological and cultural affiliation of the site and its place with regional temporal and adaptive contexts. It is also possible that the site could provide information about the social organization of individuals interred at the site. Additionally, the site carries religious and cultural significance with regard to contemporary ethnographic perspectives about death and burial. Site CA-CCO-680 also has the potential to provide additional information about coastal-inland adaptation patterns, obsidian conveyance/exchange networks, settlement systems, subsistence patterns, and other related issues (ASM Affiliates, Inc., 2014).

Site P-07-00861 is NRHP eligible under Criterion A for its repeated use as a ceremonial location for prehistoric people. In particular, Site P-07-00861 retains the potential to provide information about its use and significance as a frequently used ceremonial site that reflects an important aspect of prehistoric ritual life. It may have been a site where rituals were performed and/or plants used to assist in those rituals were gathered and processed. In its current condition, the site preserves a group of archaeological remains that exemplifies the use of certain sites for both ceremonial and utilitarian purposes and provides some insight into how prehistoric people may have conceptualized and divided the use of ritual and living space within a larger territory (ASM Affiliates, Inc., 2014).

Site P-07-00861 is also NRHP eligible under Criterion D for its potential to provide additional information about prehistoric chronology, settlement, and subsistence. Obsidian analysis could provide information about the age of the site and conveyance/exchange networks; analysis of bedrock mortar features and subsistence remains could provide insight into the types and locations of environments used by site occupants and, by extension, the regional use of inland and coastal settings by prehistoric people; and analysis of cupule features could provide insight into prehistoric or ethnographic ceremonial uses of the site, including use of cupules for fertility rituals, to control weather, for puberty/initiation ceremonies, as trail markers, as geographical/territorial boundary markers, or as indications of rituals held to ensure safe passage along a travel route (ASM Affiliates, Inc., 2014).

3.7 Topography, Geology, and Soils

This section describes the topography, geology, soils, and regulatory setting at the former NWS Concord site.

3.7.1 Regulatory Framework

3.7.1.1 Federal

Clean Water Act Section 402

The CWA (33 U.S.C. 1251 *et seq.*) includes provisions for reducing soil erosion for the protection of water quality. The applicable provisions of the CWA are described in Section 3.14, Water Resources.

Farmland Protection Policy Act

The purpose of the Farmland Protection Policy Act (FPPA) (7 U.S.C. 4201 *et seq.*) is to minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural

uses. The FPPA also requires that federal programs be compatible with state, local, and private efforts to protect farmland. In order to minimize conversion of farmland, federal agencies are required to:

- identify and take into account the adverse effects of their programs on the preservation of farmland;
- consider alternative actions, as appropriate, that could lessen adverse effects; and
- ensure that their programs, to the extent practicable, are compatible with state, local government, and private programs and policies to protect farmland.

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), is charged with oversight of the FPPA. Agencies have the option of determining whether a site contains farmland—and therefore falls under the FPPA—without input from NRCS.

The FPPA established criteria by which impacts on farmland are to be assessed. The criteria include soil quality and characteristics that affect the viability of existing or potential farming operations. For the purposes of the FPPA, soils are categorized as prime farmland, farmland of statewide importance, unique farmland, or not prime farmland. Prime farmland is land that is particularly well suited for growing agricultural crops. Prime farmland may include farmland that can be made well suited for agriculture if drained or irrigated. Site characteristics that affect the viability of farms include the extent of urbanization in the vicinity, the presence of infrastructure such as water and sewer lines, and the level of agricultural services available in the vicinity.

3.7.1.2 State

Building Codes

The International Building Code (IBC), which encompasses the former Uniform Building Code, is published by the International Code Council (ICC) to provide standard specifications for engineering and construction activities, including measures to address geologic and soil concerns (ICC 2009). Specifically, these measures encompass issues such as seismic loading (e.g., classifying seismic zones and faults), ground motion, and engineered fill specifications (e.g., compaction and moisture content). The referenced guidelines, though not formal regulatory requirements per se, are widely accepted by regulatory authorities and are routinely included in related standards such as grading codes. The IBC guidelines are updated regularly to reflect current industry standards and practices, including criteria from sources such as the American Society of Civil Engineers and the American Society for Testing and Materials (ASTM) International.

The California Code of Regulations, Title 24 (California Building Standards Code), has incorporated the former Uniform Building Code and applies to all applications to local agencies for building permits.

Alquist-Priolo Earthquake Fault Zoning Act

The California Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) was passed in December 1972 primarily to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides, and its purpose is to protect public

safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes.

This law requires the state geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back 50 feet from it. Seismic hazard maps have been completed for much of the San Francisco Bay area.

3.7.2 Topography and Geology

3.7.2.1 Topography

The southern portion of the former NWS Concord site is located in the Diablo Valley, which consists of gently sloping lowlands and hilly terrain ranging in elevation from sea level to 400 feet amsl. The floor of the Diablo Valley slopes gently to the northwest. The northeast portion of the site is located within the Los Medanos Hills, which have peak elevations ranging from 800 feet amsl in the lower hills to greater than 1,400 feet amsl. The Los Medanos Hills have significant topographic relief, including steep slopes of over 50 percent (USGS 1997).

Elevations at the former NWS Concord site range from approximately 165 feet amsl at its southern/western boundary to approximately 656 to 1,437 feet amsl at its northern boundary. The nearest major body of water is the Suisun Bay, located approximately 2.5 miles north of the site.

3.7.2.2 Geology

According to the California Geological Survey (CGS), the former NWS Concord site lies within the southern range of the Coast Range Physiographic Province of California (CGS 2002a). The Coast Range Province is composed of northwest-trending mountain ranges, ridges, and small alluvial valleys that are aligned with and adjacent to the California coastline. The ranges and valleys trend northwest, subparallel to the San Andreas Fault. The Coast Ranges are composed of thick, Mesozoic- and Cenozoic-aged sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay (CGS 2002a, USGS 1997).

The bedrock geology at the former NWS Concord site includes Pliocene- to Holocene-aged alluvium in the southern and western site boundaries, Miocene- to Pleistocene-aged sandstone and conglomerates in the northern site boundary, and Paleocene- to Oligocene-aged mudstone and sandstone in the eastern and northern site boundaries (USGS 2005).

3.7.2.3 Geologic Hazards

This section presents information about potential geologic hazards associated with the development of the former NWS Concord site. Hazards evaluated include seismicity and faulting, soil liquefaction, and slope stability.

Seismicity and Faulting

The former NWS Concord site is located in a seismically active area and has a high probability of earthquake hazard. Seismic hazards include earthquakes, ground faulting, and secondary effects such as liquefaction and related slope failures.

According to the CGS, 14 earthquakes have been recorded between 1827 and 1980 within 50 kilometers (km) of Concord, California. The earthquake epicenters were primarily located near San Francisco. These events had Richter Magnitude Values that ranged from 5.5 to 7.0 in magnitude (M), with five of the earthquakes equaling or exceeding 6.0 M. These five earthquakes are described below. Based on the Richter Magnitude Value scale, an earthquake of 5.0 to 5.9 M can be felt by people and would cause major damage to poorly constructed buildings over a small region or slight damage to well-built structures. A 6.0 to 6.9 M earthquake can be destructive in populated areas up to approximately 100 miles across, and an earthquake of greater than 7.0 M can cause serious damage over large areas (CGS 2002b).

The five earthquakes equaling or exceeding 6.0 M were located near the Hayward Fault (7.0 M in 1868), Vacaville (6.6 M in 1892), Mare Island (6.4 M in 1898), Montezuma Hills (6.0 M in 1889), and east of San Francisco Bay (6.0 M in 1864) (CGS 2002b). Additionally, several other significant earthquakes have occurred within the San Francisco Bay area, including the 1906 San Francisco and 1989 Loma Prieta events. The 1906 San Francisco earthquake ruptured 296 miles of the San Andreas Fault from San Juan Bautista, California, in the south to offshore at Shelter Cove, California, in the north. The magnitude has been estimated to be 8.3 M, with an intensity of VIII to IX on the Modified Mercalli Intensity Scale (USGS 2012a). The 1989 Loma Prieta earthquake occurred approximately 96 kilometers south of San Francisco; however, the peak ground acceleration (PGA) as a percent of gravity (%g) measured east of San Francisco was still significant (0.25g) (USGS 2012b).

Faults

Faults are classified by age as Historic, Holocene, Late Quaternary, Quaternary, and Pre-Quaternary (CGS 2010) according to the following criteria:

- Historically active faults are those that have generated earthquakes accompanied by surface rupturing during historic time (approximately the past 200 years) or that exhibit seismic fault creep (slow, incremental movement along a fault that does not entail earthquake activity).
- Holocene fault displacement has occurred during the past 11,700 years without historic record. These are active faults that show geologic evidence of movement within Holocene time (the most recent geologic epoch). Sufficiently active and well-defined faults show geologic evidence of movement during the Holocene along one or more of their segments or branches, and their trace may be identified by direct or indirect methods.
- Late Quaternary fault displacement has occurred during the past 700,000 years. Inactive faults show direct geologic evidence of inactivity (that is, no displacement) during all of the Quaternary period or longer.
- Most Quaternary faults show evidence of displacement during the past 1.6 million years. Possible exceptions are faults that displaced rocks of undifferentiated Pliocene-Pleistocene age near the end of the Tertiary and beginning of the Quaternary periods.
- Pre-Quaternary faults are older than 1.6 million years or are faults without recognized Quaternary displacement.

Although it is difficult to quantify the probability that an earthquake will occur on a specific fault, the preceding classification is based on the assumption that if a fault has moved during the past 11,000 years, it is more likely to produce earthquakes in the future.

The City of Concord is located within an earthquake fault zone (California Department of Conservation 2007), and several active major faults are in the vicinity of the site (see Table 3.7-1 and Figure 3.7-1). Only one fault is actually located on the former NWS Concord site, the Clayton Section Greenville Fault (northern section of the Greenville Fault). This fault is located in the southeastern to the northeastern portion of the site and is categorized as a Holocene fault. There is no record of historic earthquakes on the Clayton Fault section. The Concord Fault is another active fault, located approximately 1 mile west of the site. It is a major northwest-trending right-lateral fault of the San Andreas Fault system. The Greenville Fault (northern section) and the Concord Fault have both been mapped in the Alquist-Priolo Earthquake Zone, with estimated slip rates of 1 to 2 millimeters per year (mm/yr) and 2 to 4 mm/yr, respectively. In California, slip rates for faults range from 0 to about 38 mm/yr, although a slip rate of more than 10 mm/year is generally considered fast (a slip rate around 1 to 2 mm/yr might be considered average for a major, active fault). The California Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The two faults mentioned above are located in the Alquist-Priolo Earthquake Zone (CGS 2007, CGS 2010).

Faults near the former NWS Concord site are included on Table 3.7-1. In addition, several unnamed Pre-Quaternary faults (older than 1.6 million years) or unnamed faults without recognized Quaternary displacement south of the former NWS Concord site (CGS 2010) are not included in Table 3.7-1.

Table 3.7-1 Faults Near the Former NWS Concord Site

Fault	Age Classification	Approximate Distance/ Direction from Site
Clayton Section Greenville Fault	Holocene	Onsite
Concord-Green Valley Fault	Historic and Holocene	1 mile west
Franklin Fault	Quaternary	7 miles west
Davis Fault	Quaternary	9 miles east
Kirby Hills Fault	Quaternary fault (age undifferentiated)	9.5 miles northeast
Pleasanton Fault	Holocene and Quaternary fault	10 miles southwest
Calaveras Fault	Historic and Holocene	13 miles southwest
Hayward Fault	Historic	15 miles west
Marsh Creek Section Greenville Fault	Historic	17 miles southeast
Las Positas Fault	Historic Late Quaternary	24 miles south
San Andreas Fault	Historic	34 miles west

Source: CGS 2010.

The USGS has predicted a 63 percent chance of an earthquake with a magnitude of 6.7 or greater occurring in the San Francisco Bay area during the next 30 years. The intensity of the seismic shaking during an earthquake depends on the distance and direction to the earthquake's epicenter, the magnitude of the earthquake, and the area's geologic conditions (USGS 2007). Therefore, earthquakes occurring on faults closest to the former NWS Concord site would have the potential to generate the largest ground motions at the site.

According to the USGS, the PGA with 2 percent probability of exceedance in 50 years is 0.59g to 0.77g for the region surrounding the NWS Concord site (USGS 2010). The USGS has categorized PGAs in California ranging from 0.01g to 1.00g, and the former NWS Concord site lies within the second-highest interval of the PGA range. PGA is a measure of earthquake acceleration on the ground. It is not a measure of the total energy (magnitude, or size) of an earthquake but, rather, of how hard the earth shakes in a

given geographic area. Peak ground acceleration generally correlates well with the Mercalli scale. Per the Modified Mercalli Intensity Scale (Mercalli XII, Inc., 2013), average peak acceleration greater than 0.60g is equal to an intensity value of X (0.60g to 0.80g) to XII (0.90g and higher). A PGA of greater than 0.50g would be similar to an earthquake with a Richter magnitude of greater than 8.5 that would last longer than 37 seconds (Mercalli XII, Inc., 2013).

Liquefaction

Liquefaction generally occurs when loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake. Earthquake waves cause water pressures to increase in the sediment and the sand grains to lose contact with each other, leading the sediment to lose strength and behave like a liquid. The soil can lose its ability to support structures and can flow down even very gentle slopes. All parts of the San Francisco Bay region have the potential to be shaken hard enough for susceptible sediment to liquefy (USGS 2006).

Susceptibility to liquefaction under earthquake shaking is delineated by the USGS into five categories (Very Low, Low, Moderate, High, and Very High). Based on review of a liquefaction susceptibility map of the San Francisco Bay area, the former NWS Concord site liquefaction susceptibility ranges from “Very Low” to “Very High” (USGS 2005-2006).

Approximately 40 percent to 50 percent of future liquefaction occurrences are expected to occur within areas mapped as Very High susceptibility. This translates to an areal density of about one occurrence for every 1.5 square miles mapped in this category. Only modest shaking is required to cause liquefaction of deposits mapped with Very High susceptibility (a PGA of about 0.1g). Geologic map units included in the Very High category include the latest Holocene and historical stream channels and artificial fills over bay and other estuarine mud (USGS 2006).

Less than 2 percent of future liquefaction occurrences are expected to occur within areas mapped as Very Low susceptibility. This translates to an areal density of less than about one occurrence for every 40 square miles mapped in this category. Stronger shaking (a PGA greater than 0.6g) is required to cause liquefaction of deposits mapped with Very Low susceptibility. Geologic map units included in the Very Low category include Pleistocene deposits and pre-Quaternary deposits and bedrock (USGS 2006).

Slope Stability

Landslides, earth flows, and debris flows are common in the San Francisco Bay region. Landslides include slumps, translational slides, rock falls, deep failure of slopes, and shallow debris flows. Although gravity acting on an over-steepened slope is the primary reason for a landslide, erosion, slopes weakened by saturation, and earthquakes are also contributing factors. Earth flows represent flows of clayey earth, which are actually landslides that move slowly, in contrast to the rapid movement of debris flows. Slides and earth flows deform the ground surface when they move and remain in the landscape as recognizable landslide masses, whereas debris flows run downslope to locations lower in the landscape and form separate, thin deposits that quickly become unrecognizable (USGS 1998).

The former NWS Concord site contains a few small areas described by the USGS as a landslide category of Mostly Landslides. This occurs along the northeastern portion of the site in the Los Medanos Hills area with relatively steep topography. The area categorized as Mostly Landslides consists of mapped landslides and intervening areas typically narrower than 1,500 feet. The remainder of the northeastern area of the site within the Los Medanos Hills with relatively moderate topographic relief is categorized as an area of Few Landslides. This area contains few, if any, large mapped landslides but locally contains scattered small landslides and questionably identified larger landslides. The remaining property at the former NWS Concord site, which consists of the majority of the site, is described by the USGS as Flat

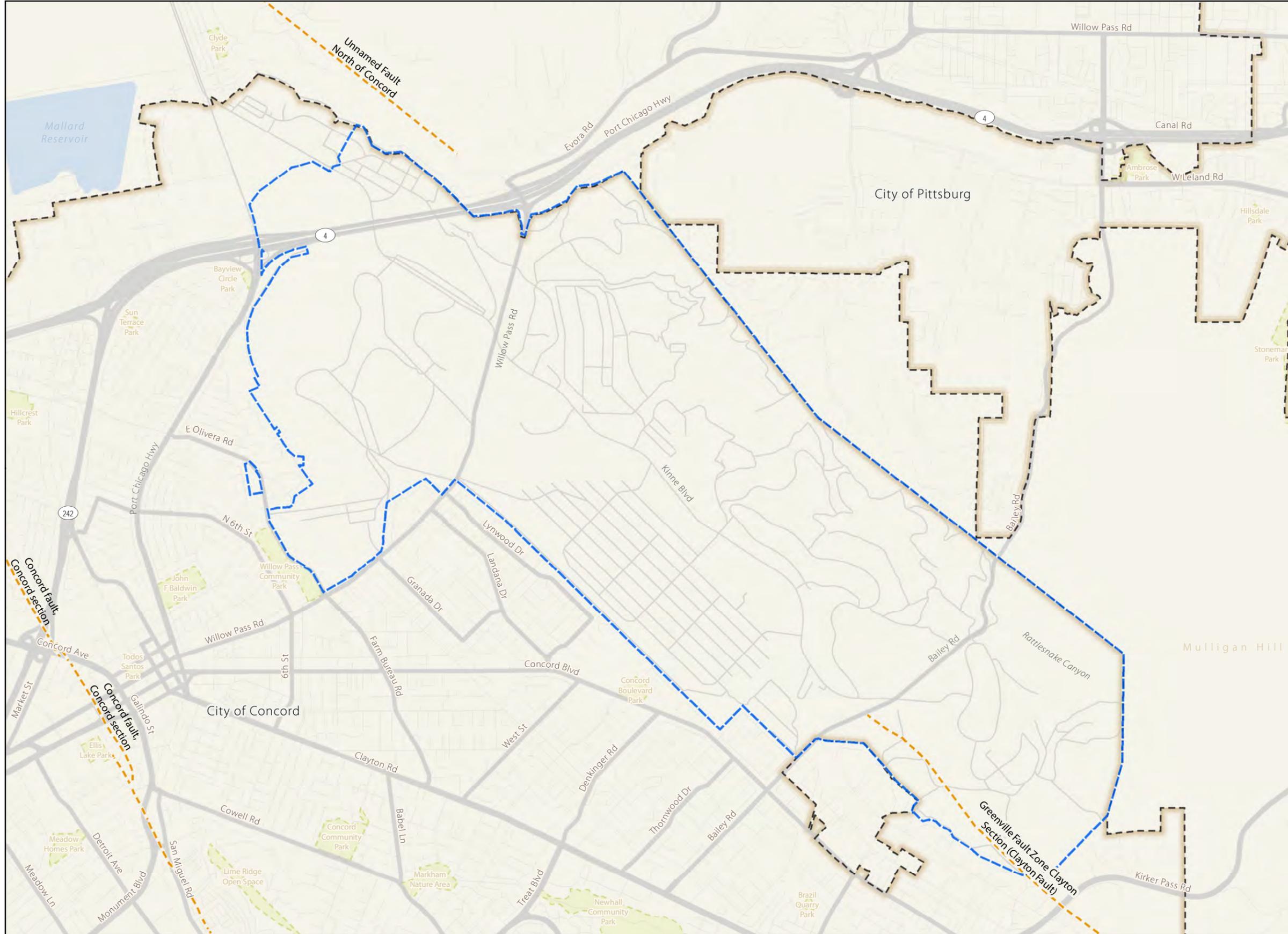


Figure 3.7-1
Faults

Former NWS Concord
Concord, California

Legend

-  Former NWS Concord
-  City Limits
-  Quaternary Fault



SCALE



SOURCE: ESRI, 2010; U.S. Geological Survey, California Geological Survey 2006.

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Land or Surficial Deposits with minimal threat of landslides (USGS 1998). The Flat Land area on the former NWS Concord site consists of gently sloping lowlands and hilly terrain ranging in elevation from approximately 165 feet amsl to less than 400 feet amsl, making this portion of the site not as susceptible to landslides as the hilly terrain to the northeast.

3.7.3 Soils

The following sections describe soil resources at the former NWS Concord site, including general information regarding the nature and properties of the soil association and/or mapping unit located on the site. Existing information regarding the property’s soil resources was gathered from the USDA Contra Costa County Soil Survey (USDA 1977) and the Web-based Natural Resources Conservation Service Soil Survey Geographic database (USDA NRCS SSURGO 2013).

3.7.3.1 Soil Types

The soil types on the former NWS Concord site that have not been substantially altered by development are listed in Table 3.7-2.

Soil types that have been substantially altered for development purposes by grading, filling, and construction of roads, buildings, and other facilities are listed in Table 3.7-3.

Table 3.7-2 Soils of Undeveloped Areas on the Former NWS Concord

Soil	Description	Runoff
Altamont-Fontana Complex, 50 to 75 percent slopes (AcG)	Well-drained soils underlain by shale and soft, fine-grained sandstone.	Where the soils are bare, runoff is rapid.
Cropley Clay, 2 to 5 percent slopes (CkB)	Moderately well-drained soils formed in fine-textured alluvium from sedimentary rock.	Runoff is slow.
Kimball Gravelly Clay Loam, 9 to 30 percent slopes (KaE)	Well-drained soils underlain by weakly cemented, gravelly terrace material.	Runoff is medium.
Positas Loam, 0 to 2 percent slopes (PkA)	Moderately well-drained soils underlain by weakly consolidated terrace material.	Runoff is slow.
Positas Loam, 2 to 9 percent slopes (PkC)	Moderately well-drained soils underlain by weakly consolidated terrace material.	Runoff is slow.

Table 3.7-3 Soils Altered for Development Purposes on the Former NWS Concord

Soil	Description	Runoff
Altamont Clay, 9 to 15 percent slopes (AbD)	Well-drained soils underlain by shale and soft, fine-grained sandstone.	Runoff is slow to medium where the soil is tilled and exposed.
Altamont Clay, 15 to 30 percent slopes (AbE)	Well-drained soils underlain by shale and soft, fine-grained sandstone.	Runoff is medium.
Altamont-Fontana Complex, 30 to 50 percent slopes (AcF)	Well-drained soils underlain by shale and soft, fine-grained sandstone.	Runoff is medium to rapid where the soil is bare.
Antioch Loam, 0 to 2 percent slopes (AdA)	Moderately well-drained soils underlain by old mixed alluvium.	Runoff is slow.
Antioch Loam, 2 to 9 percent slopes (AdC)	Moderately well-drained soils underlain by old mixed alluvium.	Runoff is slow to medium.
Capay Clay, 0 to 2 percent slopes (CaA)	Moderately well-drained soils formed in alluvium from sedimentary rock.	Runoff is very slow.

Table 3.7-3 Soils Altered for Development Purposes on the Former NWS Concord

Soil	Description	Runoff
Capay Clay, 2 to 9 percent slopes (CaC)	Moderately well-drained soils formed in alluvium from sedimentary rock.	Runoff is slow.
Clear Lake Clay (Cc)	Poorly drained soils formed in fine-textured alluvium.	Runoff is very slow.
Conejo Clay Loam, 0 to 2 percent slopes (CeA)	Well-drained and moderately well-drained soils formed in material from sedimentary rock.	Runoff is slow.
Conejo Clay Loam, Clay Substratum, 0 to 2 percent slopes (ChA)	Well-drained and moderately well-drained soils formed in material from sedimentary rock.	Runoff is slow.
Diablo Clay, 9 to 15 percent slopes (DdD)	Well-drained soils underlain by calcareous, soft, fine-grained sandstone and shale.	Runoff is slow to medium.
Garretson Loam, 0 to 2 percent slopes (GaA)	Well-drained soils on alluvial fans and floodplains of small creeks, formed in alluvium from sedimentary rock.	Runoff is very slow to slow.
Garretson Loam, 2 to 5 percent slopes (GaB)	Well-drained soils on alluvial fans and floodplains of small creeks, formed in alluvium from sedimentary rock.	Runoff is slow.
Kimball Gravelly Clay Loam, 2 to 9 percent slopes (KaC)	Well-drained soils underlain by weakly cemented, gravelly terrace material.	Runoff is slow to medium.
Perkins Gravelly Loam, 2 to 9 percent slopes (PaC)	Well-drained soils underlain by weakly consolidated, gravelly old alluvium.	Runoff is slow to medium.
Rincon Clay Loam, 0 to 2 percent slopes (RbA)	Well-drained soils formed in alluvial valley fill from sedimentary rock.	Runoff is slow.
Rincon Clay Loam, 2 to 9 percent slopes (RbC)	Well-drained soils formed in alluvial valley fill from sedimentary rock.	Runoff is medium.
San Ysidro Loam, 0 to 2 percent slopes (Sc)	Moderately well-drained soils formed in alluvium from sedimentary rock.	Runoff is slow.
Zamora Silty Clay Loam, 0 to 2 percent slopes (ZaA)	Well-drained soils formed in alluvium from sedimentary rock.	Runoff is slow.

3.7.3.2 Soil Characteristics and Limitations

Soils on the former NWS Concord property that have not already been developed generally have few moderate developmental limitations. The main developmental limitations include shallow depth to bedrock, potentially hydric soils, poorly drained soil, or flood frequency (occasional flooding is expected to occur infrequently under usual weather conditions, with a 5 to 50 percent chance of flooding in any year or 5 to 50 times in 100 years), all of which may constrain development activities.

Table 3.7-4 lists the individual soil types (i.e., soil map units) within the former NWS Concord site and their extent in acres (Figure 3.7-2). Table 3.7-4 also identifies the map units' prime farmland status and the potential limitations each soil type may present to development that may need to be addressed.

3.7.3.3 Prime Farmland

The NRCS categorizes soils with respect to their suitability for farming. Those soils that are or may be made suitable for farming fall into one of four categories: prime farmland, unique farmland, farmland of

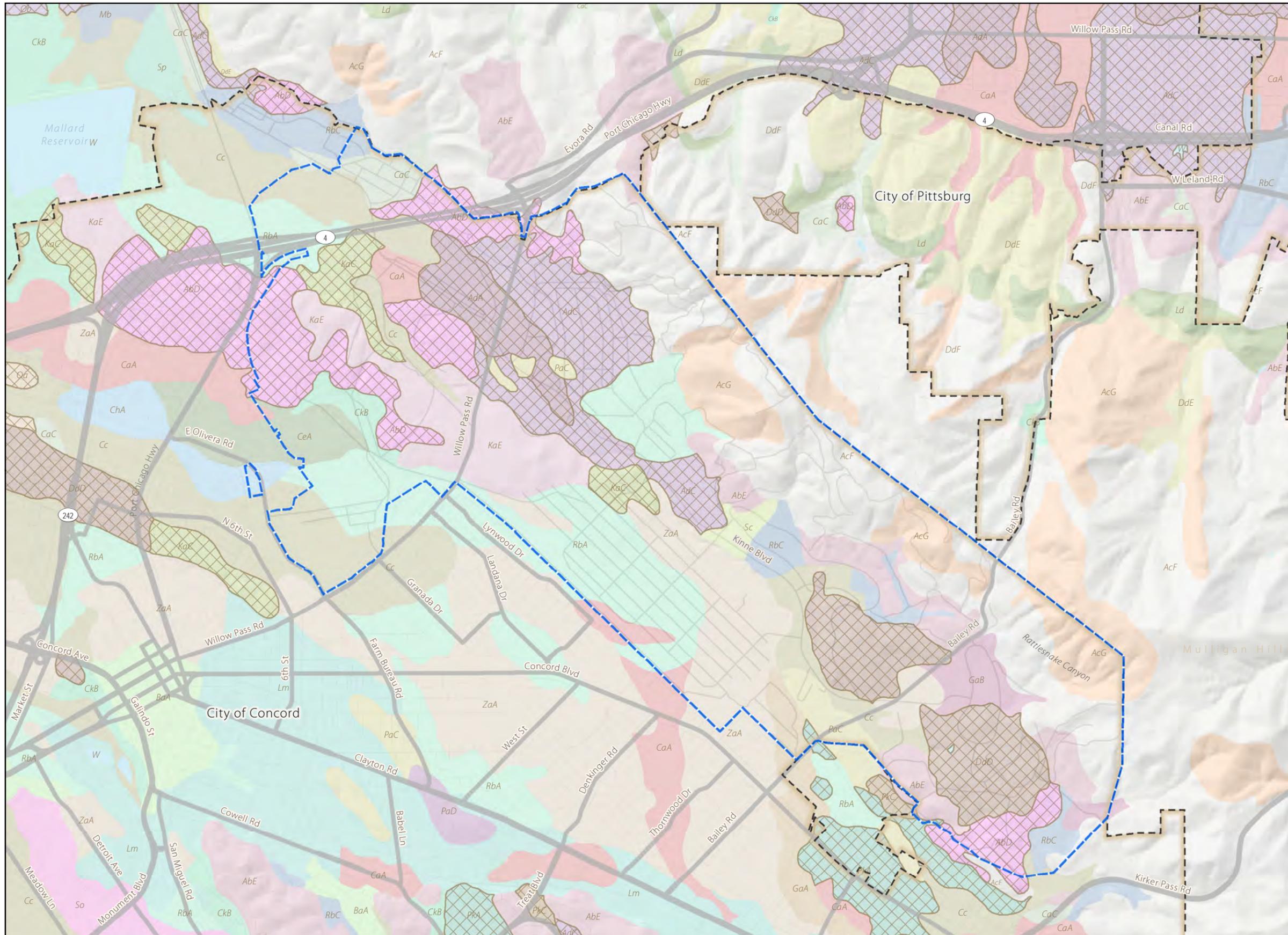


Figure 3.7-2
Soil Units
Former NWS Concord
Concord, California

Legend

- Former NWS Concord
- City Limits

Soil Unit

- | | |
|-----|----------------------------------|
| AbD | Ld |
| AbE | Lm |
| AcF | Mb |
| AcG | Md |
| AdA | Oa |
| AdC | Ob |
| BaA | PaC |
| CaA | PaD |
| CaC | PKA |
| Cc | PKC |
| CeA | Qa |
| ChA | Ra |
| CkB | RbA |
| DdD | RbC |
| DdE | RbD |
| DdF | Sc |
| GaA | So |
| GaB | Sp |
| KaC | W |
| KaE | ZaA |
| | Farmland of Statewide Importance |



SOURCE: ESRI, 2010; U.S. Department of Agriculture, Natural Resources Conservation Service, 2007.

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Table 3.7-4 Soil Types on the Former NWS Concord Site with Prime Farmland Status or Limitations for Development

Map Unit Symbol	Map Unit Name	Area (acres)	Prime Farmland Status	Acres	Potential Limitations	Hazard of Erosion
AcF	Altamont-Fontana Complex, 30 to 50 percent slopes	805.3	NA	NA	Potentially hydric; depth to bedrock 3.5' to 5'	Moderate to high where the soil is bare.
AcG	Altamont-Fontana Complex, 50 to 75 percent slopes	309.8	NA	NA	Potentially hydric, Depth to bedrock 3.5' to 5'	High where the soil is bare.
AbE	Altamont Clay, 15 to 30 percent slopes	258.2	NA	NA	Depth to bedrock 3.5' to 5'	Moderate where the soil is bare.
AbD	Altamont Clay, 9 to 15 percent slopes	417.3	Farmland of Statewide Importance	417.3	Depth to bedrock 3.5' to 5'	Slight to moderate.
AdA	Antioch Loam, 0 to 2 percent slopes	156.3	Farmland of Statewide Importance	156.3	NA	Slight where the soil is tilled and exposed.
AdC	Antioch Loam, 2 to 9 percent slopes	377.8	Farmland of Statewide Importance	377.8	NA	Slight to moderate where the soil is tilled and exposed.
CaA	Capay Clay, 0 to 2 percent slopes	69.3	Prime Farmland if Irrigated	69.3	Potentially hydric	Slight hazard where the soil is tilled and exposed.
CaC	Capay Clay, 2 to 9 percent slopes	52.9	Prime Farmland if Irrigated	52.9	NA	Slight where the soil is tilled and exposed.
Cc	Clear Lake Clay	378.4	Prime Farmland if Irrigated	378.4	Potentially hydric, poorly drained soil; occasional flood frequency (annual probability of a flood event)	Slight hazard where the soil is tilled and exposed.
CeA	Conejo Clay Loam, 0 to 2 percent slopes	69.8	Prime Farmland if Irrigated	69.8	Potentially hydric	Slight hazard if soil is tilled and exposed.
ChA	Conejo Clay Loam, Clay Substratum, 0 to 2 percent slopes	5.7	Prime Farmland if Irrigated	5.7	Potentially hydric	Slight hazard if soil is tilled and exposed.
CkB	Cropley Clay, 2 to 5 percent slopes	46.9	Prime Farmland if Irrigated	46.9	Potentially hydric	Slight where the soil is tilled and exposed.
DdD	Diablo Clay, 9 to 15 percent slopes	349.7	Farmland of Statewide Importance	349.7	Depth to bedrock 3.5' to 5'	Slight to moderate where the soil is tilled and exposed.

Table 3.7-4 Soil Types on the Former NWS Concord Site with Prime Farmland Status or Limitations for Development

Map Unit Symbol	Map Unit Name	Area (acres)	Prime Farmland Status	Acres	Potential Limitations	Hazard of Erosion
GaA	Garretson Loam, 0 to 2 percent slopes	37.7	Prime Farmland if Irrigated	37.7	NA	Slight where the soil is tilled and exposed.
GaB	Garretson Loam, 2 to 5 percent slopes	96.8	Prime Farmland if Irrigated	96.8	NA	Slight where the soil is tilled and exposed.
KaC	Kimball Gravelly Clay Loam, 2 to 9 percent slopes	117.7	Farmland of Statewide Importance	117.7	NA	Slight to moderate where the soil is tilled and exposed.
KaE	Kimball Gravelly Clay Loam, 9 to 30 percent slopes	296.7	NA	NA	NA	Moderate where soil is bare.
PaC	Perkins Gravelly Loam, 2 to 9 percent slopes	74.4	Prime Farmland if Irrigated	74.4	NA	Slight to moderate where the soil is tilled and exposed.
PkA	Positas Loam, 0 to 2 percent slopes	5.3	Farmland of Statewide Importance	5.3	NA	Slight where the soil is tilled and exposed.
PkC	Positas Loam, 2 to 9 percent slopes	0.5	Farmland of Statewide Importance	0.5	NA	Slight where the soil is bare.
RbA	Rincon Clay Loam, 0 to 2 percent slopes	604.0	Prime Farmland if Irrigated	604.0	Potentially hydric	Slight where the soil is tilled and exposed.
RbC	Rincon Clay Loam, 2 to 9 percent slopes	122.1	Prime Farmland if Irrigated	122.1	NA	Slight where the soil is tilled and exposed.
Sc	San Ysidro Loam	35.5	NA	NA	Potentially hydric	Slight.
ZaA	Zamora Silty Clay Loam, 0 to 2 percent slopes	349.0	Prime Farmland if Irrigated	349.0	NA	Slight hazard of erosion.
Grand Total		5,038		3,332		

Source: USDA NRCS SSURGO 2013.

Notes:

NA = not applicable.

statewide importance, and farmland of local importance. Prime farmland, as defined by the USDA, “is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It has the soil quality, growing season, and moisture supply needed to produce a sustained high yield of crops while using acceptable farming methods. Prime farmland produces the highest yields and requires minimal amounts of energy and economic resources, and farming it results in the least damage to the environment” (NRCS 2007). Cultivated land, pastureland, and forestland are all potential prime farmland areas; the classification does not consider whether the land is actively farmed.

Soils that would be described as prime farmland soils if they were irrigated or farmland of statewide importance cover approximately 3,638.8 acres at the former NWS Concord site (see Figure 3.7-2). No unique farmland soils occur on the property (USDA NRCS SURRGO 2013). Developed land (i.e., urban, industrialized, residential, or built-up land) or water bodies are by definition not farmland soils. Developed land and water comprise a small area located in the northwest and southwest portion of the site. Grassland/grazing leases currently cover approximately 85 percent of the site.

3.7.3.4 Hydric Soils

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper soil layer. Hydric soils tend to be saturated for significant parts of each year, may be prone to flooding or ponding, and tend to have poor drainage. These qualities are limitations that must be addressed to improve their suitability for construction.

Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation. Because of this, regulated wetlands may occur in hydric soils. None of the map units within the former NWS Concord site are composed entirely of hydric soils. However, approximately 2,437.6 acres of the site contains soil map units (AcF, AcG, CaA, Cc, CeA, ChA, CkB, RbA, and Sc) that may include areas of hydric soils (USDA NRCS SSURGO 2013).

3.7.3.5 Constructability

Constructability refers to the relative suitability of a soil for the construction of buildings, roads, and other infrastructure. Table 3.7-4 identifies attributes that may adversely affect constructability for each soil map unit. Specific design and construction practices can be employed to overcome constructability limitations.

Shallow depth to bedrock (bedrock within 3.5 to 5 feet of the surface) may require blasting to excavate for foundations. Approximately 41 percent of the site is covered by soils with a shallow depth to bedrock. Areas that flood should generally be avoided as building sites. Measures taken to address constructability limitations usually increase construction costs.

Hydric soils may be associated with wetlands that are subject to regulation by federal and/or state regulation. The wet conditions associated with hydric soils may also present limitations to development activities, such as excavation and the movement of heavy equipment. Approximately 45 percent of the site has map units that may contain hydric soils.

A portion of the soils at the former NWS Concord site have already been developed or modified for some purpose. Prior modifications may or may not have overcome some of the limitations to development. To varying degrees, all soils may require specific measures to control soil erosion and limit runoff of sediment during clearing and construction activities.

3.8 Hazards and Hazardous Substances

This section describes the regulatory framework and existing site conditions at the former NWS Concord with respect to the Navy Environmental Restoration (ER) Program and compliance programs for hazardous wastes and materials existing on the former installation. For the purposes of this EIS, the term “hazardous materials” will generically apply to materials that could be an environmental hazard if not properly managed and includes materials such as chemicals; metals; petroleum, oil, and lubricants; materials stored in tanks; asbestos; lead-based paint (LBP); polychlorinated biphenyls (PCBs); pesticides; and radioactive materials. Hazardous waste has a specific regulatory definition that is further discussed in this section.

Environmental management, investigation, and cleanup activities at the former NWS Concord are ongoing; therefore, this section presents the latest data available at the time of preparation. Current information regarding the ER and compliance programs is maintained as part of the Navy’s administrative record and can be found in the local information repository at the Concord Public Library¹¹ or on the NWS Concord webpages on the Navy BRAC PMO website at: <http://www.bracpmo.navy.mil>.

3.8.1 Background

The Navy has been performing environmental restoration activities at the former NWS Concord under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) since 1982, when it performed an Initial Assessment Study (IAS) to identify sites where contamination was suspected to pose a threat to human health or the environment (Ecology and Environment, Inc., 1983). The IAS was followed by a Site Investigation (SI) study of the Inland Area (known as the Inland Area SI) that was completed in 1993 (PRC Environmental Management, Inc., and Montgomery Watson 1993). The former NWS Concord was placed on the CERCLA National Priorities List (NPL) on December 16, 1994, under EPA ID CA7170024528. On June 12, 2001, the Navy entered into a Federal Facility Agreement (FFA) with EPA Region 9 and the State of California Environmental Protection Agency (CalEPA) under CERCLA Section 120 (EPA 2001). The FFA requires that the Navy investigate and remediate actual or threatened releases of hazardous substances, pollutants, and contaminants at the former NWS Concord in accordance with CERCLA Section 120; specific sections of the Resource Conservation and Recovery Act (RCRA); Executive Order (EO) 12580, entitled Superfund Implementation; the Defense Environmental Restoration Program (DERP); and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Section 3.8.2 provides additional detail regarding these regulations). The FFA listed the areas and sites considered to be areas of contamination, established goals and responsibilities among the Navy and the regulatory agencies, and set enforceable cleanup schedules for the sites. A Restoration Advisory Board, which first met in 2001, consists of Navy and community representatives and state and federal regulators who advise the Navy on environmental cleanup issues and strategies.

The Navy is complying with CERCLA by conducting the Navy ER Program, which is a component of the DERP. Under the ER Program, the Navy is addressing releases of hazardous substances at the former NWS Concord to ensure adequate protection of human health and the environment. Potential environmental effects of CERCLA response actions (such as soil excavation, soil transport, and operation of treatment systems) are evaluated by the Navy and regulatory agencies during the CERCLA process. The Navy and the regulatory agencies consider future redevelopment and reuse during the CERCLA decision-making process. Appropriate controls to protect human health and the environment are incorporated into the selection, design, and implementation of the CERCLA response actions.

¹¹ An information repository for the NWS Concord project is located at the Concord Public Library, 2900 Salvio Street, Concord, CA, 94519.

Separate from investigation and remediation under CERCLA, the Navy is implementing compliance programs for other potential hazards, such as hazardous waste, underground and aboveground storage tanks, asbestos, LBP, PCBs, and radioactive materials.

3.8.2 Environmental Restoration and Regulatory Overview

The Navy performs environmental restoration and compliance activities for hazardous wastes and materials at the former NWS Concord in accordance with the primary programs and regulatory requirements discussed in this section.

3.8.2.1 Environmental Restoration

Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA, commonly known as Superfund, provides federal authority for response actions to clean up abandoned or uncontrolled hazardous waste sites. CERCLA requires federal agencies to respond to releases or threatened releases of hazardous substances, pollutants, or contaminants that may endanger human health or the environment. CERCLA specifically uses the term “hazardous substance” as opposed to “hazardous material.” Under CERCLA, the EPA developed the NPL, a list of sites that present the greatest risk to public health and the environment.

CERCLA Section 120(h)(3)(A) requires that, prior to property transfer, all necessary remedial actions to protect human health and the environment with respect to any hazardous substance remaining on the property be completed or in place and proven to be operating properly and successfully.

CERCLA Section 120(h)(3) imposes several requirements on transfers of federal real property “owned by the United States” to non-federal entities. With regard to the federal real property disposal process, CERCLA requires the federal government to:

- Give notice of hazardous substance activity to the grantee;
- Include a covenant in the deed that “all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer;”
- Include a deed covenant that the United States will return and perform any additional response action that may be required in the future; and
- Retain a perpetual right of access necessary to do such additional response actions.

These requirements only apply to conveyances of real property out of federal ownership. They do not apply to interagency federal real property transfers or to leases, licenses, or easements granted for the use of federal land.

CERCLA Section 120(h)(3)(C) allows property at NPL sites to be transferred before all necessary remedial actions have been taken if the EPA, with the concurrence of the governor of the state in which a facility is located, determines that the property is suitable for transfer, based on a finding that:

- (I) The property is suitable for transfer for the use intended by the transferee, and the intended use is consistent with protection of human health and the environment;
- (II) The deed or other agreement proposed to govern the transfer between the United States and the transferee of the property contains assurances that:

1. Provide for any necessary restrictions on the use of the property to ensure the protection of human health and the environment;
 2. Provide that there will be restrictions on use necessary to ensure that required remedial investigations, response action, and oversight activities will not be disrupted;
 3. Provide that all necessary response action will be taken and identify the schedules for investigation and completion of all necessary response action as approved by the appropriate regulatory agency; and
 4. Provide that the federal agency responsible for the property subject to transfer (in this case, the Navy) will submit a budget request to the Director of the Office of Management and Budget that adequately addresses schedules for investigation and completion of all necessary response action, subject to congressional authorizations and appropriations;
- (III) The federal agency requesting deferral (in this case, the Navy) has provided notice, by publication in a newspaper of general circulation in the vicinity of the property, of the proposed transfer and of the opportunity for the public to submit, within a period of not less than 30 days after the date of the notice, written comments on the suitability of the property for transfer; and
- (IV) The deferral and the transfer of the property will not substantially delay any necessary response action at the property (EPA 2002).

Transfer of property pursuant to CERCLA Section 120(h)(3)(C) is commonly referred to as an “early transfer.”

Superfund Amendments and Reauthorization Act

CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, which mandated that the DOD follow the same cleanup regulations that apply to private entities. SARA established the DERP, discussed below.

Defense Environmental Restoration Program

The DERP is the broad program encompassing the Navy ER Program and is driven by statutory requirements in SARA, with delegated federal lead agency authority from the president of the United States to DOD through EO 12580. Through the DERP, the DOD conducts environmental restoration activities at sites on active installations, installations undergoing BRAC, and formerly utilized defense sites (FUDS). The three main objectives of the DERP are:

- The identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants, and contaminants;
- The correction of other environmental damage (such as detection and disposal of unexploded ordnance) that creates an imminent and substantial endangerment to public health or the environment; and
- The demolition and removal of unsafe buildings and structures, including those identified at FUDS.

Navy Environmental Restoration Program

To comply with the DERP, the Navy established the ER Program to reduce the risk to human health and the environment from past waste disposal operations and hazardous substance spills, including certain

petroleum spills not addressed in the CERCLA framework. The Navy ER Program encompasses three main program categories. Sites in two of the program categories are managed at the former NWS Concord: the Installation Restoration Program (IRP) and the MMRP. The IRP addresses releases of hazardous substances, pollutants, or contaminants that pose toxicological risks to human health or the environment. The MMRP addresses environmental health and safety hazards from munitions and explosives of concern (MEC) and munitions constituents.

The Navy ER Program is structured in accordance with CERCLA requirements, which specify sequential procedures for initiating and carrying out the remedial process. The primary steps and a brief description of each are as follows (Navy August 2006):

1. **Site discovery and notification:** Designation of a potentially contaminated site.
2. **Preliminary assessment/site inspection (PA/SI):** Description of the site on the basis of file reviews and limited field data collection. Identifies locations requiring additional investigation and potential remediation.
3. **Remedial investigation/feasibility study (RI/FS):** The RI involves sampling/analysis and data collection to determine the nature and extent of contamination. The FS evaluates the effectiveness and cost of feasible remedial alternatives.
4. **ROD:** The preferred remedial alternative is documented in a proposed plan for public comment. The ROD then identifies the selected remedy based on the RI/FS report and public comment.
5. **Remedial design (RD):** Design of the remedial action selected in the ROD. Remedial designs for hazardous sites commonly include different types and combinations of remedial actions, such as excavation and disposal; treatment and containment of hazardous materials, pollutants, or contaminants; and land use controls (LUCs).
6. **Remedial action, construction:** Construction of the designed remedial system. This may include construction of any applicable LUCs.
7. **Remedy in place:** Milestone at which remedial construction has been completed and the remedy is operating as planned to meet remedial objectives.
8. **Remedial action, operation:** Operation, maintenance, and monitoring activities for the remedial system and site. This may include management of LUCs.
9. **Response complete:** Milestone at which remedial objectives have been met and cleanup goals achieved.
10. **Long-term management:** Long-term monitoring of the protectiveness of the remedy. This may include groundwater monitoring and management of LUCs.
11. **Site closeout:** Milestone at which the Navy has completed active management and monitoring at the site, the remedy is protective of human health and the environment, and contaminant levels allow for the site's intended use.

The primary response actions are supplemented with other studies and actions as necessary to address the site, such as removal actions, interim remedial actions, human or ecological risk assessments, and the application of LUCs or institutional controls (ICs). Both LUCs and ICs are restrictions placed on a site to protect human health and the environment in cases where the site cannot or will not be cleaned up to levels that allow unrestricted use. LUCs are physical (e.g., engineering controls), legal (e.g., restrictive covenants or deeds), or administrative (e.g., notices and permits) mechanisms that restrict property use to ensure that land use activities in the future remain compatible with the conditions of the land. ICs are

typically administrative or legal devices. Implementation of LUCs or ICs will allow a property to be developed for its intended use while preventing exposure to residual levels of hazardous constituents.

The EPA, state agencies, and the public have opportunities to review and comment on assessments/studies and proposals for removal/remedial actions throughout the process. A site may be removed from the NPL when the final ROD requirements are attained and the site is operational and functional.

Because CERCLA excludes petroleum from its definition of hazardous substances, the cleanup of petroleum releases from underground storage tanks or other sources is regulated under RCRA and state law (see Section 3.8.2.2.2) and not under the ER Program.

3.8.2.2 Environmental Compliance

In addition to the requirements of the ER Program, the Navy has complied with other regulations for hazardous wastes and materials during its ownership and occupancy of the former NWS Concord property. Such regulations also would apply to the management of hazardous wastes and materials during future occupancy and use by transferees after the Navy has conveyed the property.

The compliance programs discussed below are federal and state programs. There are few local (i.e., Contra Costa County and City of Concord) regulations related to hazardous wastes and materials. However, in California, a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) is implemented at the local level by a Certified Unified Program Agency (CUPA). The CUPA has responsibility in its jurisdiction for the six elements of the Unified Program: hazardous waste generator and onsite hazardous waste treatment; underground storage tanks (USTs); aboveground storage tanks (ASTs); hazardous materials release response plans and inventories; accidental release prevention; and Uniform Fire Code hazardous materials management plans and inventories. The CUPA for Contra Costa County is Contra Costa Health Services (CCHS).

3.8.2.2.1 Hazardous Waste

RCRA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The RCRA Hazardous and Solid Waste Amendments of 1984 added land disposal restrictions and corrective action requirements, among others.

The California Department of Toxic Substances Control (DTSC) regulates hazardous waste and RCRA programs in California in Title 22, Division 4.5, of the CCR, *Environmental Health Standards for the Management of Hazardous Waste*. In addition to listed and characteristic hazardous wastes as defined by the EPA and DTSC (characteristic wastes exhibit properties such as toxicity, ignitability, corrosivity, or reactivity), universal wastes are regulated as hazardous wastes. Universal wastes include batteries, certain pesticides, mercury-containing equipment (such as thermostats), and mercury-containing light bulbs (such as fluorescent bulbs). The CUPA has responsibility for certain lower tiers of hazardous waste generators.

3.8.2.2.2 Hazardous Materials

General Hazardous Material Control

Hazardous materials are required to be stored in designated areas designed to prevent accidental release to the environment. The California Building Code (CBC) describes the requirements to safely store materials that are a moderate explosion hazard, high fire or physical hazard, or health hazard.

Under Title 19 of the CCR, Division 2, Chapter 4, Article 4, the California Emergency Management Agency requires businesses (which include governments and agencies) that handle or store certain

amounts of hazardous materials to submit a hazardous materials business plan that includes an inventory of hazardous materials stored onsite, an emergency response plan, and an employee training program. The business plan satisfies the EPA's requirements for reporting hazardous materials to the local community in accordance with the Emergency Planning and Community Right-to-Know Act (EPCRA).

Underground Storage Tanks

USTs containing hazardous substances or petroleum products are regulated by the EPA under RCRA Subtitle I. In California, the State Water Resources Control Board (SWRCB) and RWQCBs regulate USTs under the authority of Title 23 of the CCR, Division 3, Chapter 16, *Underground Storage Tank Regulations*. If released, hazardous substances such as petroleum can affect groundwater, public health and safety, and the environment. The SWRCB and RWQCBs also provide regulatory oversight for the petroleum corrective action program (under Article 11 of the regulations) to clean up UST sites where petroleum was released. The CUPA (CCHS) implements the UST regulations at the local level.

The Navy investigates known or suspected petroleum release sites and conducts remediation as appropriate. The petroleum cleanup follows a parcel-by-parcel iterative process similar to the CERCLA environmental restoration program; i.e., investigation followed by identification of cleanup options, culminating in the approval by the RWQCB of a corrective action plan for each parcel as necessary and implementation of the cleanup actions identified in that plan.

Aboveground Storage Tanks

ASTs used for the storage of petroleum products are regulated by the EPA under the CWA and, in California, by CalEPA under the state Aboveground Petroleum Storage Act. The CUPA (CCHS) implements the AST regulations at the local level. A primary component of the compliance program for ASTs is maintenance of a spill prevention, control, and countermeasure (SPCC) plan when the ASTs at a facility have an aggregate storage capacity greater than 1,320 gallons of petroleum.

Asbestos

Abatement of asbestos-containing material (ACM) is regulated under Title II of the Toxic Substances Control Act (TSCA). Asbestos is also regulated as a hazardous air pollutant under the CAA and as a potential worker safety hazard. The agencies with primary responsibility for asbestos safety in California are Air Quality Management Districts (AQMDs) and Cal/OSHA.

Lead-Based Paint

LBP is regulated under Title IV of the TSCA. As with asbestos, lead is regulated as a hazardous air pollutant under the CAA and as a potential worker safety hazard, and it is regulated in California for those hazards by AQMDs and Cal/OSHA. The waste from LBP removal is typically evaluated to determine whether it must be managed as a hazardous waste under RCRA. In addition, the California Department of Public Health (CDPH) regulates lead in residential areas and facilities where children could be at risk from lead poisoning.

Polychlorinated Biphenyls

PCBs are regulated under the TSCA. The DTSC regulates PCBs and PCB-contaminated materials as a California hazardous waste when the PCBs exceed certain limits. The PCB-containing light ballasts from older fluorescent light fixtures typically require management as a hazardous waste in California.

Radioactive Materials

The CDPH is responsible for ensuring that facilities that use radioactive materials or radiation-producing equipment (such as X-ray equipment) are properly licensed in accordance with state and federal laws and regulations, including the state Radiation Control Law and Title 17 of the CCR, Division 1, Chapter 5, Subchapter 4, *Radiation*. The CDPH receives its authority from the U.S. Nuclear Regulatory Commission

(NRC). Navy operations involving radioactive materials are authorized directly by the NRC and the Navy Master Materials License and are not licensed by state radiation control agencies. CDPH also provides consultation to the DTSC on radiological issues at BRAC sites on the NPL.

Pesticides

Pesticides, which include herbicides, are regulated under the Federal Insecticide, Fungicide, and Rodenticide Act. The California Department of Pesticide Regulation regulates pesticide use in the state.

Transportation of Hazardous Materials

Hazardous materials that result from construction or other activities at the former NWS Concord property may require offsite transportation for disposal and/or treatment. The U.S. Department of Transportation (DOT) regulates the transportation of hazardous materials in Title 49 of the CFR. The California Highway Patrol (CHP) regulates the transportation of hazardous materials in Title 13 of the CCR, Division 2, Chapter 6, *Hazardous Materials*. Transportation and disposal of material, such as soil, that is classified as a hazardous waste would be subject to applicable federal and state regulations, including those of the DTSC.

3.8.2.3 Finding of Suitability to Transfer

Before transfer of BRAC property, the Navy must ensure that all applicable statutory and regulatory requirements have been satisfied. The Navy prepares a Finding of Suitability to Transfer (FOST) for the transfer of title to real property by deed to non-federal entities. A FOST summarizes how the applicable requirements and notifications for hazardous materials, petroleum products, and other regulated materials (such as ACM, LBP, and PCBs) have been satisfied and that the property is environmentally suitable for transfer. A FOST also addresses any restrictions, notifications, or deed covenants related to hazardous materials at the surplus property. Any long-term remedies, including LUCs or ICs, and responsibilities for maintenance and reporting are discussed in a FOST. A FOST is forwarded to the EPA and state agencies for review and comment (DOD 2006).

Potentially contaminated properties can be transferred under the “early transfer” process of CERCLA, as described in Section 3.8.2.1, in which case the Navy would prepare a Finding of Suitability for Early Transfer (FOSET) to transfer property prior to completion of cleanup actions. In the case of a FOSET, either the Navy or the property recipient may conduct cleanup actions. A FOSET allows for earlier property transfer and redevelopment while still assuring property cleanup.

3.8.3 Environmental Restoration Program Sites

This section summarizes the existing conditions regarding ER Program sites at the former NWS Concord property. The ER Program at the former NWS Concord encompasses two program areas—the IRP and the MMRP. The CERCLA actions the Navy is implementing at the former NWS Concord follow the process described in Section 3.8.2.1 and have typically encompassed the steps of RI/FSs, RODs, RD, land use control remedial design (LUC-RD), remedial action operation and maintenance, long-term monitoring, and site closeout. The Navy secures the approval of FFA signatories or their designees at applicable steps in the CERCLA process.

As with other former installations, the former NWS Concord ER Program has been an evolving and dynamic program. Over time, investigations of various geographic, media, and constituent focus areas (e.g., soil, groundwater, chemicals, radioactive materials, munitions) have led to some sites moving among the IRP, MMRP, and compliance programs in order to appropriately and efficiently remediate hazardous substances. The Navy maintains a site management plan for the former NWS Concord that consists of a master schedule listing the Navy ER Program sites, tasks completed, and schedule for planned work. For clarity in this document, the status of the ER Program as of February 2014 (site

management plan schedule dated February 4, 2014) has been selected as the baseline date to describe the existing conditions of the ER Program sites (Navy February 2014). The ER Program sites are therefore categorized below in the program area in which they were being addressed as of February 2014. In cases where sites have moved across programs, additional categorization and site identifiers are included where practicable.

3.8.3.1 Installation Restoration Program Sites

The IRP sites designated at the former NWS Concord are in various stages of investigation. Some sites have been closed, recommended for no further action, or transferred to other cleanup programs. The IRP sites and site investigation history are described below. Table 3.8-1 summarizes the sites, past actions associated with them, and their current status, including certain anticipated next steps. The sites are shown on Figure 3.8-1.

3.8.3.1.1 Active IRP Sites

IRP Solid Waste Management Unit Sites

Four solid waste management units (SWMUs)—SWMUs 2, 5, 7, and 18—are being investigated under the IRP. The sites, comprising about 22 acres total, were originally investigated under RCRA in the 1990s and then transferred to the CERCLA IRP following the performance of a RCRA Facility Assessment Confirmation Study (completed in 1997), which recommended further investigating chemicals at the sites under the IRP. The sites, located in the northwestern portion of the Inland Area, have been grouped together for study under the IRP due to their close proximity and similar history of use and operations. Subsequent investigations confirmed the presence of VOCs in groundwater and soil at portions of the sites. Following the RI and FS, the ROD (Navy July 2010) specified air sparging to address VOCs in groundwater and soil vapor extraction to address VOCs in soil gas. The remedies are expected to operate through 2017 (Navy April 2006, July 2010, February 2014).

- **SWMU 2, Building IA-7 Burn Pit.** Building IA-7 was built in the mid-1940s as a fire station and is still in operation. Fuel oil and napalm were reportedly burned in a shallow pit south of the building as part of firefighting training from 1969 to 1973. Fire-extinguishing chemicals reportedly included ammonium phosphate, potassium carbonate, potassium chloride, and sodium chloride.
- **SWMU 5, Buildings IA-12 and 269.** Building IA-12 was built in the mid-1940s and functioned as the locomotive repair shop. The building is no longer used for industrial activities and was steam-cleaned and emptied of all equipment in 2002 and 2003. A waste oil UST, aboveground oil supply tanks, and a waste oil sump were originally associated with the building and have been removed. At one time, batteries were maintained and recharged at the building, and a grease and sand trap were inside the building.

Building 269, located 60 feet west of Building IA-12, was constructed in the 1970s as a locomotive and rail car steam-cleaning facility, to replace the one at Building IA-51 (see SWMU 18). A steam-cleaning area was constructed in 1976 to collect oily wastes and process them in an oil/water separator located 5 feet west of the area.

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
Installation Restoration Program (IRP) Sites					
Active IRP Sites					
Solid Waste Management Unit Sites: • SWMU 2 • SWMU 5 • SWMU 7 • SWMU 18	• Building IA-7 Burn Pit • Buildings IA-12 and 269 • Buildings IA-15 and IA-16 • Building IA-51	RFA	1992	SWMUs 2, 5, 7, and 18 are being addressed under the IRP as one unit. Remedial action is underway: air sparging for VOCs in groundwater and soil vapor extraction for VOCs in soil gas. Remedies are anticipated to operate through 2017.	PCE, solvents, and petroleum hydrocarbons in groundwater and soil
		RFA Confirmation Study	1997		
		SWMUs transferred to IRP	After 1997		
		SI	2005		
		Draft final FS	2005		
		Treatability study	2007		
		FS	2008		
		ROD	2010		
Remedial action	In progress				
22	Building 7SH5 and Main Magazine Area	IAS	1983	Proposed Plan for site remediation involves LUCs to limit exposure to arsenic in soil. NTCRA for endrin-contaminated soil was completed in 2013, with the report anticipated to be complete in 2014. Bioavailability study for arsenic is in progress and anticipated to be complete in 2015, with an FS addendum and ROD to follow.	VOCs; arsenic in surface soil; endrin in surface soil (in one area)
		Inland Area SI	1993		
		RI	1998, 2006		
		FS	2008		
		Proposed Plan	2010		
		NTCRA (endrin-contaminated soil)	2014		
		Bioavailability study	In progress		
22A	Magazine Groups 1 through 5	IAS	1983	Proposed Plan consists of NFA at Magazine Groups 1, 2, and 4 and LUCs restricting residential development at Magazine	Arsenic in surface soil
		RI	2007 to 2009		
		FS	2011		
		Proposed Plan	2012		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
		ROD	In progress	Groups 3 and 5 to address arsenic. ROD is in progress and anticipated to be completed in 2014.	
29	Building IA-25	SI	1989	Building IA-25 was known as Missile Component Maintenance. NTCRA for groundwater using biotic and abiotic techniques is being performed from 2013 to 2017. Revised FS anticipated in 2017. ROD, remedial action, and long-term monitoring are anticipated.	Chlorinated hydrocarbons (primarily TCE) in soil gas and groundwater; lead in surface soil due to lead-based paint associated with the building (the latter is not addressed by the CERCLA process)
		HHRA	1999		
		ERA	2001		
		Draft final FS	2003		
		Additional RI activities	2011		
		FS	2013		
		NTCRA (VOCs in groundwater)	In progress		
41	IA-100 Storage Areas	SI	2013	NFA recommended in 2013 for two areas (IA-100 South and the Area North of IA-100). IA-100 North area is being studied primarily for PAHs in soil. NTCRA for MEC is planned for 2014 for the Area West of IA-100. A subsequent RI/FS is anticipated.	Arsenic and PAHs in surface soil (IA-100 North); MEC in soil (Area West of IA-100)
		NFA recommended for two of the four areas (IA-100 South and the Area North of IA-100)	2013		
		Data gap investigation	2014		
		EE/CA	2014		
		Action memorandum for NTCRA (MEC in soil)	2014		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
42	Building 81	AOPI SI	2013	Building 81 was the Ordnance Maintenance and Test Building. Leach field and associated piping are being investigated for VOCs, particularly TCE, disposed of via building sanitary system. RI for soil, soil gas, and groundwater is in progress and anticipated to be completed in 2014.	VOCs (especially TCE) in soil, soil gas, and groundwater
		RI	In progress		
Closed or No Further Action IRP Sites					
14	Kinne Boulevard Wells	IAS	1983	Site consists of three closed petroleum production wells. Navy recommended NFA in 1993 and submitted letter to DTSC in 1995 requesting site closure.	Fuel oil
		Inland Area SI	1993		
		NFA recommended	1993		
15	Railroad Classification Yard	IAS	1983	Broken vials of the rodenticide methyl bromide found during the IAS were removed, and the 1983 IAS report recommended NFA. PA/RVI is in progress to reevaluate previous findings.	Methyl bromide, MEC, and munitions constituents
		NFA recommended	1983		
		PA/RVI	In progress		
16	Black Pit at Red Rock	IAS	1983	NFA recommended in 1995 and again in 2009 after two different SIs.	Chemicals and metals in soil
		SI	1995		
		NFA recommended	1995		
		Included in MMRP PA, which recommended an SI	2007		
		SI	2009		
		NFA	2009		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
17	Building IA-24	IAS	1983	Building IA-24 was the Forklift Maintenance and Storage building. 2005 ROD recommended NFA. EPA, DTSC, and RWQCB approved the NFA ROD.	Metals, fuel and oil constituents
		Inland Area SI	1993		
		RI	1995		
		NFA ROD	2005		
18	Building IA-25 ----- AOPSI Building IA-25 Outfeature	IAS	1983	1983 IAS report recommended NFA for IRP Site 18, a potential burn pit and solvent disposal area at Building IA-25 (Missile Component Maintenance). Site was later re-investigated under a 2013 SI due to an area of disturbed soil and was identified as AOPSI Building IA-25 Outfeature; the SI found no evidence of a burn pit/solvent disposal area, and NFA was again recommended.	IRP Site 18: paints, solvents Building IA-25 Outfeature: debris, MEC, munitions constituents, metals, VOCs
		NFA recommended	1983		
		PA	2010		
		AOPSI SI	2013		
		NFA recommended	2013		
20	Old Homestead, Seal Creek	IAS	1983	1983 IAS report recommended NFA, and no additional investigation was conducted.	Household debris; no hazardous materials identified
		NFA recommended	1983		
27	Buildings IA-20 and IA-36	Inland Area SI	1993	Building IA-20 was a chemical laboratory, and Building IA-36 was a boiler house. 2013 ROD recommended NFA. EPA, DTSC, and RWQCB approved the ROD.	VOCs, oils, pesticides (primarily chlordane); lead, mercury, Arochlor - 1248, and Arochlor-1254 in surface soil
		RI	1997		
		TCRA (metals and PCBs in soil)	2010		
		NFA ROD	2013		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
Military Munitions Response Program (MMRP) Sites					
Active MMRP Sites					
UXO 0001A (also known as IRP Site 24A, Pistol Firing Range)	Former Pistol Range	IAS	1983	NTCRA for metals, PAHs, and munitions debris in soil is in progress.	MEC, munitions debris, and munitions constituents (metals, PAHs) in soil
		Inland Area SI	1993		
		RI	1997		
		Transferred to MMRP			
		MMRP PA	2007		
		NTCRA (MEC, metals, and PAHs in soil)	In progress		
UXO 0009/ UXO 0003 (portions of site were formerly IRP Site 13, Burn Area)	Former Inland Burn Area/Railroad Sidings Excavation Area	IAS	1983	TCRA for buried and potentially explosive munitions, as well as removal of metals-contaminated soil, is in progress. RI/FFS is also in progress.	MEC and munitions constituents (metals, perchlorate) in soil and groundwater; napalm and fuel oil constituents in soil
		Inland Area SI	1993		
		RI	1997		
		Removal action (napalm-contaminated soil)	1997		
		RI re-initiated	2005		
		Site 13 transferred to MMRP; Railroad Sidings Excavation Area added to MMRP			
		MMRP PA	2007		
		TCRA (MEC and metals in soil)	In progress		
		RI/FFS	In progress		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
UXO 0010 (formerly IRP Site 23B)	Eagle's Nest EOD	IAS	1983	TCRA for MEC in soil is in progress. RI/FFS is also in progress.	MEC and munitions constituents (including lead) in soil
		Inland Area SI	1993		
		NFA recommended	1993		
		Transferred to MMRP			
		MMRP PA	2007		
		SI	2009		
		TCRA (MEC in soil)	In progress		
RI/FFS	In progress				
UXO 0011	Guam Way	SI	2013	TCRA for debris, commingled potentially explosive material, and contaminated soil was completed in 2013. RI/FS for soil and groundwater is in progress.	MEC and munitions constituents (lead) in soil; petroleum constituents in soil and groundwater; chlorinated solvents in groundwater
		TCRA (debris and MEC in soil)	2013		
		RI/FS	In progress		
UXO 0012	Bermed Area	Supplemental PA	2008	RI consisting of a munitions and soil investigation is in progress.	MEC in soil
		AOPI SI	2013		
		RI	In progress		
UXO 0013	Rocket Practice Area	PA/SI	In progress	PA/SI is in progress.	MEC in surface and subsurface soil
<i>Closed or No Further Action MMRP Sites</i>					
UXO 0002	Borrow/Dredge Fill Area	MMRP PA	2007	Navy recommended NFA based on 2007 PA and other reviews. PA/RVI is in progress to reevaluate previous findings.	Chemicals, MEC, and munitions constituents in soil
		NFA recommended	2007		
		PA/RVI	In progress		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
UXO 0004	Red Rock Disposal Area	MMRP PA	2007	Navy recommended NFA based on 2007 PA and other reviews. PA/RVI is in progress to reevaluate previous findings.	MMRP PA: MEC and munitions constituents PA/RVI: Chemicals, metals, and munitions constituents in soil and groundwater
		NFA recommended	2007		
		PA/RVI	In progress		
UXO 0005	Burn Area Near HE-58	MMRP PA	2007	Navy recommended NFA based on results of 2009 SI.	MEC and munitions constituents in soil and groundwater
		SI	2009		
		NFA recommended	2009		
UXO 0006 (formerly IRP Site 19, Seal Creek)	Seal Creek Disposal Area	IAS	1983	1983 IAS report recommended NFA, but 1993 Inland Area SI report recommended removal of the wastes. Site subsequently moved to the MMRP. Navy recommended NFA based on 2007 PA. PA/RVI is in progress to reevaluate previous findings.	Chemicals, MEC, and munitions constituents in soil and groundwater
		Inland Area SI	1993		
		Transferred to MMRP			
		MMRP PA	2007		
		NFA recommended	2007		
		PA/RVI	In progress		
None (formerly IRP Site 23A)	Inland Area EOD	IAS	1983	NFA recommended by 1993 Inland Area SI report. Site subsequently moved to the MMRP. Navy recommended NFA in 2009 based on 2007 PA and other reviews.	MEC and munitions constituents in soil
		Inland Area SI	1993		
		NFA recommended	1993		
		Transferred to MMRP			
		MMRP PA	2007		
		NFA recommended	2009		
None (formerly IRP Site 24B, Aircraft Firing Range)	Bore Sighting Range	IAS	1983	NFA recommended by 1993 Inland Area SI report. Site subsequently moved to the MMRP. Navy recommended NFA based on 2007 PA.	MEC and munitions constituents in soil
		Inland Area SI	1993		
		NFA recommended	1993		
		Transferred to MMRP			
		MMRP PA	2007		
		NFA recommended	2007		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
Other Sites and Investigations					
<i>Areas of Potential Interest</i>					
AOPI	Building IA-27	PA	2010	2013 SI found no evidence of historical disposal, and NFA was recommended.	Debris in disposal area
		AOPI SI	2013		
		NFA recommended	2013		
AOPI	Building 93	NFA recommended from RCRA investigations for Building 93 (SWMU 24)	1997	The AOPI site, comprising Building 93, Building 420, and associated suspected disposal areas, has been investigated numerous times over the years. NFA was recommended in 2013 based on AOPI SI.	Chemicals (e.g., VOCs), MEC, and munitions constituents in soil and groundwater and in Building 93 itself
		Geophysical investigation	2003		
		ESR investigations	2005		
		Explosive hazard evaluation, Building 93	2007		
		AOPI SI	2013		
		NFA recommended	2013		
AOPI	Northern Railroad Excavation A, B, and C	PA	2010	2013 SI found no evidence of historical disposal or munitions activities in the disposal/excavation areas, and NFA was recommended.	MEC in disposal/excavation area
		AOPI SI	2013		
		NFA recommended	2013		
AOPI	Unocal Pipeline Site	Unocal submitted closure report for SWMU 30	1991	Investigated for petroleum under RCRA following 1989 release of crude oil (see Section 3.8.4). Site recommended for NFA based on 2013 AOPI SI for MEC.	MEC in soil
		AOPI SI	2013		
		NFA recommended	2013		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
AOPI	Northern and Southern Runway Debris Areas	SI	In progress	SI of two debris areas in progress.	MEC, MPPEH, and munitions constituents in soil
<i>Preliminary Assessment/Re-verification Investigation Sites</i>					
None	C-3 Disposal Area	Geophysical survey	2003	NFA recommended based on 2003 geophysical survey. PA/RVI is in progress to reevaluate previous findings.	Chemicals in soil
		NFA recommended	2003		
		PA/RVI	In progress		
None	Nitens Plantation	Geophysical survey	2003	Potential construction-material disposal site recommended for NFA based on 2003 geophysical survey. PA/RVI is in progress to reevaluate previous findings.	Chemicals in soil
		NFA recommended	2003		
		PA/RVI	In progress		
None	Runway Apron Fuel Pit/Septic System Area	Geophysical survey	2003	PA/RVI is in progress to investigate the fuel pit, reevaluate previous findings for the septic system area, and investigate the potential for MEC.	Chemicals in soil and groundwater; MEC
		Septic system and soil investigation	2005		
		PA/RVI	In progress		

Table 3.8-1 Summary of Environmental Restoration Program Sites

Site Number	ER Program Site Name	Program Activity		Current Status	Constituents of Concern
		Key Activity	Date Completed		
None	Southern Railroad Excavations T10, T11, and T12	Geophysical survey	2003	NFA recommended based on 2003 geophysical survey. PA/RVI is in progress to reevaluate previous findings.	Chemicals in soil
		NFA recommended	2003		
		PA/RVI	In progress		

Source: ChaduxTt 2011; City of Concord 2010; ECC-Insight LLC 2014; Ecology and Environment, Inc., 1983; Malcolm Pirnie, Inc., 2007; Navy April 2006, April 2010, July 2010, January 2012, November 16, 2012, November 2012, March 2013, February 2014; Restoration Advisory Board 2012; Tetra Tech, Inc., 2013; Tetra Tech EM, Inc., 2013; Trevet 2012; TriEco-Tetra Tech 2012, 2013.

Note: Additional information concerning the sites summarized in this table is included in the document text.

Key:

AOPI = area of potential interest
 DTSC = Department of Toxic Substances Control
 EE/CA = engineering evaluation/cost analysis
 EOD = explosive ordnance disposal
 ERA = ecological risk assessment
 ESR = environmental status report
 FS = Feasibility Study
 FFS = focused feasibility study
 IAS = initial assessment study
 IRP = Installation Restoration Program
 HHRA = human health risk assessment
 LUC = land use control
 LUC-RD = land use control remedial design
 MEC = munitions and explosives of concern
 MMRP = Military Munitions Response Program
 MPPEH = material potentially presenting an explosive hazard

NFA = no further action
 NTCRA = non-time-critical removal action
 PA = preliminary assessment
 PA/RVI = preliminary assessment/re-verification investigation
 PAH = polycyclic aromatic hydrocarbon
 PCB = polychlorinated biphenyl
 PCE = tetrachloroethylene (aka perchloroethylene)
 RI = remedial investigation
 ROD = record of decision
 RWQCB = Regional Water Quality Control Board
 SI = site inspection or site investigation
 SWMU = solid waste management unit
 TCE = trichloroethylene
 TCRA = time-critical removal action
 VOC = volatile organic compound

- **SWMU 7, Buildings IA-15 and IA-16.** Building IA-15 consisted of a metals shop, machine shop, welding shop, forge shop, offices, and tool storage area in the eastern part of the building and an automotive repair shop in the western part of the building.

Building IA-16 was the painting shop for NWS Concord. Four fuel USTs (called the IA-17 USTs) were originally located between Buildings IA-16 and IA-12 and were removed in January 1999 (also see Section 3.8.6.2).

- **SWMU 18, Building IA-51.** SWMU 18 consists of Building IA-51 and a locomotive turntable. Building IA-51 was built in the 1940s for use as a tire maintenance shop and steam-cleaning facility for locomotives and vehicles. The steam-cleaning facility was deactivated in the mid-1970s when the steam-cleaning facility at Building 269 (part of SWMU 5) became operational.

Site 22, Building 7SH5 and Main Magazine Area

Site 22, located in the southwestern part of the Inland Area, is a 531-acre site consisting of grasslands, 13 buildings, and 118 bunkers (magazines) that were built in 1944 to store munitions.

Building 7SH5 was built in 1944 to store inert equipment and was used from 1957 through the mid-1970s as an environmental and vibration testing area for missile components. From the mid-1970s to mid-1990s, maintenance operations such as paint stripping, cleaning, and painting missile wings and fins were conducted in the building. The bunkers and magazines have been empty and sealed since 2001, and the site is used for cattle grazing. The first RI, conducted in the late 1990s, did not find significant contamination from past operations at Building 7SH5 (Navy April 2006).

Elevated levels of arsenic have been investigated in surface soils in open grassland areas at Site 22 and have been attributed to herbicide use. A 2005 Agency for Toxic Substances and Disease Registry report concluded that the arsenic levels would not be expected to affect the health of nearby residents (Navy April 2006). An RI/FS was completed in 2008. The Navy's proposed plan for site remediation involves the use of LUCs to limit exposure to arsenic in surface soil that poses a risk to human health (residential use) and excavation of surface soil in one 500-square-foot portion of Site 22 (near magazine 6PC33) where the soil was contaminated with endrin (an insecticide) at levels that pose a risk to wildlife (Navy April 2010). A non-time-critical removal action for the endrin-contaminated soil was completed in 2013, with the report to follow in 2014, and a bioavailability study for arsenic was in progress as of 2014 (Navy February 2014). Following the bioavailability study, an FS addendum and ROD will be completed.

Site 22A, Magazine Groups 1 through 5

Site 22A encompasses 504 acres and 103 magazines grouped into five separate areas located east of Site 22 and along the center of the Inland Area. The five areas consist of:

- Group 1: 2.4 acres, 6 magazines
- Group 2: 154 acres, 39 magazines
- Group 3: 39 acres, 18 magazines
- Group 4: 124 acres, 20 magazines
- Group 5: 185 acres, 20 magazines

Similar to Site 22, the ammunition magazines were built in the 1940s and have been empty and sealed since 2001. The RI/FS studied arsenic in surface soil that has been attributed to herbicide use. The FS was

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completed in 2011. The Navy's proposed plan for site remediation consists of no further action at Magazine Groups 1, 2, and 4 because concentrations of arsenic in surface soil do not pose unacceptable risk to human health and the environment, and LUCs at Magazine Groups 3 and 5 to address arsenic contamination in surface soil that may pose potential risk to future residents (Navy November 2012). A ROD is in progress.

Site 29, Building IA-25

Site 29, consisting of Building IA-25 (Missile Component Maintenance), is located just northwest of Site 22. Building IA-25 was constructed in 1945 and is located within an earthen berm. The building was used from the mid-1940s to the 1980s to manufacture and test military explosives. The building also included a paint spray booth that was renovated in the late 1970s to be used to rework explosives. Site 29 is being investigated for chlorinated hydrocarbons (primarily trichloroethylene [TCE]) in soil gas and groundwater. Lead in soil has been identified from LBP associated with the building. At one time, Site 29 also included SWMU 13, which consisted of the septic system and a storm drain outfall that were investigated for similar contaminants. SWMU 13 was remediated under a RCRA corrective action in 1997 (see Section 3.8.4) and is no longer part of IRP Site 29.

A 1999 human health risk assessment conducted for Site 29 indicated a potential risk to humans if the site were used for residential purposes, and a 2001 ecological risk assessment indicated a potential risk to animals from ingestion of contaminated soil. The chlorinated hydrocarbons in groundwater were found in 2005. An RI was performed (most recent RI activities were completed in 2011) to re-confirm the nature and extent of contamination previously identified in documentation produced during operational status. The FS was finalized in 2013. A non-time-critical removal action for VOCs in groundwater using biotic and abiotic techniques is being performed, with anticipated completion by 2017 (Navy April 2006, February 2014).

Site 41, IA-100 Storage Areas

The 5.4-acre IA-100 Storage Areas, located near Kinne Boulevard just east of the Site 22 Main Magazine Area, consist of four separate investigation areas. The IA-100 North and IA-100 South areas were used for general maintenance and to store materials, including pesticides and arsenic-containing treated wood, from the 1950s until 2005. The area called Area West of IA-100 was used to unload cargo from the nearby railroad and has been observed to contain munitions-related debris and items in surface and subsurface areas. The area called Area North of IA-100 was used for storage.

An SI was completed in 2013, and a data gap investigation, engineering evaluation/cost analysis (EE/CA), and action memorandum were completed in 2014. Some surface and subsurface munitions items at the Area West of IA-100 were removed as part of the data gap investigation. Site 41 is being investigated for arsenic and polycyclic aromatic hydrocarbons (PAHs) in soil at the IA-100 North area, and for MEC in soil at the Area West of IA-100. The SI recommended no further action for the IA-100 South area and the Area North of IA-100 (ECC-Insight LLC 2014; Navy February 2014).

Site 42, Building 81

Building 81 (Ordnance Maintenance and Test Building), located east of the Site 22A Group 2 Magazine Area, was used for maintaining ordnance and for testing fuzes and hydraulic fluids. The building was built in 1959 and operations in it ceased in 2001. An SI was completed in 2013. The leach field and associated piping are being investigated for VOCs, particularly TCE, that were identified in soil gas during the SI. The VOCs are believed to have been disposed of via the building sanitary system and potentially exist in soil. An RI for soil, soil gas, and groundwater is anticipated to be completed in 2014 (Navy February 2014; Tetra Tech, Inc., 2013). Septic tanks associated with Building 81 were previously identified as SWMU 22 and addressed by that program (see Section 3.8.4).

3.8.3.1.2 Closed or No Further Action IRP Sites

Site 14, Kinne Boulevard Wells

Site 14 consists of three petroleum production wells near Kinne Boulevard, at the northwestern end of the Inland Area. Two of these wells currently lie within the portion of the Inland Area that was transferred to the U.S. Army in 2008. The Kinne Boulevard wells were used by the Navy between 1928 and the 1960s, and then closed by the Navy in 1995. The Navy recommended no further action for the site in 1993 and submitted a letter to the DTSC in 1995 requesting site closure (Navy April 2006).

Site 15, Railroad Classification Yard

Site 15, located toward the northwestern end of the Inland Area adjacent to Mt. Diablo Creek, is the site of shell casings and broken vials of the rodenticide methyl bromide that were identified during the 1983 IAS. The vials of methyl bromide were removed, and the IAS report recommended no further action at that time (Navy April 2006). Because of the shell casings identified by the 1983 IAS, a walkover survey for MEC was conducted in 2007, but no further munitions were found (TriEco-Tetra Tech 2013). A PA/re-verification investigation (RVI) was in progress in 2014 to reevaluate previous findings and investigate the potential for MEC and munitions constituents at the site (TriEco-Tetra Tech 2013). The PA/RVI is also discussed in Section 3.8.3.3.2.

Site 16, Black Pit at Red Rock

The Black Pit at Red Rock is located just north of Site 22, about 100 yards southeast of Mt. Diablo Creek. The pit (15 feet long, 10 feet wide, and 5 feet deep) was observed during the IAS near a disposal area and a clean fill borrow area and contained noticeably black soil. Sample analysis at the time indicated that the pit was used for the disposal of paints, pigments, and other chemicals. An SI conducted at the pit in 1995 did not find constituents of concern, and no further action was recommended at that time (Navy April 2006). The pit was later addressed in the MMRP PA (completed in 2007; see Section 3.8.3.2), when the pit and the nearby disposal area were investigated for potential MEC and munitions constituents. The 2007 MMRP PA concluded that the pit was a suspected MEC area and recommended an SI (Malcolm Pirnie, Inc., 2007). An SI was conducted in 2009, as a result of which the Black Pit at Red Rock site was again recommended for no further action. The Black Pit at Red Rock is currently a separate site from the nearby disposal and soil-borrow areas that collectively comprise the site now known as MMRP site UXO 0004, Red Rock Disposal Area (see Section 3.8.3.2.2).

Site 17, Building IA-24

Building IA-24 (Forklift Maintenance and Storage) is located on the eastern side of Kinne Boulevard, approximately between Site 22 and Site 22A Magazine Group 3. Building IA-24 was used from the 1950s through 1988 for heavy equipment maintenance, cleaning, and battery recharging. A diesel UST was removed and replaced with an AST in 1997, which was subsequently removed in 2004. The building is not used for Navy operations but is used by cattle-ranching lease holders to store hay bales. The RI performed in the mid-1990s found no constituents of concern above levels of concern at the site, and the ROD (2005) recommended no further action. The EPA, DTSC, and RWQCB approved the ROD (Navy April 2006).

Site 18, Building IA-25 (Also Known as Area of Potential Interest [AOPI], Building IA-25 Outfeature)

Site 18 is located at Building IA-25 (Missile Component Maintenance) and refers to a potential burn pit and solvent disposal area. Paints and solvents were reportedly burned and disposed of in the area. The 1983 IAS report recommended no further action at that time (City of Concord 2010). The potential burn pit and solvent disposal area was later re-investigated as AOPI Building IA-25 Outfeature under a 2013 AOPI SI due to an area of disturbed soil and uncertainties surrounding the location of IRP Site 18. The SI

investigated the site for MEC, munitions constituents, metals, and VOCs. The 2013 SI did not find any evidence of a burn pit or solvent disposal area, and the site was again recommended for no further action (Tetra Tech, Inc., 2013).

Site 20, Old Homestead, Seal Creek

Site 20, located approximately between Site 22 and Site 22A Magazine Group 4, is the site of household debris that was noted in the 1983 IAS. The debris was disposed of by local ranchers prior to the Navy obtaining the property in 1943. No hazardous materials were disposed of at the site. The IAS report recommended no further action at that time, and no additional investigation was conducted at the site (Navy April 2006).

Site 27, Buildings IA-20 and IA-36

Site 27 consists of 0.4 acre located near the northern portion of the Inland Area. Building IA-20 (Chemical Laboratory) was constructed in 1947 and used from 1964 to the mid-1990s as a chemical and materials testing laboratory. The laboratory was used to test oils and hydraulic fluids, develop new weapons test methods, and evaluate characteristics of ordnance. Building IA-36 (Boiler House) is a former boiler house constructed in 1946. A diesel UST located at Building IA-36 was removed in 1997. Neither building has been used since 1999. Site 27 was investigated for VOCs, oils, metals, pesticides (primarily chlordane), and PCBs. Chlordane was found at levels within EPA standards for industrial areas but above EPA standards for residential areas. A time-critical removal action for metals and PCBs in soil was completed in 2010 to reduce the risk to wildlife. The Navy proposed no further action for Site 27, which is eligible for unrestricted use because it does not pose unacceptable risks to human health (under either industrial or residential scenarios) or the environment (Navy April 2006; January 2012). The ROD detailing no further action for the site was finalized in 2013. The EPA, DTSC, and RWQCB approved the ROD.

3.8.3.2 Military Munitions Response Program Sites

A PA was completed of the Inland Area in 2007 for areas containing MEC or munitions constituents (Malcolm Pirnie, Inc., 2007). As a result of the PA and additional reviews and visual surveys, further site investigation was recommended for certain sites and no further action for others. Some of the sites were moved to the MMRP from the IRP. The MMRP sites designated at the former NWS Concord are in various stages of investigation. Some sites have been closed or recommended for no further action. The MMRP sites and site investigation history are described below. Table 3.8-1 summarizes the sites, past actions associated with them, and their current status, including certain anticipated next steps. The sites are shown on Figure 3.8-1.

3.8.3.2.1 Active MMRP Sites

UXO 0001A, Former Pistol Range

The 1.5-acre former pistol range, located between Site 22A Magazine Groups 3 and 4, was active from the early 1950s to 2005 and is currently inactive. It was originally investigated as IRP Site 24A, Pistol Firing Range, in the IAS, SI, and RI and was subsequently moved to the MMRP. Previous IRP investigations found elevated levels of metals (mostly lead) in soil, PAHs in soil (from creosote-treated wood used to support the target berm) at levels above screening values, and potentially explosive munitions debris (Navy April 2006). A non-time-critical removal action for MEC, metals, and PAHs in soil was in progress as of 2014 to reduce human and ecological risks (Trevet 2012; Navy February 2014).

UXO 0009/UXO 0003, Former Inland Burn Area/Railroad Sidings Excavation Area

The Former Inland Burn Area/Railroad Sidings Excavation Area is an approximately 43-acre site located west of Willow Pass Road. The majority of the site (28 acres) was formerly investigated as IRP Site 13,

Burn Area, and was moved to the MMRP to complete the investigation as MMRP identifier UXO 0009. The Burn Area was later combined with the adjoining 15-acre UXO 0003 Railroad Sidings Excavation Area to create the present combined Former Inland Burn Area/Railroad Sidings Excavation Area site.

Portions of the original Burn Area site were used from the late 1940s to approximately 1974 to destroy live ordnance by burning it in trenches and natural gullies. The ordnance included flares, smoke chemicals, thermite grenades, small arms ammunition, and powder and loose material cleaned from ammunition ships. The area was also briefly used as a firefighting training area, where napalm and fuel oil were burned, and for target practice using .50-caliber machine guns. A removal action for napalm-contaminated soil was conducted in 1997. Low concentrations of perchlorate (a rocket fuel component) have been found in groundwater at the site, below California public health goals (Navy April 2006; November 16, 2012). The Railroad Sidings Excavation Area is located in the northern portion of the combined site. The Railroad Sidings Excavation Area was similarly used from the 1940s to the 1970s as an open burning and open detonation area, and the contaminants and munitions constituents it contains are similar to those of the original Burn Area site (Navy April 2006).

A time-critical removal action for buried and potentially explosive munitions, as well as removal of metals-contaminated soil, was in progress as of 2014 for the combined site. An RI/Focused FS (FFS) is also underway at the site to investigate chemical constituents (Navy November 16, 2012, February 2014).

UXO 0010, Eagle's Nest Explosive Ordnance Disposal (EOD)

The 2.4-acre Eagle's Nest EOD site is located east of Site 22A Magazine Group 3 and was used from approximately 1959 to the 1970s for controlled explosions and open burning/open detonation. It was originally investigated as IRP Site 23B. No further action was recommended for Site 23B in 1993, based on the results of the Inland Area SI, which found a lack of explosive chemicals in soil samples and little physical evidence that munitions had been detonated in the area. The site was subsequently moved to the MMRP because of its historic use for EOD operations and because lead had been detected in soil at concentrations greater than reference levels of concern (Navy April 2006). A time-critical removal action for MEC in soil and an RI/FFS for MEC and munitions constituents in soil were in progress as of 2014 (Navy February 2014).

UXO 0011, Guam Way

The 1.6-acre Guam Way site, located on Guam Way Road northwest of Willow Pass Road, is a disposal site that may also have been used for burning debris and trash. Site investigations identified buried trash and debris commingled with potentially explosive material (intact bomb fuzes), lead in soil at levels that could pose unacceptable risks to future residents, petroleum constituents in soil and groundwater, and chlorinated solvents in soil gas and groundwater. The Guam Way site was investigated as an AOPI in an SI that was completed in 2013. A time-critical removal action for the debris, commingled potentially explosive material, and contaminated soil was conducted in 2013, and an RI/FS for soil and groundwater was in progress as of 2014 (Navy February 2014; TriEco-Tetra Tech 2012).

UXO 0012, Bermed Area

The approximately 1.7-acre Bermed Area is located in the southeastern portion of the installation, adjacent to the closed Inland Area EOD site (which is discussed in Section 3.8.3.2.2 below). The history of the Bermed Area is uncertain, but it is thought to have been confused over time with the history of the Inland Area EOD site, at which no MEC has been found. The Bermed Area was likely used from the 1940s to 1960s for EOD operations. A supplemental PA was completed in 2008, and an AOPI SI was completed in 2013. During the subsurface exploration conducted of the Bermed Area in 2012 as part of the SI, potentially explosive munitions (such as variable timed fuzes) and munitions debris were found in exploratory trenches. An RI, consisting of a munitions and soil investigation, was in progress as of 2014 (Navy February 2014; Tetra Tech, Inc., 2013).

UXO 0013, Rocket Practice Area

The approximately 14-acre Rocket Practice Area, located just east of Site 22A Magazine Group 4, was used as a rocket practice area and range. Little historical information is available for the site, although it is presumed to have been used in the 1950s and 1960s based on the types of practice rockets identified at the site. As a result of the identification of surface munitions (parts from 3.5-inch practice rockets) during a site walkover performed in 2012, some shallow munitions removals were performed in 2013. The PA/SI for the nature and extent of surface and subsurface MEC in soil was in progress as of 2014 (Environmental Cost Management, Inc., and Engineering Remediation Resources Group, Inc., 2013; Navy February 2014).

3.8.3.2.2 Closed or No Further Action MMRP Sites

UXO 0002, Borrow/Dredge Fill Area

The 27-acre Borrow/Dredge Fill Area, located west of Willow Pass Road, was used during the 1970s and 1980s to dispose of dredged material from the Contra Costa Canal and local creeks. The area consists of soil piles and trenches for which no evidence has been found of MEC or munitions scrap. The Navy recommended no further action for the site based on the 2007 PA and other reviews (Malcolm Pirnie, Inc., 2007; Navy April 2006). A PA/RVI was in progress in 2014 to re-evaluate previous findings and investigate the potential for chemicals in soil (TriEco-Tetra Tech 2013). The PA/RVI is also discussed in Section 3.8.3.3.2.

UXO 0004, Red Rock Disposal Area

The Red Rock Disposal Area, located near the northern edge of Site 22, was originally investigated as a 5.3-acre disposal site that was included in the MMRP based on installation fire department logs that suggested the area may have been used for open burning/open detonation of munitions. The 2007 PA addressed both the disposal area and the Black Pit at Red Rock (the pit is IRP Site 16 and is discussed in Section 3.8.3.1.2). The Navy recommended no further action for the disposal area in 2007 based on the PA and other reviews, which concluded that the disposal area was not suspected to contain MEC (Malcolm Pirnie, Inc., 2007). A PA/RVI (see Section 3.8.3.3.2) was in progress as of 2014 to reevaluate previous findings and investigate the potential for chemicals and munitions constituents in soil, soil gas, and groundwater. The PA/RVI is addressing a larger 11-acre site, consisting of the original 5.3-acre disposal area and an adjacent 5.7-acre disposal area that were both used for the transfer of non-munitions trash and debris (TriEco-Tetra Tech 2013). IRP Site 16, Black Pit at Red Rock, is now considered to be a separate site from the Red Rock Disposal Area (see Section 3.8.3.1.2).

UXO 0005, Burn Area Near HE-58

The 92-acre Burn Area Near HE-58 site is located near Building HE-58, at the southeastern end of the Inland Area. The area was used from 1966 to 1978 for maneuvers and open burning/open detonation. The types of munitions thought to be destroyed in the area included bulk propellants, bulk explosives, pyrotechnics, small arms, and grenades. The Navy recommended no further action for the site, based on the results of a 2009 SI (Navy April 2006; City of Concord 2010).

UXO 0006, Seal Creek Disposal Area

The approximately 9.2-acre Seal Creek Disposal Area, located near the southeastern end of Site 22, was originally investigated as IRP Site 19, Seal Creek, because of the presence of a mixed-debris fill area containing solid wastes and two empty 55-gallon drums. The disposal area, located to the west of Building 93 and on the north bank of Seal Creek (Mt. Diablo Creek), operated from the 1950s to at least 1983. The 1983 IAS report recommended no further action, but the 1993 Inland Area SI report recommended removal of the wastes. The site was subsequently moved to the MMRP based on installation fire department logs that suggested older landfills such as this site had been used for ordnance

disposal. The 2007 PA investigated a 1.5-acre portion of the site and called it “Disposal Area – Seal Creek.” The PA determined that the site was not expected to contain MEC or munitions constituents, and the Navy recommended no further action for the site at that time (Navy April 2006). A PA/RVI was in progress in 2014 to re-evaluate previous findings and investigate the potential for chemicals in soil, soil gas, and groundwater (TriEco-Tetra Tech 2013). The PA/RVI is addressing the larger 9.2-acre site (see Section 3.8.3.3.2).

Inland Area EOD

The 41-acre Inland Area EOD site, located at the southeastern end of the Inland Area, was originally investigated as IRP Site 23A. The site was used from the late 1940s until about 1959 for controlled explosions and open burning/open detonation. No further action was recommended for Site 23A in 1993, based on the results of the Inland Area SI, which found a lack of ordnance-related debris and explosives compounds in soil samples. The site was subsequently moved to the MMRP because of its historic use for EOD operations (Navy April 2006). The Navy recommended no further action for the site in 2009, based on the results of the 2007 PA and other reviews.

Bore Sighting Range

The 5.3-acre Bore Sighting Range, located in the westernmost portion of the Inland Area near the old airfield, was originally investigated as IRP Site 24B, Aircraft Firing Range. It is the location of Building IA-56, which was used from 1944 to 1946 as an aircraft target range for the bore-sighting of wing guns. No further action was recommended for Site 24B in 1993, based on the results of the Inland Area SI, which did not find projectiles, metal fragments, or elevated metals concentrations in soil from a berm at the site. The site was subsequently moved to the MMRP because of its limited historic use as a firing range and because the backstop berm used at the target range is still intact. The Navy has recommended no further action for the site based on the 2007 PA (Malcolm Pirnie, Inc., 2007; Navy April 2006).

3.8.3.3 Other Sites and Investigations

The Navy investigates other potential hazardous waste/material sites as necessary to determine whether such sites should be included in the ER Program. The sites described below are shown on Figure 3.8-1. Table 3.8-1 summarizes the sites, past actions associated with them, and their current status, including anticipated next steps.

3.8.3.3.1 Areas of Potential Interest

Building IA-27

Building IA-27, located just south of Site 22A Magazine Group 2, was built in 1945 and used as a carpentry shop before being used for administrative storage. It was vacated in 2001. The AOPI concerned a potential disposal area to the north of the building. An SI performed in 2013 did not find any evidence of a disposal area, and no further action was recommended (Tetra Tech, Inc., 2013). Septic tanks associated with Building IA-27 were previously identified as SWMU 14 and addressed by that program (see Section 3.8.4).

Building 93

The Building 93 AOPI is a multi-acre site in the southern portion of the installation that encompasses Building 93, Building 420, and a grassland area with a decommissioned septic tank and leach field. It encompasses portions of MMRP Site UXO 0006, Seal Creek Disposal Area, which is discussed in Section 3.8.3.2.2. Building 93 was originally investigated in the 1990s as SWMU 24 (see Section 3.8.4). Building 93 and associated suspected disposal areas have been investigated numerous times in the past due to the use of hazardous materials and storage of hazardous waste at the building, the potential for use/disposal of MEC and other materials, and reports of open burning/open detonation at the site.

Building 420 historically contained paint booths and other maintenance areas. In its status as a recent AOPI, the Building 93 site was studied in 2012 for MEC, munitions constituents, and organic compounds in soil and groundwater. Although elevated TCE was detected in one groundwater sample, the screening-level risk assessment recommended no further action based on the location of the samples (Tetra Tech EM, Inc., 2013).

Northern Railroad Excavation A, B, and C

The Northern Railroad Excavation A, B, and C AOPIs are located in the northwest portion of the former NWS Concord property, near other railroad sites and facilities. Northern Railroad Excavation A was thought to be a clean soil-borrow area, Northern Railroad Excavation B was thought to be an incomplete railroad revetment, and Northern Railroad Excavation C was thought to have been used for drainage or soil borrow or was an unfinished revetment. The AOPIs were investigated because open burning and open detonation had been documented in other incomplete railroad excavations at the Former Inland Burn Area (the Former Inland Burn Area is discussed in Section 3.8.3.2.1.) SIs completed in 2013 found no evidence of MEC or munitions constituents at the Northern Railroad Excavation A, B, or C AOPIs, and no further action was recommended (Tetra Tech, Inc., 2013; Tetra Tech EM, Inc., 2013).

Unocal Pipeline Site

The approximately 1-acre Unocal Pipeline Site is located in the western portion of the former NWS Concord. It contains an underground oil pipeline that was formerly owned by Unocal and is currently owned by ConocoPhillips. The site was originally investigated as SWMU 30 (see Section 3.8.4) as a result of a pipeline leak in 1989 that was repaired and cleaned up at that time. Because ammunition was discovered during that cleanup, site soil was investigated for MEC in a 2013 AOPI SI. No explosives were found during the SI, and the site was recommended for no further action (Tetra Tech EM, Inc., 2013).

Northern and Southern Runway Debris Areas

The 70-acre Northern and Southern Runway Debris Areas consist of three sites, totaling about 70 acres, located near former runway areas in the western portion of the station. The Navy is conducting an SI at both debris areas to address MEC, material potentially presenting an explosive hazard (MPPEH), and munitions constituents in surface and subsurface soil. Data gathered during the SI field activities will be used to update the conceptual site models, develop baseline MEC hazard assessments, and complete screening-level human and ecological risk assessments for munitions constituents, as applicable.

3.8.3.3.2 Preliminary Assessment/Re-verification Investigation Sites

The Navy is conducting a PA/RVI to: 1) identify potential sites at former NWS Concord, through record and historical aerial photograph reviews, that may have been overlooked in previous assessments, and 2) re-verify, through additional record reviews and field investigations, whether previous “no further action” recommendations for certain sites are appropriate or whether a response action is required. The PA is basewide in scope. The RVI is focusing on eight sites and is anticipated to be completed in 2014. Four of the sites had already been categorized within the ER Program and are discussed in previous subsections; they consist of:

- One closed IRP site: IRP Site 15, Railroad Classification Yard (see Section 3.8.3.1.2); and
- Three closed MMRP sites (see Section 3.8.3.2.2):
 - Site UXO 0002, Borrow/Dredge Fill Area
 - Site UXO 0004, Red Rock Disposal Area

- Site UXO 0006, Seal Creek Disposal Area.

The remaining four sites have not been previously categorized under the ER Program and are briefly described below.

C-3 Disposal Area

The approximately 2-acre C-3 Disposal Area is located adjacent to the Railroad Classification Yard, toward the northwestern end of the Inland Area. The site was recommended for no further action based on a 2003 geophysical survey that concluded that disposal occurred on the surface and buried wastes were likely not present. The PA/RVI is being performed to reevaluate previous findings and investigate the potential for chemicals in soil (TriEco-Tetra Tech 2013).

Nitens Plantation

The approximately 2-acre Nitens Plantation site, located east of Building 93, is a potential disposal site for waste construction materials. The area had been marked in the past by dead trees. The site was recommended for no further action based on a 2003 geophysical survey. The PA/RVI is being performed to reevaluate previous findings and investigate the potential for disposal in the area and chemicals in soil (TriEco-Tetra Tech 2013).

Runway Apron Fuel Pit/Septic System Area

The approximately 6-acre Runway Apron Fuel Pit/Septic System Area is located in the former airport area in the westernmost portion of the Inland Area. The fuel pit was identified in a 2013 records search. The septic system is likely associated with former Building 122. The septic tank was not found during a 2003 geophysical survey. Soil investigations of the general area completed in 2005 did not find any soil contamination. Because the location of the septic tank was unknown at the time of the 2005 investigation, it was uncertain whether the soil investigations adequately characterized the septic system area. The PA/RVI is being performed to investigate the fuel pit and reevaluate previous findings for the septic system, including the potential for chemicals in groundwater and soil gas, and also investigate the potential for MEC (TriEco-Tetra Tech 2013).

Southern Railroad Excavations T10, T11, and T12

The approximately 1.2-acre site, located near other railroad sites in the northwest portion of the Inland Area, consists of incomplete railroad sidings that had been partially excavated and filled. The site was recommended for no further action based on a 2003 geophysical survey. The PA/RVI is being performed to reevaluate previous findings and investigate the potential for chemicals in soil (TriEco-Tetra Tech 2013).

3.8.4 Solid Waste Management Unit Sites

This section presents the existing conditions for SWMU sites at the former NWS Concord. Under RCRA, the DTSC has identified and evaluated various SWMUs at the former NWS Concord for historical or potential releases of hazardous wastes to the environment and the potential need for corrective actions. SWMUs at the former NWS Concord include features such as septic systems and leach fields where hazardous chemicals might have collected, industrial buildings and areas, boilers, and certain USTs. Of the 37 SWMUs originally identified at the Inland Area, 33 have received a recommendation of no further action, and the other four were transferred to the IRP (see Section 3.8.3.1.1). The SWMUs identified for the Inland Area at NWS Concord are discussed briefly below. They are listed in Table E-1 and shown on Figure E-1 in Appendix E.

The SWMUs in the Inland Area were originally identified by a 1992 RCRA Facility Assessment (RFA), which identified 33 SWMUs. Of those 33, the DTSC recommended no further action for 14 SWMUs—3,

4, 6, 8, 9, 10, 11, 19, 21, 27, 28, 29, 31, and 32. Four additional SWMUs (51, 52, 53, and 54) were added to the program in the mid-1990s, and four other SWMUs (2, 5, 7, and 18) were transferred to the IRP in the late 1990s (see Section 3.8.3.1.1), leaving 19 SWMUs to be further assessed. An RFA confirmation study and selected RCRA Corrective Action Program activities were performed between 1995 and 1997 and led to the cleanup of several SWMUs, most notably many of the septic tanks. Most of the septic tanks did not contain hazardous materials and were cleaned as a maintenance measure and not as a RCRA corrective action. RCRA corrective actions were performed for the SWMU 13 septic tank and for pesticide-contaminated soil at SWMU 16 (CH2M Hill 1997). As a result of the RFA confirmation study and selected RCRA Corrective Action Program efforts, 15 more SWMUs were recommended for no further action—12, 13, 14, 15, 16, 17, 20, 22, 23, 24, 25, 51, 52, 53, and 54 (Navy April 2006).

Of the remaining four SWMUs, SWMU 1 was assessed by the RFA confirmation study but subsequently transferred to the UST program, where it received a recommendation of no further action. SWMUs 26 and 33 were evaluated and addressed under the UST program and also received a recommendation of no further action (City of Concord 2010). SWMU 30, which was a release of 84 gallons of crude oil from the Unocal pipeline in 1989, was cleaned up at that time. Unocal submitted a closure report to the water board in 1991, but there is no verification on record acknowledging site closure (Tetra Tech EM, Inc., 2013). The DTSC recommended in 1992 that a RCRA Facility Investigation be performed to confirm that soil and groundwater were not contaminated by residual petroleum constituents (DTSC 1992). The site was recently investigated for MEC as an AOPI under the ER Program (see Section 3.8.3.3.1).

3.8.5 Basewide Historical Radiological Assessment

This section presents the existing conditions for potential radiological sites at the former NWS Concord. The Atomic Energy Commission (AEC, and its successor agency, the NRC) originally issued licenses to the Navy for the use of radioactive materials at NWS Concord. In 1985, the NRC granted permitting authority to the Navy under a Master Materials License, at which time five Naval Radioactive Materials Permits (NRMPs) were issued to NWS Concord. Those five NRMPs were terminated individually between 1990 and 2008. Historical radiological operations included:

- The use of X-ray machines and particle accelerators to examine weapons materials and components. The X-ray machines and particle accelerators emitted radiation when energized and did not themselves use radioactive material.
- The use of gamma radiography (using cobalt-60 or iridium-192 radioactive sources) and nuclear density gauges (using uranium-235 and californium-252 radioactive sources) to examine weapons materials and components. Although the nuclear density gauge itself was used at the NWS Concord facility in Pittsburg, California, the radioactive sources were eventually stored at the Inland Area before being disposed of.
- The use of X-ray nondispersive spectroscopy systems (using iodine-125, americium-241, and polonium-210 radioactive sources) to examine materials and components.
- The use of gas chromatographs (using nickel-63 radioactive sources) for sample analysis.
- Repair and disposition of equipment containing radioluminescent dials or gauges (which usually contained radium-226). This work was not required to be conducted under a license or permit.
- Storage and examination of depleted uranium ammunition. Depleted uranium consists primarily of uranium-238.
- Storage of instrument calibrators.
- Storage and shipment of radioactive materials from other Navy facilities.

- Handling and disposition of various radioactive sources, materials, and wastes.
- Storage and maintenance of special weapons. The primary isotopes associated with special weapons are uranium-235, plutonium-239, and hydrogen-3 (tritium). For security reasons, the Navy does not confirm or deny the presence of special weapons at its facilities.

The Naval Sea Systems Command Detachment, Radiological Affairs Support Office (RASO), prepared a historical radiological assessment (HRA) for the Inland Area of the former NWS Concord in 2010 in support of CERCLA and the Navy ER Program (Naval Sea Systems Command 2010). The HRA satisfies the preliminary assessment (PA) step of the ER Program process (see Section 3.8.2.1) and is intended to identify areas potentially impacted from historical uses of radioactive material, the likelihood of residual contamination and contaminant migration, sites that need further action, and recommendations for future radiological investigations and remediation processes. The HRA consisted of a historical review and site reconnaissance and did not include current radiation surveys of the former NWS Concord.

After completing the HRA, the RASO concluded that 48 sites in the Inland Area might have been impacted from historical uses of radioactive material. The terminology of “impacted” and “non-impacted” was used in the HRA in accordance with the protocol of that assessment, which is NRC-driven. Designating a site as “impacted” does not confirm the presence of radioactive material but indicates that there is a possibility for residual radioactive contamination exceeding NRC’s release standards. A non-impacted site is one where there is no reasonable possibility for residual radioactive contamination.

The 48 impacted sites identified by the HRA are summarized in Table 3.8-2 and shown on Figure 3.8-2; the sites consist of:

- Seven buildings:
 - Buildings IA-20, IA-21, IA-21A, and IA-22, which were evaluation laboratories
 - Building IA-58, X-Ray Building
 - Building 81, Ordnance Maintenance and Test Building (also called Weapons Maintenance Building), and
 - Building 87, Inert Storage Building;
- Six depleted uranium munitions storage magazines; and
- Thirty-five special weapons magazines.

The HRA concluded that the potential for contamination at each of the 48 impacted sites is “unlikely” and categorized the contamination potential for seven types of media at the sites. Surface soil, surface water, groundwater, and air were determined to have a contamination potential of “none” for all of the 48 sites. Subsurface soil and drainage systems were determined to have contamination potentials of “none” or “low” depending on the site. Structures were determined to have a contamination potential of “low” for all of the 48 sites (see Table 3.8-2). The RASO recommended that scoping surveys be conducted to further study media with a contamination potential of “low.” Only routine constraints were recommended for future remedial activities at the impacted sites because the RASO noted that “it is anticipated that either no contamination or low concentrations of residual radioactive material will be identified.” No evidence has been found that contaminants have migrated off base, and the HRA did not recommend restricted access or emergency action for any impacted site (Naval Sea Systems Command 2010). Final status surveys of the 48 impacted sites were in progress as of 2014.

Table 3.8-2 Impacted Sites Identified by Historical Radiological Assessment

Impacted Site Designated by Historical Radiological Assessment	Radioactive Materials Use	Radionuclides of Concern	Potential for Contaminated Media	
Building IA-20, Chemical Laboratory	Used as a chemical and materials testing laboratory. Radioactive materials use consisted of: <ul style="list-style-type: none"> • Calibration and servicing of tensiometers, some of which had radioluminescent gauges containing Ra-226. • Storage, inspection, and partial disassembly of depleted uranium penetrators, which contained primarily U-238. 	Ra-226, U-238	Surface soil	None
			Subsurface soil	Low
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	Low
Building IA-21, Material Test Laboratory	Used for nondestructive testing of weapon materials. Radioactive materials use consisted of: <ul style="list-style-type: none"> • Radiography using Co-60 sources. • Chemical testing with a gas chromatograph containing a Ni-63 source. • Handling of low-level radioactive waste containing Co-60 and Ra-226. • Examination and partial disassembly of depleted uranium penetrators, which contained primarily U-238. 	Co-60, Ni-63, Ra-226, U-238	Surface soil	None
			Subsurface soil	Low
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	Low
Building IA-21A, Evaluation Laboratory	Used for electronic testing of microcircuits and as a wet chemistry laboratory. Radioactive materials use consisted of: <ul style="list-style-type: none"> • Storage of an Am-241 source associated with an X-ray nondispersive spectroscopy system. • Examination and partial disassembly of depleted uranium penetrators, which contained primarily U-238. 	Am-241, U-238	Surface soil	None
			Subsurface soil	Low
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	Low

Table 3.8-2 Impacted Sites Identified by Historical Radiological Assessment

Impacted Site Designated by Historical Radiological Assessment	Radioactive Materials Use	Radionuclides of Concern	Potential for Contaminated Media	
Building IA-22, Photography Laboratory	Used as a wet chemistry laboratory. Radioactive materials use consisted of: <ul style="list-style-type: none"> • Chemical testing with a gas chromatograph containing a Ni-63 source. • Storage of a Po-210 source associated with an X-ray nondispersive spectroscopy system. • Examination and partial disassembly of depleted uranium penetrators, which contained primarily U-238. 	Ni-63, U-238 (The Po-210 would have since decayed away because it has a 138-day half-life.)	Surface soil	None
			Subsurface soil	Low
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	Low
Building IA-58, X-Ray Building	Served as the Scientific and Engineering Division's primary X-ray and radiography facility. Radioactive materials use consisted of: <ul style="list-style-type: none"> • X-ray nondispersive spectroscopy using an Am-241 source. • Storage and use of radiography devices containing Co-60 sources. • Storage of radioactive check sources containing Sr-90 and Cs-137. • Storage of other miscellaneous sources such as an Am-241 source, an Ra-226 source, and a U-235 source from a neutron density gauge from the Navy's facilities at Pittsburg, California. • Examination and partial disassembly of depleted uranium penetrators, which contained primarily U-238. • Handling and storage of low-level radioactive waste. 	Am-241, Co-60, Cs-137, Ra-226, Sr-90, U-235, U-238	Surface soil	None
			Subsurface soil	Low
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	Low

Table 3.8-2 Impacted Sites Identified by Historical Radiological Assessment

Impacted Site Designated by Historical Radiological Assessment	Radioactive Materials Use	Radionuclides of Concern	Potential for Contaminated Media	
Building 81, Ordnance Maintenance and Test Building	Used for ordnance maintenance and test activities such as missile assembly, maintenance of special weapons, explosive operations, and machine radiography. Radioactive materials use consisted of: <ul style="list-style-type: none"> • Handling of special weapons, which likely contained tritium (H-3), Pu-239, and U-235. • Radiography using Co-60 sources. 	H-3, Co-60, Pu-239, U-235	Surface soil	None
			Subsurface soil	Low
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	Low
Building 87, Inert Storage Building	Used to store inert materials. Radioactive materials use consisted of: <ul style="list-style-type: none"> • Radiography using Co-60 sources. • Potential maintenance of special weapons, which likely contained tritium (H-3), Pu-239, and U-235. 	H-3, Co-60, Pu-239, U-235	Surface soil	None
			Subsurface soil	Low
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	Low
Depleted Uranium Munitions Storage Magazines (6 total): 6LC87, 6LC88, 6LC96, 6PC44, 6PCZ58, and 6PCZ65	Radioactive materials use consisted of the storage of depleted uranium ammunition, which contained primarily U-238.	U-238	Surface soil	None
			Subsurface soil	None
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	None
Special Weapons, Bulk Magazines (17 total): 2AC61, 2AT5, 2AT6, 2AT7, 2AT8, 2AT9, 2AT10, 2AT11, 2AT12, 2AT13, 2AT14, 2AT15, 2AT16, 2AT17, 2AT18, 2AT19, and 2AT20	Radioactive materials use consisted of the storage of special weapons, which likely contained H-3, Pu-239, and U-235.	H-3, Pu-239, U-235	Surface soil	None
			Subsurface soil	None
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	None

Table 3.8-2 Impacted Sites Identified by Historical Radiological Assessment

Impacted Site Designated by Historical Radiological Assessment	Radioactive Materials Use	Radionuclides of Concern	Potential for Contaminated Media	
Special Weapons, RI Magazines (17 total): 2AC62, 2AC63, 2AC64, 2AC65, 2AC66, 2AC67, 2AC68, 2AC69, 2AC70, 2AC71, 2AT72, 2AT73, 2AT74, 2AT75, 2AT76, 2AT77, and 2AC78	Radioactive materials use consisted of the storage of special weapons, which likely contained H-3, Pu-239, and U-235.	H-3, Pu-239, U-235	Surface soil	None
			Subsurface soil	None
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	None
Special Weapons Magazine 2HT14	Radioactive materials use consisted of the storage of special weapons, which likely contained H-3, Pu-239, and U-235.	H-3, Pu-239, U-235	Surface soil	None
			Subsurface soil	None
			Surface water	None
			Groundwater	None
			Air	None
			Structures	Low
			Drainage systems	None

Naval Sea Systems Command 2010.

Key:

- Am = americium
- Co = cobalt
- Cs = cesium
- H = hydrogen
- Ni = nickel
- Po = polonium
- Pu = plutonium
- Ra = radium
- RI = receipt inspection (unable to confirm)
- Sr = strontium
- U = uranium

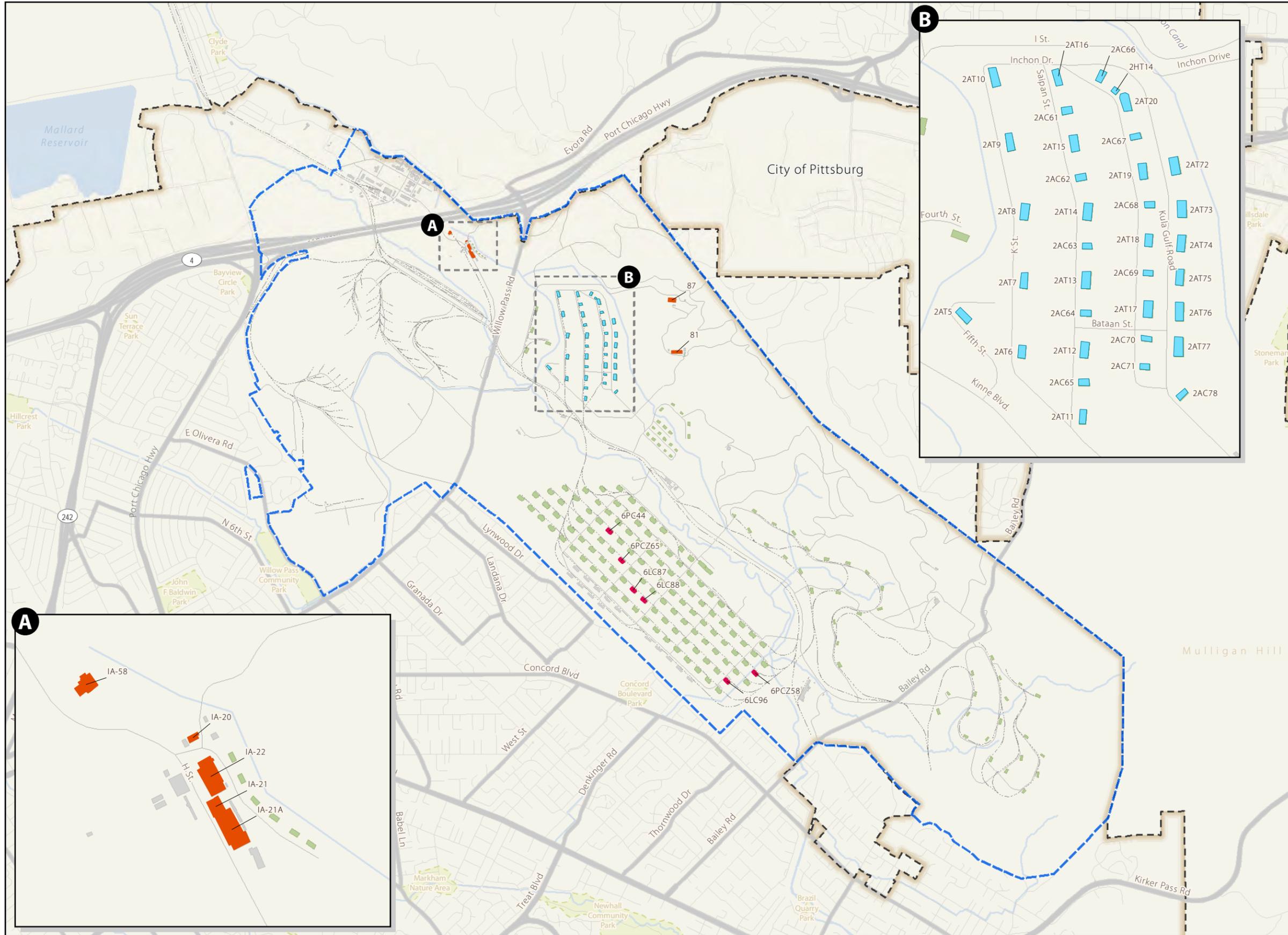


Figure 3.8-2
Potential Radiological Sites
 Former NWS Concord
 Concord, California

Legend

- Major Highway
- Street
- - - Railroad
- Stream/Canal
- ▭ Former NWS Concord
- ▭ City Limit
- ▭ Waterbody
- ▭ Local Park

- ▭ Building
 - ▭ Magazine
- Potential Radiological Sites Identified by Historical Radiological Assessment:
- ▭ Building
 - ▭ Depleted Uranium Munitions Storage Magazine
 - ▭ Special Weapons Magazine



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3.8.6 Other Hazardous Waste/Materials Management

This section presents the existing conditions for other hazardous wastes and materials the Navy is managing under various compliance programs during its ownership and occupancy of the former NWS Concord.

3.8.6.1 Hazardous Waste

Hazardous wastes generated at the Inland Area include routine wastes from maintenance, such as waste oils, chemicals, solvents, paint, antifreeze, cleaners, fluorescent light ballasts and bulbs, batteries, adhesives, and wood with creosote, as well as hazardous wastes generated from the ER Program. The NSW Concord Inland Area currently operates in large quantity generator status (EPA ID CA7170024528), which means it generates 1,000 kilograms (2,200 pounds) per month or more of hazardous waste. The Inland Area has one accumulation area (Building 433) and one satellite accumulation area (Building IA-8). The Navy has been a large-quantity generator for the past two years because of numerous CERCLA removal actions.

The installation no longer maintains RCRA Part B-permitted (DTSC-permitted) hazardous waste facilities, which were at one time used to treat photochemical/photoprocessing silver wastes, crush spent fluorescent light tubes (which contained mercury), and store hazardous wastes. One permitted facility at Building IA-22 was closed in 1999, and the remaining four permitted facilities at the Inland Area were closed in 2003. The DTSC acknowledged the closure of the five facilities at the Inland Area in a 2003 letter (Navy April 2006; DTSC 2003).

3.8.6.2 Underground Storage Tanks

Historically, 42 USTs were located in the Inland Area at NWS Concord. The USTs are summarized in Table E-2 in Appendix E. All of the USTs have been removed and have received determinations of no further action, closure, or both.

3.8.6.3 Aboveground Storage Tanks

Historically, 21 ASTs were located in the Inland Area at NWS Concord. The ASTs are summarized in Table E-2 in Appendix E. All of the ASTs have been removed and have received determinations of closure (Navy July 2014).

3.8.6.4 Asbestos

Asbestos has been evaluated at the former NWS Concord by four ACM surveys (conducted in 1988, 1989, 1999, and 2000) as well as by the 2002 Environmental Baseline Survey (EBS) conducted for the Administration and Runway Areas. The ECP report provides the asbestos-evaluation results for the 70 buildings and facilities remaining (i.e., not demolished) in the Administration and Runway Areas at the time of the ECP report (2006). ACM was found in 40 of the 49 buildings that were surveyed for asbestos. ACM was found in materials such as pipe insulation, sealants, mastic, floor tiles, sheet flooring, grout, cinder blocks and mortar, fire-door insulation, transite panels, drywall, gaskets, and roofing. Both friable and non-friable asbestos were reported (Navy April 2006).

Other buildings or facilities in the Inland Area have either not been surveyed for ACM or have been demolished. Due to the age and use of the buildings at the Inland Area, it can be assumed that ACM is present in any unsurveyed building older than 1989, the year that asbestos use was restricted in the U.S.

An ACM re-evaluation effort is in progress to document for the Navy and future landowner the current condition of identified ACM at the former installation.

3.8.6.5 Lead-Based Paint

LBP has been evaluated at the former NWS Concord by two surveys (one conducted in 1996 primarily for housing and child-occupied areas and one pre-demolition survey conducted in 1997 for specified buildings) as well as by the 2002 Administration and Runway Areas EBS. The ECP report provides the LBP results for the 70 buildings and facilities remaining (i.e., not demolished) in the Administration and Runway Areas at the time of the ECP report (2006). Only one of those buildings/facilities (Building 245A-D, a Fourplex Unit) was surveyed for LBP, which was found in paint and in soil near the building's foundation (Navy April 2006).

Other buildings or facilities in the Inland Area have either not been surveyed for LBP or have been demolished. Due to the age and use of the buildings at the Inland Area, it can be assumed that LBP is present in any unsurveyed building older than 1978, the year that lead-based paint use was restricted in the U.S.

Lead from LBP has been found in soil beneath Building IA-25 (IRP Site 29) during CERCLA investigations performed at that site (see Section 3.8.3.1.1).

3.8.6.6 Polychlorinated Biphenyls

More than 270 electrical transformers, which were tested for PCBs in the early 1990s, are located in the Inland Area. The transformers and testing results are listed in the ECP report (Navy April 2006). More than 60 results were listed in the ECP report as "not available." All of the available results showed PCB concentrations below 50 ppm, which is the EPA limit for PCBs in transformer oil. About 55 of the available results exceeded 5 ppm, which is the level at which the DTSC requires PCB-containing liquids to be managed as a hazardous waste (22 CCR Division 4, Chapter 11, Article 3).

Fluorescent light ballasts in older fixtures (manufactured before 1979, the year that PCB manufacture was banned in the U.S.) at the Inland Area likely contain PCBs in their ballasts (Navy April 2006).

A current PCB inventory and removal effort is in progress as of 2014.

3.8.6.7 Radioactive Materials

No radioactive materials are currently known to be in use or stored at the Inland Area of the former NWS Concord (Navy April 2006). As discussed in Section 3.8.5, NWS Concord was previously licensed and permitted to use radioactive materials, with the last of the permits being terminated in 2008. The potential for residual radioactive materials in environmental media is discussed in Section 3.8.5.

3.8.7 Other Nearby Hazardous Waste/Material Sites

The most significant hazardous waste/materials site near the former NWS Concord Inland Area is the 6,641-acre MOTCO, which consists of the former NWS Concord Tidal Area and a small portion of the Inland Area that were transferred to the U.S. Army in 2008 (see Figure 1-1). As with the Inland Area, hazardous materials were used and hazardous wastes were generated at the Tidal Area in support of the Navy's mission when the area was under Navy control. The Tidal Area was included in the 1983 IAS. Hazardous materials sites identified at the Tidal Area include the Tidal Area Landfill, R-Area Disposal Site, Kiln Site, Allied A and B Sites, Coke Pile Site, Froid and Taylor Road Site, Wood Hogger Site, K-2 Area, G-1 Area, and Litigation Area, among others. Collectively, those sites were affected by contaminants that included petroleum constituents, heavy metals, solvents, VOCs, burn materials, wood preservatives, pesticides, PCBs, and ordnance (Navy 2005; Ecology and Environment, Inc., 1983). The Army has taken over cleanup of historical waste/materials sites at MOTCO under its IR program. For example, the Army has submitted the proposed plan for cleanup of Sites 2 (R-Area Disposal Site), 9 (Froid and Taylor Road Site), and 11 (Wood Hogger Site), which consists of LUCs to address risks to

human health from arsenic, PAHs, dioxins/furans, and PCBs in soil (Department of the Army 2011). Presently, MOTCO is an active installation that provides terminal and distribution services for ammunition and cargo. MOTCO is listed as an NPL site in DTSC's EnviroStor Database.

In addition to the MOTCO facility, the EnviroStor database lists multiple other smaller cleanup or corrective action sites in nearby cities such as Concord, Martinez, Antioch, and Pittsburg. Such sites include the Central Contra Costa Sanitary District disposal area in Martinez, Triangle PWC galvanizing site in Pittsburg, Chemical and Pigment Company site in Bay Point, and Los Medanos Tank Farm site in Pittsburg (DTSC n.d.). Each of these sites is about 5 miles from the former NWS Concord and is in various stages of regulatory action. Similarly, according to EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, the closest CERCLA sites in Contra Costa County would be in Pittsburg and Clayton, over 5 miles away (EPA 2013f).

Phillips 66 (P66) is currently conducting petroleum cleanup and groundwater monitoring actions near the southeast corner of the Inland Area. In 2011, oil was discovered within and adjacent to Navy property, and a pinhole release was subsequently identified in the P66 Line 200 pipeline. P66 has replaced a portion of the line and is continuing remediation activities and coordination with applicable resource agencies, including USACE and RWQCB. The USACE and the RWQCB are involved because the remediation effort impacted small areas of seasonal wetlands subject to the regulatory jurisdiction of these two agencies pursuant to the CWA (Phillips 66 Pipeline LLC 2012).

3.9 Noise

This section provides background information on how noise is measured, and the regulatory framework for evaluating noise. It also provides a description of existing noise levels for the area of the former NWS Concord.

3.9.1 Noise Fundamentals

Noise is defined as unwanted sound. The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually composed of sound emanating from natural sources and from human activities. Some land uses, known as sensitive receptors, are more sensitive to noise than others. Sensitive receptors generally include homes, schools, convalescent and retirement homes, hospitals and care facilities, parks, and outdoor recreation areas.

Ambient sound levels vary with time of day, wind speed and direction, and level of human activity. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location. The amplitude of sound is usually described by the decibel (dB), which is a logarithmic measure of the sound pressure level. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud). Table 3.9-1 lists typical sources and levels of noise and the corresponding human responses to the noise levels. Noise measurements are usually on an "A-weighted" scale, denoted as "dBA," which filters out very low and very high frequencies in order to replicate human sensitivity.

To characterize the average ambient noise environment in a given area, noise level descriptors are commonly used. The Day-Night Average Sound Level, or "DNL," is a 24-hour-period noise descriptor that places a stronger emphasis on noise that occurs during nighttime hours (10:00 p.m. to 7:00 a.m.) by applying a 10-dB "penalty" to compensate for sleep interference and other disruptions caused by loud nighttime noise. Shorter measurement durations (typically 1 hour) are described as A-weighted Energy

Table 3.9-1 Decibel Levels of Common Sounds

Sound Source	dBA	Perception/Response
	150	
Carrier Deck Jet Operation	140	
	130	Painfully Loud Limit
Jet Takeoff (200 feet)	120	
Discotheque		
Auto Horn (3 feet)	110	
Riveting Machine		
Jet Takeoff (2,000 feet)	100	
Shout (0.5 foot)		
NY City Subway Station	90	Very Annoying
Heavy Truck (50 feet)		Hearing Damage (8 hours, continuous exposure)
Pneumatic Drill (50 feet)	80	Annoying
Freight Train (50 feet)	70	Telephone Use Difficult
Freeway Traffic (50 feet)		Intrusive
Air Conditioning Unit (20 feet)	60	
Light Auto Traffic (50 feet)	50	Quiet
Living Room	40	
Bedroom		
Library	30	Very Quiet
Soft Whisper (15 feet)		
Broadcasting Studio	20	
	10	Just Audible
	0	Threshold of Hearing

Source: NYSDEC 2001.

Key:
dBA = A-weighted decibels

Equivalent Levels (LAeq)¹², indicating the total energy contained by the sound over a given sample period, or the average noise based on the energy content (acoustic energy) of the sound.

3.9.2 Regulatory Framework

Implementation of the proposed action must comply with applicable local noise regulations. Regulating noise is generally a responsibility of local governments, and no federal or state noise standards directly regulate environmental or community noise. However, several federal agencies have developed community noise guidelines.

US Environmental Protection Agency and Federal Highway Administration

In response to the passage of the federal Noise Control Act of 1972, the EPA published *Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* in 1974. The EPA guidance provides recommended maximum noise levels to protect public health and welfare with adequate margins of safety. In these guidelines, a noise level of 70 dBA Leq(24), the 24-hour equivalent continuous sound level, was identified as the level of environmental noise that would prevent any measurable hearing loss over a lifetime, and noise levels of 55 dBA DNL outdoors and 45 dBA indoors were identified as noise thresholds that would prevent activity interference or annoyance (EPA 1978). The EPA guidance also identifies an increase of 5 dBA, as compared to a baseline noise exposure level of 55 dBA DNL, as an adequate or acceptable increase relative to adverse community reaction.

The Federal Highway Administration's *Construction Noise Handbook* provides guidance for assessing construction-noise related to transportation projects and is commonly used to evaluate construction noise for non-transportation-related projects. The handbook contains maximum noise emission levels and usage factors for various construction equipment, and this information can be used in predicting construction noise levels.

Contra Costa County

Contra Costa County has ordinances that limit noise for wind energy conversion systems and temporary events. The county currently has no other quantitative noise regulations.

City of Concord Noise Regulations

Section 62-32(1)y of the Concord Municipal Code defines the hours of the day when permitted construction activity is allowed. Section 122-306(o) states that "all noise emanating from the subject site shall comply with the noise standards in the Safety and Noise Element of the General Plan. An acoustic study may be required, at the project applicant's expense, for any use which could create or be subject to noise exposure greater than that deemed normally acceptable by the General Plan. The acoustic study shall include recommendations on noise attenuating or mitigating measures to reduce noise impacts to acceptable levels."

The City of Concord's Guidelines for Community Noise Exposure can be found in the Safety and Noise Element of the General Plan (City of Concord 2012) and are presented in Table 3.9-2.

¹² Leq, the Equivalent Continuous Sound Level, is the preferred single value figure to describe sound pressure levels that vary over time and would produce the same sound energy over the stated period of time.

Table 3.9-2 City of Concord’s Guidelines for Land Use Compatibility with Community Noise Exposure

Day-Night External Sound Level (dB DNL) ¹				
Land Use Category	Normally Acceptable ²	Conditionally Acceptable ³	Normally Unacceptable ⁴	Clearly Unacceptable ⁵
Residential Low-Density Single-Family, Duplex, Mobile Homes	50–59	60–69	70–74	Greater than 75
Residential Multi-family	50–64	65–69	70–74	Greater than 75
Mixed-Use and High-Density Residential	50–64	65–74	75–79	Greater than 80
Transient Lodging: Motels, Hotels	50–64	65–69	70–79	Greater than 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	64–69	65–69	70–79	Greater than 80
Auditorium, Concert Halls, Amphitheaters	--	50–69	--	Greater than 70
Sports Arenas, Outdoor Spectator Sports	--	50–74	--	Greater than 75
Playgrounds, Neighborhood Parks	50–66	67–74	--	Greater than 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–69	70–79	Greater than 80	--
Office Buildings, Business Commercial, Professional	50–69	70–74	Greater than 75	--
Industrial, Manufacturing, Utilities, Agriculture	50–69	70–74	Greater than 75	--

Source: City of Concord 2012

¹ dB DNL = Day-Night Average Sound Level, in Decibels.

² Normally Acceptable: Specified land use is satisfactory, based on the assumption that any buildings are of conventional construction, without any special noise insulation requirements.

³ Conditionally Acceptable: New construction should be undertaken only after a detailed analysis of the noise reduction requirements and after noise insulation features are included in the design. Conventional construction with closed windows and fresh air supply systems or air conditioning will normally suffice.

⁴ Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made, and noise insulation features must be included in the design.

⁵ Clearly Unacceptable: New construction or development should generally not be undertaken.

3.9.3 Ambient Noise Measurements

Land uses surrounding the former NWS Concord are discussed in Section 3.2. Road traffic and rail noise from BART are the major sources of noise around the former NWS Concord. The main traffic routes contributing to local noise generation are SR 4, SR 242, Port Chicago Highway, Olivera Road, Farm Bureau Road, Willow Pass Road, Concord Boulevard, Clayton Road, and Bailey Road. The BART corridor passes north to south through the City of Concord and then follows SR 4 east across a portion of the former NWS Concord, toward the City of Pittsburg. Kinne Boulevard, which is not open to public use, runs through the middle of the former NWS Concord from the main entrance at the north to Bailey Road at the south.

The City of Concord conducted noise measurements in 2007 to characterize the ambient noise environment in and around the former NWS Concord (City of Concord 2010). These noise measurements included attended spot measurements and long-term monitoring. Attended spot measurements were collected over 15-minute sampling periods between 7:00 a.m. and 7:00 p.m. and were designed to capture

peak traffic and off-peak traffic noise conditions. Sound level meters were deployed onsite for long-term monitoring. Meters recorded a noise measurement after every 15 minutes of sampling over a period of 7 days. The 24-hour DNL was calculated for the long-term monitoring locations, and the results from the spot noise measurements are given in terms of LA_{eq}. The results are provided in Tables 3.9-3 and 3.9-4.

Table 3.9-3 Long-Term Noise Monitoring Results

Sound Level Meter	Description of Location	DNL (dB) ¹
A	At the southeast boundary of the former NWS Concord, approximately 1,000 feet from the center of Bailey Road and 1,130 feet from the boundary of the former NWS Concord. Measurement taken at 5 feet above grade.	48
B	100 feet from eastbound SR 4 traffic, approximately 1,000 feet southwest of the overpass over Kinne Boulevard. Measurement taken at 5 feet above grade.	75
C	On a hilltop located at the northeast corner of the former NWS Concord, 360 feet southeast of the eastbound BART track and 1,300 feet south of eastbound SR 4 traffic.	69

Source: City of Concord 2010.

Note:

¹ DNL (dB) = Day-Night Average Sound Level, in Decibels.

Table 3.9-4 Spot Measurement Results

Field Measurement Location	Description of Location	Dominant Noise Source(s)	dB LA _{eq} ¹ , 15 min
1	Along Port Chicago Highway at High School Avenue, approximately 35 feet from BART line (railway elevated above Port Chicago Highway), and 20 feet from center of Port Chicago Highway	BART, Port Chicago Highway	71
2	At Willow Pass Community Park: East Olivera Road at Salvio Street, approximately 25 feet from East Olivera Road at west boundary of the former NWS Concord	East Olivera Road	70
3	Along Willow Pass Road at Granada Drive, approximately 25 feet from center of Willow Pass Road	Willow Pass Road	73
4	Along Concord Boulevard at Granada Drive, approximately 25 feet from center of Concord Boulevard	Concord Boulevard	73
5	Along Clayton Road at Mendocino Drive, approximately 25 feet from center of Clayton Road	Clayton Road	76
6	Along Bailey Road at Myrtle Drive, approximately 25 feet from center of Bailey Road at southwest boundary of the former NWS Concord	Bailey Road	71
7	At the playground behind 2731 Hamilton Avenue on western boundary of the former NWS Concord	BART, SR 4	50
8	On sidewalk outside 4014 Majestic Drive, at Lynwood Drive, approximately 50 feet from western boundary of the former NWS Concord	Lynwood Drive	49

Table 3.9-4 Spot Measurement Results

Field Measurement Location	Description of Location	Dominant Noise Source(s)	dB LAeq¹, 15 min
9	On sidewalk outside 249 Havenwood Circle in Pittsburg, northeast of the former NWS Concord	SR 4	44
10	On sidewalk outside 1844 Rosa Blanca Drive, in Pittsburg, northeast of the former NWS Concord	SR 4	47
11	Along SR 4 at Kinne Boulevard on the former NWS Concord, approximately 75 feet north of center of SR 4	BART, SR 4	67

Source: City of Concord 2010.

Note:

¹ dB LA_{eq} = A-weighted Energy Equivalent Level, in Decibels.

3.10 Public Services

This section describes the existing physical and regulatory setting for educational facilities, fire protection, law enforcement services, emergency medical services, and parks and recreation within the City of Concord and Contra Costa County.

3.10.1 Regulatory Framework

3.10.1.1 Federal and State

Leroy F. Greene School Facilities Act of 1998

The Leroy F. Greene School Facilities Act of 1998 authorizes school districts to levy statutory developer fees on new construction. Per the language in California Government Code Section 65996, the development fees authorized by this law provide for “full and complete school facilities mitigation.”

3.10.1.2 Regional and Local

City of Concord 2030 General Plan

The City of Concord 2030 General Plan identifies policies and goals to guide future growth within the city. Several policies addressing the provision of public services are included within the plan, including policies that establish performance standards for police facilities, reserve adequate land for schools and other community uses such as parkland, and ensure sufficient public safety services. In addition, the plan authorizes the collection of development fees for public services where appropriate (City of Concord 2012). These policies are discussed below, as applicable.

- Policy PF-2.1.6 of the City of Concord 2030 General Plan requires that future planning for the former NWS Concord include adequate land for schools.
- Growth Management Element Policy 2.1.1, Standard A, establishes a requirement that new development dedicate parkland at the ratio of 5 acres per 1,000 residents.

According to the City of Concord 2030 General Plan Parks, Open Space, and Conservation Element, Policy 1.1.1 calls broadly for parks acquisition and development to achieve a ratio of 6 acres of parkland per 1,000 residents. The city’s policy is to maintain a ratio of parkland per 1,000 residents through a combination of new parkland provided by new development at the ratio of 5 acres per 1,000 residents plus additional parklands paid for through other funding sources, such as parkland bonds, in order to meet the 6-acre standard (City of Concord 2012).

Mount Diablo Unified School District School Development Fees

In accordance with California Education Code 17620 (formerly California Government Code Section 53080), the MDUSD levies a development fee on new construction within the district. These development fees fund the district's Capital Facilities Fund. In FY 2011-2012, this development fee was \$2.97 per square foot of new, accessible residential construction and \$.47 per square foot of new covered and enclosed space of commercial/industrial construction. These fees are typically reviewed and adjusted every five years (MDUSD 2012).

Contra Costa County Fire Protection District (CCCFPD) Development Fees

In accordance with the City of Concord Municipal Code, Chapter 14, Section 63, a fire facilities impact fee is collected for new developments within the city (City of Concord 2014). This impact fee of \$325 per single-family residential unit, \$200 per multi-family residential unit, and between \$0.15 and \$0.38 per square foot for all other commercial and industrial development is required prior to issuance of the building permit (City of Concord 2014). The purpose of this fee is to provide CCCFPD a funding source from new development for fire protection capital improvements to serve that new development.

East Bay Regional Park District Master Plan

The EBRPD manages the regional parks in Contra Costa and Alameda counties. The EBRPD Public Safety Division provides police, fire, and emergency services to all EBRPD parklands (EBRPD 2014c). Parklands are managed in accordance with the EBRPD Wildfire Hazard Reduction and Resource Management Plan to reduce the risk of wildfire (EBRPD 2013a).

3.10.2 Educational Facilities

The former NWS Concord is located within the boundaries of the MDUSD, which serves the City of Concord as well as part of central Contra Costa County, including the communities of Clayton and Pleasant Hill, and sections of Walnut Creek, Martinez, Pittsburg, and Bay Point. The MDUSD encompasses 51 schools, including 28 elementary schools, nine middle schools, five high schools, four alternative high schools, two special education schools, two charter schools, and one continuation high school. In addition the district provides pre-school programs, adult education programs, and mental health collaborations (MDUSD n.d.)

In December 2012, the district had a total population of 31,829 students in kindergarten through grade 12. In addition, the district had 10,529 adult students enrolled in its continuing education programs as of July 2012 (MSUSD n.d.). Over the past decade, total enrollment in the district has declined. During the 2003-2004 school year, total enrollment in the district reached 36,821 students; by the 2012-2013 school year, total enrollment had declined to 32,001, or declined by 13.9% over the 9 years. In 2010, the district began a process of redistricting, which included some school closures, to deal with excess capacity in the district (Education Data Partnership 2011-2013).

During the 2011-2012 school year, the most recent year for which data are available, the MDUSD employed a total of 1,529.3 full-time equivalent (FTE) teachers. As a result, the 2011-2012 students-per-teacher ratio was 22.2. This ratio is slightly higher than that experienced in the district during the 2006-2007 school year, when the ratio was 21.0 students per teacher (Education Data Partnership 2013).

Currently, four institutions of higher learning are located in the City of Concord, including California State University (CSU), East Bay Concord Campus, which offers degrees and courses in nursing and other health-related fields, business administration, criminal justice, and teaching certification. In addition, Heald College Concord offers training in dental and medical assisting; ITT Technical Institute offers courses and degrees in technology, electronics, drafting and design, and business; and the Gurnick Academy of Medical Arts offers courses and certificates in the medical field.

3.10.3 Public Safety, Emergency, and Health Care Facilities

3.10.3.1 Police

The DOD currently provides safety, security, and perimeter control on the former NWS Concord site and will continue to do so until the formal transfer of the site is completed.

The City of Concord Police Department (CCPD) provides police services to all other areas within the city boundaries, with support from the California Highway Patrol; the Contra Costa County Sheriff, which has jurisdiction over unincorporated areas within the vicinity of the site; the BART District Police; and the University Police at CSU East Bay Concord Campus.

In 2011, the CCPD patrolled approximately 30.5 square miles with 152 sworn officers, supported by 48 non-sworn, full-time employees, 98 volunteers, and 15 reserve officers (Baracco & Associates 2011). Based on 2010 U.S. Census Bureau data, approximately 124,711 people live in the City of Concord. This equates to approximately 1.2 officers per 1,000 residents, which is consistent with the countywide average of 1.18 officers per 1,000 residents. According to data provided by the Local Agency Formation Commission, on average, the CCPD responds to Priority 1 incidents within 12 minutes and 15 seconds, while law enforcement countywide averaged 5 minutes and 19 seconds. (Baracco & Associates 2011).

The CCPD operates out of its headquarters building located on Galindo Street. In 2009, the department responded to a total of 122,300 calls for service, conducted 2,358 arrests, and handled 534 traffic accidents (Baracco & Associates 2011). Financing for the operation and maintenance of the CCPD comes from the City of Concord General Fund.

3.10.3.2 Fire and Emergency Medical Services (EMS)

Fire protection at the former NWS Concord is primarily provided by the NWS Concord Fire Department. A fire protection facility located just north of Highway 4 on the former NWS Concord was originally built to provide services to the Navy and is still in operation. A mutual aid agreement, signed in 1998 between the Navy and the CCCFPD, allows the NWS Concord Fire Department and CCCFPD to provide joint protection and emergency services to the region if additional resources are needed by either department. As noted in the 2010 Reuse Plan EIR, following transfer of the property, personnel and equipment presently associated with the facility will move to a new fire station being constructed by the Army on land previously transferred by the Navy to Army.

Fire protection and EMS services in the City of Concord are provided by the CCCFPD. The CCCFPD provides fire services to nine cities, including Antioch, Clayton, Concord, Lafayette, Martinez, Pittsburg, Pleasant Hill, San Pablo, and Walnut Creek as well as several unincorporated areas of Contra Costa County, including the communities of Bay Point, Clyde, El Sobrante, Pacheco, and Port Chicago from 24 fully-staffed stations located throughout the region. The locations of these fire stations are shown in Figure 3.10-1 (CCCFPD 2013). Currently, the 24 stations are staffed with a daily minimum of 77 personnel; in addition, two more stations are staffed by reserve firefighters who are paid on-call (CCCFPD n.d.). During FY 2012-2013, the district had a total of 364 authorized personnel (CCCFPD 2012a, 2012b) serving more than 523,162 people (CCCFPD 2013; U.S. Census Bureau 2010e), with a ratio of approximately one fire station per 21,798 people or .69 personnel per 1,000 residents.

In addition to services provided by CCCFPD personnel, the district also maintains mutual aid agreements with all fire agencies in Contra Costa County, including the East Contra Costa Fire Protection District (ECCFPD), the EBRPD, the California Department of Forestry and Fire Protection (CAL FIRE), and private industrial companies. These agreements provide the CCCFPD with emergency response assistance on an as-needed basis (City of Concord 2010).

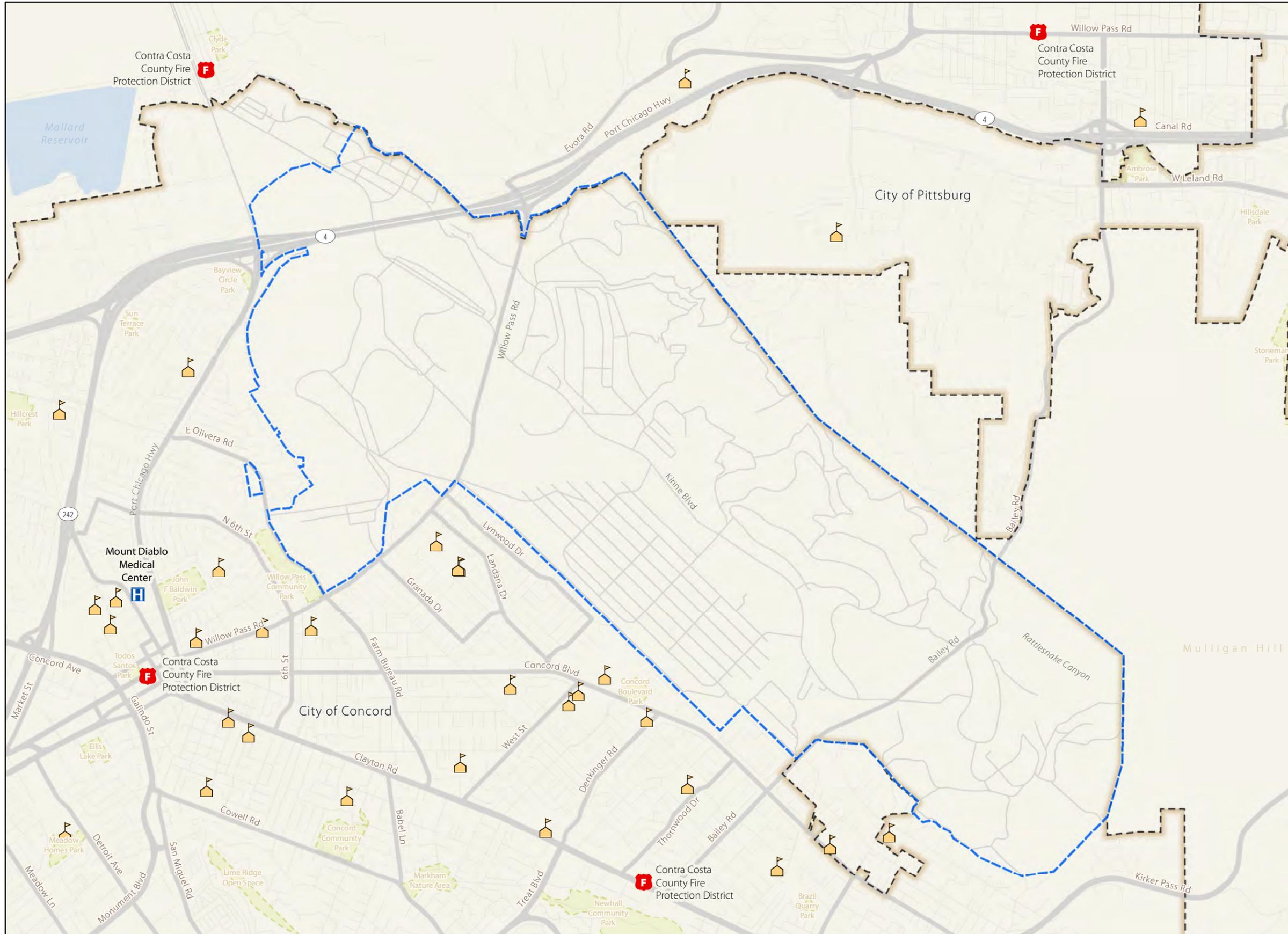


Figure 3.10-1
Community Facilities
Former NWS Concord
Concord, California

Legend

- Former NWS Concord
- City Limits

Community Facilities

- Fire Station
- Hospital
- School



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The CCCFPD provides EMS services throughout its service area through a contract with American Medical Response (AMR) CoCo County. AMR CoCo County is fully-accredited with the Commission of Accreditation of Ambulance Services (CAAS) and employs approximately 350 EMTs and paramedics in Contra Costa County. AMR CoCo County typically responds to approximately 70,000 calls per year under its contract with CCCFPD (AMR n.d.). Contra Costa County's ambulance contract requires AMR to comply with a 90-percent response standard of 11 minutes and 45 seconds for all Code 3 emergency calls within urban areas, while the county's board of supervisors has also established a goal of 10 minutes for paramedic response time.

3.10.3.3 Health Care

Several hospitals/medical facilities serve residents of the City of Concord, including the John Muir Medical Center Concord, located in the city, and the John Muir Health Center Walnut Creek, located in Walnut Creek. In addition, the Children's Hospital and Research Center Oakland—Walnut Creek Campus provides outpatient pediatric surgery, diagnostic imaging, and specialty care, and the Kaiser Permanente Walnut Creek Medical Facility provides emergency or urgent care and general medical services. Both of these facilities are located in Walnut Creek and serve area residents (Children's Hospital & Research Center n.d.).

The John Muir Medical Center Concord is a 313-bed licensed hospital that specializes in cancer and cardiac care. In addition, it provides general surgery and orthopedic and neurology programs. The John Muir Medical Center Walnut Creek is a 572-bed licensed medical facility that serves all of Contra Costa County and is the only designated trauma center in the county. The John Muir Health group also operates a 73-bed psychiatric hospital in the City of Concord (John Muir Health 2014).

3.10.4 Open Space, Parks, and Recreation

The former NWS Concord is not accessible to the public for open space, parks, or recreational uses, with the exception of the public Diablo Creek Golf Course, approximately 50 percent of which is located in land leased from the Navy. As discussed in the 2010 Final Reuse Plan EIR, Contra Costa County has many parks, recreation facilities, trails, and open space areas, and approximately 636 acres of parks, recreation, and open space facilities are located within the City of Concord (City of Concord 2010).

The former NWS Concord is located within the jurisdiction of the EBRPD, which controls over 114,000 acres of parkland throughout Alameda and Contra Costa counties (EBRPD 2014a). The EBRPD oversees several parks in unincorporated areas of the county that are located within 5 miles of the project site. Some of these include the Black Diamond Mines Regional Preserve (2.6 miles east), Waterbird Regional Park (3.5 miles west), Diablo Foothills Regional Park (4 miles southwest), Clayton Ranch landbank (4.5 miles south), and the Briones Regional Park (5 miles west) (City of Concord 2010).

The EBRPD is also responsible for building and maintaining more than 1,200 miles of trails (EBRPD 2014a). Within the vicinity of the site, this trail network includes the Iron Horse Regional Trail and the California Hiking and Riding Trail, both of which pass through Concord; the Contra Costa Canal Regional Trail, which terminates near the southwestern edge of the site; and the Delta de Anza Regional Trail, which terminates near the northern edge of the site at the intersection of Willow Pass Road and SR 4 (City of Concord 2002).

In addition to the facilities operated by the EBRPD, the City of Concord also maintains a network of public parks and recreational facilities, including approximately 331 acres of neighborhood and community parkland, and 305 acres of specialized recreation facilities such as sports complexes, golf courses, gardens, and arboretums. The city also operates seven community centers, a senior center, and public swimming pools (City of Concord 2012).

Parks, open space, and recreation areas in the City of Concord serve over 124,000 residents in the city, in addition to others who live and work in the region. Therefore, the current ratio of city parkland per resident is approximately 5 acres per 1,000 residents.

Additional regional and state open space areas include Mt. Diablo State Park, a 20,000-acre park approximately 2.5 miles from the former NWS Concord, and semi-private open space areas immediately south and west of the site managed by the East Bay Municipal Utility District (EBMUD). The EBMUD primarily uses this land for water storage and management; however, most of the area is also open to the public and is complimented by land grants obtained through non-profit organizations such as the Trust for Public Land.

3.11 Transportation, Traffic, and Circulation

This section describes the state, regional, and local plans and policies that guide the development and management of the transportation network around the former NWS Concord. This section also describes the current local roadway network and traffic conditions, as well as public transportation, that support the City of Concord.

3.11.1 Plans and Policies

No specific statutes govern transportation as it pertains to implementation of the proposed action; however, City of Concord regulations require future developments outside of the area that would be developed under the Area Plan to pay a fee that would partially fund transportation improvements. Several state, regional, and local plans and policies guide the development and management of the transportation network in the vicinity of the former NWS Concord. While decisions regarding policy and allocation of federal and state transportation funding generally are made at the state level, planning typically begins at the local level and is carried through the regional and state levels.

State

The California Department of Transportation (Caltrans) and the California Transportation Commission (CTC) are the primary agencies that oversee transportation infrastructure in California. Caltrans manages the state's highway and inter-city rail systems (Caltrans 2013a), and the CTC is responsible for the programming and allocating of funds for the construction of highway, passenger rail, and transit improvement in the State of California.

Caltrans is currently developing the California Transportation Plan 2040 (CTP 2040), which is a statewide, long-range transportation plan that will create a policy framework for all levels of government to address future mobility needs and reduction of GHG emissions. CTP 2040 will replace CTP 2025, which was approved in 2006 and updated in 2007. Transportation goals identified in the CTP 2040 planning process include improving multi-modal mobility and accessibility for all people and preserving the multi-modal transportation system. Policies related to these goals include operating an efficient transportation system; strategic investment; providing multi-modal choices; sustainable and preventative maintenance strategies; including life cycle costs in decision making; and adapting the transportation system to reduce impacts from climate change. Other goals of CTP 2040 will include supporting a vibrant economy, improving public safety and security, fostering livable and healthy communities, promoting social equity, and practicing environmental stewardship (Caltrans 2013b).

Contra Costa County is located in Caltrans District 4, which encompasses the nine-county San Francisco Bay Area. Currently, the only Caltrans project underway near the former NWS Concord is the expansion of SR 4 between the City of Pittsburg and SR 160 (Caltrans 2014a).

The CTC is responsible for adopting the 5-year State Transportation Improvement Program (STIP) and approving the 4-year State Highway Operating and Protection Program (SHOPP) (CTC 2013); both programs are funded from a mix of federal and state dollars, while STIP projects may also receive local funding. The 2014 STIP includes an estimated \$37.9 million in allocations for state highway improvements, intercity rail, and regional highway and transit improvements in Contra Costa County through 2019 (CTC 2014). The Interregional Transportation Improvement Program and Regional Transportation Improvement Program (RTIP) nominate projects for inclusion in the STIP.

The Interregional Transportation Improvement Program is prepared by Caltrans to allocate funding for highway and rail projects that improve interregional mobility across the state; none of the projects in the 2014 Interregional Transportation Improvement Program are located near the former NWS Concord. The RTIP is prepared by the MTC and is discussed below.

The 2014 SHOPP includes over \$85.5 million in allocations for maintenance, safety improvements, and rehabilitation of the state highway system in Contra Costa County through 2018 (Caltrans 2014b). Proposed transportation projects included in the STIP and SHOPP near the former NWS Concord are presented in Table 3.11-1.

Regional

Transportation planning in California at the regional and local level has a strong connection with land use planning. Multiple regional agencies are involved in planning for transportation in and around Concord, including the MTC, which serves the nine-county San Francisco Bay Area that includes Contra Costa County; the Contra Costa Transportation Authority (CCTA), serving Contra Costa County; and two Regional Transportation Planning Committees (RTPCs) serving central and eastern Contra Costa County.

The MTC serves as the region's federally designated Metropolitan Planning Organization (MPO) and the state-designated regional transportation planning agency. MPOs are designated in urbanized areas with populations over 50,000 people and are responsible for developing a RTIP that recommends regional transportation projects to be included in the STIP. Regional transportation planning agencies are responsible for developing a regional transportation plan that serves as a long-range transportation plan and the foundation for the RTIP (MTC 2013). The 2013 RTIP was adopted by the MTC at the end of 2013 and adopted as part of the STIP in early 2014 (MTC 2014). All transportation projects near the former NWS Concord included in the 2014 RTIP were included in the 2014 STIP (See Table 3.11-1).

The regional transportation plan developed by the MTC in partnership with ABAG was integrated with the land use strategy known as Plan Bay Area. Plan Bay Area includes the region's Sustainable Communities Strategy and the 2040 Regional Transportation Plan. California's 2008 Senate Bill 375 requires the state's 18 metropolitan areas to develop a Sustainable Communities Strategy to reduce GHG emissions from cars and light trucks and plan for future population growth. Plan Bay Area was adopted in July 2013 and included the transportation projects near the former NWS Concord that are presented in Table 3.11-1. Not all projects included in Plan Bay Area were included in the 2014 RTIP or STIP. Plan Bay Area projects not included in the STIP may not currently have been allocated federal or state funding but may be funded locally (ABAG and the MTC 2013).

Plan Bay Area identifies the former NWS Concord as a Priority Development Area, where the region expects to see transit-oriented and infill development that will accommodate the majority of future growth. In Contra Costa County, 70 percent of funding through the One Bay Area Grant must be invested in Priority Development Areas (ABAG and the MTC 2013). The One Bay Area Grant is a program managed by MTC that provides a share of the region's federal transportation funding to communities for

Table 3.11-1 Proposed Transportation Projects Near NWS Concord

Project	Program or Plan Proposing the Project
Collision reduction improvements along SR 4, SR 242, and I-680	SHOPP
Rehabilitation of a SR 242 viaduct in Concord	SHOPP
Improvements to the I-680 and SR 4 interchange	STIP, RTIP, RTP, CMP, CC RTPC, General Plan
Widening of SR 4 east of Pittsburg to SR 160	RTP, CMP, Measure J; EC RTPC
Extending BART from Pittsburg to Byron in eastern Contra Costa County	RTP, CMP, Measure J
Constructing HOV lanes on I-680 south of SR 242	STIP, RTIP, RTP, CMP, Measure J, CC RTPC
Add new northbound on-ramp and southbound off-ramp to SR 242 from Clayton Road	RTP, CMP, Measure J, CC RTPC, General Plan
Reconstruction of ramps to SR 4 from Willow Pass Road	RTP, CMP, Measure J, CC RTPC
Improvements to the intersection of Clayton Road and Treat Boulevard	RTP, CMP, CC RTPC
Extension of James Donlon Boulevard to Kirker Pass Road	RTP; EC RTPC
Construction of truck climbing lane and bike lane on Kirker Pass Road from Clearbrook Drive to crest of Kirker Pass Road	STIP, RTIP, RTP, CMP, CC RTPC
Add east and westbound lanes to SR 4, west of Port Chicago Highway to the east of Willow Pass Road	RTP, CMP
Local street operations and maintenance	RTP, CMP, Measure J
Safety improvements on Willow Pass Road from Avilla Road to Lynwood Drive	CMP
Widening of Ygnacio Valley Road/ Kirker Pass Road from Michigan Boulevard to Cowell Road	RTP, CMP, CC RTPC, General Plan
Repaving of a section of Concord Boulevard from Port Chicago Highway to 6th Street and Ayers road to Kirker Pass Road	CMP
Widening of Evora Road	CMP, General Plan
Traffic improvements along Bailey Road in Concord	CMP, CC RTPC
Concord BART station bicycle and pedestrian improvements	STIP, RTIP, CMP

Source: CCTA 2013a, c, ABAG 2013b, MTC 2014, CTC 2014, Caltrans 2014b, City of Concord 2012

Key:

- | | |
|---|--|
| CC RTPC = Central Costa County Regional Transportation Planning Committee Action Plan | RTIP = Regional Transportation Improvement Program |
| CMP = Congestion Management Program | RTP = Regional Transportation Program |
| EC RTPC = Eastern Central Costa County Regional Transportation Planning Committee Action Plan | SHOPP = State Highway Operating and Protection Program |
| General Plan = Concord 2030 General Plan | STIP = State Transportation Improvement Program |
| Measure J = Contra Costa County local transportation sales tax | |

local street preservation, bicycle and pedestrian access improvements, planning activities, and other specific transportation programs. A project that receives funding through the One Bay Area Grant is also included in the RTIP/STIP.

California's Proposition 111 was passed in 1990 and specified that each county designate a congestion-management agency to implement programs to manage traffic levels. The CCTA is designated as the congestion-management agency for Contra Costa County and is responsible for coordinating land use, air quality, and transportation planning and for preparing and updating the county's Congestion Management Program (CMP) every two years (CCTA 2013a). The 2013 CMP identifies LOS standards for state highways and principal arterials including I-680, SR 4, SR 242, and sections of Clayton Road, Treat Boulevard, Kirker Pass Road, and Ygnacio Valley Road near the former NWS Concord. Performance measures are also identified for these key roadways in addition to performance measures for transit service in the County. The CMP also included a 7-year capital improvement program. Projects must be included in the CMP in order to be included in the RTIP/STIP. Projects near the former NWS Concord identified in the CMP are presented in Table 3.11-1.

The CCTA is also responsible for managing the county's transportation sales tax program. In 2004, Contra Costa voters approved Measure J, a law to extend a sales tax under Measure C for an additional 25 years beyond Measure C's 2009 expiration. Measure C was a 0.5-percent transportation sales tax in Contra Costa County passed in 1988. Measure J continues the half-cent transportation sales tax to fund voter-approved transportation programs and projects (CCTA 2013b). The measure is expected to provide \$2.5 billion for countywide and local transportation projects. Planned projects expected to receive funding under Measure J near the former NWS Concord are presented in Table 3.11-1 (CCTA 2013c).

As part of Measure J, RTPCs must develop an action plan for Routes of Regional Significance and establish multimodal transportation service objectives (MTSOs) for those routes (TRANSPLAN 2009). Criteria for Routes of Regional Significance include:

- Connecting two or more subareas of Contra Costa County;
- Entering or leaving the county;
- Carrying a significant amount of through-traffic; or
- Providing access to a regional facility.

MTSOs include quantifiable measures of effectiveness for attaining transportation objectives. TRANSPAC is the designated RTPC in central Costa County, including the City of Concord (TRANSPAC 2009). TRANSPLAN is the RTPC for eastern Contra Costa County, which includes the area just east of the former NWS Concord (TRANSPLAN 2009). MTSOs in both eastern Contra Costa County and central Costa County action plans use a delay index for freeways of regional significance. The eastern Contra Costa County action plan MTSO for freeways also includes a utilization of high-occupancy lanes. The MTSOs were incorporated into this traffic analysis and are discussed in more detail in Section 3.11.2, Roadway Network. Table 3.11-1 shows projects near the former NWS Concord recommended in the eastern and central county action plans.

Local

The City of Concord Department of Public Works is responsible for maintaining the city's street infrastructure, including curbs, gutters, sidewalks, street lighting, and traffic control devices (City of Concord Department of Public Works 2013). The city's 2030 General Plan includes a transportation section that addresses future development potential and necessary improvements to the city's transportation system to accommodate the new development. The 2030 General Plan was amended in

2012 to include the Area Plan for the Concord Reuse Project. Suggested transportation improvements near the former NWS Concord are presented in Table 3.11-1. Additional transportation projects are proposed as part of the Concord Reuse Project (City of Concord 2012).

The California Mitigation Fee Act (Government Code 66000-66020) allows the city to levy transportation impact fees on new development. An offsite street improvement program is included in the City of Concord's municipal code to administer transportation impact fees. The offsite street improvement program levies a fee on future development outside of the Concord Reuse Project site to partially fund transportation improvements identified in the 2030 General Plan that will accommodate growth and maintain LOS benchmarks (Code publishing 2014).

3.11.2 Roadway Network

The City of Concord and surrounding Contra Costa County are served by several major highways, including I-680, SR 4, and SR 242, and an extensive street network made up of arterial and local roads. A traffic analysis of existing traffic conditions on roadway segments, freeway segments, freeway ramps, and intersections in the vicinity of the former NWS Concord was conducted in 2013 (Kittelson & Associates, Inc. 2014). The study area identified for this traffic analysis relied on locations previously studied during the City of Concord's CEQA EIR. Locations included in scoping comments and analyzed in previous studies were considered for inclusion in this study area. This ensured a broad scope of consideration in the process of selecting intersections and segments that adequately represent the study area. Previous plans reviewed included:

- The FEIR Addendum (City of Concord 2012a),
- The FEIR (City of Concord 2010), and
- The DEIR (City of Concord 2008).

The locations analyzed in the 2010 Reuse Plan EIR were reviewed by public and agency stakeholders during the City of Concord's public review process as part of the CEQA review. As a result of extensive information and feedback received from agency and other stakeholders during this public review process, the City of Concord expanded the list of study intersections; the original list of 45 intersections in the Concord Community Reuse Project Draft EIR was expanded to 62 in the Reuse Plan FEIR. The number of study roadway segments also increased by one.

Alternative 1 is based on the land use and roadway network assumed on the former NWS Concord site in the 2012 FEIR Addendum, which in turn represents refinement of the assumptions used for the Preferred Project in the 2010 FEIR. Because the locations studied in the 2012 FEIR Addendum were a subset of those studied in the 2010 FEIR, the use of these locations ensures broader consideration in the selection process. No location was identified in the 2012 FEIR Addendum to exceed the performance threshold that was not identified in the 2010 FEIR. The roadway and networks of Alternative 2 are similar to those of Alternative 1.

The number of locations to be addressed in the transportation impact study was further narrowed by focusing on the following factors:

- Locations that would operate below LOS thresholds and worse than existing conditions under the Preferred Alternative in the 2010 FEIR; and
- Intersections that would operate within 0.05 of volume-to-capacity ratio (v/c) of the LOS thresholds under the Preferred Alternative in the 2010 FEIR.

Locations that would operate below performance thresholds and worse than existing conditions are not necessarily locations identified to have significant impacts in the respective analyses. In some instances, the project would improve the level of service or would reduce the v/c as compared to future no-project (no action) conditions. The proposed study locations include all locations that meet the above criteria in the 2010 FEIR and the 2008 DEIR, not only those that have been identified to have significant impacts.

Intersections that would operate within 0.05 v/c of the performance thresholds in the 2010 FEIR were also selected for inclusion in the analysis. While these locations were not shown to operate below standards, their v/c ratios were close enough to the thresholds that they could potentially be exceeded with the analysis of the proposed action. Their inclusion provides a buffer to ensure locations that could potentially be adversely impacted were studied.

Finally, a number of intersections along Concord Boulevard were specifically identified as locations of concern through the scoping process. To ensure such concerns are addressed, those intersections are also included for analysis.

This selection process identified 28 intersections, five roadway segments, 12 freeway segments, and 21 freeway ramps for analysis (See Table 3.11-2). Using the same criteria, the SR 4, SR 242, and I-680 freeway corridors designated as Routes of Regional Significance have been identified for evaluation based on the relevant MTSOs. Locations of these roadways and intersections are shown on Figure 3.11-1.

Table 3.11-2 Study Locations

ID	Study Location
Roadway Segments	
RS 1	Ygnacio Valley Road e/o Cowell Road
RS 2	Bailey Road e/o of Concord Boulevard
RS 3	Concord Boulevard w/o Denkinger Road
RS 4	Port Chicago Highway n/o Olivera Road
RS 5	Kirker Pass Road s/o Myrtle Drive
Freeway Segments	
FS 1	I-680 s/o Monument Boulevard
FS 2	I-680 n/o Monument Boulevard
FS 3	I-680 n/o SR 242
FS 4	I-680 n/o Willow Pass Road
FS 5	I-680 n/o Concord Avenue
FS 6	I-680 n/o SR 4
FS 7	SR 242 n/o I-680
FS 8	SR 4 e/o SR 242
FS 9	SR 4 e/o Port Chicago Highway
FS 10	SR 4 e/o Willow Pass Road
FS 11	SR 4 e/o San Marco Boulevard
FS 12	SR 4 e/o Railroad Avenue
Freeway Ramps	
FR 1	Willow Pass Road NB off-ramp
FR 2	Concord Avenue WB to NB on-ramp
FR 3	Willow Pass Road EB to SB on-ramp
FR 4	Clayton Road NB off-ramp
FR 5	Concord Avenue EB to NB on-ramp
FR 6	Clayton Road SB on-ramp
FR 7	Port Chicago Highway EB off-ramp

Table 3.11-2 Study Locations

ID	Study Location
FR 8	Port Chicago Highway EB on-ramp
FR 9	Willow Pass Road EB off-ramp
FR 10	Port Chicago Highway WB on-ramp
FR 11	Port Chicago Highway WB off-ramp
FR 12	Willow Pass Road WB on-ramp
FR 13	Willow Pass Road WB off-ramp
FR 14	San Marco Boulevard EB off-ramp
FR 15	SB San Marco Boulevard WB on-ramp
FR 16	NB San Marco Boulevard WB on-ramp
FR 17	NB San Marco Boulevard EB on-ramp
FR 18	San Marco Boulevard WB off-ramp
FR 19	SB Bailey Road EB off-ramp
FR 20	Bailey Road WB on-ramp
FR 21	Railroad Avenue WB on-ramp
Intersections	
Int 1	Port Chicago Highway/Panoramic Drive
Int 2	Port Chicago Highway/Olivera Road
Int 3	Farm Bureau Road/Willow Pass Road
Int 4	Commerce Avenue - SR 242 SB/Concord Avenue
Int 5	West Street/Concord Boulevard
Int 6	Denkinger Road/Concord Boulevard
Int 7	Bailey Road/Concord Boulevard
Int 8	North Main Street/Sunnyvale Avenue - SB I-680 ramps
Int 9	North Main Street/Geary Road
Int 10	Buskirk Avenue - NB I-680 Off Ramp/Treat Boulevard
Int 11	Oak Road/Treat Boulevard
Int 12	Bancroft Road/Treat Boulevard
Int 13	Oak Grove Road/Treat Boulevard
Int 14	NB I-680 Off Ramp/Ygnacio Valley Road
Int 15	Bancroft Road/Ygnacio Valley Road
Int 16	Oak Grove Road/Ygnacio Valley Road
Int 17	Ayers Road/Ygnacio Valley Road
Int 18	Willow Pass Road/Evora Road (West)
Int 19	Willow Pass Road/SR 4 WB ramps
Int 20	Willow Pass Road/SR 4 EB ramps
Int 21	Willow Pass Road/Avila Road
Int 22	Willow Pass Road/Evora Road (East) - SR 4 WB off-ramp
Int 23	San Marco Boulevard-Willow Pass Road/SR 4 EB ramps
Int 24	San Marco Boulevard/W Leland Road
Int 25	Bailey Road/Willow Pass Road
Int 26	Bailey Road/SR 4 EB ramps - BART access
Int 27	Railroad Avenue/W Leland Road
Int 28	Kirker Pass Road/James Donlon Boulevard

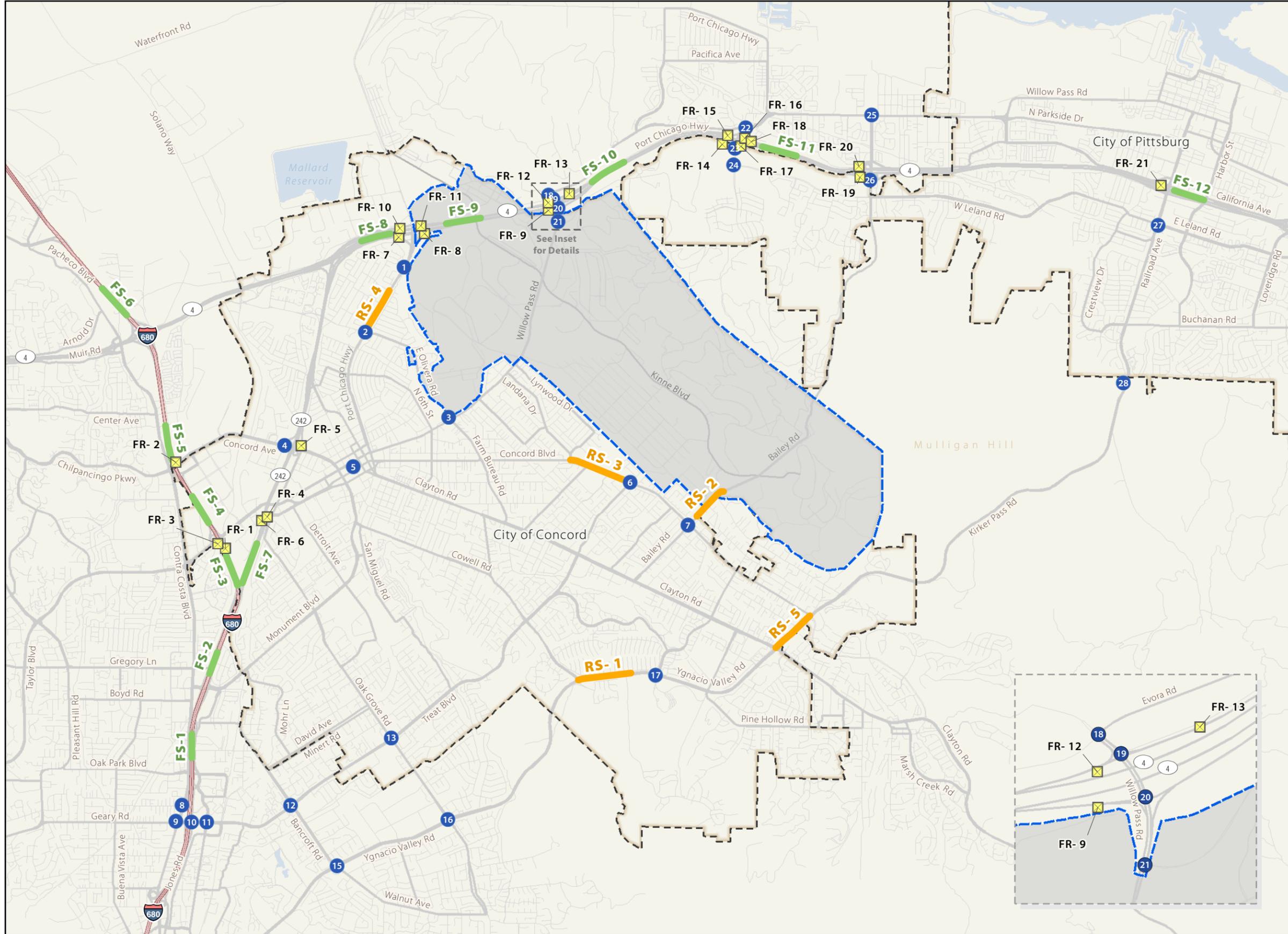


Figure 3.11-1
Study Locations
Former NWS Concord
Concord, California

Legend

- Former NWS Concord
- City Limits
- Waterbody
- County Boundary

Traffic Study Intersections and Roadways

- Freeway Ramp
- Intersection
- Study Roadways
- Freeway Segments



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Information on current traffic volumes and operations was taken from existing Caltrans data, manual turn movement counts, and machine counts. Peak hour traffic counts for the freeway segments and freeway ramps for SR 4 and SR 242 were collected in February 2013 as part of a ramp metering study conducted for MTC. Peak hour traffic volumes for I-680 were taken from the Caltrans Performance Measurement System and from Caltrans' most recently available (2012) estimate of average daily traffic. Manual turning movements at intersections were counted in June 2013 for this analysis. Peak hour traffic volumes for road segments were derived from adjacent intersection turning movement counts that were applicable or from machine counts on roadway segments collected in June of 2013

Existing LOS was determined for intersections, road segments, freeway segments, and freeway ramps. Multimodal transportation service objectives identified in the central and eastern Contra Costa County action plans for freeways were also determined for existing conditions. LOS for signalized intersections was based on procedures from the Contra Costa County Technical Procedures Update, and unsignalized intersection LOS was based on procedures from the Transportation Research Board's Highway Capacity Manual. LOS for roadway segments was estimated using the Florida Department of Transportation's Quality/Level of Service Handbook, which was based on methodology from the 2010 Highway Capacity Manual. The Highway Capacity Manual is consistent with guidelines from Caltrans and was used to determine LOS for freeway segments and freeway ramps.

MTSOs established in the East County Action Plan for Routes of Regional Significance and the Central County Action Plan for Routes of Regional Significance set different LOS thresholds for intersections of regional significance and were used in this analysis. The action plans also include additional MTSOs for freeways. Both action plans use a delay index for freeways of regional significance, and the East County Action Plan also includes utilization of high occupancy lanes.

The former NWS Concord is located on the eastern side of the City of Concord in central Contra Costa County. The northwest portion of the former NWS Concord is crossed by SR 4, east of its interchanges with I-680 and SR 242. Willow Pass Road crosses the site in a northeasterly direction and accesses SR 4 just north of the site. Bailey Road crosses the southeast portion of the site in a northeasterly direction. The North Concord/Martinez BART Station is located on the western edge of the site, off of Port Chicago Highway. Several access roads provide circulation around the site.

The roadway network of the study area is graphically presented in Figure 3.11-1. The principal roadways and intersections in the vicinity of the former NWS Concord site are described below.

I-680 is the primary north-south freeway in central Costa County near the City of Concord. I-680 begins at an interchange with I-80 in Solano County north of Contra Costa County and travels south to its terminus in the City of San Jose. The freeway runs along the west side of the City of Concord and intersects with SR 4 near the northwestern corner of the city. The number of lanes on I-680 within the study area varies from seven lanes north of SR 4 to 12 lanes north of Monument Boulevard.

SR 4 is the primary west-east route in northern Contra Costa County. SR 4 begins at an interchange with I-80 west of Concord and runs east to an interchange with SR 160 before winding west past the City of Stockton to its terminus at SR 89 near the California/Nevada State border. The freeway crosses the northwest end of the former NWS Concord site. Access to SR 4 from the former NWS Concord is available to the north, off of Willow Pass Road. SR 4 varies from nine lanes east of Willow Pass Road to 12 lanes east of SR 242.

SR 242 is a main north-south route that runs between I-680 to the west and SR 4 to the northwest of the former NWS Concord. SR 242 is a six-lane highway with direct ramp access near the site provided on Olivera Road.

Willow Pass Road is a two-lane arterial that begins at I-680 in Pleasant Hill and then traverses the former NWS Concord in a northeasterly direction before it terminates at its interchange with SR 4 north of the site. Willow Pass Road provides ramp access to SR 4 north of the property.

Bailey Road is a two-lane arterial that traverses the southern portion of the site in a northeasterly direction from Clayton Road, south of the former NWS Concord, to Pittsburg.

Concord Boulevard is an arterial road near the western edge of the site. The road begins at the intersection of Clayton Road and Sutter Street, just east of SR 242 near downtown Concord. The roadway continues in a southeastward direction southwest of the site to just past Kirker Pass Road, where it continues as Oakhurst Drive.

Port Chicago Highway is a semi-circular route west of the former NWS Concord that begins at Clayton Road, in central Concord, and continues north to the northwestern edge of the site. The road continues north before turning east and terminating in Bay Point. The road provides access to the northwest portion of the site and ramp access to SR 4 just north of the North Concord/Martinez BART Station.

Kirker Pass Road/Railroad Avenue/Ygnacio Road is a major corridor extending between I-680 in Walnut Creek and SR 4 in Pittsburg. The roadway does not provide direct access to the former NWS Concord but serves as one of the few west-to-east arterials south of the site. The segment as it traverses through unincorporated Contra Costa County and Concord southeast of the property is known as Kirker Pass Road. The segment south of the property is primarily two lanes in each direction with a center median.

3.11.3 Existing Traffic Volumes

Existing peak-hour traffic volumes for roadway segments are presented in Table 3.11-3. Peak hours typically occurred between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM. Traffic volumes were highest during the evening peak hour for four of the road segments. Bailey Road had higher morning peak-hour volumes and had the lowest peak-hour volumes overall. Ygnacio Valley Road had the highest volumes during both peak hours of the road segments studied.

Table 3.11-3 Existing Roadway Segment Peak-Hour Traffic Volumes

ID	Link	Location	Number of Lanes	Peak-Hour Volume	
				AM	PM
RS 1	Ygnacio Valley Road	East of Cowell Road	6	3,074	3,243
RS 2	Bailey Road	East of Concord Boulevard	2	924	700
RS 3	Concord Boulevard	West of Denkinger Road	4	1,739	1,926
RS 4	Port Chicago Highway	North of Olivera Road	2	1,009	1,223
RS 5	Kirker Pass Road	South of Myrtle Drive	6	2,292	2,323

Source: Kittelson & Associates, Inc. 2014

Table 3.11-4 presents peak-hour traffic volumes for freeway segments, and Table 3.11-5 presents traffic volumes for freeway ramps. Morning peak hour volumes for I-680 northbound ranged from 3,044 vehicles north of SR 4 to 7,592 vehicles north of Monument Boulevard. Northbound traffic during the evening peak hour was typically higher and ranged from 4,821 vehicles north of SR 4 to 9,553 vehicles south of Monument Boulevard. Southbound traffic was generally higher during the morning peak hour, ranging between 4,867 vehicles north of Concord Avenue and 8,592 vehicles south of Monument Boulevard. Evening peak-hour traffic on southbound I-680 ranged from 4,075 vehicles north of Concord Avenue to 7,286 vehicles north of Monument Boulevard.

Table 3.11-4 Freeway Segment Peak-Hour Traffic Volumes

ID	Freeway Name	Direction	Number of Lanes		Peak-Hour Volume	
			Freeway	Aux ¹	AM	PM
Interstate 680						
FS 1	I-680 s/o Monument Boulevard	NB	5	1	7,433	9,553
		SB	6	1	8,592	7,194
FS 2	I-680 n/o Monument Boulevard	NB	6	0	7,529	9,676
		SB	6	0	8,702	7,286
FS 3	I-680 n/o SR 242	NB	4	0	4,339	5,576
		SB	4	1	5,015	4,199
FS 4	I-680 n/o Willow Pass Road	NB	4	1	4,275	5,494
		SB	4	1	4,941	4,137
FS 5	I-680 n/o Concord Avenue	NB	4	0	4,211	5,412
		SB	4	1	4,867	4,075
FS 6	I-680 n/o SR 4	NB	4	0	3,044	4,821
		SB	4	1	4,969	4,230
State Route 242						
FS 7	SR 242 n/o I-680	NB	3	0	3,120	5,329
		SB	3	0	4,684	3,015
State Route 4						
FS 8	SR 4 e/o SR 242	EB	4	0	2,150	6,341
		WB	2	0	5,111	2,208
FS 9	SR 4 e/o Port Chicago Highway	EB	4	0	3,282	7,029
		WB	4	0	6,889	3,007
FS 10	SR 4 e/o Willow Pass Road	EB	5	0	3,148	7,945
		WB	4	0	8,490	3,359
FS 11	SR 4 e/o San Marco Boulevard	EB	4	0	3,025	6,633
		WB	4	0	8,733	3,524
FS 12	SR 4 e/o Railroad Avenue	EB	4	0	4,836	4,113
		WB	4	0	2,945	3,225

Source: Kittelson & Associates, Inc. 2014

¹ Aux = auxiliary lane used for traffic entering and exiting the freeway via ramps.

Key:

- e/o = east of
- EB = eastbound
- n/o = north of
- NB = northbound
- s/o = south of
- SB = southbound
- WB = westbound

Table 3.11-5 Freeway Ramp Peak-Hour Traffic Volumes

ID	Ramp	Peak-Hour Volume	
		AM	PM
Interstate 680			
FR 1	Willow Pass Road NB off-ramp	1,019	1,075
FR 2	Concord Avenue WB to NB on-ramp	193	374
FR 3	Willow Pass Road EB to SB on-ramp	441	744
State Route 242			
FR 4	Clayton Road NB off-ramp	859	1,420
FR 5	Concord Avenue EB to NB on-ramp	633	577
FR 6	Clayton Road SB on-ramp	768	900
State Route 4			
FR 7	Port Chicago Highway EB off-ramp	620	380
FR 8	Port Chicago Highway EB on-ramp	136	688
FR 9	Willow Pass Road EB off-ramp	379	604
FR 10	Port Chicago Highway WB on-ramp	218	445
FR 11	Port Chicago Highway WB off-ramp	826	289
FR 12	Willow Pass Road WB on-ramp	762	477
FR 13	Willow Pass Road WB off-ramp	519	312
FR 14	San Marco Boulevard EB off-ramp	421	1,457
FR 15	SB San Marco Boulevard WB on-ramp	1,082	409
FR 16	NB San Marco Boulevard WB on-ramp	632	216
FR 17	NB San Marco Boulevard EB on-ramp	89	37
FR 18	San Marco Boulevard WB off-ramp	113	273
FR 19	SB Bailey Road EB off-ramp	145	583
FR 20	Bailey Road WB on-ramp	976	320
FR 21	Railroad Avenue WB on-ramp	1,604	853

Source: Kittelson & Associates, Inc. 2014

Key:

- EB = eastbound
- NB = northbound
- SB = southbound
- WB = westbound

The segment of SR 242 north of I-680 had traffic volumes ranging from 3,120 northbound vehicles to 4,684 southbound vehicles during the morning peak hour, and 3,015 southbound vehicles to 5,329 northbound vehicles during the evening peak hour.

Morning peak hour volumes on SR 4 eastbound ranged from 2,150 vehicles east of SR 242 to 4,836 vehicles east of Railroad Avenue. Morning peak-hour traffic volumes on SR 4 westbound ranged from 2,945 vehicles east of Railroad Avenue to 8,733 vehicles east of San Marco Boulevard. Traffic volumes during the evening peak hour on eastbound SR 4 were between 4,113 east of Railroad Avenue and 7,945 east of Willow Pass Road. Westbound traffic volumes during the evening peak hour were between 2,208 vehicles east of SR 242 and 3,359 vehicles east of Willow Pass Road. Westbound peak-hour volumes were generally twice as high during the morning, and eastbound peak-hour volumes were twice as high during the evening.

All of the I-680 freeway ramps studied had higher evening peak-hour volumes, while the peak-hour volume varied for SR 4 and SR 242. Peak-hour volumes for I-680 ramps ranged from 441 vehicles during

the morning peak hour on the southbound on-ramp to Willow Pass Road to 1,075 vehicles during the evening peak hour on the northbound off-ramp to Willow Pass Road. Traffic volumes on SR 242 were between 577 during the evening peak hour on the northbound on-ramp to Concord Avenue and 1,420 on the Clayton Road northbound off ramp during the evening peak hour. The morning peak-hour volumes for SR 4 ranged from 89 vehicles on the eastbound ramp from San Marco Boulevard to 1,604 vehicles on the westbound on-ramp from Railroad Avenue. Evening peak-hour volumes were between 37 vehicles on the eastbound ramp from San Marco Boulevard to 1,457 vehicles on the eastbound off-ramp to San Marco Boulevard.

3.11.4 Existing Traffic Operations

An analysis was conducted to evaluate the capacity of each roadway and freeway segment, freeway ramp, and intersection to accommodate current traffic volumes. The analysis characterized capacities based on their LOS. LOS is a qualitative measure that describes the general operating conditions of the roadway or freeway segment, freeway ramp, or intersection using factors such as speed, travel times, and delays. LOS is reported on a scale of “A” to “F,” with “A” representing adequate operating conditions and free-flowing traffic and “F” representing the worst operating conditions and significant delays. Detailed descriptions of the range of LOS are provided in Table 3.11-6.

Table 3.11-6 General Level of Service Description

LOS	Description
A	Free Flow or Insignificant Delays: Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.
B	Stable Operation or Minimal Delays: The ability to maneuver within the traffic stream is only slightly restricted, and control delay at signalized intersections is not significant.
C	Stable Operation or Acceptable Delays: The ability to maneuver and change lanes is somewhat restricted, and average travel speeds may be about 50 percent of the free-flow speed.
D	Approaching Unstable or Tolerable Delays: Small increases in flow may cause substantial increases in delay and decreases in travel speed.
E	Unstable Operation or Significant Delays: Significant delays may occur, and average travel speeds may be 33 percent or less of the free-flow speed.
F	Forced Flow or Excessive Delays: Congestion, high delays, and extensive queuing occur at critical signalized intersections with urban street flow at extremely low speeds.

Source: Highway Capacity Manual, Transportation Research Board, Washington D.C., 2010.

The majority of the 28 intersections included in the analysis currently operate at an LOS of E or better during both morning and evening peak hours. As shown in Table 3.11-7, three of the intersections currently operate below acceptable standards. The intersections of Willow Pass Road and the SR 4 westbound ramps (Intersection 19) and Willow Pass Road and the SR 4 eastbound ramps (Intersection 20) are both unsignalized and operate at a morning peak-hour LOS of E and F, respectively. The signalized intersection of Bailey Road and the SR 4 eastbound ramps operates at LOS F during the evening peak hour.

All of the roadway segments studied currently operate between LOS D and LOS C and are within performance thresholds (See Table 3.11-8). Bailey Road (RS 2) and Concord Boulevard (RS 3) both operate at LOS D during the morning peak hour. The remaining roadway segments all operate at LOS C during the morning peak hour. Port Chicago Highway operates at LOS C during the evening peak hour, while all other roadway segments operate at LOS D during the evening peak hour.

Table 3.11-9 shows the existing LOS of the freeway segments analyzed. Two of the 12 freeway segments studied operate at LOS F in the westbound direction during the morning peak hour: SR 4 east of SR 242 (FS 8) and SR 4 east of San Marco Boulevard. All of the I-680 and SR 242 freeway segments operate at LOS D or higher during both peak hours.

The existing LOS for the freeway ramps analyzed is shown in Table 3.11-10. The majority of ramps currently operate at LOS E or better with the exception of four ramps on SR 4. The westbound off-ramps to Port Chicago Highway and to Willow Pass Road from SR 4 and the westbound on-ramp from Willow Pass Road to SR 4 operate at LOS F during the morning peak hour. The eastbound off-ramp to San Marco Boulevard from SR 4 also operates at LOS F during the evening peak hour.

The existing travel speed and delay index MTSO on the three freeways designated as Routes of Regional Significance are presented in Table 3.11-11 for central and eastern Contra Costa County and in Table 3.11-12 for eastern Contra Costa County. The HOV lane utilization MTSO for SR 4 in eastern Contra Costa County is shown in Table 3.11-12. The MTSO delay index threshold for SR 4 in eastern Contra Costa County is 2.5 and 5.0 in central Contra Costa County. The index delay threshold for I-680 and SR 242, respectively, in central Contra Costa County is 4.0 and 3.0. None of the freeways studied currently exceed the delay index standard. The MTSO for HOV utilization in eastern Contra Costa County calls for HOV utilization to exceed 600 vehicles per lane in the peak direction during the peak hour. SR 4 currently meets this threshold minimum.

3.11.5 Public Transportation

Several public transit options are available in the City of Concord and near the former NWS Concord. The Central Contra Costa Transit Authority, or County Connection, provides fixed-route and paratransit bus service in Concord and throughout Contra Costa County. County Connection has 38 fixed and express routes, with several routes providing service near the former NWS Concord, including routes 10, 15, 17, 28/627, and 93X (County Connection n.d.).

BART provides commuter rail service throughout the region. The Pittsburg/Bay Point – SFO/Millbrae line connects Concord with San Francisco and the San Francisco International Airport (SFO) to the southwest and Pittsburg to the northeast (BART 2014). BART stations near the former NWS Concord include the Concord Station, located on Oakland Avenue south of downtown Concord; the North Concord/Martinez Station, located on Port Chicago Highway adjacent to the northwest border of the former NWS Concord; and the Pittsburg/Bay Point Station, located on Bailey Road northeast of the former NWS Concord. County Connection has 10 fixed routes that connect with the Concord Station and three routes that connect with the North Concord/Martinez Station. The Pittsburg/Bay Point Station forms the terminus of the BART line and currently has no connecting County Connection bus routes.

Tri Delta Transit provides bus service in east Contra Costa County with 13 weekday routes and four weekend routes. Routes connect Concord with the cities of Bay Point, Pittsburg, Antioch, Oakley, Brentwood, and Discovery Bay. Route 201 provides service between the Concord Station and the Pittsburg/Bay Point Station, where transfers can be made to 11 other Tri Delta Transit bus routes (Tri Delta Transit 2013).

The Concord General Plan indicates additional transit service is planned for the redevelopment of the former NWS Concord that would connect the site to the BART stations and other Concord neighborhoods (Concord Department of Planning 2013). Figure 3.11-2 shows bus routes and the location of BART stations in relation to the former NWS Concord.

Table 3.11-7 Intersection Peak-Hour Level of Service

ID	Intersection	Control	LOS Standard	AM Peak Hour		PM Peak Hour	
				LOS	V/V or Delay ¹	LOS	v/c or Delay ¹
Int 1	Port Chicago Highway/Panoramic Drive	Signal	E	A	0.38	A	0.4
Int 2	Port Chicago Highway/Olivera Road	Signal	E	B	0.65	B	0.69
Int 3	Farm Bureau Road/Willow Pass Road	Signal	E	B	0.66	B	0.67
Int 4	Commerce Avenue – SR 242 SB/Concord Avenue	Signal	E	A	0.59	C	0.75
Int 5	West Street/Concord Boulevard	Signal	E	A	0.53	A	0.49
Int 6	Denkinger Road/Concord Boulevard	Signal	E	A	0.45	A	0.53
Int 7	Bailey Road/Concord Boulevard	Signal	E	A	0.59	A	0.56
Int 8	North Main Street/Sunnyvale Avenue - SB I-680 ramps	Signal	F	D	0.81	C	0.1
Int 9	North Main Street/Geary Road	Signal	F	B	0.69	C	0.78
Int 10	Buskirk Avenue-NB I-680 Off- Ramp/Treat Boulevard	Signal	E	D	0.87	E	0.98
Int 11	Oak Road/Treat Boulevard	Signal	E	A	0.59	C	0.72
Int 12	Bancroft Road/Treat Boulevard	Signal	F	D	0.85	D	0.88
Int 13	Oak Grove Road/Treat Boulevard	Signal	E	C	0.8	B	0.7
Int 14	NB I-680 Off Ramp/Ygnacio Valley Road	Signal	E	E	0.93	E	0.99
Int 15	Bancroft Road/Ygnacio Valley Road	Signal	F	C	0.76	C	0.78
Int 16	Oak Grove Road/Ygnacio Valley Road	Signal	F	E	0.91	D	0.85
Int 17	Ayers Road/Ygnacio Valley Road	Signal	E	E	0.91	D	0.84
Int 18	Willow Pass Road/Evora Road (West)	Signal	mid-D v/c 0.85	B	0.68	A	0.44
Int 19	Willow Pass Road/SR 4 WB ramps	All-way Stop	mid-D v/c 0.85	E	41.8	C	16
Int 20	Willow Pass Road/SR 4 EB ramps	All-way Stop	mid-D v/c 0.85	F	70.2	C	22.1
Int 21	Willow Pass Road/Avila Road	1-way Stop	mid-D v/c 0.85	A (B)	0.2 (13.9)	A (C)	0.4 (19.7)
Int 22	Willow Pass Road/Evora Road (East)-SR 4 WB off-ramp	Signal	mid-D v/c 0.85	A	0.46	A	0.29
Int 23	San Marco Boulevard - Willow Pass Road/SR 4 EB ramps	Signal	mid-D v/c 0.85	A	0.39	A	0.5
Int 24	San Marco Boulevard/W Leland Road	Signal	mid-D v/c 0.85	D	0.85	A	0.33
Int 25	Bailey Road/Willow Pass Road	Signal	E	A	0.39	A	0.51

Table 3.11-7 Intersection Peak-Hour Level of Service

ID	Intersection	Control	LOS Standard	AM Peak Hour		PM Peak Hour	
				LOS	V/V or Delay ¹	LOS	v/c or Delay ¹
Int 26	Bailey Road/SR 4 EB ramps - BART access	Signal	E	A	0.41	F	1.11
Int 27	Railroad Avenue/W Leland Road	Signal	mid-D v/c 0.85	A	0.55	D	0.81
Int 28	Kirker Pass Road/James Donlon Boulevard	Signal	E	n/a ²	n/a ²	n/a ²	n/a ²

Source: Kittelson & Associates, Inc. 2014

Notes:

¹ Average vehicle delay is used for unsignalized intersections

² Int 28 is a proposed intersection and does not currently exist.

Key:

EB = eastbound

Int = intersection

LOS = level of service

NB = northbound

SB = southbound

V/C = volume-to-capacity ratio

WB = westbound

Table 3.11-8 Roadway Segment Peak-Hour Level of Service

ID	Street Name	Number of Lanes	Class	AM Peak Hour			PM Peak Hour		
				Volume	V/C	LOS	Volume	V/C	LOS
RS 1	Ygnacio Valley Road	6	I	3,116	0.83	C	3,756	0.99	D
RS 2	Bailey Road	2	II	924	0.77	D	700	0.58	D
RS 3	Concord Boulevard	4	II	1,739	0.57	D	1,926	0.63	D
RS 4	Port Chicago Highway	2	I	1,009	0.57	C	1,223	0.69	C
RS 5	Kirker Pass Road	6	II	2,003	0.44	C	2,249	0.49	D

Source: Kittelson & Associates, Inc. 2014

Key:

LOS = level of service

V/C = volume-to-capacity ratio

Table 3.11-9 Freeway Segment Peak-Hour Level of Service

ID	Freeway Name	Direction	AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS
Interstate 680						
FS 1	I-680 s/o Monument Boulevard	NB	0.64	C	0.82	D
		SB	0.62	C	0.52	B
FS 2	I-680 n/o Monument Boulevard	NB	0.58	C	0.75	D
		SB	0.67	C	0.56	C
FS 3	I-680 n/o SR 242	NB	0.5	B	0.65	C
		SB	0.53	B	0.44	B
FS 4	I-680 n/o Willow Pass Road	NB	0.45	B	0.58	C
		SB	0.57	C	0.48	B
FS 5	I-680 n/o Concord Avenue	NB	0.49	B	0.63	C
		SB	0.51	B	0.43	B
FS 6	I-680 n/o SR 4	NB	0.35	B	0.56	C
		SB	0.52	B	0.44	B
State Route 242						
FS 7	SR 242 n/o I-680	NB	0.48	B	0.82	D
		SB	0.72	C	0.47	B
State Route 4						
FS 8	SR 4 e/o SR 242	EB	0.25	A	0.74	C
		WB	1.19	F	0.51	B
FS 9	SR 4 e/o Port Chicago Highway	EB	0.38	B	0.82	D
		WB	0.8	D	0.35	B
FS 10	SR 4 e/o Willow Pass Road	EB	0.33	B	0.84	D
		WB	0.99	E	0.39	B
FS 11	SR 4 e/o San Marco Boulevard	EB	0.35	B	0.77	D
		WB	1.01	F	0.41	B
FS 12	SR 4 e/o Railroad Avenue	EB	0.56	C	0.48	B
		WB	0.34	B	0.37	B

Source: Kittelson & Associates, Inc. 2014

Key:

e/o = east of

EB = eastbound

LOS = level of service

n/o = north of

NB = northbound

s/o = south of

SB = southbound

V/C = volume-to-capacity ratio

WB = westbound

Table 3.11-10 Freeway Ramp Peak-Hour Level of Service

ID	Ramp	AM Peak Hour			PM Peak Hour		
		V/C	Density	LOS	V/C	Density	LOS
Interstate 680							
FR 1	Willow Pass Road NB off-ramp	0.68	29.36	D	0.75	32.24	D
FR 2	Concord Avenue WB to NB on-ramp	0.51	21.55	C	0.61	25.16	C
FR 3	Willow Pass Road EB to SB on-ramp	0.53	16.58	B	0.64	20.2	C
State Route 242							
FR 4	Clayton Road NB off-ramp	0.47	8.43	A	0.79	20.69	C
FR 5	Concord Avenue EB to NB on-ramp	0.49	13.42	B	0.73	21.83	C
FR 6	Clayton Road SB on-ramp	0.78	31.24	D	0.59	24.43	C
State Route 4							
FR 7	Port Chicago Highway EB off-ramp	0.25	10.71	B	0.73	28.97	D
FR 8	Port Chicago Highway EB on-ramp	0.24	12.65	B	0.78	31.74	D
FR 9	Willow Pass Road EB off-ramp	0.42	19.47	B	0.86	36.34	E
FR 10	Port Chicago Highway WB on-ramp	0.48	20.99	C	0.58	24.36	C
FR 11	Port Chicago Highway WB off-ramp	1.08	44.57	F	0.43	19.9	B
FR 12	Willow Pass Road WB on-ramp	0.96	37.81	F	0.41	18.37	B
FR 13	Willow Pass Road WB off-ramp	1.01	41.98	F	0.42	19.43	B
FR 14	San Marco Boulevard EB off-ramp	0.41	7.71	A	1.09	33.35	F
FR 15	SB San Marco Boulevard WB on-ramp	0.98	31.38	D	0.39	10.4	B
FR 16	NB San Marco Boulevard WB on-ramp	0.81	32.47	D	0.32	15.02	B
FR 17	NB San Marco Boulevard EB on-ramp	0.31	14.59	B	0.65	26.89	C
FR 18	San Marco Boulevard WB off-ramp	0.78	33.1	D	0.37	17.75	B
FR 19	SB Bailey Road EB off-ramp	0.35	9.62	A	0.75	24.62	C
FR 20	Bailey Road WB on-ramp	0.88	28.45	D	0.35	9.87	A
FR 21	Railroad Avenue WB on-ramp	0.88	34.45	D	0.42	18.49	B

Source: Kittelson & Associates, Inc. 2014

Key:

- EB = eastbound
- LOS = level of service
- NB = northbound
- SB = southbound
- V/C = volume-to-capacity ratio
- WB = westbound

Table 3.11-11 Existing Peak-Hour Delay Index on Freeways in Central and Eastern Contra Costa County

Peak Hour	Direction	Free Flow Speed (mph)	Existing	
			Speed (mph)	Delay Index
State Route 4 (Central County)				
AM	EB	65	62	1
AM	WB	65	52	1.2
PM	EB	65	46	1.4
PM	WB	65	65	1
State Route 4 (East County)				
AM	EB	65	61	1.1
AM	WB	65	49.1	1.4
PM	EB	65	46	1.4
PM	WB	65	51	1.3
Interstate 680 (Central County)				
AM	NB	65	46	1.4
AM	SB	65	40	1.6
PM	NB	65	44	1.5
PM	SB	65	56	1.2
State Route 242 (Central County)				
AM	NB	65	50	1.3
AM	SB	65	48	1.4
PM	NB	65	53	1.3
PM	SB	65	49	1.3

Source: Kittelson & Associates, 2014

Key:

- EB = eastbound
- NB = northbound
- SB = southbound
- WB = westbound

Table 3.11-12 Existing Peak-Hour HOV Lane Utilization on SR 4 in Eastern Contra Costa County

Peak Hour	Peak Direction	Vehicle per Lane
State Route 4		
AM	EB	n/a ¹
AM	WB	826
PM	EB	1,029
PM	WB	n/a ¹

Source: Kittelson & Associates, 2014

Note:

- ¹ The MTSO for HOV lane utilization applies only to the peak direction at peak hour. SR 4 WB has been identified as the peak direction during the morning peak hour, and SR 4 EB has been identified as the peak direction during the evening peak hour.

Key:

- EB = eastbound
- WB = westbound

3.11.6 Pedestrian and Bicycle Facilities

Walking and bicycling are considered viable alternatives to the automobile in Concord, and the Concord Development Plan promotes pedestrian-oriented design and supporting bicycle facilities (Concord Department of Planning 2013). Caltrans classifies bicycle facilities into three main categories (Caltrans 2012):

- Class I Bike Path – Provides an exclusive right of way for bicycle access to areas not served by streets or highways
- Class II Bike Lane – Shared roadways that delineates the right of way for bicyclists and motorists
- Class III Bike Route – Designates preferred route for bicyclists in high-demand corridors on shared roadways with bike route signs or markings.

In addition, Caltrans recognizes that significant bike travel occurs on roadways where designations, special signage, or pavement for bicycles is not provided.

The City of Concord employs a similar classification for bicycle facilities but divides Class II bike routes into two categories. Class 3A routes are similar to Caltrans Class III designation routes. Class 3B routes use edge lanes to provide additional space for bicyclists but do not meet the 5-foot bike lane minimum width required by Caltrans Class II bike lanes (Concord Department of Planning 2013). Figure 3.11-3 shows the location of bike facilities near the former NWS Concord. The Concord General Plan proposes a network of Class I and II bicycle facilities for the redevelopment of NWS Concord.

3.12 Utilities and Infrastructure

This section describes the existing physical and regulatory setting related to utilities and infrastructure, including systems for water supply, wastewater management (including recycled water), stormwater management, solid waste management, electrical supply, natural gas supply, petroleum and oil pipelines, and information technology/communications, as they relate to the former NWS Concord site.

3.12.1 Regulatory Framework

3.12.1.1 Federal and State

Clean Water Act of 1972 and California Code of Regulations Title 23

The CWA of 1972 protects water quality, including the regulation of stormwater and wastewater discharge during construction and operation of a facility. In accordance with the CWA, the State of California established Title 23 of the California Code of Regulations (Waters) by which the State Water Quality Control Board (SWQCB) as well as the nine RWQCBs enforce laws for the protection of water quality and the allocation of surface rights. As part of Title 23, the California SWQCB requires municipalities in California to comply with National Pollution Discharge Elimination System (NPDES) permits. Specific NPDES permits and Stormwater Pollution Prevention Plans (SWPPs) are also required for construction projects that will disturb more than one acre.

Urban Water Management Planning Act

Section 10610.4 of the California Urban Water Management Planning Act of 1983 specifies that “Urban Water Suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.” Accordingly, all urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or

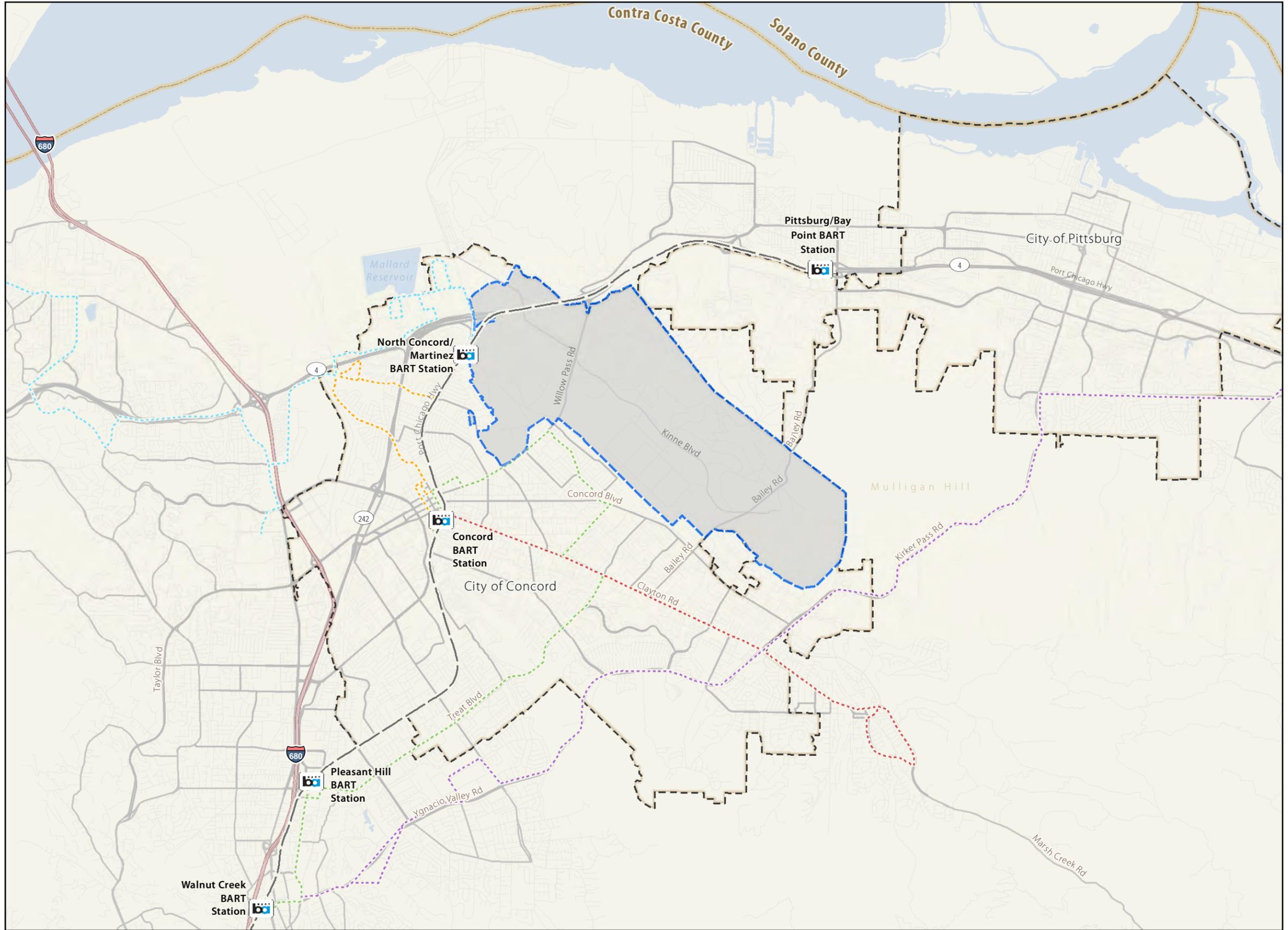


Figure 3.11-2
Bus Routes and BART Stations
 Former NWS Concord
 Concord, California

Legend

-  Former NWS Concord
-  City Limits
-  Waterbody
-  County Boundary

-  Bay Area Rapid Transit (BART) Station
-  Bay Area Rapid Transit (BART) Line

- County Connection Bus Routes
-  Route 10
 -  Route 15
 -  Route 17
 -  Route 28/627
 -  Route 93X



SCALE



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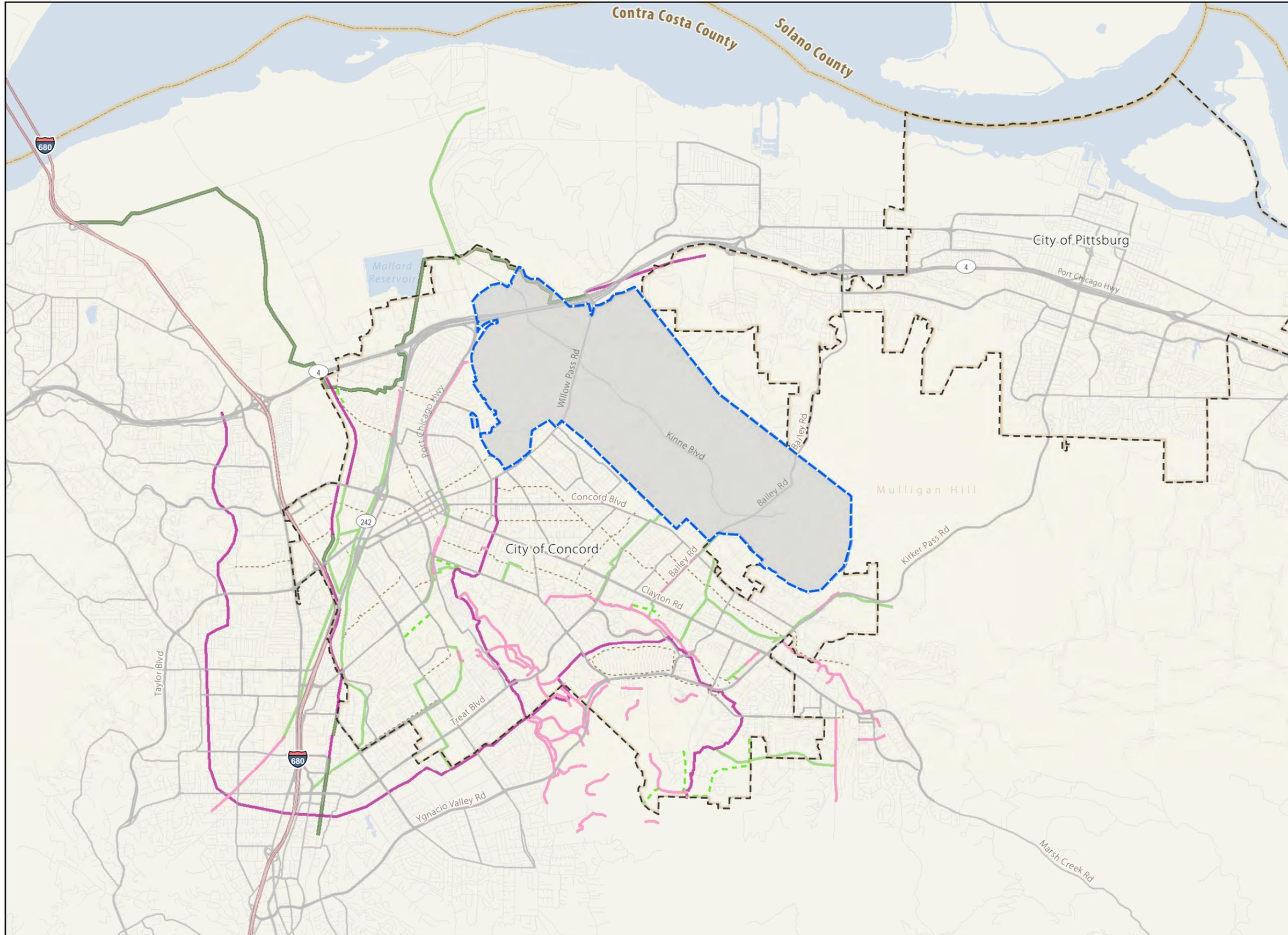


Figure 3.11-3
Bike Trails

Former NWS Concord
Concord, California

Legend

-  Former NWS Concord
-  City Limits
-  Waterbody
-  County Boundary

Bike Trails

-  Existing Regional Trail
-  Existing Local Trail
-  Proposed Feeder Route
-  Proposed Local Route
-  Proposed Regional Route
-  Proposed Class 3 Bike Trail



0 0.5 1 Miles

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supplying more than 3,000 acre-feet annually, are required to prepare an Urban Water Management Plan (UWMP). The CCWD, which supplies water to the City of Concord, including the former NWS Concord, prepared and adopted the current UWMP in June 2011.

Water Conservation Act of 2009

Senate Bill X7-7, the Water Conservation Act, enacted in November 2009, requires all water suppliers in the state to increase water use efficiency. The act has been codified in the California Water Code, Division 6: Conservation, Development, and Utilization of State Water Resources, Part 2.55 Sustainable Water Use and Demand Reduction. The act addresses two sectors, urban water conservation and agricultural water conservation. The act establishes an overall goal of reducing per capita urban water use by 10 percent by December 31, 2015, and by 20 percent by December 31, 2020. Other requirements of the act include (California Department of Water Resources 2013):

- Each urban retail water supplier shall develop water use targets and an interim water use target by July 1, 2011. As defined in the California Water Code, an urban water use target is the urban retail water supplier's targeted future daily per capita water use. An interim urban water use target is the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020 (California Water Code Section 10608.12).
- An urban retail water supplier shall include in its water management plan the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use.
- A Commercial, Institutional, Industrial (CII) task force is to be established that will develop and implement urban best management practices for statewide water savings.

Effective 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans.

Senate Bills 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001)

Adopted in 2002, Senate Bills 610 and 221 seek to improve the coordination of local water supply and land use decisions to help provide California's cities, farms, and rural communities with adequate water supplies. These bills have been codified in the California Water Code 10910-10915 and Government Code Section 66473-66474.10, respectively. Senate Bill 610 (SB 610) requires that the city or county, and the associated public water system, prepare a water supply assessment for projects that would:

- 1) create the equivalent demand of 500 residential units;
- 2) include a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (46,452 square meters) of floor space; or
- 3) a commercial office building employing more than 1,000 persons or having more than 250,000 square feet (23,226 square meters) of floor space.

Transfer of the former NWS Concord would not require preparation of a water supply assessment (City of Concord 2012). However, development proposals for the site may require preparation of one or more water supply assessments. SB 221 requires cities or counties in certain residential subdivisions to prepare a written verification of sufficient water supply for any proposed development.

Safe Drinking Water Act

Passed in 1974 and amended in 1986 and 1996, the federal Safe Drinking Water Act (SDWA) regulates drinking water quality and authorizes the EPA to set health-based standards for drinking water. The SDWA also provides for treatment, monitoring, sampling, analytical methods, reporting, and public information requirements. Basic regulations associated with the federal and California SDWAs are implemented and enforced by the CDPH, Division of Drinking Water and Environmental Management.

Resource Conservation and Recovery Act of 1976

RCRA (42 U.S.C. §6901 *et seq.*) establishes requirements for the management of solid waste. RCRA establishes provisions for the design and operation of solid waste landfills which are implemented through regulations promulgated by the EPA (40 CFR Parts 239-282). States are authorized to carry out functions of the act through their own waste programs and laws.

California Integrated Waste Management Act (AB 939)

The Integrated Waste Management Act of 1989 established regulations for solid waste management, codifying the act in the Public Resources Code (PRC 40050). The regulations require all local and county governments to develop, for review and adoption by the California Integrated Waste Management Board, a source reduction and recycling element and an integrated waste management plan that identify ways to reduce the amount of solid waste sent to landfills. This law set reduction targets of 25 percent by 1995 and 50 percent by the year 2000.

California Government Code Sections 4216–4216.9

These subsections of the California Government Code (“Underground Service Alert”) protect underground infrastructure by requiring notification to the appropriate regional notification center at least two working days prior to beginning any excavation. After this notification, underground infrastructure operators are notified and required to locate and field-mark the approximate location and number of subsurface installations that may be affected. The excavator is then required to determine the exact location of subsurface installations that may be affected by excavating with hand tools.

California Building Standards Code and California Fire Code

As discussed in Section 3.10, Public Services, Title 24 of the California Code of Regulations consists of 11 parts that contain building design and construction requirements as they relate to fire, life, and structural safety. Title 24 incorporates current editions of the IBC, including the electrical, mechanical, energy, and fire codes applicable to any development project proposed for the former NWS Concord.

New residential and non-residential buildings in California are required to conform to energy conservation standards specified in 24 CCR Part 6 of Title 24, which address energy consumed for heating, cooling, ventilation, water heating, and lighting. The 2008 standards went into effect beginning in 2010 and established “energy budgets,” expressed in terms of energy consumed per year on a per-square-foot basis.

The California Green Building Standards Code (Title 24 Part 11) was adopted in 2010 as part of the California Building Standards Code (24 CCR) and establishes mandatory standards for planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

3.12.1.2 Local Regulations

Contra Costa County Ordinance 96-21, Title 1014

The Contra Costa County Watershed Program (CWP) is responsible for ensuring that the county complies with its municipal stormwater NPDES permits, which were developed in accordance with the CWA and

Title 23 of CCR. Contra Costa County Ordinance 96-21, Title 1014, grants the CWP authority to enforce compliance with the municipal NPDES permits (Contra Costa County 2006-2013).

City of Concord Construction and Demolition Recycling Ordinance

In 2007, the City of Concord adopted a local C&D materials recycling ordinance. The C&D ordinance requires that at least 50 percent of waste materials generated by a construction or demolition project be recycled and that 75 percent of all inert debris (concrete, asphalt, brick, and similar masonry products) be recycled. In addition, some projects are required to pay a performance security and program fee that is refunded at project completion if compliance is met (City of Concord 2007b).

Concord 2030 Urban Area General Plan

The City of Concord 2030 General Plan identifies policies and goals to guide future growth within the city, including local utilities such as water and wastewater. The following general plan principles and policies for citywide development are applicable to the reuse of the former NWS Concord, as it pertains to the provision of public utilities (City of Concord 2012):

Principle Public Facilities (PF)-1.1: Provide a Safe and Reliable Water Supply

- Policy PF-1.1.1: Coordinate with the CCWD to provide an adequate and safe water supply.
- Policy PF-1.1.2: Encourage water conservation through City programs and cooperation with the CCWD.
- Policy PF-1.1.3: Coordinate with the San Francisco Bay Regional Water Quality Control Board to provide for the implementation of Storm Water Management Programs intended to protect receiving water sources from pollutants.

Principle PF1.2: Ensure Public Health and Safety by Providing Effective Wastewater Collection and Treatment

- Policy PF-1.2.1: Operate and maintain the City-owned wastewater collection system, including the transfer of wastewater to Central Contra Costa Sanitary District (CCCSD) for treatment and disposal.
- Policy PF-1.2.2: Reduce the need for sewer system improvements by requiring new development to incorporate water conservation measures.
- Policy PF-1.2.3: Cooperate with CCCSD and other service providers to develop a wastewater reclamation program as a supplement to potable water supplies.

Principle PF-1.3: Protect the Community from Adverse Impacts of Water Runoff

- Policy PF-1.3.1: Require new development to provide any needed storm drains that are not part of the City's master storm drain system and to incorporate features into site improvement plans to minimize surface runoff.
- Policy PF-1.3.2: Schedule master drainage improvement projects in the Capital Improvement Program.
- Policy PF-1.3.3: Maintain master storm drain system maps that identify locations where easements should be reserved for the eventual installation of pipes and structures to ensure appropriate storm drainage management.

- Policy PF-1.3.4: Continue the Drainage Area Fee Program to fund master storm drainage improvements.
- Policy PF-1.3.5: Ensure that new development contributes needed drainage improvements in proportion to a project's impacts, to assure an equitable distribution of costs to construct and maintain the City's master storm drainage system."

3.12.2 Water Systems

3.12.2.1 City of Concord

Water Supply

The CCWD supplies water to the City of Concord. The primary source of the district's water is the Sacramento-San Joaquin Delta, via the Central Valley Project (CVP) (CCWD 2013). The CVP is a statewide system under the U.S. Bureau of Reclamation that allows the bureau to regulate and store water in reservoirs where surpluses exist, then transport it through a series of canals, aqueducts, and pump plants to areas in need of water throughout the Central Valley (CCWD 2011). The U.S. Bureau of Reclamation built the Contra Costa Canal and Clayton Canal, which traverse the City of Concord and the former NWS Concord site, as part of the delta division of the CVP. These canals are managed and maintained by the CCWD, and the rights-of-ways are owned by the U.S. Bureau of Reclamation. However, only the Contra Costa Canal is still used. Use of the Clayton Canal was discontinued more than 20 years ago, and there are no plans to reinstate use of this canal.

CCWD's CVP contract with the U.S. Bureau of Reclamation currently allows the CCWD to provide delivery of up to 195,000 acre-feet (AF) of water per year within the district through 2045 and includes provisions for reductions in deliveries during water shortages (CCWD 2011). This water is drawn from delta intakes near Oakley at Rock Slough, Discovery Bay at Old River, Bay Point at Mallard Slough, and Victoria Island and transported through the Contra Costa Canal, which originates at Rock Slough, then flows west to Clyde, south to Walnut Creek, and north to Martinez (CCWD 2013).

CCWD has additional water rights to divert up to 95,980 AF per year from the Los Vaqueros Reservoir and up to 26,700 AF per year from Mallard Slough. However, when these supplies are used, CVP diversions are reduced by an equivalent amount such that the combined delivery is limited to 195,000 AF per year (CCWD 2011).

Other water sources available to CCWD include recycled water and local groundwater.

Water Treatment

The CCWD owns and operates two water treatment facilities, the Bollman WTP in Concord and the Randall-Bold WTP in Oakley (CCWD 2013). The Randall-Bold WTP is owned jointly by CCWD and the Diablo Water District. Untreated water from the delta and Los Vaqueros Reservoir is channeled through the Contra Costa Canal to the Randall-Bold grit basin before being treated at the Randall-Bold WTP or the Bollman WTP (CCWD 2007). The CCWD also partners with the City of Brentwood Public Works Department to co-operate the City of Brentwood WTP in Oakley. This facility shares some of its infrastructure with the Randall-Bold WTP to reduce operational costs (City of Brentwood 2008). However, water treated at the City of Brentwood WTP is not sent to Concord, and therefore this facility is not discussed further.

Combined, water treatment capacity of the Bollman and Randall-Bold WTPs is 115 mgd. As of 2011, the Bollman WTP operated near its capacity of 75 mgd (CCWD 2011). The Randall-Bold WTP has a current

rated capacity of 50 mgd and is designed for future expansion to a capacity of 80 mgd, if conditions warrant an expansion (CCWD 2007).

Treated water from the Randall-Bold WTP is conveyed from Oakley to the northern portion of the City of Concord via the CCWD's multi-purpose pipeline (MPP), a 22-mile welded steel pipeline (CCWD 2011).

Groundwater

Groundwater resources in the CCWD service area do not supply significant amounts of water toward regional water demands. As indicated above under Water Supply, the primary source of water is the CVP. An unknown number of wells within the CCWD service area are owned by other entities, including industries, private individuals, and municipal water utilities; these wells do not contribute to the CCWD potable water supply. Although groundwater is not managed by the CCWD, it has provided estimates of total groundwater use within the CCWD service area to be approximately 3,000 AF per year (CCWD 2011).

The only groundwater used by the CCWD is that provided through an agreement with the East Contra Costa Irrigation District. The agreement with the East Contra Costa Irrigation District includes an option for up to 4,000 AF per year of groundwater (by exchange) when the CVP is experiencing shortages, such as one that occurred during the 2007-2009 drought. As per the agreement, the exchange water may be used anywhere within the CCWD service area (CCWD 2011).

Recycled Water

In accordance with the Water Conservation Act of 2009, as discussed previously in Section 3.12.1.1, the CCWD established a baseline consumption of 183 gallons per capita per day (gpcd) and is required to reduce its per capita consumption by 15 percent by the year 2015 and 20 percent by 2020. Efficient use of recycled water is a key component in CCWD's long-term sustainable water supply strategy. The CCWD set an interim water use target for the year 2015 of 165 gpcd and a 2020 water use target of 146 gpcd to comply with this regulation. By the year 2010, the CCWD had already reduced its consumption to approximately 140 gpcd by implementing several conservation measures, including the 2009 Drought Management Program (CCWD 2011). This program consisted of certain rules and regulations to restrict the use of water during any water shortage condition caused by drought, as well as prohibitions on water use for any purpose other than household uses. Specific prohibited uses of CCWD-provided water during the 2009 Drought Management Program included, but were not limited to: using water for non-recirculating decorative fountains or filling decorative lakes or ponds; washing paved or other hard-surfaced areas, including sidewalks, walkways, driveways, patios, and parking areas; and washing a vehicle, trailer, or boat using a hose without a shut-off nozzle (CCWD 2011).

Recycled water is generated at the CCCSD WWTP, and excess recycled water is stored in a 30-million-gallon-capacity water storage area. The CCCSD's recycled water distribution system extends south from the WWTP into the cities of Concord and Pleasant Hill. Approximately 200 million gallons of recycled water are used annually for irrigation of land uses such as golf courses, a community college, local schools, and the City of Pleasant Hill (CCWD 2011).

3.12.2.2 Former NWS Concord

Potable water was supplied to the former NWS Concord by the CCWD. Potable water was drawn from a connection with CCWD's water trunk lines at the main gate on Port Chicago Highway and along the western side of the site near the former Navy multi-family residential areas, Victory Village and Quinault Village, located on Olivera Road. Five water tanks with a total capacity of 1.7 million gallons and five pump stations owned by the Navy also provided water on the former NWS Concord (City of Concord 2010).

3.12.3 Stormwater Collection Systems

3.12.3.1 City of Concord

The CWP in Contra Costa County maintains municipal stormwater NPDES permits for areas within the county, including the City of Concord, and as such is responsible for ensuring compliance with the federal CWA and CCR Title 23. The East Contra Costa County NPDES Permit, adopted in September 2010, regulates stormwater discharge into the delta from areas within the City of Concord, as well as other areas throughout the county (Contra Costa County 2013a). The CWP's authority is supported by Contra Costa County Ordinance 96-21, Title 1014, Stormwater Management and Discharge Control, as discussed previously in Section 3.12. 1.2.

Within the city limits, the City of Concord Public Works Department maintains the stormwater drainage collection system, which includes 229 miles of stormwater drain pipes; 1,140 manholes; and almost 6,000 catch basins. Stormwater is discharged into a variety of creeks and drainage channels, including Mt. Diablo Creek, Galindo Creek, Pine Creek, and their tributaries and the Walnut Creek Flood Control Channel. These creeks, channels, and regional flood control basins are maintained by the Contra Costa County Flood Control and Water Conservation District (CCCFC&WCD) (Contra Costa County 2013a). No evaluation of the existing capacity of the city's stormwater drainage has been completed (City of Concord 2010).

3.12.3.2 Former NWS Concord

The former NWS Concord consists of primarily pervious, undeveloped area. Surface drainage features on the site include Mt. Diablo Creek, the Holbrook Channel, a number of small tributaries that drain the northeast portion of the site, and a number of wetlands (wetlands and other surface water features are described further in Chapter 3.5, Biological Resources). More than 75 percent of the site drains into Mt. Diablo Creek, which only flows during the rainy season. Approximately 22 percent of stormwater from the site drains into the Holbrook Channel and connected urban drainages. The Holbrook Channel begins near the western edge of the site and eventually joins Walnut Creek. Approximately 1 percent of stormwater from the site drains into the Willow Creek watershed toward the City of Pittsburg through sheet flow during major storm events (ESA PWA 2011). During the wet season, the Contra Costa Canal acts as a drainage channel within the site (City of Concord 2010).

3.12.4 Sanitary Sewage Collection and Treatment Systems

3.12.4.1 City of Concord

Both the CCCSD and the City of Concord provide sewage collection services to the City of Concord. The City of Concord maintains and operates the majority of the sewer system within the city boundaries, while the CCCSD owns and operates a small portion primarily within northern and western areas of the city (Contra Costa LAFCO 2008).

Wastewater generated from homes and businesses throughout the City of Concord and other central Contra Costa County communities served by the CCCSD and City of Concord flow through underground pipelines. The City of Concord owns and maintains approximately 383 miles of 6-inch- to 54-inch-diameter collector and trunk sewer mains; approximately 119 miles of sewer laterals; 8,140 manholes; and more than 39,000 service connections (City of Concord 2012). The CCCSD owns and maintains 1,500 miles of underground pipelines that range from 6 inches to 102 inches in diameter (CCCSD 2009). Much of the wastewater is conveyed by gravity to the CCCSD WWTP northeast of the intersection of I-680 and SR 4. However, a few hilly areas and lands downslope from the treatment plant require pumping facilities to "lift" the effluent to the gravity system. The CCCSD owns 19 pumping stations, and the City

of Concord owns one pumping station that assist in conveying the wastewater (CCCSD 2009; Contra Costa LAFCO 2008).

At the WWTP, the CCCSD provides treatment and disposal services for all wastewater from the City of Concord (Contra Costa LAFCO 2008). Wastewater is treated to either secondary levels, after which it is discharged into the Suisun Bay, or to advanced levels (chemical-assisted filtration and hypochlorite disinfection) to produce high-quality recycled water suitable for nonpotable uses. The WWTP operates under an NPDES permit, with a maximum operating capacity of approximately 125 mgd (53.8 mgd dry-weather flow). The CCCSD can also temporarily divert up to 140 million gallons of excess sewer inflow into WWTP holding basins during wet weather flow. The dry-weather flow of the WWTP in fiscal year 2008 was 35.2 mgd (City of Concord 2010), and in 2012 the CCCSD treated approximately 33.2 mgd (Leavitt 2013).

The City of Concord uses a 20-year financial planning horizon when considering future capital projects for the sewer system. These future projects will be funded through the Sewer Enterprise Fund, which at the start of FY 2013-2104 was approximately \$6.1 million (Ovadia 2013).

According to documents prepared by the City of Concord Finance Department and the Department of Public Works, the following are several major sewer projects to be undertaken in 2014 (City of Concord Finance Department 2013; City of Concord Department of Public Works n.d.):

- Project Number PJ 2244, Citywide Sewer Lateral Replacement. This project consists of replacing 120 lower sewer laterals throughout the city and was slated to start in March 2014.
- Project Number PJ 2245, Willow Pass Road Trunk Replacement. This project will replace deteriorated 10- and 12-inch sanitary sewer trunk lines along Willow Pass Road (between Galindo Street and Market Street) to improve flow and reduce the potential for overflows. This project was expected to be advertised for bid in May 2014.
- Project Number PJ 2295, Citywide Sanitary Sewer Improvements Phase II. This project will be completed summer 2014.

3.12.4.2 Former NWS Concord

Wastewater generated at the former NWS Concord site is collected by the CCCSD system and the City of Concord. A 2,160-acre area in the northeastern portion of the site is serviced by the CCCSD as part of its DA12-1 service area. An additional 2,160-acre area in the southwestern portion of the site and 708-acre portion near the abandoned airfield do not currently have a sewage collection system because no sewage is generated within these areas of the site.

3.12.5 Other Utilities and Infrastructure

3.12.5.1 City of Concord

Solid Waste and Recycling Management

The Concord Disposal Service (CDS) provides solid waste collection services to the City of Concord. In 2004, the City of Concord generated 134,465 tons of solid waste, which was disposed of at the Potrero Hills and Keller Canyon landfills.

The Potrero Hills Landfill, Inc., is a Class III landfill located in Solano County near SR 12 in Suisun City, about 16 miles north of the former NWS Concord. The landfill accepts municipal, industrial, C&D, and

other waste types. It is permitted to receive an average of 3,400 tons per day and has a permitted capacity of 83.1 million cubic yards (cy) (California Department of Resources Recycling and Recovery [CalRecycle] 2014a; Solano County Department of Resource Management 2012). The landfill received an average of approximately 1,075 tons of waste per day in 2012 (CalRecycle 2014c). CalRecycle lists the remaining capacity as 13.8 million cy, with an estimated closure date of 2048.

The Keller Canyon Landfill, located east of the former NWS Concord in unincorporated Contra Costa County on Bailey Road near Pittsburg, is a Class II landfill. The landfill accepts municipal, industrial, C&D, and other waste types. It is permitted to accept up to 3,500 tons of waste per day, with a capacity of 75 million cy (CalRecycle 2014b; Contra Costa Environmental Health 2009). The landfill received an average of approximately 2,000 tons of waste per day in 2012 (CalRecycle 2014d). CalRecycle lists the remaining capacity as 63.4 million cubic yards, with an estimated closure date of 2030. The facility permit lists the closure date as 2050 (Contra Costa Environmental Health 2009). In 2008, Keller Canyon Landfill applied for an amendment to its facility land use permit that would increase the maximum allowed waste from 3,500 tons to 4,900 tons per day (Contra Costa County n.d. [b]). A notice of preparation of a subsequent EIR to amend the land use permit was circulated on August 6, 2009.

CCCSO also operates the Household Hazardous Waste Collection Facility located near the City of Martinez, which serves the City of Concord. The diversion of household hazardous waste from landfills, along with several other recycling programs, has been successful in reducing overall waste being transported to landfills.

To comply with the California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939), the City of Concord is required to recycle at least 50 percent of the solid waste generated by the community and residences. CDS provides recycling and greenwaste services to the City of Concord. The City of Concord met the 50-percent recycling goal in 2000; however, in 2006, the diversion rate fell to 49 percent (CIWMB 2009). Contra Costa County has a robust C&D recycling industry and maintains lists of certified C&D processing facilities (Central Contra Costa Solid Waste Authority 2014).

Electric and Natural Gas Supply

PG&E provides electricity to the City of Concord through a 115-kv transmission power line that parallels SR 4 in Pittsburg, turns south at the intersection of SR 4 and Kirker Pass Road, and continues along Kirker Pass Road toward the southwest. Several distribution lines provide utility feeds throughout the City of Concord, the City of Clayton, and the area north of Willow Pass Road. Power is fed to the 115-kv line through high voltage transmission lines outside of the City of Concord that receive power from several power plants within PG&E's service area as well as from energy purchased outside the service area.

PG&E also provides natural gas to the City of Concord via a 20-inch high pressure gas pipeline that passes through the utility corridor next to Kirker Pass Road. A PG&E gas meter station is located at the intersection of Port Chicago Highway and SR 4.

Telecommunications

AT&T is the major telecommunications provider in the city. Comcast and Astound Broadband also provide telecommunications as well as cable television services in the city.

3.12.5.2 Former NWS Concord

Solid Waste and Recycling Management

Because the former NWS Concord is considered a major federal facility and treated as an incorporated municipality, it is not required to use the sole service solid waste provider that collects waste within the

City of Concord (Matter of Concord Disposal, Inc., 1992). However, CDS still provides solid waste disposal, recycling, and greenwaste services at the former NWS Concord site.

Electric and Natural Gas Supply

Currently, power is provided to the former NWS Concord by PG&E via a 4.16-kv electrical system that distributes power purchased from the Western Area Power Administration (WAPA 2008). A 21-kV power line operated by PG&E runs through the former NWS Concord site, adjacent to Kinne Boulevard and parallel to WAPA's facilities.

PG&E also supplies natural gas to the former NWS Concord. The natural gas distribution line ends just north of SR 4, near the site's front entrance gate.

Telecommunications

Telecommunication cable is present both in underground conduits and on overhead structures at the former NWS Concord. Comcast maintains an existing overhead line extending through the site, and a 2-inch conduit fiber-optic cable crosses the site in the area between Port Chicago Highway and Willow Pass Road. The former NWS Concord is within an area subject to an existing franchise agreement between Comcast and the City of Concord.

3.13 Visual Resources and Aesthetics

This section presents a discussion of the existing physical and regulatory setting for visual resources and aesthetics relating to natural and built features of the former NWS Concord landscape visible from public areas. The character of existing visual resources and aesthetics are evaluated using a modified Bureau of Land Management (BLM) visual resource management methodology, selected for this evaluation because of the open space characteristics of the former NWS Concord that are consistent with public lands typically evaluated with the BLM visual resource management methodology. The ROI is a noncontiguous area that includes former NWS Concord and adjacent areas from which the public can see the installation. This includes adjacent roadways such as SR 4, certain neighborhoods within the City of Concord (including the Sun Terrace and Dana Estates neighborhoods), and the City of Concord's downtown. Mount Diablo is a prominent landscape feature in the region, and views of it are included in the discussion below because the former NWS Concord provides an unobstructed foreground for views of Mount Diablo from the City of Concord.

The affected environment is defined by a landscape analysis, aesthetic objectives as guided by local plans, and a characteristic landscape description of KOPs. A description of key terms related to the affected environment is provided below; a full glossary of terms is provided in BLM manual 8400 – Visual Resource Management (BLM 1984).

Landscape Analysis

The landscape analysis provides an overall description of the unique combination of visual features (land, water, vegetation, and structures) within the ROI. The analysis is based on the following components: landscape type (panoramic, enclosed, feature, or canopied), overall landscape character elements (form, line, color, and texture), and landscape analysis factors (contrast, sequence, axis, convergence, co-dominance, framing, and scale).

Aesthetic Objectives

For the purposes of this analysis, aesthetic objectives are defined by local plans applicable to the proposed action and the ROI (see Section 3.13.2), as well as based on comments received during the public scoping period (refer to Section 1.9 for further information on public involvement under NEPA). No federal or state plans or policies are relevant to this analysis.

Key Observation Points

KOPs are locations where the impact of the proposed action would be most critical. Typically, critical viewpoints include commonly traveled routes and likely observation points (refer to Section 3.13.3 for further information on KOP selection).

Characteristic Landscape Description

The characteristic landscape description identifies the visual resources observed from KOPs that may be affected by the proposed action. Land and water features, vegetation, and structures are described for their form, line, color, and texture. Form is the mass or shape of an object such as landforms or structures. Line is the path that the eye follows when perceiving abrupt changes in form, color, or texture or when objects are aligned in a sequence. Texture is the noticeable contrast between form or color mixtures described by grain, density, and regularity.

Figure 3.13-1, Visual Setting, depicts KOPs, other viewpoints, adjacent transportation corridors, and parks and open space.

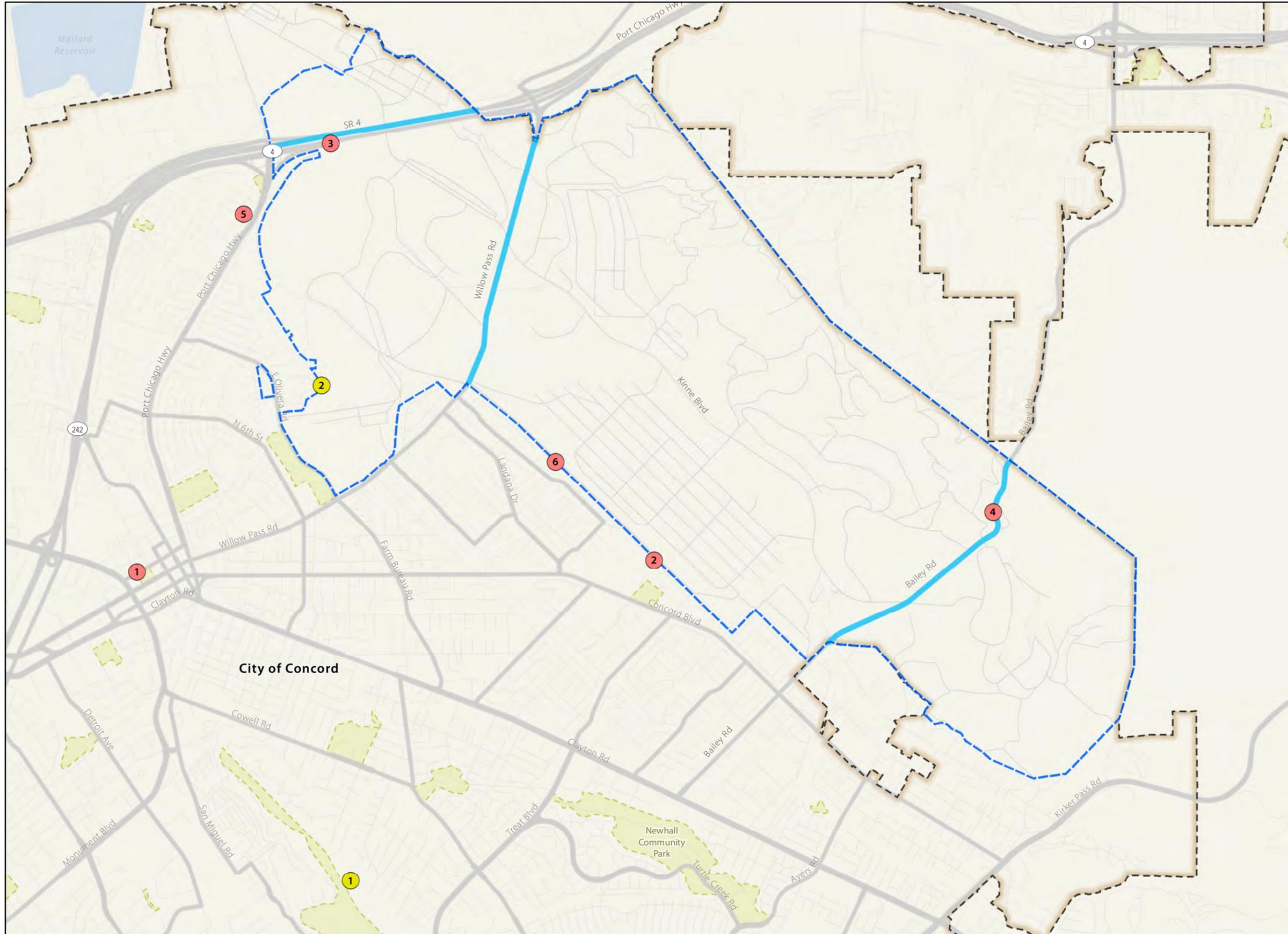
3.13.1 Landscape Analysis

Views within the ROI include panoramic, feature, and canopied, depending upon the viewer location.

Typical panoramic views in the ROI are from elevated residential and open space locations as well as along Willow Pass and Bailey Roads (see Figure 3.13-2). Panoramic views are broad horizontal landscapes where objects in the foreground and middle ground do not obstruct distant views. Rolling hills are the prominent forms within the ROI's panoramic landscapes, with strong curving lines broken by the straight horizon. Color and texture are primary distinguishing factors between urban (complex colors, varied textures, and linear features associated with urban structures and materials) and open space (more homogenous and lighter colors, and simpler textures associated with grassland landscapes). The contrast between urban and open space areas, the linear sequence of bunkers, and the scale relationship between structures and the open space around them are evident factors of the landscape within characteristic panoramic views of the former NWS Concord.

Feature views of Mount Diablo occur throughout the ROI from residential locations and along roadways such as SR 4 (see Figure 3.13-3). Feature landscapes are dominated by a feature element to which the viewer's eye is drawn. Mount Diablo is the predominant form within feature landscapes, with relatively flat landscape lines broken by the line of Mount Diablo against the horizon. In general, views contain fine texture and color that subtly shift from foreground to background; however, dark grey-green hues and medium texture, associated with urban development, may be prominent along the horizon of views of Mount Diablo from some locations. The contrast and scale relationship between Mount Diablo and the surrounding relatively flat and rolling landforms are noticeable in feature views that include the former NWS Concord.

Canopied landscapes within the ROI are typical from downtown Concord and residential locations that are not adjacent to the former NWS Concord (see Figure 3.13-4). Canopied landscapes are landscapes where features overhang to create a canopy or ceiling to the view. Trees, transportation infrastructure, and buildings are the predominant forms in canopied views of the installation site. Strong converging lines, complex colors from vibrant reds to grey concrete, and complex textures are also characteristic landscape elements of these views. The variety between forms, colors, and textures as well as the linear sequence of objects alongside roadways and convergence or roadway lines are noticeable analysis factors.

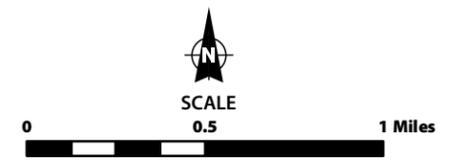


**Figure 3.13-1
Visual Setting**
Former NWS Concord
Concord, California

Legend

- Major Highway
- Local Road
- Former NWS Concord
- City Limits
- Waterbody
- Local Park
- Key Observation Point
- Viewpoint
- Transportation Corridor

	Label	Name
Key Observation Point	1	KOP 1: Salvio Street and Mt. Diablo St
	2	KOP 2: Concord High School
	3	KOP 3: State Route 4
	4	KOP 4: Bailey Rd
	5	KOP 5: Panoramic Dr
	6	KOP 6: Beechwood Dr
Viewpoint	1	Viewpoint 1: Lime Ridge Open Space
	2	Viewpoint 2: Haleakala St



SOURCE: ESRI, 2010; Contra Costa County, 2012; City of Pittsburg, 2008; City of Concord, 2012.

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View toward Mt. Diablo from Bailey Road in Los Medanos Hills. Land in the middle ground is the former NWS Concord.



View westward from Bailey Road in Los Medanos Hills across the former NWS Concord.

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View of Los Medanos Hills at former NWS Concord. Photo taken from Lime Ridge Open Space. (Viewpoint 1 on Figure 3.13-1)



View of former NWS Concord taken from Concord High School

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View toward Mt. Diablo across former NWS Concord lands in the foreground. Photo taken from SR-4 near Port Chicago Highway.

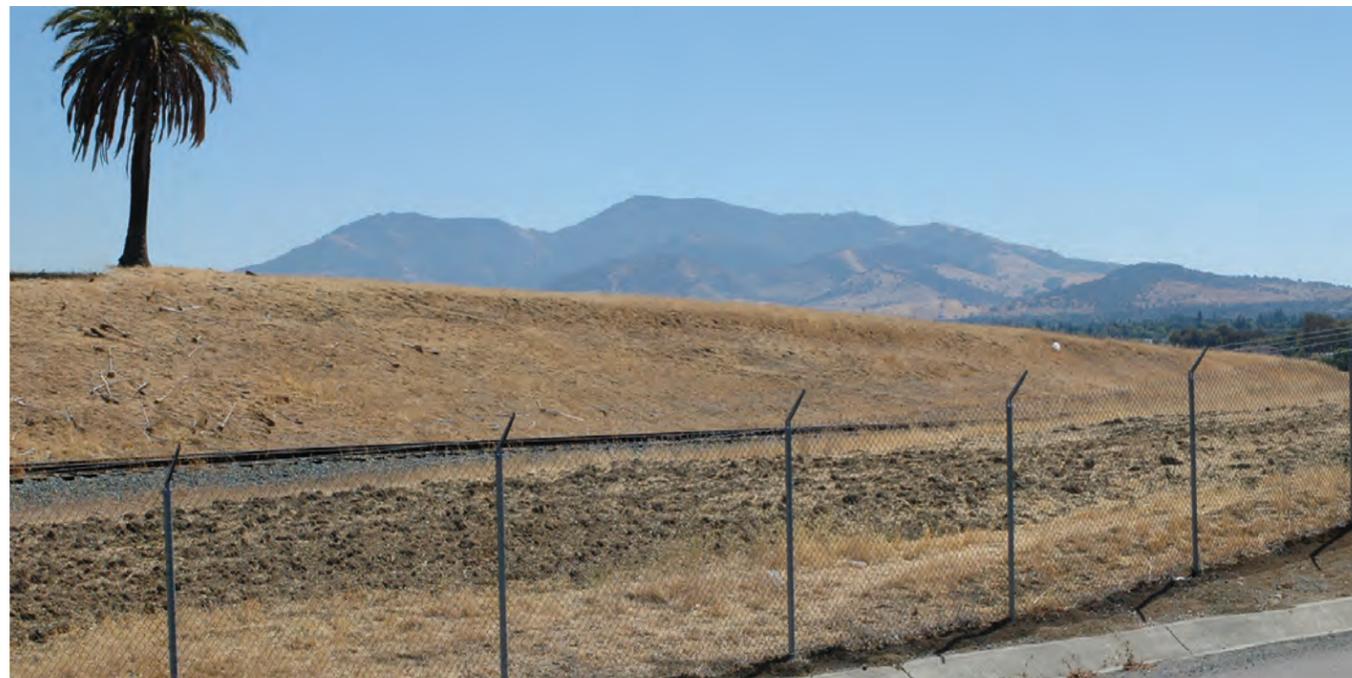


View toward Mt. Diablo from SR-4 near Willow Pass Road. Former NWS Concord is in the middle ground.

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View toward Mt. Diablo from small park near Haleakala Street, in Victory Village (Coast Guard housing). Former NWS Concord is the property in the middle ground beyond the cyclone fence. (Viewpoint 2 on Figure 3.13-1)



View toward Mt. Diablo from North Concord BART station. Former NWS Concord is the property in the foreground beyond the cyclone fence.

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3.13.2 Local Plans and Policies

Two City of Concord plans guide the aesthetic objectives for the proposed action and the ROI as well as the requirements for the visual impact analysis (Section 4.13). These plans and associated policies are identified below.

- **City of Concord, 2030 General Plan (Concord General Plan).** The City of Concord General Plan does not have a section dedicated to visual resources policies; however, policies related to aesthetic and scenic quality are included within these goals:
 - LU-1, Livable and Enjoyable Residential Neighborhoods;
 - LU-9, Well-Designed Development;
 - LU-10, High-Quality Urban Design in Public Spaces and Infrastructure;
 - LU-11, Open Space Protection;
 - POS-2, Protection and Accessible Open Space System; and
 - POS-3, Well-Planned Natural Resource Conservation.

Relevant principles and policies related to the land uses and design features of reuse of the former NWS Concord are provided in Table 3.13.1.

- **Concord Reuse Project Area Plan.** The City of Concord 2030 General Plan includes the Concord Reuse Project Area Plan, which provides further guidance on the use of the site beyond the principles and policies stated in the 2030 General Plan. This includes specific policies and standards for its development and conservation that are related to visual resources, as listed in Table 3.13.2.
- **City of Concord, Development Code.** The City of Concord Development Code provides criteria and standards to implement policies contained in the Concord General Plan. Hillside Protection (Chapter 122, Article VI, Division 1) regulations address the protection of views in hillside areas.

Table 3.13.1 City of Concord General Plan Principles and Policies Related to Visual Resources

Principle	Description
Principle LU-8.1	Achieve a complete and diverse community that provides well connected neighborhoods and districts with high-quality urban design and convenient access to open space, daily necessities, and regional transit.
Policy LU-8.1.3	On the portions of the CRP site that adjoin existing Concord neighborhoods, design open spaces and new buildings to be compatible in scale with adjacent established uses.
Policy LU-8.1.6	Design built features and the circulation system to respond to the CRP site’s natural form. Where slopes of 30% or greater occur within planned development areas on the CRP site, they should generally be set aside as open space.
Policy LU-8.1.8	Maximize views from public rights of way and public spaces on the CRP site to natural features, including but not limited to Mount Diablo, the California Delta, and the Los Medanos Hills, provided the resulting design is consistent with the climate action program.
Policy LU-8.1.9	Provide street and open space connections between the CRP site and established Concord neighborhoods at appropriate locations to improve accessibility and create a more cohesive and connected city.

Table 3.13.1 City of Concord General Plan Principles and Policies Related to Visual Resources

Principle	Description
Principle LU-8.2	Provide for a balance between development and open space on the CRP site.
Policy LU-8.2.1	Designate the most environmentally sensitive portions of the CRP site, including the Los Medanos Hills and the Mt Diablo Creek corridor, as permanent open space.
Policy LU-8.2.2	Incorporate a network of greenways within the CRP site that help define neighborhood edges, connect residents to services and workplaces, and provide access to recreational features and open space.
Principle LU-10.1	Create Attractive, Inviting Public Spaces and Streets that Enhance the Image and Character of the City.
Policy LU-10.1.7	Implement urban design measures which visually and functionally integrate the Concord Reuse Project site into the existing City and reduce perceptions that the site is a separate community.
Principle POS-2.2	Preserve Natural Resources within Designated Open Space
Policy POS-2.2.3	Strive to preserve open space in northeast Concord in order to maintain the visual profile of the Los Medanos Hills. <i>The City will coordinate with the East Bay Regional Park District in the dedication of a new regional park on the Concord Reuse Project site. The park will encompass the most environmentally sensitive portions of the site, including the Los Medanos Hills.</i>

Source: City of Concord 2010

Key:

CRP = Concord Reuse Plan

Table 3.13.2 Concord Reuse Project Area Plan Principles and Policies Related to Visual Resources

Principle	Description
Policy C-1.1	Resource Conservation - Encourage new development to preserve natural elements that contribute to the community's ecological value and aesthetic character.
Principle C-2	Protect ridgelines and visible hillsides in the CRP area.
Policy C-2.1	Hillside and Ridgeline Protection - Require new development to use natural landform as a key determinant of land use and urban design. This shall include preservation of hillsides and ridgelines, and conservation as permanent open space of the Los Medanos Hills and area south of Bailey Road.
Policy C-2.2	Slopes Over 30 Percent - Limit development on slopes that are 30 percent or greater. Where such slopes occur within the areas shown for urban uses on the Area Plan Diagram, they should generally be set aside as public or private open space in order to minimize the need for grading and earth movement. In the areas closest to the North Concord / Martinez BART Station, some development on steeper slopes may be acceptable in order to maximize transit-oriented development opportunities.
Policy C-2.4	Open Space and Community Character - Use open space to delineate the edge of the urbanized area, to frame new and established neighborhoods, to retain the visual profile of the site from other parts of Concord, and to maintain a distinct boundary between the Diablo Valley and the communities to the east.

Table 3.13.2 Concord Reuse Project Area Plan Principles and Policies Related to Visual Resources

Principle	Description
Principle C-6	Expand Concord's tree canopy through tree planting and preservation in the CRP area.
Policy C-6.1	Minimizing Tree Loss - Require that future development in the Plan Area be sited in a way that avoids the loss of oak woodlands and large specimen oak trees.
Policy SHN-2.1	Mt. Diablo Creek Buffer and Channel Improvements - Consistent with site-wide permits obtained from resource agencies having jurisdiction over streams on the site, maintain a buffer along Mt. Diablo Creek.
Policy U-8.2	Siting of Telecommunication Facilities - Ensure that any telecommunication facilities developed on the site are consistent with the overall standards and policies of the Area Plan, including the preservation of scenic views and vistas; conservation of sensitive habitat areas and natural topography; and protection of public health and safety.

Source: City of Concord January 2012c

3.13.3 Scenic Quality Field Survey

The existing visual appearance of the former NWS Concord was assessed from KOPs (see Figure 3.13-1). KOPs were selected based on locations identified by the City of Concord as sensitive to views of the former NWS Concord and representative of the different types of landscape views in the city. Selection criteria included or considered identification of important features on the former NWS Concord, changes to the installation site as a result of the proposed action, and important views to the community. These views are identified as views across the site toward Mount Diablo and the Los Medanos Hills as well as views from neighborhoods adjacent to the former NWS Concord, major roadways adjacent to and traversing the installation site, and locations where people congregate (e.g., downtown Concord). Table 3.13-3 lists KOPs and the rationale for their selection. KOP photographs presented in this section were taken in September and October 2013.

Table 3.13-3 KOP Selection

KOP	Location Description	Selection Rationale for Views Important to the Community
1	Salvio Street and Mt. Diablo Street	Contains views of Los Medanos Hills from downtown Concord
2	Concord High School	View includes features on the former NWS Concord and contains views of Los Medanos Hills from a location where people congregate (high school football field bleachers)
3	State Route 4	View includes features on the former NWS Concord and contains views of Mount Diablo from a major roadway (SR 4) adjacent to the former NWS Concord.
4	Bailey Road	View includes features on the former NWS Concord and contains views from a major roadway (Bailey Road) that traverses the former NWS Concord
5	Panoramic Drive	Contains views of Los Medanos Hills from Sun Terrace neighborhood adjacent to the former NWS Concord
6	Beechwood Drive	Contains views of Los Medanos Hills from Dana Estates neighborhood adjacent to the former NWS Concord

BLM Manual Handbook 8431-1, Form 8400-4, was used to assess the existing scenic quality of the former NWS Concord (BLM 1986). The characteristic landscape description and human and environmental factors are identified for each KOP. Human and environmental factors affect the viewer's perception of the landscape and can enhance or distract attention from the former NWS Concord.

3.13.3.1 KOP 1 – Salvio Street and Mt. Diablo Street

The view from KOP 1 is an enclosed canopied landscape that is representational of views of the former NWS Concord from downtown Concord (Figure 3.13-4). The fore- and middle-ground are dominated by single and multi-story buildings and landscaped trees and shrubs that transition to rolling terrain in the distance. Complex lines and textures created by the structures and vegetation along the periphery of the view create an axis in the middle of the view down Salvio Street to the former NWS Concord. Prominent colors from vegetation and structures in the foreground are complex.

Figure 3.13-4 KOP 1 – Salvio Street and Mt. Diablo Street



Location: Downtown Concord at Salvio Street and Mt. Diablo Street

Date: September 7, 2013

Distance from the former NWS Concord: 1 mile to the former NWS Concord boundary, and 3 miles to the background distance zone

Human and environmental factors greatly affect the visibility of the former NWS Concord from this location. The distance to the viewer, small length of time the installation site is in view (glimpses between city blocks), lack of nighttime lighting at the former NWS Concord, and movement of cars in the foreground distract the viewer's attention from the former NWS Concord. Conversely, the convergence of lines down Salvio Street makes the former NWS Concord more prominent in the view. Conditions under which the KOP photograph was taken include full foliage cover from trees; the installation site would be

more visible from this location during winter months, when the trees are bare. Viewer sensitivity in this area is moderately high due to the location in downtown Concord.

3.13.3.2 KOP 2 – Concord High School

The view from KOP 2 is an open panorama landscape that is representative of unobstructed views of the former NWS Concord from areas adjacent to the installation boundary (Figures 3.13-5 and 3.13-2). The fore- and middle-ground include buildings and explosive ordnance magazines that transition to rolling hills in the middle ground and distant views. The magazines create ordered lines of structures and complex mounded forms in the foreground. Also in the foreground, buildings are geometric and create horizontal lines across the view. Texture of landforms is simple to moderate with rolling hills, regular mounds, and smooth plains. The form, line, texture, and color of the hills tend to be similar throughout, with a line of trees that covers less than 5 percent of the view and contrasts with the matrix.

Figure 3.13-5 KOP 2 – Concord High School



Location: Concord High School from football bleachers

Date: September 8, 2013

Distance from the former NWS Concord: 100 feet to foreground and middle-distance zone

Human and environmental factors increase the visibility of the former NWS Concord from this location. The location of the installation site in the foreground, angle of view below eye-level, and prolonged length of view over a school day make installation features more prominent in the view. The explosive ordnance magazines are camouflaged by color and grassy texture; however, once observed, they may become more prominent because of the regular spatial relationship between magazines. Views from KOP 2 would primarily occur between fall and spring and would drop substantially during summer months.

3.13.3.3 KOP 3 – State Route 4

The view from KOP 3 is feature landscape, centered on Mount Diablo, that is representative of views of the former NWS Concord looking southwest from areas located on the northern and western peripheries of the installation (Figure 3.13-6). The fore- and middle-ground include explosive ordnance magazines that transition to rolling hills in distant views. At this angle, the form of the magazines blends into the surrounding hills and does not divert the viewer's eye from the distant feature of Mount Diablo. Transmission structures in the foreground introduce contrasting linear features that would likely seem to appear and retreat at intervals as viewers traverse SR 4 by car. Form, line, texture, and color of landforms and landscapes in the foreground and middle ground tend to be somewhat similar and only moderately complex, with rolling hills, regular mounds, and smooth plains; these views contrast with the distant view of Mount Diablo. Recently graded soil in the foreground appears coarse.

Figure 3.13-6 KOP 3 – State Route 4



Location: State Route 4 from eastern road shoulder

Date: August 15, 2013

Distance from the former NWS Concord: 5 feet to foreground and middle-distance zone

Human and environmental factors affect visibility of the former NWS Concord from this location. The feature of Mount Diablo commands the viewer's attention from KOP 3. The former NWS Concord appears at or above eye level, neither diminishing nor enhancing views from KOP 3. Viewers in this area would likely be traveling along SR 4, which has a posted speed limit of 65 miles per hour. Drivers would be focused on the roadway, and passengers traveling west would be oriented away from this vantage point, likely looking north. Passengers in eastbound cars have relatively unobstructed views of the former NWS Concord and have the highest sensitivity to environmental and anthropogenic changes in the landscape. Views from KOP 3 would occur year round, with the duration affected by localized traffic patterns on SR 4, which can become congested during the weekday morning and evening commutes.

3.13.3.4 KOP 4 – Bailey Road

The view from KOP 4 is a panorama landscape (Figure 3.13-7 and Figure 3.13-2). Views similar to KOP 4 would be relatively rare within the ROI but would also occur from elevated portions of SR 4 and Willow Pass Road. The foreground is characterized by grassy, rolling-hill slopes. Regularly spaced and linear explosive ordnance magazines create diagonal lines and regular texture in the middle distance. Distant views include a break in vegetation and structures that are defined by a change in color from the fore- and middle-grounds.

Figure 3.13-7 KOP 4 – Bailey Road



Location: Bailey Road

Date: September 7, 2013

Distance from the former NWS Concord: within the former NWS Concord

The prominence of the former NWS Concord from this KOP varies based on human and environmental factors. The location of the installation site extending from the foreground to distant views, angle of view below eye level, and contrast between the former NWS Concord and the City of Concord (change in color from near to distant views) as well as the contrast in texture and regular spatial relationship between the bunkers in the middle distance increase the prominence of the former NWS Concord features within this view. Conversely, the relatively short length of time the viewer is exposed to views, combined with the motion of other vehicles, distracts the viewer's attention from the installation site.

3.13.3.5 KOP 5 – Panoramic Drive

The view from KOP 5 is an open landscape that is representational of views of the former NWS Concord from the Sun Terrace neighborhood (Figure 3.13-8). The foreground is dominated by single and multi-story buildings and their landscaping (trees and shrubs), while middle and distant views include rolling terrain and foothills. Vertical lines and textures created by transmission structures, landscaping, and

vegetation along the periphery of the view create an axis in the middle of the view that opens onto the former NWS Concord. These vertical lines focus the view on a series of ornamental trees in the middle-ground. A large earthen berm on the periphery of the former NWS Concord obstructs views of the ordnance magazines, resulting in a more natural landscape. Prominent colors in the foreground contrast with colors in the middle and distant views.

Figure 3.13-8 KOP 5 – Panoramic Drive



Location: Panoramic and St. George Drives

Date: August 15, 2013

Distance from the former NWS Concord: 0.5 mile to middle-distance zone

The prominence of the former NWS Concord from this KOP varies based on human and environmental factors. The location of the installation site extending from the middle view to the background, angle of view below eye level, and stark contrast between developed landscapes in the foreground against the seemingly rural appearance of the former NWS Concord affect viewer perception. Viewer activity from this KOP is also highly variable, ranging from drivers along Panoramic Drive, who will experience relatively short duration views, to residents who likely experience long-duration views from their homes, including nighttime views. Views from KOP 5 would likely include motion in the foreground in the form of cars, bicycles, and pedestrians.

3.13.3.6 KOP 6 – Beechwood Drive

The view from KOP 6 is an open panorama landscape that is representative of views of the former NWS Concord from the Dana Estates neighborhood (Figure 3.13-9). The fore- and middle-ground include explosive ordnance magazines that transition to rolling hills in the middle-ground and distant views. The magazines create ordered lines of structures and mounded forms in the foreground. Trees introduce vertical forms and distinct colors and textures into the view, causing the eye to pause and move across the

middle ground. The strong lines and distinct colors of the buildings on the hillside break the smooth texture of the grass, making these distant features more prominent. The texture and color of landforms is simple to moderate, with smooth rolling hills, coarse sporadic trees, and ordered structures.

Figure 3.13-9 KOP 6 – Beechwood Drive



Location: Periphery of the former NWS Concord from Beechwood Drive

Date: August 15, 2013

Distance from the former NWS Concord: 5 feet to foreground

Human and environmental factors increase the visibility of the former NWS Concord from this location. The location of the former NWS Concord in the foreground, angle of view at and above eye level, and prolonged duration of views experienced by local residents make installation features more prominent in this view. The explosive ordnance magazines are camouflaged by color and grassy texture; however, once observed, these features may become more prominent due to the regular spatial relationship between them. Residents of the Dana Estates neighborhood experience similar views year round and would be highly sensitive to changes in the environment.

3.14 Water Resources

Water resources discussed in this EIS are defined below and include surface water, groundwater, water quality, and floodplains. The region of influence for water resources is the Mt. Diablo/Seal Creek watershed.

3.14.1 Regulatory Framework

Federal and state regulations, policies, and plans are discussed below for surface water and water quality, groundwater, and floodplains.

3.14.1.1 Surface Water and Water Quality

The CWA (33 U.S.C. §1251) established the basic structure for regulating discharges of pollutants into waters of the U.S. The CWA contains the requirements to set water quality standards for all contaminants in surface waters. The EPA is the designated regulatory authority to implement pollution control programs and other requirements of the CWA. However, the EPA delegates regulatory authority for the CWA to the applicable state agency for the implementation of pollution control programs as well as other CWA requirements. The Rivers and Harbors Act regulates development and use of the nation's navigable waterways: 33 U.S.C. 401 §10 of the act prohibits unauthorized obstruction or alteration of navigable waters and vests the USACE with authority to regulate discharges of fill and other materials into such waters.

The CWA designates water quality standards and establishes permitting and certification processes. Water quality standards are the foundation of a water-quality-based pollution control program, which is implemented through the states for waterbodies within their jurisdiction. These standards define the goals for a waterbody by designating its uses and setting criteria to protect these uses.

Water quality standards consist of three primary elements:

1. Designated best uses (also referred to as beneficial uses)
2. Narrative statements and numeric criteria (i.e., for specific physical, chemical, and biological characteristics) to protect the uses
3. An anti-degradation policy to protect higher-quality waters from being further degraded.

Clean Water Act Sections 305(b) and 303(d)

The CWA requires that each state conduct water quality assessments to determine whether its streams, lakes, and estuaries are sufficiently “healthy” to meet their designated best uses. This information is updated and reported to the EPA every two years. This process is mandated by Section 305(b) of the CWA, and the state prepares 305(b) reports. The 305(b) report is the primary source of information for the development of the “Impaired Waters” list for the states, known as the 303(d) list. Impaired waters are waterbodies that do not meet the water quality standards for their designated uses.

The water quality standards are based on the designated uses. If a waterbody contains levels of pollutants that are greater than the water quality standards, it will not support one or more of its designated/beneficial uses, and its water quality will be considered to be “impaired.” Thus, when a waterbody is included on the 303(d) list, the designated/beneficial use that is impaired or the specific water quality standards for that use that have not been achieved are identified. For those waterbodies that are designated as impaired, Section 303(d) of the CWA requires that the state prepare a Total Maximum Daily Load (TMDL). A TMDL identifies sources of pollution and the reductions needed from those identified pollutant sources in order to meet water quality standards.

Clean Water Act Sections 404 and 401

The CWA of 1977 regulates restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. The CWA authorizes the USACE to regulate the discharge of dredged or fill material into the waters of the U.S. and adjacent wetlands. Waters of the U.S. include surface water features within areas that are traditional navigable waters, interstate waters, all other waters that could affect interstate or foreign commerce, impoundments of waters of the U.S., tributaries, the territorial seas, and adjacent wetlands (33 CFR 328.3 and 40 CFR 122.2). There is currently a proposed rule by the USACE and EPA that would revise the definition of waters of the U.S. to provide better clarity and consistency in reviewing projects under the jurisdiction of the CWA (79 FR 76).

Sections 404 and 401 of the CWA regulate the discharge of fill material into waters of the U.S. to minimize the impacts of proposed projects on the physical, chemical, and biological integrity of the nation's waters. Additional discussion regarding the USACE's regulation of Section 404 of the CWA is provided in Section 3.14.1.2 (Wetlands). The RWQCBs regulate discharges to waters within their respective jurisdictions through, among other means, administration of CWA Section 401 water quality certifications. For the San Francisco Bay area, the RWQCB administers CWA Section 401 water quality certifications to ensure that projects with federal CWA Section 404 permits do not violate state water quality standards. The California SWRCB has jurisdiction over depositing fill or dredging in "State Only Waters" and issues waste discharge requirements for these projects. Construction projects may require RWQCB approval of a CWA Section 401 water quality certification.

State Water Resources Control Board and San Francisco Bay Regional Water Quality Control Board

In California, the SWRCB administers water rights, pollution control, and water quality functions for the state as part of the CalEPA. Therefore, the SWRCB is responsible for assessing water quality and determining whether waters meet the water quality standards. The SWRCB prepares a water quality assessment report that is submitted to the EPA for review every two years. This report satisfies the requirements of CWA sections 305(b) and 303(d). The *2010 Integrated Report [Clean Water Act 303(d) List/305(b)] Report* was approved by the EPA on October 11, 2011. This report summarizes the water quality conditions in California from 2008 through 2009 and includes a comprehensive list of impaired waters. Because of the number of data sets submitted throughout the state, the 2012 California Integrated Report has not yet been compiled. The SWRCB is preparing an assessment of recent data in order to create an updated report, and SWRCB staff anticipates that the report will be completed and available for regional board public review by the end of 2013 or early 2014 (SWRCB 2010).

The SWRCB and nine RWQCBs are responsible for protecting water quality. The SWRCB and the nine RWQCBs were given authority over state water rights and water quality policy under the Porter-Cologne Water Quality Control Act. The SWRCB establishes state-wide policies and regulations for the implementation of water quality control programs mandated by both federal and state water quality statutes and regulations. Through water-quality control plans (basin plans), the RWQCBs designate beneficial uses and establish water quality objectives for waters of the state. As set forth in the California Water Code Sections 13240-13248, each specific basin plan designates or establishes 1) beneficial uses to be protected, 2) water quality objectives, and 3) a program of implementation to achieve the stated water-quality objectives. The former NWS Concord is located within the region covered by the *San Francisco Bay Basin Water Quality Control Plan* (San Francisco Bay RWQCB 2013).

The California Code of Regulations, Title 23 Waters, Section 659 Beneficial Use of Water, sets forth the following beneficial uses:

- Domestic
- Irrigation
- Power
- Municipal
- Mining
- Industrial
- Fish and Wildlife Preservation and Enhancement
- Aquaculture

- Recreational
- Stock-watering
- Water Quality
- Frost Protection
- Heat Control

The San Francisco Bay Region RWQCB establishes beneficial uses for the region in which the former NWS Concord is located. These beneficial uses are discussed in detail in Section 3.14.4.1 below.

In addition to establishing the beneficial uses to be protected, the San Francisco Bay RWQCB has established water quality objectives to define appropriate levels of environmental quality and to control activities that can adversely affect aquatic systems (San Francisco Bay RWQCB 2013). These water quality objectives include narrative and numerical objectives for both surface water and groundwater.

Clean Water Act Section 402

The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the NPDES permit process (CWA Section 402). The NPDES program requires all industrial facilities and municipalities of a certain size that discharge pollutants into waters of the U.S. to obtain a permit. Stormwater discharges into the San Francisco Bay region are commonly controlled through general and individual NPDES permits, which are administered by the San Francisco Bay RWQCB.

California Fish and Game Code, Sections 1600–1603

This statute regulates activities that would “substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of a natural watercourse” that supports fish or wildlife resources. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes only watercourses that have a surface or subsurface flow that supports or has supported riparian vegetation. The CDFG has interpreted the term "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation (BLM 2012). A Lake and Streambed Alteration Agreement must be obtained from the CDFW for any proposed project that would result in an adverse impact on a river, stream, or lake. If fish or wildlife would be adversely affected in any substantial way, an agreement to implement mitigation measures identified by the CDFW would be required.

3.14.1.2 Wetlands

Clean Water Act Sections 404 and 401

As described in Section 3.14.1.1, the CWA of 1977 regulates restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters, including wetland resources.. The delineation of these wetland resources is fundamental to USACE and EPA regulatory responsibilities under Section 404 of the CWA. Wetland delineation consists of standardized procedures that are used to determine whether a wetland is present on a site and, if so, to establish its boundaries in the field. In combination with current regulations and policies, delineation methods help define the area of federal responsibility under the CWA, within which the agencies attempt to minimize the impacts of proposed projects to the physical, chemical, and biological integrity of the nation’s waters. In determining jurisdiction under the CWA, the USACE is governed by federal regulations (33 CFR 320–330) that define wetlands. The USACE released the *Regional Supplement to the USACE Wetlands Delineation*

Manual for the Arid West Region (Version 2.0) in September 2008, which is the current accepted standard for this region. However, as the delineation was conducted in 2007, the December 2006 USACE Interim Regional Supplement was the approved delineation manual at the time.

The USACE evaluates permit applications for essentially all construction activities that occur in the nation's waters, including wetlands. USACE permits are also required for any work in the nation's navigable waters. The USACE either performs or receives jurisdictional delineations of waters of the U.S. that are within the potential area of impacts for proposed developments and provides a jurisdictional determination of effects. The jurisdictional review performed by the USACE may require modifications of development plans and specifications in order to preclude impacts on waters of the U.S.

The RWQCB regulates Section 401 of the CWA, and this is discussed further in Section 3.14.1.1 (Water Resources).

3.14.1.3 Groundwater

Congress originally passed the Safe Drinking Water Act in 1974 (42 U.S.C. §Section 300 *et seq.*) to protect public health by regulating the nation's public drinking water supply. The law, as amended in 1986 and 1996, includes numerous requirements to protect drinking water and its sources. A sole-source aquifer, as defined under Section 1424(e) of the Safe Drinking Water Act, is an aquifer that has been designated as the sole or principal drinking water source for the area and that, if contaminated, would create a significant hazard to public health. Under the Safe Drinking Water Act, each state is required to prepare its own wellhead protection program.

A wellhead protection area is defined as the surface and subsurface area surrounding a water well or wellfield that supplies a public water system through which contaminants are reasonably likely to move toward and reach the water well or wellfield. In California, the state's wellhead protection program falls under the Drinking Water Source Assessment and Protection (DWSAP) Program administered by the California Department of Public Health. The State of California's wellhead protection program was approved by the EPA in 1999 (University of California, Davis 2001).

As discussed above, the San Francisco Bay RWQCB regulates surface water and groundwater quality and protects groundwater through the identification of beneficial uses and water quality objectives for each groundwater basin and regulating activities that can impact the beneficial uses of groundwater. Specific beneficial uses for the groundwater in the vicinity of the former NWS Concord are discussed in Section 3.14.4.2.

3.14.1.4 Floodplains

Executive Order 11988 (Floodplain Management) and the regulations of the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA) (44 CFR, Part 60, Criteria for Land Management and Use) establish avoidance of development in floodplains as federal policy. FEMA defines the regulatory 100-year floodplain as the area that would be covered by a flood that has a 1 percent chance of occurring in any given year (often referred to as the "100-year flood event"). Development in the regulatory floodplain that would affect or re-direct flood flows is discouraged because floodplains provide a natural means of detaining floodwaters and thus protecting downstream properties from damage.

Under the authority of Executive Order 11988, Floodplain Management, federal agencies are required to avoid, to the extent possible, the long- and short-term impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development where there is a practicable alternative. Federal agencies are also required to reduce the risk of flood loss; minimize

the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values provided by the floodplain.

At the local level, the City of Concord's municipal code, Chapter 34 Flood Management, sets forth policies and requirements to protect the public and minimize public and private losses due to flood conditions associated with land in flood-prone areas.

3.14.2 Surface Water

Surface water includes streams, drainages, canals, and ponds. Approximately 21 acres (0.4 percent of the overall site) of these features are present within the former NWS Concord (see Figure 3.14-1).

The former NWS Concord is located within the Mt. Diablo Creek watershed, which covers approximately 23,800 acres (37 square miles) in the north-central part of Contra Costa County (Contra Costa Resource Conservation District 2006). This watershed is heavily urbanized throughout the developed areas of the City of Concord and Clayton (San Francisco Bay RWQCB 2007). However, the primary land use within the watershed is open space and/or agriculture (approximately 54 percent of the total watershed) (Contra Costa Resource Conservation District 2006). Primary creeks within the watershed include Mt. Diablo Creek, Mitchell Creek, and Donner Creek.

Mt. Diablo Creek is the primary surface water feature within the former installation. The headwaters of Mt. Diablo Creek consist of approximately 12 small, intermittent, and perennial streams originating on the north slope of Mount Diablo. The main stem of Mt. Diablo Creek flows approximately 17.2 miles from the headwaters through agricultural land in the upper watershed before flowing through the cities of Clayton and Concord as well as the former NWS Concord before emptying into the Suisun Bay (ESA PWA 2012; Contra Costa Resource Conservation District 2006). Approximately 4.8 miles of Mt. Diablo Creek flows through the former NWS Concord. Mt. Diablo Creek and its tributaries are seasonally intermittent or fed by springs and flow year round (Contra Costa Resource Conservation District 2006). The creek drains approximately 78 percent of the area of the former installation. The remaining 22 percent of the site drains toward the Holbrook Channel (ESA PWA 2012).

Mt. Diablo Creek enters the former installation at Bailey Road and flows northwest along Kinne Boulevard, under Willow Pass Road and SR 4, through the Diablo Creek Golf Course, and then discharges into the Suisun Bay (see Figure 3.14-1; ESA PWA 2011). The creek was historically re-routed and has been impacted by development and increased runoff in the watershed, resulting in significant erosion along its banks within the former installation boundaries, particularly between Bailey Road and Willow Pass Road (ESA PWA 2011). As part of a reach-specific study of the creek, very steep banks (15 to 20 feet high on both sides) were documented in the bunker area, upstream of Willow Pass Road. The creek is culverted under local road crossings in this area, and flooding has been observed behind the culverts during high flows (ESA PWA 2011). Mt. Diablo Creek is an ephemeral stream, with flows following rainfall events that dissipate quickly.

The largest tributary drainage that flows into Mt. Diablo Creek on the former NWS Concord site is Willow Pass Creek. Flows within this creek are characterized as flashy¹³ because peak flows correspond directly to high rainfall amounts, followed by a significant decrease in flow (H.T. Harvey and Associates 2012). Spring-fed perennial pools are present within this creek.

¹³ "Flashy" refers to intense streamflow and describes flows during storm events that rise very quickly and then drop very quickly.

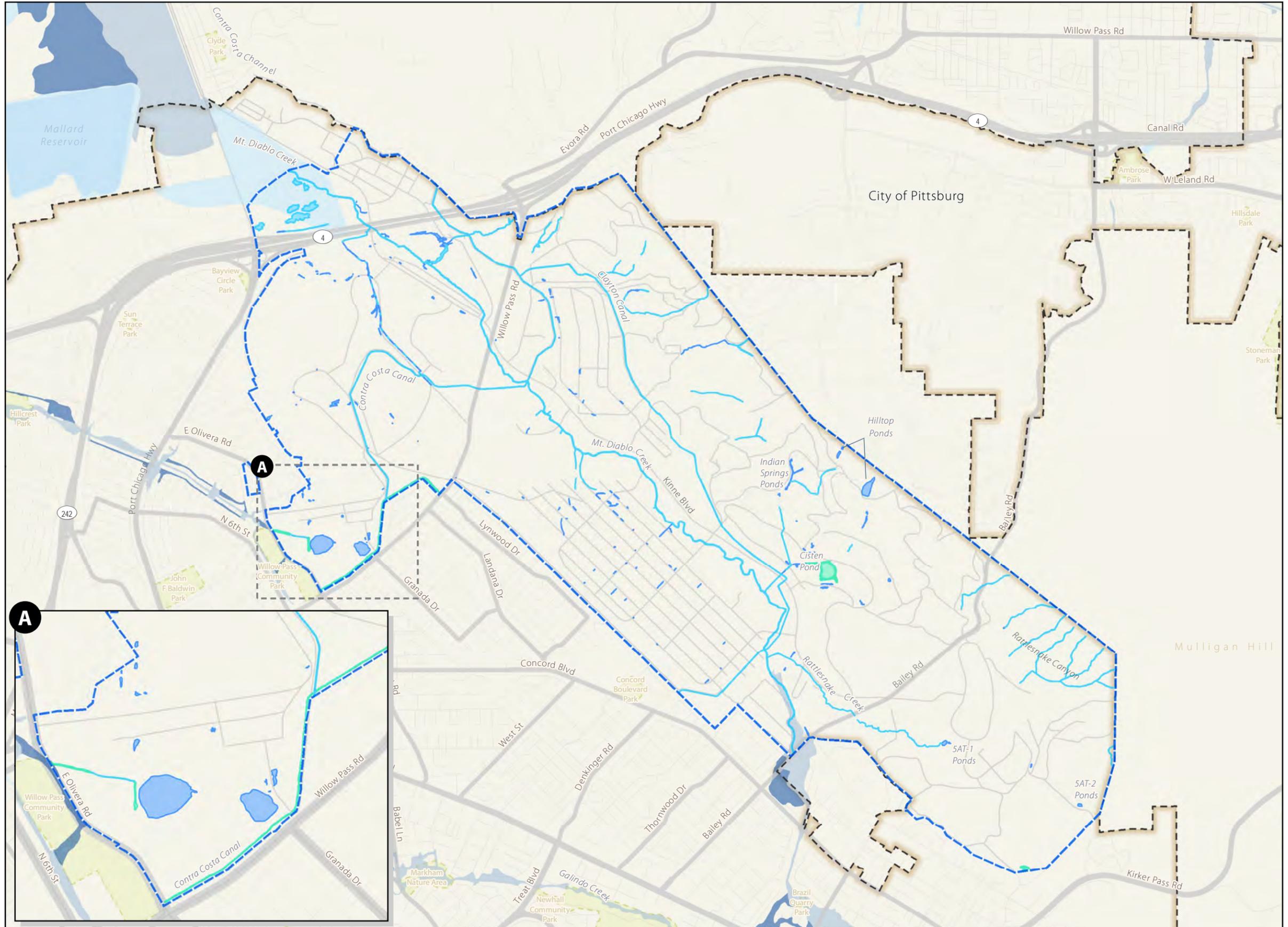


Figure 3.14-1
Surface Waters and Wetlands
 Former NWS Concord
 Concord, California

Legend

- Former NWS Concord
- City Limits

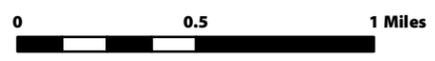
- Seasonal Wetlands
- Creeks / Drainages / Canals / Ponds
- Freshwater Marsh
- Flood Zone A
- Flood Zone AE
- Flood Zone AO

Zone A- 100-year floodplain in which no base flood elevations or depths exist.
 Zone AE- 100-year floodplain in which base flood elevation exists.
 Zone AO- Subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow).

Habitat Type	Existing Area Acreage
Creeks / Drainages / Canals / Ponds	20.63
Freshwater Marsh	5.77
Seasonal Wetlands	17.87
	44.26 total



SCALE



SOURCE: ESRI, 2010; H. T. Harvey & Associates, 2009.
 Federal Emergency Management Agency, 2013.

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As indicated above, approximately 22 percent of the site drains toward Holbrook Channel, a constructed tributary to Walnut Creek. The channel begins near the western edge of the former installation and flows along Willow Pass Road, then north through residential neighborhoods in the City of Concord until it joins Walnut Creek near Marsh Drive (ESA PWA 2011).

Multiple short, steep tributaries drain the Los Medanos Hills on the eastern portion of the site down to the Mt. Diablo Creek valley. These ephemeral tributaries dissipate on the valley floor and do not directly connect to Mt. Diablo Creek (ESA PWA 2011). The majority of these drainages are comprised of steep, non-vegetated, narrow, swale-like features that extend westward toward Mt. Diablo Creek. In locations where the slope of the hills steepens, the channels become incised. Occasional in-channel ponds are present, as discussed below.

3.14.2.1 Ponds

The former NWS Concord site includes approximately 20 small ephemeral stock ponds, watering holes, and seepage ponds, the majority of which are located in the Los Medanos Hills. Water levels in the ponds vary widely throughout the year, gradually drying out in the summer, and are highest in the winter due to the collection of runoff. Two of these ponds—Cistern Pond and Springs Pond—are perennial; however, Springs Pond was not found to contain water during field work conducted in March 2009 (H. T. Harvey and Associates 2012). In addition, the Diablo Creek Golf Course ponds are man-made and entirely supported by an artificial water supply.

3.14.2.2 Canals

In addition to the natural features discussed above, two canals cross the site, as indicated on Figure 3.14-1. Both canals are owned by the U.S. Bureau of Reclamation and are leased to the CCWD (City of Concord 2012). Refer to Section 3.2, Land Use, for a discussion of the history of the canals and a detailed description of each one.

3.14.3 Wetlands

Wetlands are defined as areas that are periodically or permanently inundated by surface or groundwater and support vegetation adapted to saturated soils. Wetlands are recognized as important natural systems because of their value to fish and wildlife, and their functions as storage areas for flood flows, groundwater recharge, nutrient recycling, and water quality improvement. Seasonal and perennial aquatic communities onsite consist of freshwater marsh (a total of approximately 6 acres) and seasonal wetlands, including seeps and springs (a total of approximately 18 acres). These features are located throughout the site and are formed when rainfall collects in topographic depressions that are underlain by clays and clay loams with high water-holding capacities (City of Concord 2012). The largest area of surface ponding occurs in the flat fields adjacent to a perennial spring near the old airfield. Vernal pools (i.e., pools that are underlain by soil having a restrictive subhorizon and supporting endemic plant species and/or invertebrate species) were determined to be entirely absent from the former NWS Concord (City of Concord 2012).

Jurisdictional Wetland and Non-Wetland Features

Federal Jurisdiction. Within the former NWS Concord, there are jurisdictional and non-jurisdictional waters. Jurisdictional waters refer to those waters defined as “waters of the U.S.,” which are subject to the jurisdiction of the USACE under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. As per the CWA, waters of the U.S. encompass all waters used or that could be potentially used for interstate commerce, including all waters which are subject to the ebb and flow of the tide; all interstate waters including wetlands; other waters such as mudflats, sandflats, wetlands, wet meadows, natural ponds for which the use, degradation, or destruction of could affect interstate or foreign commerce;

impoundments and tributaries of waters of the U.S.; territorial seas; and wetlands adjacent to waters of the U.S. as defined above (33 CFR 328.3). Under Section 10 of the Rivers and Harbors Act, waters of the U.S. are referred to as navigable waters, and are those waters that are subject to the ebb and flow of the tide shoreward of the mean high water mark, and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce (33 CFR 322.1).

Based on field surveys and an in-field review by the USACE, the USACE concluded in its written jurisdictional determination of the extent of navigable waters and waters of the U.S. at the former NWS Concord that the only aquatic/wetland features that the USACE considered non-jurisdictional are the Contra Costa Canal, the Clayton Canal, and the seven golf course ponds (Hicks 2011). Therefore, the total area of federally jurisdictional waters under the CWA Section 404 within the boundaries of the former NWS Concord is approximately 35.9 acres (see Table 3.14-1).

Table 3.14-1 Federal and State Jurisdictional Wetlands

Jurisdictional Agency	Area (acres)
USACE	35.9
RWQCB only	44.3
Total	44.3

State Jurisdiction. Waters are also regulated at the state level by the RWQCB. The RWQCB regulates discharges that may affect “waters of the State” as defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters within the boundaries of the state” (California Water Code, Division 7 Water Quality). Therefore, “waters of the state” include waters of the U.S. and surface waters that are not waters of the U.S.—for example, non-jurisdictional wetlands (SWRCB n.d.). The 35.9 acres of USACE jurisdictional waters/wetlands would also be subject to state jurisdiction, as would the 8.4 acres of water that do not have federal jurisdiction, which would be determined through review by the RWQCB.

3.14.4 Groundwater

Groundwater is water found in soil pore spaces and in the fractures of rock formations beneath the ground surface; it can be collected using wells, tunnels, or drainage galleries, or it may flow naturally to the ground surface via seeps or springs. An aquifer is an underground layer of water-bearing permeable rock or unconsolidated materials (e.g., gravel, sand, silt, or clay) that can yield a usable quantity of water. A groundwater basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers (San Francisco Bay RWQCB 2013).

Groundwater beneath the former NWS Concord is present in two groundwater basins: the Clayton Valley Groundwater Basin and an unnamed/unmapped groundwater basin. Mt. Diablo Creek separates these two groundwater basins underlying the installation, with the Clayton Valley Groundwater Basin on the western portion of the former NWS Concord site and an unnamed/unmapped groundwater basin on the eastern portion of the site (San Francisco Bay RWQCB 2013). The Clayton Valley Groundwater Basin is underlain by recent alluvial deposits and older alluvium valley fill deposits, together more than 700 feet thick (California Department of Water Resources 2003). Aquifers in this basin are hydrologically connected to the Suisun Bay. Limited data exist regarding the occurrence and movement of groundwater in the basin (California Department of Water Resources 2003).

Beneath the former NWS Concord, groundwater is typically found in the coarser sand and gravel units of the unconsolidated alluvial deposits. In the low-lying valley portions of the former installation, groundwater is found at depths of 30 to 50 feet under semi-confined to confined conditions (Navy April 2006). As part of groundwater sampling at IRP Site 13 (Burn Area) and Site 22, which are both within low-lying flat areas, groundwater was first encountered at depths of about 20 to 25 feet below ground

surface (bgs) under semi-confined to confined conditions. Given the higher topographic elevations found at the former installation, depth to groundwater can be 100 feet or more (Tetra Tech, Inc., 2003).

Groundwater at the former installation supplies wells used to water livestock onsite through grazing leases and to irrigate the Diablo Creek Golf Course. Additionally, two springs onsite are used as a water supply for wildlife and cattle. One spring at a former ranch house on the installation is no longer in use and is capped (Navy April 2006). A number of groundwater seeps are located within the western portion of the former installation, in the vicinity of the former air field. These seeps form a tributary channel to Holbrook Channel (ESA PWA 2012).

3.14.5 Water Quality

Water quality describes the chemical and physical composition of water as affected by natural conditions and human activities.

3.14.5.1 Surface Water Quality

As indicated above in Section 3.14.1, the San Francisco Bay RWQCB regulates surface water and groundwater quality in the region. The *San Francisco Bay Water Quality Control Plan* (Basin Plan) identifies eight existing beneficial uses for Mt. Diablo Creek; these are defined in Table 3.14-2 (San Francisco Bay RWQCB 2013).

Table 3.14-2 Existing Beneficial Uses for Mt. Diablo Creek

Beneficial Use	Description
Cold Freshwater Habitat	Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Fish Migration	Uses of water that support habitats necessary for migration, acclimatization between fresh water and salt water, and protection of aquatic organisms that are temporary inhabitants of waters within the region.
Preservation of Rare and Endangered Species	Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.
Fish Spawning	Uses of water that support high-quality aquatic habitats suitable for reproduction and early development of fish.
Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Wildlife Habitat	Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.
Water Contact Recreation	Uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and uses of natural hot springs.
Non-Contact Water Recreation	Uses of water for recreational activities involving proximity to water but not normally involving contact with water, where water ingestion is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidal pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Source: San Francisco Bay RWQCB 2013

According to the 2010 Integrated Report [Clean Water Act 303(d) List/305(b)] Report, Mt. Diablo Creek is listed as impaired for the beneficial use of COLD due to the pollutant diazinon. The source of pollution has been identified as urban runoff/storm sewers (SWRCB 2010). This impairment is being addressed by an EPA-approved TMDL. Mt. Diablo Creek is also listed as impaired for the same beneficial use due to toxicity from an unknown source. A TMDL is expected for toxicity in 2021 (SWRCB 2010).

As part of the SWRCB Surface Water Ambient Monitoring Program, water quality monitoring was conducted in the Mt. Diablo Creek watershed in 2003. Monitoring efforts included three stations along the main stem of Mt. Diablo Creek in proximity to former NWS Concord: the Port Chicago Highway site northwest of the former NWS Concord (near the mouth of Mt. Diablo Creek), the Diablo Creek Golf Course adjacent to NWS Concord, and along Bailey Road at Laura Drive, adjacent to the southern portion of the former installation (San Francisco Bay RWQCB 2007). Monitoring included the following parameters: benthic macroinvertebrates and physical habitat, temperature, dissolved oxygen (DO), pH, and water chemistry and toxicity. Overall, the monitoring results indicated that benthic macroinvertebrate assemblages in the watershed, including those of the three stations highlighted for their proximity to the former NWS Concord, reflected poor conditions; temperature guidelines were exceeded in the summer; DO levels were exceeded in all seasons; and the samples from the mouth of Mt. Diablo Creek evidenced toxicity due to exceedances of quality benchmarks (San Francisco Bay RWQCB 2007).

A more recent assessment of water quality in the Mt. Diablo Creek watershed was provided in the *Mount Diablo Creek Watershed Assessment* (Contra Costa Resource Conservation District 2006). Pathogens, namely *E. coli*, are present in almost all creeks within the watershed, including Mt. Diablo Creek. Chemical contamination was also documented in the watershed assessment; this contamination stems from sites within the former installation boundaries where petroleum, paints, pesticides, metals, PCBs, VOCs, dioxin, petroleum hydrocarbons, and other chemicals have been detected (Contra Costa Resource Conservation District 2006).

3.14.5.2 Groundwater Quality

The California Department of Water Resources evaluated the characteristics of groundwater basins in the region and throughout the state in California's Groundwater, Bulletin 118, which was produced in 2003. Existing and potential beneficial uses applicable to the Clayton Valley Groundwater Basin are provided in Table 3.14-3.

Table 3.14-3 Existing and Potential Beneficial Uses for the Clayton Valley Groundwater Basin

Beneficial Use	Description
Existing Beneficial Use	
Municipal and Domestic Supply	Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply.
Proposed Beneficial Uses	
Industrial Process Supply	Uses of water for industrial activities that depend primarily on water quality.
Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel-washing, fire protection, and oil well repressurization.
Agricultural Supply	Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation, stock-watering, or support of vegetation for range grazing.

Source: San Francisco Bay RWQCB 2013

At the former NWS Concord, groundwater quality has been characterized as fair, with high concentrations of total dissolved solids, hardness, and chlorides (Navy April 2006).

Groundwater sampling was conducted at IRP sites 13 and 22 in 2003. A total of five monitoring wells were sampled, four at IRP Site 13 and one at IRP Site 22. Monitoring was conducted for parameters including temperature, pH, turbidity, specific conductance, and DO and focused on detection of perchlorate¹⁴. Perchlorate was indicated in three of the four wells sampled at Site 13; two of these three wells exceeded the adopted screening levels (Tetra Tech, Inc., 2003), as discussed in Section 3.8, Hazards and Hazardous Substances. Perchlorate was also detected in the well at IRP Site 22; however, the concentration in this well was below the screening level. Due to the detected perchlorate presence, further sampling and remedial work is ongoing.

3.14.6 Floodplains

A floodplain is flat, or nearly flat, land adjacent to a stream or river that experiences occasional or periodic flooding. FEMA maps flood-prone areas as part of the National Flood Insurance Program; these flood hazard maps typically delineate the 100-year floodplain. The Flood Insurance Rate Maps (FIRMs) produced by FEMA typically do not include federal facilities such as the former NWS Concord. Based on a review of available FIRMs for the City of Concord dated June 16, 2009, only two small areas of the former NWS Concord, north of SR 4 and primarily east of the Port Chicago Highway and along the westernmost end of Bailey Road, have been mapped. Both areas are associated with the floodplain of Mt. Diablo Creek and include the Diablo Creek Golf Course and a small area along the installation boundary near Bailey Road (see Figure 3.14-1; FEMA 2009). The first mapped floodplain area is indicated as Zone A, which corresponds to areas subject to inundation by the 1-percent annual chance flood event that are not associated with base flood elevations or flood depths. The area of Zone A within the boundaries of former NWS Concord is approximately 67.6 acres. The second mapped floodplain area, near Bailey Road, is indicated as Zone AE, which corresponds to areas subject to inundation by the 1-percent annual chance flood event; the area within the former NWS Concord is approximately 12.6 acres.

FEMA is currently in the process of developing a detailed hydraulic model of Mt. Diablo Creek that is reflective of existing conditions. The model will then be used to delineate and map the 100-year floodplain within the former NWS Concord boundaries; this process is anticipated to take several years (ESA PWA 2011).

Historical records indicate that flooding occurs in the Mt. Diablo creek watershed on an annual basis. Areas affected by flooding include the entrance gate in the Administration Area, the area downstream of SR 4 near the Diablo Creek Golf Course, and Port Chicago Highway northwest of the former installation (Navy April 2006).

Although floodplains have not been mapped by FEMA on the former NWS Concord, FEMA and the CCCFC&WCD have both calculated peak discharges for Mt. Diablo Creek. Discharge is the rate of flow in a stream. Peak discharge is the flow that occurs when the maximum flood stage or depth is reached in a stream as a result of a storm event (USDA, Soil Conservation Service, 1989). Estimated peak discharges at two locations within the former NWS Concord boundaries are provided in Table 3.14-4.

¹⁴ Perchlorate (ClO₄) is a naturally occurring as well as man-made chemical that is used to produce rocket fuel, fireworks, flares, and explosives.

Table 3.14-4 Peak Discharge Estimates for Mt. Diablo Creek

Location along Mt. Diablo Creek	Drainage Area (square miles)	Peak Discharge (cfs) ¹					
		10-year Storm		50-year Storm		100-year Storm	
		FEMA	CCCFC&WCD	FEMA	CCCFC&WCD	FEMA	CCCFC&WCD
At Bailey Road	22.1	3,670	4,210	5,670	6,420	6,350	7,170
At SR 4	30.1	4,240	4,300	6,660	6,700	7,470	7,570

Source: ESA PWA 2011

Note:

¹ cfs = cubic feet per second