Concord Community Reuse Plan

Final
Environmental Impact Report

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Concord
Community Reuse Plan

Preface

This document is the Final Environmental Impact Report (EIR) for the Concord Community Reuse Project. The Final EIR is based on the August 2009 Draft Revised EIR. Where changes have been made to the information presented in the August 2009 Draft Revised EIR they have been shown in redline to show new information and strikeout to show deleted information. A bar next to the added or deleted information has also been added to assist the reader in tracking the changes to the previous document.



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Community Reuse Plan

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List of Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACHP	Advisory Council on Historic Preservation
ACM(s)	asbestos-containing material(s)
ACS	American Community Survey
ADWF	average dry weather flow
ALUC	Contra Costa County Airport Land Use Commission
AMR	American Medical Response
AOC(s)	area(s) of concern
ARAR(s)	Applicable or Relevant and Appropriate Requirement(s)
ARB	California Air Resources Board
Army	U.S. Army
ARPA	Archaeological Resources Protection Act
AST(s)	aboveground storage tank(s)
ATSDR	Agency for Toxic Substances and Disease Registry
AUM	animal unit months
AVO	average vehicle occupancy
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BART	Bay Area Rapid Transit District
BCDC	Bay Conservation and Development Commission
BMP(s)	best management practice(s)
BRAC	Base Realignment and Closure
C&D	construction and demolition
CAC	Community Advisory Committee
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
Cal-EPA	California Environmental Protection Agency
CALFED	CALFED Bay-Delta Program
Caltrans	California Department of Transportation

CAPCOA	California Air Pollution Control Officers Association
CCAR	California Climate Action Registry
CCC	Contra Costa County
CCCC	California Climate Change Center
CCCDCD	Contra Costa County Department of Conservation and Development (formerly CCCCDD, Community Development Department)
CCCDHS	Contra Costa County Department of Health Services
CCCFC&WCD	Contra Costa County Flood Control and Water Conservation District
CCCFPD	Contra Costa County Fire Protection District
CCCSD	Central Contra Costa Sanitary District
CCCTA	Central Contra Costa Transit Authority
CCHS	Contra Costa Health Services
CCR	California Code of Regulations
CCRCD	Contra Costa Resource Conservation District
CCTA	Contra Costa Transportation Authority
CCWD	Contra Costa Water District
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDS	Concord Disposal Service
Central San	Central Contra Costa Sanitary District
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH_4	methane
CHP	California Highway Patrol
CIWMB	California Integrated Waste Management Board
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNWS	Concord Naval Weapons Station

CO	carbon monoxide
CO_2	carbon dioxide
CO_2-e	carbon dioxide equivalent
Corps of Engineers	U.S. Army Corps of Engineers
CPR	California Office of Planning and Research
CRHR	California Register of Historic Resources
CSU	California State University
CUPA	Certified Unified Program Agency
CVP	Central Valley Project
CWA	Clean Water Act
cy	cubic yards
D	Caltrans' directional factors
dB	decibels
dBA	A-weighted decibels
DI	Delay Index
DO	dissolved oxygen
DoD	U.S. Department of Defense
DOF	California Department of Finance
DOT	Department of Transportation
DTSC	California Department of Toxic Substances Control
DU/Ac	dwelling unit per acre
DVC	Diablo Valley College
DWR	California Department of Water Resources
EB	East Bay
EB	eastbound
EBCNPS	East Bay Office of the California Native Plant Society
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
ECCC HCP/NCCP	East Contra Costa County Habitat Conservation Plan/ Natural Communities Conservation Plan
ECCFPD	East Contra Costa Fire Protection District
EC/IS	Environmental Checklist/Initial Study

ECOP	Environmental Condition of Property Report
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMS	Emergency Medical Service
EO	Executive Order
EOD	explosive ordinance disposal
ESA	federal Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FS	Feasibility Study
FTA	Federal Transit Administration
FTES	full time education students
FWSS	Future Water Supply Study
g/mile	grams per mile
GGNRA	Golden Gate National Recreation Area
GHG(s)	greenhouse gas(es)
GIS	geographic information system
GPA	General Plan Amendment
gpd	gallons per day
gsf	gross square feet
GWP	global warming potential
HASP	health and safety plan
HCM	Highway Capacity Manual
HCP	habitat conservation plan
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
HFC	hydrofluorocarbon
HOV	high occupancy vehicle
HUD	U.S. Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning

I-	Interstate Highway
ICRMP	Integrated Cultural Resources Management Plan (Navy)
IPCC	Intergovernmental Panel on Climate Change
IRM	Integrated Resource Management
IRP	Installation Restoration Program
IT/COMM	information technology/communications
JRP	JRP Historical Consulting Services
JSA	Jones Stokes and Associates
K	Caltrans' peak factors
KCL	Keller Canyon Landfill
kV	kilovolts
kW	kilowatt
LBP	lead-based paint
L_{dn}	day-night average sound level
L_{eq}	equivalent continuous sound level
LOS	level of service
LRA	Local Reuse Authority
LUC(s)	land use covenant(s)
M	Richter magnitude
MBTA	Migratory Bird Treaty Act
MC	munitions constituents
MDUSD	Mt. Diablo Unified School District
MEC	munitions and explosives of concern
mgd	million gallons per day
mg/L	milligram per liter
mm	millimeter(s)
MMRP	Military Munitions Response Program
MRP	Munitions Response Program
$MMTCO_2$-e	million metric tons carbon dioxide equivalent

MOU	Memorandum of Understanding
mph	miles per hour
MPP	multi-purpose pipeline
MTC	Metropolitan Transportation Commission
MUA	Fire Service Mutual Aid Agreement
Mw	moment magnitude
N_2O	nitrous oxide
na	not applicable
NAHC	Native American Heritage Commission
Navy	U.S. Navy
NB	northbound
NCCP	Natural Community Conservation Plan
ND	no date
NEPA	National Environmental Policy Act
NFA	No Further Action
NFIP	National Flood Insurance Program
NHI	National Heritage Institute
NOP	Notice of Preparation
NOx	nitrogen oxides
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NP	“No Project” Option
NPL	National Priorities List
NPS	National Park Service
NRCS	Natural Resources Conservation Service, Department of Agriculture (formerly the Soil Conservation Service)
NRHP	National Register of Historic Places
NWS	Naval Weapons Station

O&M	operations and maintenance
OHP	Office of Historic Preservation
OPR	California Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PCE	tetrachloroethylene
PFC	perfluorocarbon
PHL	Potrero Hills Landfill
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
ppmv	parts per million by volume
ppt	parts per thousand
PPV	peak particle velocity
PRC	California Public Resources Code
PWWF	peak wet weather flows
RCRA	Resource Conservation and Recovery Act
Bureau of Reclamation	U.S. Bureau of Reclamation
RFA	RCRA Facility Assessment
RHNA	Regional Housing Needs Allocation
RI/FS	Remedial Investigation/Feasibility Study
RMMP	Riparian Mitigation and Monitoring Plan
rms	root mean squared
ROD	Record of Decision
ROG(s)	reactive organic gas(es)
RRS	Routes of Regional Significance
RTIP	Regional Transportation Improvement Program
RTMP	Regional Transportation Mitigation Program
RTP	Regional Transportation Plan
RTPC(s)	Regional Transportation Planning Committees
RWQCB	No longer in use. See Water Board.

SB	southbound
SCS	Soil Conservation Service
sf	square feet
SF_6	sulfur hexachloride
SFP	School Facility Program
SHPO	State Historic Preservation Officer
SI	Site Investigation
SIP	State Implementation Plan
SMMP	Stream Mitigation and Monitoring Plan
SR	State Route
SRA	State Response Area
State Water Board	State Water Resources Control Board
SWCA	SWCA Environmental Consultants
SWMP	Storm Water Management Plan
SWMU(s)	solid waste management unit(s)
SWPPP	Stormwater Pollution Prevention Plan
T&D	transmission and distribution
TAC(s)	toxic air contaminant(s)
TAG	Technical Advisory Group
TCE	trichloroethylene
TCP(s)	traditional cultural properties
TCO_2-e	metric tons carbon dioxide equivalent
TDM	transportation demand management
TDS	total dissolved solids
TOD	transit-oriented development
TRANSPAC	Transportation Partnership and Cooperation Committee
TSCA	Toxic Substances Control Act
TSO(s)	traffic service objective(s)

ULL	urban limit line
UPRR	Union Pacific Railroad
URBEMIS	Urban Emissions Model
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST(s)	underground storage tank(s)
v/c	volume to capacity
VdB	vibration velocity level, in decibels
VMT	vehicle miles traveled
VOC(s)	volatile organic compound(s)
WAPA	Western Area Power Administration
Water Board	California Regional Water Quality Control Board, San Francisco Bay Region
WB	westbound
WGCEP	Working Group on California Earthquake Probabilities
WMMP	Wetland Mitigation and Monitoring Plan
WTP	water treatment plant
WWTP	wastewater treatment plant
$\mu g/m^3$	micrograms per cubic meter

Concord
Community Reuse Plan

Summary

Summary

S.1 Introduction

This document is a ~~Draft~~ Final Environmental Impact Report (Final EIR) addressing the potential environmental consequences of implementing a plan for the reuse of a large portion of the Inland Area of the former Concord Naval Weapons Station (CNWS), also known as the U.S. Naval Weapons Station Seal Beach Detachment Concord. The Final EIR consists of a revised version of the August 2009 Draft Revised EIR, individual responses to the comments that were provided to the City on the August 2009 Draft Revised EIR, and individual responses to the comments that were provided to the City on the May 2008 Draft EIR. The site is located entirely in the City of Concord, and the City is acting as the Lead Agency for the reuse planning effort and the preparation of this Final EIR, in compliance with the California Environmental Quality Act (CEQA).

~~This document is a revised version of the Draft EIR that was released by the City in May 2008. That Draft EIR addressed seven alternative reuse concepts for the site. This Draft Revised EIR addresses the potential environmental impacts associated with implementing the Preferred Alternative or the Concentration and Conservation Alternative that have resulted from an extensive community planning effort for the reuse of the site.~~

~~This Draft Revised EIR is subject to public review and comment. A 45-day public review period will begin upon the release of this document, during which the City will solicit input from the public and from public agencies at the federal, State, and local levels. Following the close of the public review period, comments on the Draft Revised EIR will then be addressed in a Final EIR. The City will consider the comments and responses prior to deciding to certify the Final EIR and adopt a Reuse Plan.~~

Site Description

The Inland Area of the CNWS (the reuse site) was opened by the Navy in June 1944 and was operationally closed in September 2008. In December 2005, the Secretary of Defense designated the City as the Local Reuse Authority (LRA) responsible for developing a Reuse Plan for the reuse site; the Navy designated the 5,028-acre reuse site as surplus in March 2007, and that action initiated the process to prepare the Reuse Plan for the reuse site. The surplus property is under the custody and control of the Navy and is owned by the United States of America~~The Inland Area of the CNWS (the site) was opened by the Navy in June 1944 and was closed in November 2005. In December 2005, the Secretary of Defense designated the City as the Local Reuse Authority (LRA) responsible for developing a Reuse Plan for the site; the Navy designated the 5,028-acre site as surplus in March 2007, and that action initiated the process to prepare the Reuse Plan for the site~~.

The site is crossed by State Route (SR) 4, east of its interchanges with Interstate Highway (I-) 680 and SR 242, as well as the rail line of the Bay Area Rapid Transit (BART) District system connecting eastern Contra Costa County to other parts of the San Francisco Bay Area. In addition, the site is crossed by Willow Pass Road and Bailey Road. The western portion of the site is relatively flat, and the area north of Bailey Road is traversed by Mt. Diablo Creek. The Los Medanos Hills, rising to over 1,100 feet in elevation and with slopes

in excess of 30 percent grade, form the eastern portion of the site. Abandoned military facilities, including earth-covered ammunition bunkers, administrative and warehouse structures, and rail and road systems, can be seen from the perimeter of the site as well as from the roads that cross it. The most apparent current use is livestock grazing that occurs on approximately 90 percent of the site. The site is not open to the public, is currently surrounded by a security fence, and is patrolled by federal police.

The site is currently owned by the Navy. The Concord 2030 Urban Area General Plan (General Plan) designates the site as Public/Quasi-Public – Concord Naval Weapons Station – Inland Area. It does not provide a specific policy framework for future uses and development at the site, but recognizes this will be established by the Reuse Plan. The site is currently zoned as S (for Study Area). When a Reuse Plan is approved for the site, the General Plan will need to be amended to incorporate the land use designations in the plan, and the Zoning Ordinance and other City requirements will also need to be amended to reflect the land uses that will be allowed at the site. The amendment of the General Plan and subsequent specific plans will be subject to compliance with CEQA.

S.2 Reuse Planning Effort

Initiation of the Planning

In 2006, the City initiated a three-phase multiyear project to develop the Reuse Plan for the site. During the 6-month period of Phase 1, hundreds of residents and community leaders offered their ideas and thoughts about the issues, opportunities, and priorities to be addressed while planning for reuse of the site. Based on this input, the City developed a Vision Statement for a creative, innovative, world class Reuse Plan using a balanced approach to meet community interests, needs, and requirements. The Vision Statement also called for the Reuse Plan to be economically viable and sustainable, and to maintain and enhance the quality of life in Concord and the region.

The City's vision was developed into a set of overarching goals to direct the subsequent planning effort. These overarching goals, which constitute the overall project objectives, are:

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.

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.

The goals for the Reuse Plan were then developed into a set of Guiding Principles for the planning effort. Those Guiding Principles are available for viewing at the project website, which is located at www.concordreuseproject.org.

As a result of the Phase 1 effort, the City Council approved recommendations for the formation of a 21-member Community Advisory Committee (CAC) and Technical Advisory Groups (TAGs) to provide input to the subsequent planning effort. The City Council also developed a Planning Framework, which it adopted and published in August 2006. This document is also available online at the project website.

Phase 2 of the planning process began in November 2006. The first stage of this work culminated in a public, informational "Get the Facts" Open House on March 17, 2007. At the Open House, information was presented about the community and the site, including physical, environmental, economic, and social characteristics. Copies of the information displayed at the Open House are also on the project website.

Following the Open House, the City completed an analysis of the site capacities and constraints, which it shared at a public workshop (entitled "Applying Goals and Guiding Principles"), held on April 21, 2007. The workshop participants identified themes they would like to see incorporated into the reuse planning effort, expressing a strong preference for the following four planning themes:

- Higher-intensity uses around the North Concord/Martinez BART station
- Lower-intensity uses between Willow Pass Road and Bailey Road
- Preservation of the Los Medanos Hills above a 30 percent grade and the ridgeline, with incorporation of hiking trails
- Protection and enhancement of Mt. Diablo Creek with a trail along the creek for walking and biking

A second planning workshop (entitled "Balancing the Land Use Mix"), held on June 16, 2007, focused on examining the choices regarding scale, magnitude, and balance of land uses, as well as understanding the relationship between the site and the surrounding urbanized area. The workshop participants completed worksheets (15 total) representing their ideas for reuse of the site.

While the planning exercise at the June 2007 workshop provided a broad foundation for understanding the community's desires and expectations, the wide variety of schemes identified and the feedback from the CAC indicated that additional comment and discussion

from policymakers was needed to help guide the development of alternatives. During June and July 2007, the City held a series of meetings with the CAC and other City boards and commissions to address the following four key reuse issues:

- Level of intensity of use
- Arrangement of land uses and transit
- Distribution of open space
- Role of buffers between and transitions to surrounding land uses

These four key issues shaped the development of the alternative concepts, and the City Council held public workshops on August 4 and September 11, 2007 to discuss these four key issues. This input was used by staff to develop five alternative concepts for reuse of the site.

On September 18, 2007, the CAC met to review and discuss the five initial alternative concepts and to receive public comment. This resulted in a request for more information on the alternative concepts and a desire to expand the range under consideration. On October 2, 2007, the CAC adopted a resolution recommending that seven alternative concepts be approved by the City Council acting as the LRA for analysis in a Draft EIR. On October 9, the LRA reviewed the seven alternative concepts and approved them for analysis in a Draft EIR. Each of the seven alternatives was based on one of three themes. The themes were "Extending the Neighborhoods," "Clustered Villages," and "Concentration and Conservation."

Narrowing the Range of Alternatives

In spring 2008, at the same time that the seven alternatives were being evaluated for environmental impacts in compliance with CEQA in the May 2008 Draft EIR, the seven alternatives were also evaluated against a broader set of criteria established by the CAC. The 16 criteria were grouped into 5 categories and included the following:

- Green Planning: Resource Efficiency, Climate Change
- Transportation: Traffic, Travel Choices, Connectivity
- Community: Community Integration, Community-Serving Uses and Facilities, Housing Variety, Parkland
- Land Stewardship: Viewshed and Hillside Protection, Cultural Resources, Land Remediation, Biological Resources, Watershed Resources
- Economics: Fiscal Sustainability, Financial Feasibility

The results of the evaluations were shared with the public at CAC meetings in April and May 2008 and subsequently at public workshops held on May 28 and June 14, 2008.

At its July 15, 2008 meeting, the CAC decided to narrow the range of alternatives by removing the "Extending the Neighborhoods" theme from further consideration and by adopting a process to select one alternative representing each of the two remaining themes. The next public workshop was held on August 2, 2008, at which participants discussed the

evaluations of the alternative themes in small groups and reported their conclusions back to the broader group of attendees.

Modifying the Alternatives

The CAC used input from the workshop to modify and select two alternatives, one for each of the remaining themes under consideration ("Concentration and Conservation" and "Clustered Villages"). Modifications included changing density or intensity of development, moving major land uses to different areas of the site, improving financial performance, and considering the effect of Public Benefit Conveyance (PBC) applications. PBC is a mechanism that the Navy can use to transfer portions of the site to a local public entity such as the East Bay Regional Park District (EBRPD). It is important to note that applications for specific PBC actions have not been officially approved at this time. A PBC involves the conveyance of real property to a State or local public agency that has applied for and been found to be eligible to acquire such real property under certain laws. These laws allow property to be transferred to public agencies and institutions at discounts of up to 100 percent of fair market value. The CAC also discussed specific issues common to the alternatives, which included the number of housing units and their mix, the balance of jobs and housing density in a transit-oriented development area around the North Concord/Martinez BART Station, an education complex, a first responders training facility, a city-wide park, a tournament sports facility, and a golf course.

The community and the CAC reviewed and refined the two alternatives at workshops and meetings in August and September of 2008. At its September 30 meeting, the CAC decided it would send both alternatives forward to the LRA, but also express a preference for one of the alternatives. Also at this meeting, the comment letters received on the May 2008 Draft EIR were distributed to the CAC members. On October 14, 2008, after more than 36 meetings (including 8 public workshops), the CAC adopted Resolution 08-1, sending forward both the Concentration and Conservation Alternative and the Clustered Villages Alternative. The resolution also recommended that the City Council, acting in its capacity as the Concord LRA, designate the Clustered Villages Alternative as the preferred CNWS Reuse Alternative. The CAC also forwarded a list of suggestions made by individual CAC members regarding additional potential modifications to each of the alternatives for the LRA to consider.

Selecting a Preferred Alternative

The LRA continued the discussion of the alternatives at its meetings on November 17, 2008, December 1, 2008, and January 12, 2009, taking public comment and discussing further modifications. The selection process culminated on January 12, 2009 when the LRA adopted Resolution 09-5, designating the Clustered Villages Alternative as the Preferred Alternative subject to further environmental review under CEQA. On January 30, 2009, the City released a revised development program, land use diagram, and supporting narrative that incorporated changes requested by the LRA at its January 12, 2009 meeting. ~~The City submitted the updated materials comprising the Preferred Reuse Plan to the Navy, where it will undergo further environmental review, and to the U.S. Department of Housing and Urban Development (HUD) as part of the Homeless Assistance Submission (HAS).~~ These materials comprised the Preferred Reuse Plan. The City submitted a Base Realignment and

Closure (BRAC) Application consisting of the Preferred Reuse Plan as well as a Homeless Assistance Submission (HAS) to the U.S. Department of Housing and Urban Development (HUD).[1] Following HUD's approval of the HAS, the Navy will begin its environmental analysis to comply with the National Environmental Policy Act (NEPA), the federal Endangered Species Act (ESA), and other applicable federal laws..

The LRA submitted a BRAC Application to HUD comprising a single community preferred Redevelopment Plan and Homeless Assistance of HUD's approval, pursuant to governing regulations. The Navy has no action on the LRA's BRAC Application or its components at this time. Upon HUD's final determination on the Application, the Navy will proceed with the required NEPA analysis giving deference to the LRA's preferred Redevelopment Plan should HUD have approved it.

Key Planning Concepts Incorporated in the Alternatives

Both the Preferred Alternative and the Concentration and Conservation Alternative represent the best distillation of the concepts of the former seven alternatives. While they approach the reuse of the site from different perspectives, they both embody key planning principles and guidance accumulated during the 3-year LRA community reuse planning process, and both achieve the four overarching goals established in the community's vision for the site.

The two alternatives represent a balanced approach, with economically viable and sustainable development that will maintain and improve the quality of life for existing Concord residents and establish a framework to support the development of a world class project. The project team has used concepts of scale, density and intensity, location, and connectivity to guide the community through planning for reuse of the former CNWS. Along the way, the community has articulated a refined list of key planning concepts that have also been incorporated into the reuse planning process, including:

- 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 travel choices (including transit, walking, and biking).
- Integrate the site with existing Concord to improve the quality of life for existing Concord residents and avoid creating "two Concords."
- Create balance in housing types and housing choices.
- Provide for community and cultural facilities including a library/performing arts center/community center, adequate schools for K–12 on-site population, and a tournament-level sports facility.
- Preserve a minimum 300-foot-wide riparian corridor along the centerline of Mt. Diablo Creek.

[1] The Homeless Assistance Submission contains the City's proposed Homeless Assistance Plan, which is required by base closure law. The plan was based on a homeless needs assessment and letters of interest provided by a collaborative of homeless service providers. All of this was executed in accord with BRAC statutes.

- Preserve the hills and ridgelines on the eastern side of the CNWS.
- 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 or endangered animal species.
- Avoid development south of Bailey Road.
- Avoid roads and development east of Mt. Diablo Creek and 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 on-site mitigation for any unavoidable loss of habitat or wetlands on other portions of the site.

S.3 Reuse Plan Alternatives

The Preferred Alternative: Clustered Villages

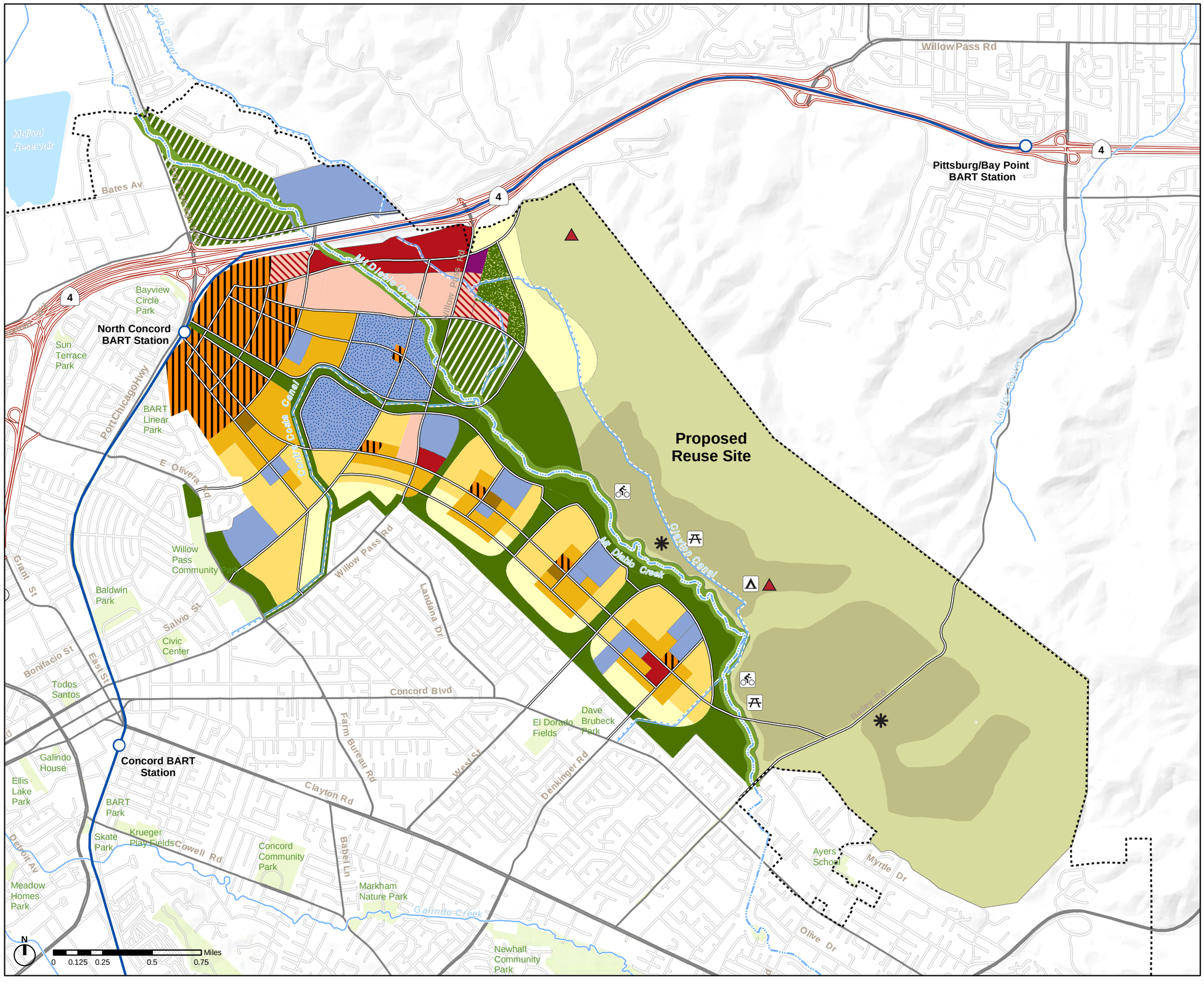
The Clustered Villages Alternative (Preferred Alternative) focuses on a series of villages connected by transit, allowing for a significant, new, diverse development balance while maintaining more than half of the site as parks, recreation, and open space. Living and working options would extend to Concord residents and others, offering a more sustainable lifestyle with mixed-use, walkable neighborhoods, and transit-oriented living along with single-family housing.

The land use diagram for the Preferred Alternative is shown on Figure S-1 and the development program is shown in Table S-1. Overall, the Preferred Alternative provides new land use to accommodate up to 12,272 residential units and 6.2 million square feet of commercial and retail uses.

The Concentration and Conservation Alternative

The Concentration and Conservation Alternative blends two planning concepts that figured prominently during the reuse planning process. The alternative focuses a significant amount of housing, retail, commercial, and community facility uses to the north of Willow Pass Road, while maximizing open space conservation by minimizing development south of Willow Pass Road and east of Mt. Diablo Creek. The land use diagram for the Concentration and Conservation Alternative is shown on Figure S-2 and the development program is shown in Table S-2. Overall, the Concentration and Conservation Alternative provides new land use to accommodate up to 10,203 residential units and 4.8 million square feet of commercial and retail uses.

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Legend

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area
- Potential Recreation Areas (Subject to habitat restriction)
- Recreation Sites & Staging Areas (per East Bay Regional Park District (EBRPD) plan)
- Environmental Education, Historical Interpretation & Port Chicago Visitors Center (per EBRPD plan)

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Locations of icons are illustrative depictions only and subject to habitat mitigation constraints.

Concord Community Reuse Plan

Revised August 21, 2009

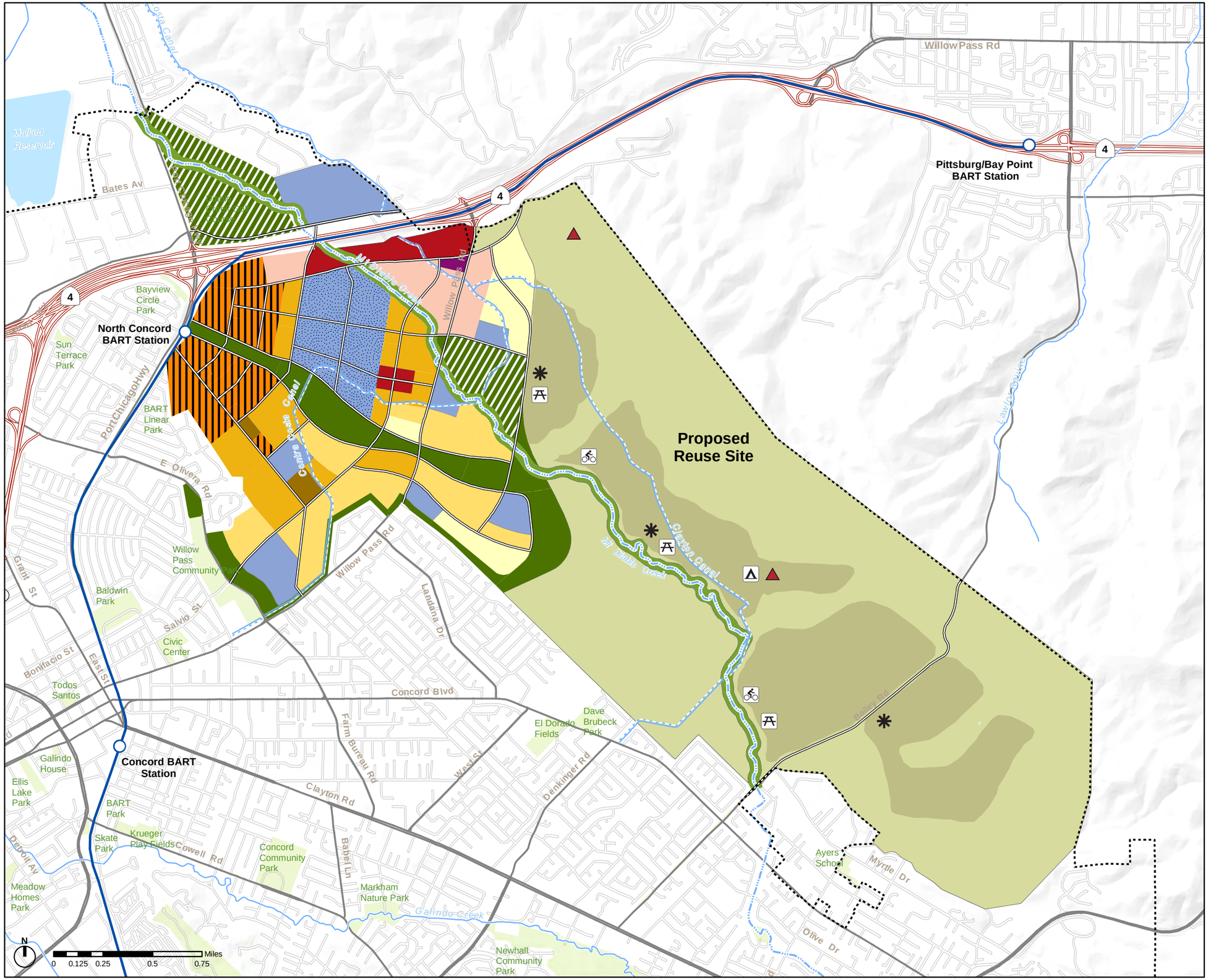
Figure S-1
Preferred Alternative Land Use Diagram

Table S-1: Preferred Alternative Development Program

Land Uses	Acres Total Acres	Units and Population Gross DU/Acre	Units	% of Units	Persons/ Unit	Population	SF and Jobs Gross FAR	SF	SF/Job	Jobs	Notes
Residential											
High-Density Residential	20.0	50.0	1,000	8.1%	1.85	1,850					**1. Recreation/Residential Low Density Flex Area:** The flex area adjacent to the Tournament Sports Facility is assumed to be Low-Density Residential use, but can be developed to support a larger recreation area, subject to a determination of financial feasibility and impact on the City's fiscal sustainability.
Medium-High Density Residential	36.0	30.0	1,080	8.8%	1.85	1,998					
Mixed-Use Residential/Retail	35.0	30.0	1,050	8.6%	1.85	1,943					
Medium-Density Residential	300.0	15.0	4,500	36.7%	2.11	9,495					
Medium-Low Density Residential	353.0	10.0	3,530	28.8%	2.94	10,378					
Low-Density Residential (see Note 1) *35 acres are designated as Recreation/Residential Low Density Flex Area*	278.0	4.0	1,112	9.1%	2.82	3,136					
Total	**1022.0**		**12,272**	**100.0%**		**28,800**					
Commercial											
Office/Transit-Oriented Development	12.0						1.70	888,624	225	3,949	
Office Park (see Note 2) *25 acres are designated as Commercial/Retail Flex use*	92.0						0.51	2,043,835	225	9,084	
Town Center Retail	10.0						0.68	296,208	500	592	**2. Commercial/Retail Flex Space:** The flex area between the North Concord BART Station and Willow Pass Road is assumed to be Commercial Retail use, but can be developed as Commercial Office use depending upon market conditions and impact on the City's fiscal sustainability. The flex area south of Willow Pass Road is assumed to be Commercial Office, but could be developed as Commercial Retail to support complementary uses to the Tournament Sports Facility, subject to a determination of financial feasibility and impact on the City's fiscal sustainability.
Neighborhood Commercial Center	16.0						0.34	236,966	500	474	
Regional Retail (see Note 2) *15 acres are designated as Commercial/Retail Flex use*	90.0						0.26	1,019,304	500	2,039	
Mid-Rise Hotel	10.0							400,000	840	476	
Family/Business Hotel	5.0							120,000	840	143	
Commercial Cluster 2 - Campus Setting	50.0						0.51	1,110,780	225	4,937	
Mixed-Use Residential/Retail	0.0						0.43	131,116	500	262	
Total	**285.0**							**6,246,833**		**21,956**	
Institutional											
Potential PBC - CSU East Bay Campus/Education Campus	150.0						0.35	2,286,900	500	4,574	
Total	**150.0**							**2,286,900**		**4,574**	
Community/Other											
Community Facilities (inc. K–12 schools)	103.0										
Other Uses - Health, Group Care, Homeless	10.0										
Other Uses - Religious Centers, Libraries, Community Centers	72.0										
Potential PBC - Sheriff and Fire Training	80.0										
Potential PBC - Center for Adaptive Learning	2.0										
Potential - Habitat for Humanity East Bay	3.0										
Transit Center/Yard	15.0										
Total	**285.0**										
Parks											**3. Open Space** creates potential for regional recreation per the EBRPD's PBC request and areas for habitat protection and restoration.
Neighborhood Parks	43.0										
Community Parks	415.0										
Recreation Facilities - Existing Golf Course	88.0										
Recreation Facilities - Sports Complex	75.0										
City-Wide Park	100.0										
Riparian Corridor	178.0										
Open Space (see Note 3)	2387.0										
Total	**3286.0**										
TOTAL	**5,028**		**12,272**			**28,800**		**8,533,733**		**26,530**	
		Average DU/Acre	**12.0**								
		Percent Open Space	**65.4%**								

DU = dwelling units; FAR = floor-to-area ratio; SF = square feet; PBC = Public Benefit Conveyance; CSU = California State University

Source: City of Concord, January 30, 2009



Legend

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Potential Recreation Areas (Subject to habitat restriction)
- Recreation Sites & Staging Areas (per East Bay Regional Park District (EBRPD) plan)
- Environmental Education, Historical Interpretation & Port Chicago Visitors Center (per EBRPD plan)

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Locations of icons are illustrative depictions only and subject to habitat mitigation constraints.

Concord
Community Reuse Plan

Revised August 21, 2009

Figure S-2
Concentration and Conservation Alternative Land Use Diagram

Table S-2: Concentration and Conservation Alternative Development Program

Land Uses	Acres Total Acres	Units and Population Gross DU/Acre	Units	% of Units	Persons/ Unit	Population	SF and Jobs Gross FAR	SF	SF/Job	Jobs	Notes
Residential											1. **Open Space** creates potential for regional recreation per the EBRPD's PBC request and areas for habitat protection and restoration.
High-Density Residential	20.0	50.0	1,000	9.8%	1.85	1,850					
Medium-High Density Residential	42.0	30.0	1,260	12.3%	1.85	2,331					
Mixed-Use Residential/Retail	25.0	30.0	750	7.4%	1.85	1,388					
Medium-Density Residential	275.0	15.0	4,125	40.4%	2.11	8,704					
Medium-Low Density Residential	264.0	10.0	2,640	25.9%	2.94	7,762					
Low-Density Residential	107.0	4.0	428	4.2%	2.82	1,207					
Total	**733.0**		**10,203**	**100.0%**		**23,241**					
Commercial											
Office/Transit-Oriented Development	10.0						1.70	740,520	225	3,291	
Office Park	80.0						0.51	1,777,248	225	7,899	
Town Center Retail	8.0						0.68	236,966	500	474	
Neighborhood Commercial Center	13.0						0.34	192,535	500	385	
Regional Retail	60.0						0.26	679,536	500	1,359	
Mid-Rise Hotel	10.0							400,000	840	476	
Family/Business Hotel	5.0							120,000	840	143	
Commercial Cluster 2 - Campus Setting	25.0						0.51	555,390	225	2,468	
Mixed-Use Residential/Retail	0.0						0.43	93,654	500	187	
Total	**211.0**							**4,795,850**		**16,683**	
Institutional											
Potential PBC - CSU East Bay Campus/Education Campus	150.0						0.35	2,286,900	500	4,574	
Total	**150.0**							**2,286,900**		**4,574**	
Community/Other											
Community Facilities (inc. schools)	78.0										
Other Uses - Health, Group Care, Homeless	9.0										
Other Uses - Religious Centers, Libraries, Community Centers	58.0										
Potential PBC - Sheriff and Fire Training	80.0										
Potential PBC - Center for Adaptive Learning	2.0										
Potential - Habitat for Humanity East Bay	3.0										
Transit Center/Yard	15.0										
Total	**245.0**										
Parks											
Neighborhood Parks	35.0										
Community Parks	269.0										
Recreation Facilities - Existing Golf Course	88.0										
Recreation Facilities - Sports Complex	75.0										
City-Wide Park	0.0										
Riparian Corridor	178.0										
Open Space (see Note 1)	3044.0										
Total	**3689.0**										
TOTAL	**5,028**		**10,203**			**23,241**		**7,082,750**		**21,257**	
		Average DU/Acre	**13.9**								
		Percent Open Space	**73.4%**								

DU = dwelling units; FAR = floor-to-area ratio; SF = square feet; PBC = Public Benefit Conveyance; CSU = California State University

Source: City of Concord, January 30, 2009

S.4 Environmental Impact Analysis of the Reuse Plan Alternatives

Chapter 1 of this ~~Draft Revised~~Final EIR is an introduction that describes the site, discusses the objectives of the ~~Draft~~ Final EIR document, introduces the project process, and lists the top issues of interest to the public as expressed through the public scoping process. ~~The chapter also provides a description of the relationship between this document and the previous Draft EIR released in May 2008.~~

Chapter 2 describes the development process of the Preferred Alternative and the Concentration and Conservation Alternative, including more detail on the concepts and features that have been incorporated into both alternatives. Chapter 2 also describes the No Project Alternative.

The next 14 chapters (Chapters 3 through 16) focus on the potential impacts of the alternatives on specific resources (land use, transportation, visual resources, etc.). They are all organized the same way to provide information about the environmental consequences of the alternatives.

- Section 1 of each chapter describes the existing conditions with respect to the specific topic. This description is based on a review of existing published material, field reconnaissance, discussions with individuals with specific knowledge about the topic, and other appropriate sources.
- Section 2 of each chapter identifies the Standards of Significance that are applied to the environmental analysis. Some of the Standards of Significance are taken from Appendix G of the CEQA Guidelines, while others reflect either local or State requirements.
- Section 3 of each chapter presents the potential impacts. The section begins, as appropriate, with a description of assumptions that have been incorporated in the analysis or information about the methodology that was used to complete the analysis. Then, impacts specific to the Preferred Alternative are identified, followed by impacts specific to the Concentration and Conservation Alternative. For each alternative, impacts that are considered to be significant are presented first, accompanied by an explanation why the application of a standard resulted in a determination that the impact would be significant. When a significant impact is set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Following presentation of the significant impacts, impacts that are not significant are presented. The chapters conclude with a description of the potential impacts of the No Project Alternative.

Table S-3 presents a summary of the significant project specific impacts of the two alternatives and the required mitigation measures. It identifies certain impacts with respect to land use, transportation, visual resources, air quality, and noise and vibration that are significant and unavoidable, even with application of required mitigation measures. Chapter 17 presents information about other CEQA considerations, including cumulative impacts. As identified, cumulative transportation and air quality impacts are also significant and unavoidable. The cumulative significant air quality impacts are the result of increased

greenhouse gas (GHG) emissions. Chapter 17 also presents a discussion of the environmentally superior alternative.

~~As introduced, this Draft Revised EIR is available for a 45-day review and comment period~~. ~~During this period comments can be sent to:~~

~~Michael W. Wright~~
~~Director, Community Reuse Planning~~
~~City of Concord~~
~~1950 Parkside Drive, M/S 56~~
~~Concord, CA 94519~~

Table S–3: Summary of Significant Impacts and Mitigation Measures

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
LAND USE (CHAPTER 3)		
Preferred Alternative		
Impact Land Use 1: The Preferred Alternative could introduce short- or long-term land use compatibility conflicts by placing higher-intensity uses and non-residential uses in close proximity to the existing lower-density residential uses in the Sun Terrace and Holbrook neighborhoods and Coast Guard Housing complex along East Olivera Road. This impact is considered to be potentially significant.	**Mitigation Measure Land Use 1**: Prior to approving any specific public or private development that would impact the Sun Terrace or Holbrook neighborhoods or the Coast Guard housing complex, the City of Concord shall require the implementation of the following measures: • Prepare design standards that incorporate measures to transition and integrate new development with adjacent uses. • Incorporate such measures into development plans. • Notify adjacent property owners in the Sun Terrace and Holbrook neighborhoods and the Coast Guard housing complex to review specific plans or proposals for development adjacent to the North Concord/Martinez BART Station. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to the granting of land use entitlements. However, the new development is anticipated to continue to be incompatible with these residential areas. Even with implementation of this mitigation measure, this impact will remain significant and unavoidable.	No
Impact Land Use 2: The Preferred Alternative could result in a conflict with the Contra Costa County Airport Land Use Compatibility Plan because potential development heights may exceed the height limits established in the Plan. This impact is considered to be potentially significant.	**Mitigation Measure Land Use 2**: Prior to approving any specific public or private development that would exceed the established height limits within the Airport Influence Area, the City of Concord shall require that site-specific plans be approved by the Contra Costa County Airport Land Use Commission according to the criteria outlined in the Contra Costa County Airport Land Use Compatibility Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Concentration and Conservation Alternative		
Impact Land Use 5: The Concentration and Conservation Alternative could introduce short- or long-term land use compatibility conflicts by placing higher-intensity uses and non-residential uses in close proximity to the existing lower-density residential uses in the Sun Terrace and Holbrook neighborhoods and Coast Guard Housing complex along East Olivera Road. This impact is considered to be potentially significant.	**Mitigation Measure Land Use 5**: Prior to approving any specific public or private development that would impact the Sun Terrace or Holbrook neighborhoods or the Coast Guard housing complex, the City of Concord shall require the implementation of the following measures: • Prepare design standards that incorporate measures to transition and integrate new development with adjacent uses. • Incorporate such measures into development plans. • Notify adjacent property owners in the Sun Terrace and Holbrook neighborhoods and the Coast Guard housing complex to review specific plans or proposals for development adjacent to the North Concord/Martinez BART Station. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to the granting of land use entitlements. However, the new development is anticipated to continue to be incompatible with these residential areas. Even with implementation of this mitigation measure, this impact will remain significant and unavoidable.	No
Impact Land Use 6: The Concentration and Conservation Alternative could result in a conflict with the Contra Costa County Airport Land Use Compatibility Plan because potential development heights may exceed the height limits established in the Plan. This impact is considered to be potentially significant.	**Mitigation Measure Land Use 6**: Prior to approving any specific public or private development that would exceed the established height limits within the Airport Influence Area, the City of Concord shall require that site-specific plans be approved by the Contra Costa County Airport Land Use Commission according to the criteria outlined in the Contra Costa County Airport Land Use Compatibility Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
TRANSPORTATION (CHAPTER 4)		
Preferred Alternative		
Impact Transportation 1: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on six freeway segments: 1. SR 4 east of SR 242 westbound (PM peak hour) 2. SR 4 east of Willow Pass Road eastbound (PM peak hour) 3. SR 4 east of Willow Pass Road westbound (AM and PM peak hours) 4. SR 4 east of San Marco Boulevard eastbound (PM peak hour) 5. I-680 north of SR 242 southbound (PM peak hour) 6. I-680 north of SR 4 southbound (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 1**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with the California Department of Transportation (Caltrans) and the Contra Costa Transportation Authority. An Assembly Bill (AB) 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 1(continued): development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 2: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on 11 freeway ramps: 1. I-680/Willow Pass Road eastbound-to-southbound on-ramp (AM peak hour) 2. SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour) 3. SR 4/Willow Pass Road westbound off-ramp (AM peak hour) 4. SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour) 5. SR 4/Southbound San Marco Boulevard westbound on-ramp (AM peak hour) 6. SR 4/Northbound San Marco Boulevard westbound on-ramp (AM peak hour) 7. SR 4/Northbound San Marco Boulevard eastbound on-ramp (PM peak hour) 8. SR 4/San Marco Boulevard westbound off-ramp (AM peak hour) 9. SR 4/Southbound Bailey Road eastbound off-ramp (PM peak hour) 10. SR 4/Bailey Road westbound on-ramp (AM peak hour)	**Mitigation Measure Transportation 2**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 2, continued: 11. SR 4/Railroad Avenue westbound on-ramp (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 2, continued**: revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 3: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on two roadway segments: • Concord Boulevard west of Denkinger Road (AM and PM peak hours) • Port Chicago Highway north of Olivera Road (AM and PM peak hours) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 3**: Transportation Demand Management (TDM) programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.	No
Impact Transportation 4: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold at 11 intersections: 1. Port Chicago Highway and Panoramic Drive (AM peak hour) 2. Port Chicago Highway and Olivera Road (AM and PM peak hours) 3. Oak Road and Treat Boulevard (PM peak hour)	**Mitigation Measure Transportation 4, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 4, continued: 4. North Main Street and Geary Road (AM and PM peak hours) 5. North Bancroft Road and Treat Boulevard (PM peak hour) 6. Main Street and Sunnyvale Avenue and SB I-680 ramps (AM peak hour) 7. Willow Pass Road and Evora Road (west) (PM peak hour) 8. San Marco Boulevard and West Leland Road (AM peak hour) 9. Railroad Avenue and West Leland Road (AM peak hour) 10. Kirker Pass Road and James Donlon Boulevard Extension (PM peak hour) 11. San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramp (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 4, Intersection Impact Location 1, continued**: operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 2**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 3**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 3, continued: management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 4:** ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 4, continued: the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 5**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 5, continued: respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
	Mitigation Measure Transportation 4, Intersection Impact Location 6: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 6, continued: prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 7**: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 7, continued: jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 8**: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and~~	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 8, continued: ~~unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 9**: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's planned improvement at the intersection of Railroad Avenue and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned~~	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 9, continued: ~~improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 10**: ~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected~~	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 10, continued: ~~jurisdiction takes place and agreement reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
	Mitigation Measure Transportation 4, Intersection Impact Location 11: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at San Marco Boulevard – Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the~~	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 4, Intersection Impact Location 11, continued: ~~affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 5: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established	**Mitigation Measure Transportation 5:** ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the~~	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 5, continued: performance threshold on 16 segments of regional routes: 1. I-680 south of Monument Boulevard - southbound PM peak hour (average speed and delay index) 2. I-680 north of Monument Boulevard - southbound PM peak hour (average speed and delay index) 3. I-680 north of SR 242 - southbound PM peak hour (average speed and delay index) 4. SR 242 north of I-680 - southbound PM peak hour (average speed and delay index) 5. SR 4 east of Willow Pass Road - eastbound PM peak hour (average speed and delay index) 6. SR 4 east of Willow Pass Road - westbound AM peak hour (average speed and delay index) 7. SR 4 east of San Marco Boulevard - eastbound PM peak hour (delay index) 8. SR 4 east of San Marco Boulevard - westbound AM peak hour (delay index) 9. SR 4 east of Bailey Road - eastbound PM peak hour (delay index) 10. SR 4 east of Bailey Road - westbound AM peak hour (delay index) 11. Leland Road (proposed) east of San Marco Boulevard - eastbound PM peak hour (delay index) 12. Leland Road (proposed) east of San Marco Boulevard - westbound AM peak hour (delay index)	**Mitigation Measure Transportation 5, continued:** ~~Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 5, continued: 13. Avila Road (proposed) west of San Marco Boulevard - eastbound PM peak hour (delay index) 14. Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM peak hours (delay index) 15. Willow Pass Road east of Evora Road - eastbound PM peak hour (delay index) 16. Willow Pass Road east of Evora Road - westbound AM peak hour (delay index) This impact is considered to be potentially significant.		
Impact Transportation 6: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on 10 freeway segments: 1. I-680 south of Monument Boulevard southbound (AM peak hour) 2. I-680 north of Monument Boulevard southbound (AM peak hour) 3. I-680 north of Monument Boulevard northbound (PM peak hour) 4. I-680 north of Willow Pass Road northbound (PM peak hour) 5. I-680 north of Concord Avenue northbound (PM peak hour) **6.** SR 242 north of I-680 northbound (PM peak hour)	**Mitigation Measure Transportation 6**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 6, continued: 7. SR 4 east of Port Chicago Highway westbound (AM peak hour) 8. SR 4 east of Port Chicago Highway eastbound (PM peak hour) 9. SR 4 east of San Marco Boulevard westbound (AM peak hour) 10. SR 4 east of Railroad Avenue westbound (AM peak hour) This impact is considered to be potentially significant.		
Impact Transportation 7: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold, but not contribute to future deficient conditions on nine freeway ramps: 1. I-680 Concord Avenue westbound-to-northbound on-ramp (PM) 2. SR 242 Clayton Road northbound off-ramp (PM) 3. SR 242 Concord Avenue eastbound-to-northbound on-ramp (PM) 4. SR 242 Clayton Road southbound on-ramp (AM and PM) 5. SR 4 Port Chicago Highway eastbound off-ramp (PM) 6. SR 4 Port Chicago Highway eastbound on-ramp (PM) 7. SR 4 Willow Pass Road eastbound off-ramp (PM)	**Mitigation Measure Transportation 7**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 7(continued): 8. SR 4 Port Chicago Highway westbound off-ramp (AM) 9. SR 4 Willow Pass Road westbound on-ramp (AM) This impact is considered to be potentially significant.		
Impact Transportation 8: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions at 12 intersections: 1. Farm Bureau Road and Willow Pass Road (PM) 2. Oak Grove Road and Treat Boulevard (PM) 3. Oak Road and Treat Boulevard (AM) 4. Oak Grove Road and Ygnacio Valley Road (AM and PM) 5. Commerce Avenue - SR 242 southbound ramps and Concord Avenue (PM) 6. North Main Street and Sunnyvale Avenue/southbound I-680 ramps (PM) 7. Willow Pass Road and Evora Road (east) (AM) 8. Willow Pass Road and Evora Road (west) (AM) 9. Willow Pass Road and Avila Road (AM and PM peak hours) 10. Railroad Avenue and West Leland Road (PM) 11. Willow Pass Road and SR 4 westbound ramps (AM peak hour)	**Mitigation Measure Transportation 8**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 8, continued: 12. Willow Pass Road and SR 4 eastbound ramps (AM peak hour) This impact is considered to be potentially significant.		
Impact Transportation 9: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold, but not contribute to future deficient conditions on 12 segments of regional routes: 1. I-680 south of Monument Boulevard - southbound (AM average speed and delay index) 2. I-680 north of Monument Boulevard - southbound (AM average speed and delay index) 3. I-680 north of Concord Avenue - northbound (PM average speed and delay index) 4. I-680 north of Concord Avenue - southbound (AM average speed) 5. SR 242 north of I-680 - southbound (AM delay index) 6. SR 242 north of Willow Pass Road - southbound (AM average speed) 7. SR 242 north of Concord Avenue - northbound (PM average speed and delay index) 8. SR 242 north of Concord Avenue - southbound (AM average speed and delay index)	**Mitigation Measure Transportation 9**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 9, continued: 9. SR 4 east of SR 242 - westbound (AM average speed and delay index) 10. SR 4 east of Port Chicago Highway - eastbound (PM average speed and delay index) 11. Bailey Road south of West Leland Road - westbound (AM delay index) 12. Leland Road west of Bailey Road - westbound (AM delay index) This impact is considered to be potentially significant.		
Impact Transportation 10: The development of the Preferred Alternative would increase traffic volumes and contribute to already deficient conditions on one freeway ramp: SR 4/Port Chicago Highway westbound on-ramp (PM peak hour). This impact is considered to be potentially significant.	**Mitigation Measure Transportation 10**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 10, continued: measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 11: The development of the Preferred Alternative would increase traffic volumes and contribute to already deficient conditions at five intersections: 1. Oak Grove Road and Treat Boulevard (AM peak hour) 2. Walnut Boulevard and Ygnacio Valley Road (PM peak hour) 3. Buskirk Avenue - northbound I-680 off-ramp and Treat Boulevard (PM peak hour) 4. Northbound I-680 off-ramp and Ygnacio Valley Road (AM peak hour)	**Mitigation Measure Transportation 11, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 11, continued: 5. Bailey Road and SR 4 eastbound ramps - BART access (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 11, Intersection Impact Location 2**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 11, Intersection Impact Location 2, continued: No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 11, Intersection Impact Location 3**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 11, Intersection Impact Location 3, continued: ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 11, Intersection Impact Location 4**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 11, Intersection Impact Location 4, continued: Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 11, Intersection Impact Location 5**: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements to the intersection of Bailey Road and SR 4 eastbound ramps. Until future coordination with the affected jurisdiction, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 11, Intersection Impact Location 5, continued: process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 12: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and contribute to already deficient conditions on 29 segments of regional routes: 1. Kirker Pass Road east of Concord Boulevard - eastbound PM peak hours (average vehicle occupancy) 2. Kirker Pass Road east of Concord Boulevard - westbound PM peak hour (average vehicle occupancy) 3. Treat Boulevard east of Oak Grove Road - eastbound AM peak hour (average vehicle occupancy) 4. Ygnacio Valley Road east of Cowell Road - eastbound AM peak hour (average vehicle occupancy) 5. Ygnacio Valley Road east of Cowell Road - westbound PM peak hour (average vehicle occupancy)	**Mitigation Measure Transportation 12**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 12, continued: 6. I-680 south of Monument Boulevard - southbound AM peak hour (average vehicle occupancy) 7. I-680 north of Monument Boulevard - northbound AM peak hour (average vehicle occupancy) 8. I-680 north of Monument Boulevard - southbound PM peak hour (average vehicle occupancy) 9. I-680 north of Concord Avenue - northbound AM peak hour (average vehicle occupancy) 10. SR 242 north of I-680 - northbound AM peak hour (average vehicle occupancy) 11. SR 242 north of I-680 - southbound AM and PM peak hours (average vehicle occupancy) 12. SR 242 north of Willow Pass Road - northbound AM and PM peak hours (average vehicle occupancy) 13. SR 242 north of Willow Pass Road - southbound AM and PM peak hours (average vehicle occupancy) 14. SR 242 north of Concord Avenue - northbound PM peak hours (average vehicle occupancy) 15. SR 242 north of Concord Avenue - southbound PM peak hour (average vehicle occupancy) 16. SR 242 north of Solano Way - northbound PM peak hours (average vehicle occupancy) 17. SR 242 north of Solano Way - southbound PM peak hour (average vehicle occupancy)	**Mitigation Measure Transportation 12, continued:** Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 12, continued: 18. SR 242 north of Olivera Road - northbound PM peak hour (average vehicle occupancy) 19. SR 242 north of Olivera Road - southbound PM peak hour (average vehicle occupancy) 20. SR 4 east of I-680 - eastbound AM peak hour (average vehicle occupancy) 21. SR 4 east of Solano Way - eastbound AM peak hour (average vehicle occupancy) 22. SR 4 east of Port Chicago Highway - eastbound AM peak hour (average vehicle occupancy) 23. SR 4 east of Port Chicago Highway - westbound PM peak hour (average vehicle occupancy) 24. SR 4 east of Willow Pass Road - eastbound AM peak hour (average vehicle occupancy) 25. SR 4 east of Willow Pass Road - westbound PM peak hour (average vehicle occupancy) 26. SR 4 east of San Marco Boulevard - eastbound AM peak hour (average vehicle occupancy) 27. SR 4 east of San Marco Boulevard - westbound PM peak hour (average vehicle occupancy) 28. SR 4 east of Bailey Road - westbound PM peak hour (average vehicle occupancy) 29. SR 4 east of Railroad Avenue - eastbound AM and PM peak hours (average vehicle occupancy) This impact is considered to be potentially significant.		

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 13: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on four freeway segments: 1. I-680 south of Monument Boulevard northbound (PM peak hour) 2. SR 4 east of SR 242 westbound (AM peak hour) 3. I-680 north of SR 242 southbound (AM peak hour) 4. I-680 north of SR 242 northbound (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 13**: None required.	Yes
Impact Transportation 14: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on two freeway ramps: 1. I-680/Willow Pass Road northbound off-ramp (PM peak hour) 2. SR 4/Port Chicago Highway westbound on-ramp (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 14**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 15: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on one roadway segment: Bailey Road east of Concord Boulevard (AM and PM peak hours). This impact is considered to be potentially significant.	**Mitigation Measure Transportation 15**: None required.	Yes
Impact Transportation 16: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold at one intersection: Northbound I-680 off-ramp/Ygnacio Valley Road (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 16**: None required.	Yes
Impact Transportation 17: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold but not contribute to future deficient conditions on 25 segments of regional routes: 1. Kirker Pass Road east of Concord Boulevard - westbound (AM average vehicle occupancy) 2. Treat Boulevard east of Oak Grove Road - eastbound (PM average vehicle occupancy) 3. Treat Boulevard east of Oak Grove Road - westbound (AM average vehicle occupancy) 4. Ygnacio Valley Road east of Cowell Road - eastbound (PM average vehicle occupancy)	**Mitigation Measure Transportation 17**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 17, continued: 5. Ygnacio Valley Road east of Cowell Road - westbound (AM average vehicle occupancy) 6. I-680 south of Monument Boulevard - northbound (AM and PM average vehicle occupancy) 7. I-680 south of Monument Boulevard - southbound (PM average vehicle occupancy) 8. I-680 north of Monument Boulevard - northbound (PM average vehicle occupancy) 9. I-680 north of Monument Boulevard - southbound (AM average vehicle occupancy) 10. I-680 north of SR 242 - northbound (AM and PM average vehicle occupancy) 11. I-680 north of SR 242 - southbound (AM and PM average vehicle occupancy) 12. I-680 north of Willow Pass Road - northbound (AM and PM average vehicle occupancy) 13. I-680 north of Willow Pass Road - southbound (AM and PM average vehicle occupancy) 14. I-680 north of Concord Avenue - northbound (PM average vehicle occupancy) 15. I-680 north of Concord Avenue - southbound (AM delay index and average vehicle occupancy) and PM (average vehicle occupancy) 16. I-680 north of SR 4 - northbound (AM and PM average vehicle occupancy) 17. I-680 north of SR 4 - southbound (AM and PM average vehicle occupancy)		

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 17, continued: 18. SR 242 north of I-680 - northbound (PM average vehicle occupancy) 19. SR 242 north of I-680 - southbound (AM average speed) 20. SR 242 north of Concord Avenue - southbound (AM average vehicle occupancy) 21. SR 242 north of Solano Way - southbound (AM average vehicle occupancy) 22. SR 242 north of Olivera Road - southbound (AM average vehicle occupancy) 23. SR 4 east of Port Chicago Highway - westbound (AM average speed and delay index) 24. SR 4 east of Bailey Road - eastbound (AM average vehicle occupancy) 25. SR 4 east of Railroad Avenue - westbound (AM and PM average vehicle occupancy) This impact is considered to be potentially significant.		
Concentration and Conservation Alternative		
Impact Transportation 26: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on six freeway segments: 1. SR 4 east of SR 242 westbound (PM peak hour) 2. SR 4 east of Willow Pass Road westbound (AM and PM peak hours)	**Mitigation Measure Transportation 26**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant~~	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 26, continued: 3. SR 4 east of San Marco Boulevard eastbound (PM peak hour) 4. SR 4 east of Railroad Avenue eastbound (PM peak hour) 5. I-680 north of SR 242 southbound (PM peak hour) 6. I-680 north of SR 4 southbound (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 26, continued**: ~~and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 27: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on 10 freeway ramps: 1. I-680/Willow Pass Road eastbound-to-southbound on-ramp (AM peak hour) 2. SR 242/Concord Avenue eastbound-to-northbound on-ramp (PM peak hour) 3. SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour) 4. SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour) 5. SR 4/southbound San Marco Boulevard westbound on-ramp (AM peak hour) 6. SR 4/northbound San Marco Boulevard westbound on-ramp (AM peak hour) 7. SR 4/northbound San Marco Boulevard eastbound on-ramp (PM peak hour) 8. SR 4/southbound Bailey Road eastbound off-ramp (PM peak hour) 9. SR 4/Bailey Road westbound on-ramp (AM peak hour) 10. SR 4/Railroad Avenue eastbound on-ramp (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 27**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 27, continued: No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 28: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on three roadway segments: 1. Ygnacio Valley Road east of Cowell Road (AM peak hour) 2. Concord Boulevard west of Denkinger Road (AM and PM peak hours) 3. Port Chicago Highway north of Olivera Road (AM and PM peak hours) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 28**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.	No
Impact Transportation 29: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold at 11 intersections: 1. Port Chicago Highway and Olivera Road (AM and PM peak hours) 2. Beechwood Drive and Landana Drive (AM peak hour) 3. Oak Road and Treat Boulevard (PM peak hour) 4. Oak Grove Road/~~Ygancio~~Ygnacio Valley Road (AM peak hour) 5. North Main Street and Geary Road (AM peak hour)	**Mitigation Measure Transportation 29, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 29, continued: 6. North Bancroft Road and Treat Boulevard (PM peak hour) 7. Willow Pass Road/Evora Road (East) - SR 4 westbound off-ramp (AM peak hour) 8. Willow Pass Road and Evora Road (west) (AM and PM peak hours) 9. San Marco Boulevard and West Leland Road (AM peak hour) 10. Kirker Pass Road and James Donlon Boulevard Extension (PM peak hour) 11. San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramps (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 29, Intersection Impact Location 2**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 3**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 3, continued: requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 4**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 4, continued: developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 5**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 5, continued: Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
	Mitigation Measure Transportation 29, Intersection Impact Location 6: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 6, continued: Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 7**: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Willow Pass Road and Evora Road (east) – SR 4 westbound ramp. Until future coordination with the affected jurisdiction takes place and agreement reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 7, continued: capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 8**: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 8, continued: with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 9**: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 9, continued: respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
	Mitigation Measure Transportation 29, Intersection Impact Location 10: ~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 10, continued: impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 11**: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures .	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 29, Intersection Impact Location 11, continued: to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 30: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold on 16 segments of regional routes: 1. Treat Boulevard east of Oak Grove - westbound PM peak hour (average vehicle occupancy)	**Mitigation Measure Transportation 30**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant~~	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 30, continued: 2. I-680 south of Monument Boulevard - southbound PM peak hour (average speed and delay index) 3. I-680 north of Monument Boulevard - southbound PM peak hour (average speed and delay index) 4. I-680 north of SR 242 - southbound PM peak hour (average speed and delay index) 5. SR 4 east of Willow Pass Road - eastbound PM peak hour (average speed and delay index) 6. SR 4 east of Willow Pass Road - westbound AM peak hour (average speed and delay index) 7. SR 4 east of San Marco Boulevard - eastbound PM peak hour (delay index) 8. SR 4 east of San Marco Boulevard - westbound AM peak hour (delay index) 9. SR 4 east of Bailey Road - eastbound PM peak hour (delay index) 10. SR 4 east of Bailey Road - westbound AM peak hour (delay index) 11. Leland Road (proposed) east of San Marco Boulevard - eastbound PM peak hour (delay index) 12. Leland Road (proposed) east of San Marco Boulevard - westbound AM peak hour (delay index) 13. Avila Road (proposed) west of San Marco Boulevard - eastbound PM peak hour (delay index)	**Mitigation Measure Transportation 30, continued:** ~~and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 30, continued: 14. Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM peak hours (delay index). 15. Willow Pass Road east of Evora Road - eastbound PM peak hour (delay index) 16. Willow Pass Road east of Evora Road - westbound AM peak hour (delay index) This impact is considered to be potentially significant.		
Impact Transportation 31: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on eight freeway segments: 1. I-680 north of Monument Boulevard northbound (PM peak hour) 2. I-680 north of Willow Pass Road northbound (PM peak hour) 3. I-680 north of Concord Avenue northbound (PM peak hour) 4. SR 242 north of I-680 northbound (PM peak hour) 5. SR 4 east of Port Chicago Highway westbound (AM peak hour) 6. SR 4 east of Port Chicago Highway eastbound (PM peak hour) 7. SR 4 east of San Marco Boulevard westbound (AM peak hour)	**Mitigation Measure Transportation 31**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 31, continued: 8. SR 4 east of Railroad Avenue westbound (AM peak hour) This impact is considered to be potentially significant.		
Impact Transportation 32: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on nine freeway ramps: 1. I-680 Concord Avenue westbound-to-northbound on-ramp (PM) 2. SR 242 Clayton Road northbound off-ramp (PM) 3. SR 242 Clayton Road southbound on-ramp (AM and PM) 4. SR 4 Port Chicago Highway eastbound off-ramp (PM) 5. SR 4 Port Chicago Highway eastbound on-ramp (PM) 6. SR 4 Willow Pass Road eastbound off-ramp (PM) 7. SR 4 Port Chicago Highway westbound off-ramp (AM) 8. SR 4 Willow Pass Road westbound on-ramp (AM) 9. SR 4 San Marco Boulevard westbound off-ramp (AM) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 32**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 33: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions at 13 intersections: 1. Farm Bureau Road and Willow Pass Road (PM) 2. Oak Grove Road and Treat Boulevard (PM) 3. Oak Road and Treat Boulevard (AM) 4. Oak Grove Road and Ygnacio Valley Road (PM) 5. Commerce Avenue - SR 242 southbound ramps and Concord Avenue (PM) 6. Ayers Road and Ygnacio Valley Road (AM) 7. North Main Street and Geary Road (PM) 8. North Main Street and Sunnyvale Avenue/southbound I-680 ramps (AM and PM) 9. Willow Pass Road and Avila Road (AM and PM peak hours) 10. Railroad Avenue and West Leland Road (AM) 11. Kirker Pass Road and James Donlon Boulevard Extension [future extension of James Donlon Boulevard] (AM) 12. Willow Pass Road and SR 4 westbound ramps (AM peak hour) 13. Willow Pass Road and SR 4 eastbound ramps (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 33**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 34: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold but not contribute to future deficient conditions on 11 segments of regional routes: 1. I-680 south of Monument Boulevard - northbound PM (average speed and delay index) 2. I-680 south of Monument Boulevard - southbound AM (average speed and delay index) 3. I-680 north of Monument Boulevard - southbound AM (average speed and delay index) 4. I-680 north of Concord Avenue - northbound PM (average speed and delay index) 5. I-680 north of Concord Avenue - southbound AM (average speed) 6. SR 242 north of I-680 - southbound AM (average speed and delay index) 7. SR 242 north of Concord Avenue - northbound PM (average speed and delay index) 8. SR 242 north of Concord Avenue - southbound AM (average speed and delay index) 9. SR 4 east of SR 242 - westbound AM (average speed and delay index) 10. SR 4 east of Port Chicago Highway - eastbound PM (average speed and delay index)	**Mitigation Measure Transportation 34**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 34, continued: 11. Bailey Road south of West Leland Road - westbound AM (delay index) This impact is considered to be potentially significant.		
Impact Transportation 35: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on one freeway segment: I-680 north of SR 242 northbound during the PM peak hour. This impact is considered to be potentially significant.	**Mitigation Measure Transportation 35**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 35, continued: the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 36: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on two freeway ramps: 1. I-680/Willow Pass Road northbound off-ramp (PM peak hour) 2. SR 4/Port Chicago Highway westbound on-ramp (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 36**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 36, continued: The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	
Impact Transportation 37: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on one roadway segment: 1. Bailey Road east of Concord Boulevard (AM and PM peak hours) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 37**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 38: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions at five intersections: 1. Oak Grove Road and Treat Boulevard (AM peak hour) 2. Walnut Boulevard and Ygnacio Valley Road (PM peak hour) 3. Buskirk Avenue - Northbound I-680 off-ramp/Treat Boulevard (AM and PM peak hours) 4. Northbound I-680 off-ramp/Ygnacio Valley Road (AM peak hour) 5. Bailey Road/SR 4 eastbound ramps - BART access (PM peak hour) This impact is considered to be a potentially significant impact.	**Mitigation Measure Transportation 38, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable. **Mitigation Measure Transportation 38, Intersection Impact Location 2**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 38, Intersection Impact Location 2, continued: The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 38, Intersection Impact Location 3**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 38, Intersection Impact Location 3, continued: The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. **Mitigation Measure Transportation 38, Intersection Impact Location 4**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 38, Intersection Impact Location 4, continued: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Transportation 38, Intersection Impact Location 5: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements to the intersection of Bailey Road and SR 4 eastbound ramps. Until future coordination with the affected jurisdiction, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 39: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and contribute to already deficient conditions on 28 segments of regional routes: 1. Kirker Pass Road east of Concord Boulevard - eastbound PM peak hour (average vehicle occupancy) 2. Kirker Pass Road east of Concord Boulevard - westbound PM peak hour (average vehicle occupancy) 3. Treat Boulevard east of Oak Grove Road - eastbound AM peak hour (average vehicle occupancy) 4. Ygnacio Valley Road east of Cowell Road - eastbound AM peak hour (average vehicle occupancy) 5. Ygnacio Valley Road east of Cowell Road - westbound AM and PM peak hours (average vehicle occupancy) 6. I-680 south of Monument Boulevard - northbound AM peak hour (average vehicle occupancy) 7. I-680 north of Monument Boulevard - northbound AM peak hour (average vehicle occupancy) 8. I-680 north of Monument Boulevard - southbound PM peak hour (average vehicle occupancy) 9. I-680 north of Concord Avenue - northbound AM peak hour (average vehicle occupancy)	**Mitigation Measure Transportation 39**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 39, continued: 10. SR 242 north of I-680 - northbound AM and PM peak hours (average vehicle occupancy) 11. SR 242 north of I-680 - southbound PM peak hour (average vehicle occupancy) 12. SR 242 north of Willow Pass Road - northbound AM and PM peak hours (average vehicle occupancy) 13. SR 242 north of Willow Pass Road - southbound PM peak hour (average vehicle occupancy) 14. SR 242 north of Concord Avenue - northbound PM peak hour (average vehicle occupancy) 15. SR 242 north of Concord Avenue - southbound PM peak hour (average vehicle occupancy) 16. SR 242 north of Solano Way - northbound PM peak hour (average vehicle occupancy) 17. SR 242 north of Solano Way - southbound PM peak hour (average vehicle occupancy) 18. SR 242 north of Olivera Road - northbound PM peak hour (average vehicle occupancy) 19. SR 242 north of Olivera Road - southbound PM peak hour (average vehicle occupancy) 20. SR 4 east of I-680 - eastbound AM peak hour (average vehicle occupancy) 21. SR 4 east of Solano Way - eastbound AM peak hour (average vehicle occupancy) 22. SR 4 east of Port Chicago Highway - eastbound AM peak hour (average vehicle occupancy)	**Mitigation Measure Transportation 39, continued:** No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.	

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 39, continued: 23. SR 4 east of Port Chicago Highway - westbound PM peak hour (average vehicle occupancy) 24. SR 4 east of Willow Pass Road - eastbound AM and PM peak hours (average vehicle occupancy) 25. SR 4 east of Willow Pass Road - westbound PM peak hours (average vehicle occupancy) 26. SR 4 east of San Marco Boulevard - eastbound AM peak hour (average vehicle occupancy) 27. SR 4 east of San Marco Boulevard - westbound PM peak hour (average vehicle occupancy) 28. SR 4 east of Railroad Avenue - eastbound AM and PM peak hours (average vehicle occupancy) This impact is considered to be potentially significant.		
Impact Transportation 40: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on three freeway segments: 1. I-680 south of Monument Boulevard northbound (PM peak hour) 2. SR 4 east of SR 242 westbound (AM peak hour) 3. I-680 north of SR 242 southbound (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 40**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 41: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on one freeway ramp: 1. SR 4/Port Chicago Highway westbound on-ramp (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 41**: None required.	Yes
Impact Transportation 42: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold at two intersections: 1. Northbound I-680 off-ramp/Ygnacio Valley Road (PM peak hour) 2. Railroad Avenue/West Leland Road (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 42**: None required.	Yes
Impact Transportation 43: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold but	**Mitigation Measure Transportation 43**: None required.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 43, continued: not contribute to future deficient conditions on 25 segments of regional routes: 1. Kirker Pass Road east of Concord Boulevard - westbound (AM average vehicle occupancy) 2. Treat Boulevard east of Oak Grove Road - eastbound (PM average vehicle occupancy) 3. Treat Boulevard east of Oak Grove Road - westbound (AM average vehicle occupancy) 4. Ygnacio Valley Road east of Cowell Road - eastbound (PM average vehicle occupancy) 5. I-680 south of Monument Boulevard - northbound (PM average vehicle occupancy) 6. I-680 south of Monument Boulevard - southbound (AM and PM average vehicle occupancy) 7. I-680 north of Monument Boulevard - northbound (PM average vehicle occupancy) 8. I-680 north of Monument Boulevard - southbound (AM average vehicle occupancy) 9. I-680 north of SR 242 - northbound (AM and PM average vehicle occupancy) 10. I-680 north of SR 242 - southbound (AM and PM average vehicle occupancy) 11. I-680 north of Willow Pass Road - northbound (AM and PM average vehicle occupancy) 12. I-680 north of Willow Pass Road - southbound (AM and PM average vehicle occupancy) 13. I-680 north of Concord Avenue - northbound (PM average vehicle occupancy)		

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Transportation 43, continued: 14. I-680 north of Concord Avenue - southbound (AM delay index and average vehicle occupancy and PM average vehicle occupancy) 15. I-680 north of SR 4 - northbound (AM and PM (average vehicle occupancy) 16. I-680 north of SR 4 - southbound (AM and PM average vehicle occupancy) 17. SR 242 north of I-680 - southbound (AM average vehicle occupancy) 18. SR 242 north of Willow Pass Road - southbound (AM average vehicle occupancy) 19. SR 242 north of Concord Avenue - southbound (AM average vehicle occupancy) 20. SR 242 north of Solano Way - southbound (AM average vehicle occupancy) 21. SR 242 north of Olivera Road - southbound (AM average vehicle occupancy) 22. SR 4 east of Port Chicago Highway - westbound (AM average speed, delay index, and average vehicle occupancy) 23. SR 4 east of Bailey Road - eastbound (AM average vehicle occupancy) 24. SR 4 east of Bailey Road - westbound (PM average vehicle occupancy) 25. SR 4 east of Railroad Avenue - westbound (AM and PM average vehicle occupancy) This impact is considered to be potentially significant.		

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
VISUAL RESOURCES (CHAPTER 5)		
Preferred Alternative		
Impact Visual Resources 1: The Preferred Alternative has the potential to degrade the visual character of the near horizon views of the site from the Sun Terrace Neighborhood and the Coast Guard Housing complex. This impact is considered to be potentially significant.	**Mitigation Measure Visual Resources 1**: Prior to approving any specific public or private development on the site, the City of Concord shall require incorporation of best management practices in any site development plans, with the purpose of minimizing the impacts of urban development as seen from the Sun Terrace Neighborhood and the Coast Guard Housing complex. However, even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.	No
Impact Visual Resources 2: The Preferred Alternative has the potential to degrade the visual character of the near horizon views of the site from SR 4 and Willow Pass Road. This impact is considered to be potentially significant.	**Mitigation Measure Visual Resources 2**: Prior to approving any specific public or private development at the site, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to minimize the impacts on views of urban development from SR 4 and Willow Pass Road. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Visual Resources 3: The Preferred Alternative has the potential to change views of lowland portions of the site from adjacent neighborhoods along Willow Pass Road between it and Bailey Road. This impact is considered to be significant.	**Mitigation Measure Visual Resources 3**: Prior to approving any specific public or private development at the site, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to minimize the impacts on views of urban development from neighborhoods adjacent to Willow Pass Road between it and Bailey Road. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Visual Resources 4: The Preferred Alternative has the potential for increased lighting from active recreation facilities. This impact is considered to be potentially significant.	**Mitigation Measure Visual Resources 4**: Prior to approving any specific public or private development of active recreation facilities that include nighttime lighting, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to control the amount of light emitted from recreational facilities, thereby reducing the impact of these facilities. The best management practices that shall be incorporated include targeted light placement and the use of directional lighting. Other specific light-reducing best management practices that shall be used include addition of green space, use of materials with a low solar reflectivity index, reduced lighting levels, and shielding to preserve both daytime and nighttime views. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Concentration and Conservation Alternative		
Impact Visual Resources 13: The Concentration and Conservation Alternative has the potential to degrade the visual character of the near horizon views of the site from the Sun Terrace Neighborhood and the Coast Guard Housing complex. This impact is considered to be potentially significant.	**Mitigation Measure Visual Resources 13**: Prior to approving any specific public or private development on the site, the City of Concord shall require incorporation of best management practices in any site development plans with the purpose of minimizing the impacts of urban development as seen from the Sun Terrace Neighborhood and the Coast Guard Housing complex. However, even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.	No
Impact Visual Resources 14: The Concentration and Conservation Alternative could result in changes to views of lowland portions of the site from SR 4 and Willow Pass Road. These impacts are considered to be potentially significant.	**Mitigation Measure Visual Resources 14**: Prior to approving any specific public or private development at the site, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to minimize the impacts on views of urban development from SR 4 and Willow Pass Road. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Visual Resources 15: The Concentration and Conservation Alternative has the potential for increased lighting from active recreation facilities. This impact is considered to be potentially significant.	**Mitigation Measure Visual Resources 15**: Prior to approving any specific public or private development of active recreation facilities that include nighttime lighting, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to control the amount of light emitted from recreational facilities, thereby reducing the impact of these facilities. The best management practices that shall be incorporated include targeted light placement and the use of directional lighting. Other specific light-reducing best management practices that shall be used include addition of green space, use of materials with a low solar reflectivity index, reduced lighting levels, and shielding to preserve both daytime and nighttime views. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
EARTH RESOURCES (CHAPTER 6)		
Preferred Alternative		
None identified.		
Concentration and Conservation Alternative		
None identified.		
HYDROLOGY AND WATER QUALITY (CHAPTER 7)		
Preferred Alternative		
None identified.		
Concentration and Conservation Alternative		
None identified.		

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
BIOLOGICAL RESOURCES (CHAPTER 8)		
Preferred Alternative		
Impact Biological Resources 1: The Preferred Alternative could result in a potential impact to wetland habitats from direct fill or alteration of hydrology. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 1**: Prior to approving any construction potentially impacting wetlands on the site, the City of Concord shall require project proponents to demonstrate avoidance of wetland fill to the extent practicable and agree to mitigate unavoidable temporary impacts to wetlands by restoration in place following construction; mitigate permanent fill of wetlands at a minimum 1:1 acreage ratio, concurrent with or prior to wetlands impacts; and provide the City with evidence of the purchase of credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for creation of wetlands coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 2: The Preferred Alternative could result in a potential impact to the channel of Mt. Diablo Creek and its aquatic habitat. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 2**: Prior to approving any construction involving impacts to Mt. Diablo Creek, the City of Concord shall require project proponents to demonstrate avoidance of creek impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts to the creek by restoration in place following construction; mitigate unavoidable permanent fill of the creek at a minimum 1:1 acreage ratio, concurrent with or prior to creek impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 3: The Preferred Alternative could result in a potential impact to riparian habitat. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 3**: Prior to approving any construction involving impacts to riparian habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of riparian habitat impacts to the extent practicable and agree to mitigate unavoidable impacts at a minimum 3:1 acreage ratio, concurrent with or prior to riparian impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of riparian habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 4: The Preferred Alternative could result in a potential impact to the channel of Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 4**: Prior to approving any construction involving impacts to Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats, the City of Concord shall require project proponents to demonstrate avoidance of aquatic habitat impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts by restoration in place following construction; mitigate unavoidable permanent fill of aquatic habitats at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 5: The Preferred Alternative could result in a potential impact to California red-legged frogs and their habitats. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 5**: Prior to approving any construction in or near potential California red-legged frog habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of red-legged frog breeding habitat impacts and impacts to Mt. Diablo Creek to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in red-legged frog breeding habitat and use only low-intensity or downcast lighting near red-legged ~~frog breeding or~~ dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which frogs may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for red-legged frogs; mitigate unavoidable temporary impacts to red-legged frog habitat at a 1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation at a 0.1:1 ratio); mitigate unavoidable permanent impacts to red-legged frog breeding habitat at a minimum 3:1 acreage ratio and to red-legged frog nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of red-legged frog habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of red-legged frog habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 6: The Preferred Alternative could result in a potential impact to California tiger salamanders and their habitats. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 6**: Prior to approving any construction or other ground-disturbing activities within areas identified as providing California tiger salamander habitat at the site, the City of Concord shall require project proponents to demonstrate avoidance of tiger salamander breeding habitat impacts to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in tiger salamander breeding habitat and use only low-intensity or downcast lighting near tiger salamander ~~breeding or~~ dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which tiger salamander may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for tiger salamander; mitigate unavoidable temporary impacts to tiger salamander habitat at a 1.1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation n at a 0.1:1 ratio); mitigate unavoidable permanent impacts to tiger salamander breeding habitat at a minimum 3:1 acreage ratio and to tiger salamander nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of tiger salamander habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of tiger salamander habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 7: The Preferred Alternative could result in a potential impact to individual western pond turtles. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 7**: Prior to approving any construction in or near potential western pond turtle habitat on the site, the City of Concord shall require project proponents to minimize grading impacts within 1/4 mile of the Cistern Pond and minimize permanent impacts to Mt. Diablo Creek, and agree to have a qualified biologist conduct surveys for communal/traditional nesting areas, implement measures to minimize impacts to turtle nests if a communal/traditional nesting area is detected, install temporary exclusion fencing around any construction areas, and have a qualified biologist conduct pre-construction surveys for all construction within 1/4 mile of aquatic pond turtle habitat; have a qualified biologist relocate any turtles detected during pre-construction surveys or during construction to suitable habitat well away from active construction areas; and have a qualified biologist conduct a construction personnel education program. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 8: The Preferred Alternative could result in a potential impact to individual Alameda whipsnakes and coast horned lizards. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 8**: Prior to approving construction in areas southeast of Willow Pass Road on the site, the City of Concord shall require project proponents to avoid planning trails or other recreation features within 200 feet of coastal sage scrub in Rattlesnake Canyon; to agree to deposit construction materials only in areas lacking snakes or suitable cover for snakes; and to agree to have a qualified biologist conduct a construction personnel education program, conduct pre-construction surveys prior to the construction of recreational or interpretive features in open space areas with rock outcrops, and relocate any whipsnakes or horned lizards detected near construction areas to suitable habitat areas well away from construction areas. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 9: The Preferred Alternative could result in a potential impact to nesting golden eagles. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 9**: Prior to approving any construction in or near potential golden eagle nesting habitat on the site, the City of Concord shall require project proponents to avoid planning trails or other recreational features within 1/4 mile of the existing eagle nest (unless seasonal closure of such trails or recreational features occurs) and to agree to have a qualified biologist conduct a pre-construction survey for nesting eagles and to maintain a 1/4 mile buffer between any active nest and new construction disturbance during the breeding season. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 10: The Preferred Alternative could result in a potential impact to burrowing owls and their habitat. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 10**: Prior to approving any construction in or near potential burrowing owl habitat at the site, the City of Concord shall require project proponents to agree to maintain buffers free from new disturbance around active owl burrows during the breeding season; have a qualified biologist conduct pre-construction surveys, relocate burrowing owls from burrows that are to be disturbed by construction during the nonbreeding season, and conduct comprehensive breeding-season and nonbreeding-season surveys to determine owl use of the individual project site prior to construction; mitigate permanent impacts to burrowing owl habitat at a minimum ratio of 6.5 acres of mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs on-site and of 9.75-19.5 acres of mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs off-site; and provide the City with evidence of the purchase of burrowing owl habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of burrowing owl habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 11: The Preferred Alternative could result in a potential impact to special-status songbirds such as loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 11**: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 12: The Preferred Alternative could result in a potential impact to nesting white-tailed kites and northern harriers. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 12**: Prior to approving construction in or near potential white-tailed kite and northern harrier habitat on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for these species to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 13: The Preferred Alternative could result in a potential impact to substantial numbers of nesting birds from development-related construction disturbance and direct removal of nests during the breeding season. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 13**: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for nesting birds to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests of native birds prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of native birds. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 14: The Preferred Alternative could result in a potential impact to bat roosts, including those of special-status bat species. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 14**: Prior to approving any construction in or near potential bat roosting habitat on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct a pre-construction/pre-demolition survey for roosting bats; to maintain buffers free from new construction-related disturbance around active bat roosts during the maternity season and around roosts that do not have to be removed; to have a qualified biologist evict bats from roosts that must be disturbed or removed (during the non-maternity season); and to provide alternative roost sites (designed by a qualified biologist) if roosts of pallid bats or Townsend's big-eared bats are removed. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 15: The Preferred Alternative could result in a potential impact to individual American badgers. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 15**: Prior to approving any construction in or near California annual grassland on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct pre-construction surveys for badger dens prior to initiation of grading; to maintain buffers free from new construction-related disturbance around active maternity dens; ~~and~~ to have a qualified biologist relocate badgers from dens located within proposed construction areas during the non-maternity season; and to have a qualified biologist resurvey the impact areas immediately prior to construction if badgers are relocated. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 16: Although no special-status plant species have been identified on the site, the Preferred Alternative could result in potential disturbance or loss of the big tarplant and round-leaved filaree and their habitat if they are identified within the development footprint in the future. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 16**: Prior to approving any construction within California annual grassland on the site, the City of Concord shall require project proponents to have a qualified biologist conduct surveys for the big tarplant and round-leaved filaree; to avoid impacts to these species to the extent practicable if they are detected on the site; and to mitigate permanent impacts to populations of these species by managing appropriate portions of the on-site open space to provide suitable conditions for these species. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 17: The Preferred Alternative could result in a potential impact to heritage trees. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 17**: Prior to approving any construction on the site, the City of Concord shall require project proponents to ensure compliance with all of the requirements of the City of Concord's Heritage Tree Ordinance. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 18: The Preferred Alternative could result in a potential impact to oak woodland/savannah. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 18**: Prior to approving any construction on a parcel that contains oak woodland/savannah habitat, the City of Concord shall require project proponents to demonstrate avoidance of impacts to oak woodland/savannah to the extent practicable; agree to have a qualified arborist prepare an Oak Protection Plan describing measures to protect trees to be saved; and mitigate unavoidable impacts to oak-dominated habitats through the replacement of impacted oaks, as described in a Tree Replacement and Planting Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 19: The Preferred Alternative could result in a potential impact from the spread or introduction of invasive plant and animal species. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 19**: Prior to approving any construction on the site, the City of Concord shall prepare and Invasive Species Control Planand require project proponents to develop and agree to implement the the ~~an Invasive Species Control~~ Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Concentration and Conservation Alternative		
Impact Biological Resources 24: The Concentration and Conservation Alternative could result in a potential impact to wetland habitats from direct fill or alteration of hydrology. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 24**: Prior to approving any construction potentially impacting wetlands on the site, the City of Concord shall require project proponents to demonstrate avoidance of wetlands fill to the extent practicable and agree to mitigate unavoidable temporary impacts to wetlands by restoration in place following construction; mitigate permanent fill of wetlands at a minimum 1:1 acreage ratio, concurrent with or prior to wetlands impacts; and provide the City with evidence of the purchase of credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for creation of wetlands coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 25: The Concentration and Conservation Alternative could result in a potential impact to the channel of Mt. Diablo Creek and its aquatic habitat. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 25**: Prior to approving any construction involving impacts to Mt. Diablo Creek, the City of Concord shall require project proponents to demonstrate avoidance of creek impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts to the creek by restoration in place following construction; mitigate unavoidable permanent fill of the creek at a minimum 1:1 acreage ratio, concurrent with or prior to creek impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 26: The Concentration and Conservation Alternative could result in a potential impact to riparian habitat. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 26**: Prior to approving any construction involving impacts to riparian habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of riparian habitat impacts to the extent practicable and agree to mitigate unavoidable impacts at a minimum 3:1 acreage ratio, concurrent with or prior to riparian impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of riparian habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 27: The Concentration and Conservation Alternative could result in a potential impact to the channel of Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 27**: Prior to approving any construction involving impacts to Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats, the City of Concord shall require project proponents to demonstrate avoidance of aquatic habitat impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts by restoration in place following construction; mitigate unavoidable permanent fill of aquatic habitats at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 28: The Concentration and Conservation Alternative could result in a potential impact to Californ**n**ia red-legged frogs and their habitats. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 28**: Prior to approving any construction in or near potential California red-legged frog habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of red-legged frog breeding habitat impacts and impacts to Mt. Diablo Creek to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in red-legged frog breeding habitat~~;~~ and use only low-intensity or downcast lighting near red-legged frog ~~breeding~~ or dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which frogs may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for red-legged frogs; mitigate unavoidable temporary impacts to red-legged frog habitat at a 1.1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation at a 0.1:1 ratio); mitigate unavoidable permanent impacts to red-legged frog breeding habitat at a minimum 3:1 acreage ratio and to red-legged frog nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of red-legged frog habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of red-legged frog habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 29: The Concentration and Conservation Alternative could result in a potential impact to California tiger salamanders and their habitats. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 29**: Prior to approving any construction or other ground-disturbing activities within areas identified as providing California tiger salamander habitat at the site, the City of Concord shall require project proponents to demonstrate avoidance of tiger salamander breeding habitat impacts to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in tiger salamander breeding habitat and use only low-intensity or downcast lighting near tiger salamander ~~breeding or~~ dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which tiger salamander may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for tiger salamander; mitigate unavoidable temporary impacts to tiger salamander habitat at a 1.1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation at a 0.1:1 ratio); mitigate unavoidable permanent impacts to tiger salamander breeding habitat at a minimum 3:1 acreage ratio and to tiger salamander nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of tiger salamander habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of tiger salamander habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 30: The Concentration and Conservation Alternative could result in a potential impact to individual western pond turtles. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 30**: Prior to approving any construction in or near potential western pond turtle habitat on the site, the City of Concord shall require project proponents to minimize grading impacts within 1/4 mile of the Cistern Pond and minimize permanent impacts to Mt. Diablo Creek, and agree to have a qualified biologist conduct surveys for communal/traditional nesting areas, implement measures to minimize impacts to turtle nests if a communal/traditional nesting area is detected, install temporary exclusion fencing around any construction areas, and have a qualified biologist conduct pre-construction surveys for all construction within 1/4 mile of aquatic pond turtle habitat; have a qualified biologist relocate any turtles detected during pre-construction surveys or during construction to suitable habitat well away from active construction areas; and have a qualified biologist conduct a construction personnel education program. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 31: The Concentration and Conservation Alternative could result in a potential impact to individual Alameda whipsnakes and coast horned lizards. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 31**: Prior to approving construction in areas southeast of Willow Pass Road on the site, the City of Concord shall require project proponents to avoid planning trails or other recreation features within 200 feet of coastal sage scrub in Rattlesnake Canyon; to agree to deposit construction materials only in areas lacking snakes or suitable cover for snakes; and to agree to have a qualified biologist conduct a construction personnel education program, conduct pre-construction surveys prior to the construction of recreational or interpretive features in open space areas with rock outcrops, and relocate any whipsnakes or horned lizards detected near construction areas to suitable habitat areas well away from construction areas. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 32: The Concentration and Conservation Alternative could result in a potential impact to nesting golden eagles. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 32**: Prior to approving any construction in or near potential golden eagle nesting habitat on the site, the City of Concord shall require project proponents to avoid planning trails or other recreational features within 1/4 mile of the existing eagle nest, to agree to have a qualified biologist conduct a pre-construction survey for nesting eagles, and to maintain a 1/4-mile buffer between any active nest and new construction disturbance during the breeding season. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 33: The Concentration and Conservation Alternative could result in a potential impact to burrowing owls and their habitat. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 33**: Prior to approving any construction in or near potential burrowing owl habitat at the site, the City of Concord shall require project proponents to agree to maintain buffers free from new disturbance around active owl burrows during the breeding season; have a qualified biologist conduct pre-construction surveys, relocate burrowing owls from burrows that are to be disturbed by construction during the nonbreeding season, and conduct comprehensive breeding-season and nonbreeding-season surveys to determine owl use of the individual project site prior to construction; mitigate permanent impacts to burrowing owl habitat at a minimum ratio of 6.5 acres of mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs on-site and of 9.75-19.5 acres of mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs off-site~~;~~ and provide the City with evidence of the purchase of burrowing owl habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of burrowing owl habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 34: The Concentration and Conservation Alternative could result in a potential impact to special-status songbirds such as loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 34**: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 35: The Concentration and Conservation Alternative could result in a potential impact to nesting white-tailed kites and northern harriers. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 35**: Prior to approving construction in or near potential white-tailed kite and northern harrier habitat on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for these species to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 36: The Concentration and Conservation Alternative could result in a potential impact to substantial numbers of nesting birds from development-related construction disturbance and direct removal of nests during the breeding season. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 36**: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for nesting birds to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests of native birds prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of native birds. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 37: The Concentration and Conservation Alternative could result in a potential impact to bat roosts, including those of special-status bat species. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 37**: Prior to approving any construction in or near potential bat roosting habitat on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct a pre-construction/pre-demolition survey for roosting bats; to maintain buffers free from new construction-related disturbance around active bat roosts during the maternity season and around roosts that do not have to be removed; to have a qualified biologist evict bats from roosts that must be disturbed or removed (during the non-maternity season); and to provide alternative roost sites (designed by a qualified biologist) if roosts of pallid bats or Townsend's big-eared bats are removed. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 38: The Concentration and Conservation Alternative could result in a potential impact to individual American badgers. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 38**: Prior to approving any construction in or near California annual grassland on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct pre-construction surveys for badger dens prior to initiation of grading; to maintain buffers free from new construction-related disturbance around active maternity dens; ~~and~~ to have a qualified biologist relocate badgers from dens located within proposed construction areas during the non-maternity season; and to have a qualified biologist resurvey the impact areas immediately prior to construction if badgers are relocated. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 39: Although no special-status plant species have been identified on the site, the Concentration and Conservation Alternative could result in potential disturbance or loss of the big tarplant and round-leaved filaree and their habitat if they are identified within the development footprint in the future. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 39**: Prior to approving any construction within California annual grassland on the site, the City of Concord shall require project proponents to have a qualified biologist conduct surveys for the big tarplant and round-leaved filaree; to avoid impacts to these species to the extent practicable if they are detected on site; and to mitigate permanent impacts to populations of these species by managing appropriate portions of the on-site open space to provide suitable conditions for these species. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Biological Resources 40: The Concentration and Conservation Alternative could result in a potential impact to heritage trees. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 40**: Prior to approving any construction on the site, the City of Concord shall require project proponents to ensure compliance with all of the requirements of the City of Concord's Heritage Tree Ordinance. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 41: The Concentration and Conservation Alternative could result in a potential impact to oak woodland/savannah. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 41**: Prior to approving any construction on a parcel that contains oak woodland/savannah habitat, the City of Concord shall require project proponents to demonstrate avoidance of impacts to oak woodland/savannah to the extent practicable; agree to have a qualified arborist prepare an Oak Protection Plan describing measures to protect trees to be saved; and mitigate unavoidable impacts to oak-dominated habitats through the replacement of impacted oaks, as described in a Tree Replacement and Planting Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Biological Resources 42: The Concentration and Conservation Alternative could result in a potential impact from the spread or introduction of invasive plant and animal species. This impact is considered to be potentially significant.	**Mitigation Measure Biological Resources 42**: Prior to approving any construction on the site, the City of Concord shall prepare an Invasive Species Control Plan and require project proponents to develop and agree to implement the ~~an Invasive Species Control~~ Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
CULTURAL RESOURCES (CHAPTER 9)		
Preferred Alternative		
Impact Cultural Resources 1: The Preferred Alternative could result in a potential change to ~~5~~ 6 of ~~10~~ 11 archaeological resources at the site that are ~~recommended for or~~ potentially eligible for listing on the National Register of Historic Places (NRHP) and California Register of Historic Places (CRHR) as historic properties/historical resources. This impact is considered to be potentially significant.	**Mitigation Measure Cultural Resources 1**: Prior to approving any specific public or private development that would impact any of the ~~five~~ six sites, the City of Concord shall require the implementation of measures for preservation in place or for adequate data recovery, curation, and documentation of historic properties/historical resources prior to earth-disturbing activities. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to initiating any earth-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Cultural Resources 2: The Preferred Alternative could cause indirect impacts to five archaeological resources that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR. This impact is considered to be potentially significant.	**Mitigation Measure Cultural Resources 2**: Prior to approving any restoration or development in the Open Space and Parks and Recreation areas where the five resources are located, the City of Concord shall require the implementation of cultural resources protection measures to control public access. The sponsor of the proposed actions within these areas shall be responsible of the implementation of the required measures prior to initiating any earth-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Cultural Resources 3: Ground disturbance as a result of implementing the Preferred Alternative could affect undocumented cultural resources, including human remains. This impact is considered to be potentially significant.	**Mitigation Measure Cultural Resources 3**: Prior to approving any specific development at the site, the City of Concord shall require the implementation of inadvertent discovery measures for the protection of cultural resources, including human remains. The public or private sponsor of the proposed development shall be responsible for establishing and implementing the inadvertent discovery measures prior to initiating any ground-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Concentration and Conservation Alternative		
Impact Cultural Resources 4: The Concentration and Conservation Alternative could result in a change to ~~5~~ 6 of ~~10~~ 11 archaeological resources that are recommended or potentially eligible for listing on the NRHP and CRHR as historic properties/historical resources. This impact is considered to be potentially significant.	**Mitigation Measure Cultural Resources 4**: Prior to approving any specific public or private development that would impact any of the ~~five~~ six sites, the City of Concord shall require the implementation of measures for preservation in place or for adequate data recovery, curation, and documentation of historic properties/historical resources prior to any earth-disturbing activities. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to initiating and earth-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Cultural Resources 5: The Concentration and Conservation Alternative could cause indirect impacts to five archaeological resources that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR. This impact is considered to be potentially significant.	**Mitigation Measure Cultural Resources 5**: Prior to approving any restoration or development in the Open Space and Parks and Recreation areas where the five resources are located, the City of Concord shall require the implementation of cultural resources protection measures to control public access. The sponsor of the proposed actions within these areas shall be responsible of the implementation of the required measures prior to initiating any earth-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Cultural Resources 6: Ground disturbance as a result of implementing the Concentration and Conservation Alternative could affect undocumented cultural resources, including human remains. This impact is considered to be potentially significant.	**Mitigation Measure Cultural Resources 6**: Prior to approving any specific development at the site, the City of Concord shall require the implementation of inadvertent discovery measures for the protection of cultural resources, including human remains. The public or private sponsor of the proposed development shall be responsible for establishing and implementing the inadvertent discovery measures prior to initiating any ground-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
HAZARDOUS MATERIALS (CHAPTER 10)		
Preferred Alternative		
Impact Hazardous Materials 1: The Preferred Alternative could result in a conflict of the proposed land use and remediation performed by the Navy. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 1**: ~~Prior to approving any specific development project at the site, the City shall require that new property owners plan and implement response actions in consultation with the City and with the approval of applicable environmental regulatory agencies that is consistent with the proposed land uses for the specific development project. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.~~ Prior to approving any specific development plan, the City shall require, at a minimum, the new property owners to have a remediation plan that has been approved by applicable environmental regulatory agencies and developed in consultation with the City. The remediation planning and implementation could occur prior to City approval of the development plan or, alternatively, as part of development activities. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the applicable regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 2: Site development activities associated with the Preferred Alternative could substantially increase the risk of exposure of construction workers or site visitors to known and unknown hazardous substances in soil or groundwater. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 2**: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare Site Management Plans to cover all site development activities. The Site Management Plans will include requirements for worker health and safety plans and soil management plans, approved by applicable environmental regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Hazardous Materials 3: Site development activities associated with the Preferred Alternative could substantially increase the risk of exposure of off-site residents or schools within 1/4 of the site to hazardous substances in wind-blown fugitive dust. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 3**: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare a Site Management Plan to cover all site development activities. The Site Management Plan will include requirements for dust control plans and perimeter air monitoring plans, approved and monitored by applicable environmental regulatory agencies such as the DTSC and the EPA. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 4: Land uses associated with the Preferred Alternative could substantially increase the risk of exposure of future occupants to residual hazardous substances in soil or groundwater. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 4**: ~~Prior to approving any specific development projects at the site, the City shall require that new property owners implement response actions that are consistent with proposed land uses, with the approval of applicable environmental regulatory agencies. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.~~ Prior to approving any specific development plan, the City shall require, at a minimum, the new property owners to have a remediation plan that has been approved by applicable environmental regulatory agencies and developed in consultation with the City. The remediation planning and implementation could occur prior to City approval of the development plan or, alternatively, as part of development activities. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the applicable regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Hazardous Materials 5: Building demolition or renovation activities associated with the Preferred Alternative could expose construction workers, future occupants, or site visitors to hazardous building materials. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 5**: The City shall require that new property owners demolish or renovate buildings in accordance with appropriate federal, State, and local regulations addressing abatement of lead-based paint, asbestos, or other hazardous building materials. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 6: The Preferred Alternative could substantially increase the risk of exposure of the public to inadvertent or accidental releases of hazardous substances to the environment from non-residential uses or transportation activities during project occupancy. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 6**: Prior to approving any occupancy permits, the City shall require the new property owners to prepare and update a Hazardous Materials Management Plan in accordance with local agency requirements. The plan shall detail the types and quantities of chemicals stored at a given location, the storage location and types of storage containers, and the emergency response equipment available at the property (i.e., location of fire hydrants and extinguishers), and provide a map showing the location of all of these items as well as major utilities. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 7: Site development activities associated with the Preferred Alternative could interfere with ongoing soil and groundwater remediation efforts by the Navy. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 7**: Site owners shall coordinate with the City, Navy, and appropriate regulatory agencies, as appropriate, to ensure that development activities do not interfere with any adjacent or on-site remediation system or activity, or unduly delay remediation activities. Specific responsibilities and requirements regarding protection of remediation systems and coordination of activities can be included in the property transfer documents. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Concentration and Conservation Alternative		
Impact Hazardous Materials 10: The Concentration and Conservation Alternative could result in a conflict of the proposed land use and remediation performed by the Navy. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 10**: Prior to approving any specific development project at the site, the City shall require that new property owners plan and implement response actions in consultation with the City and with the approval of applicable environmental regulatory agencies that is consistent with the proposed land uses for the specific development project. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the regulatory agency. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 11: Site development activities associated with the Concentration and Conservation Alternative could substantially increase the risk of exposure of construction workers or site visitors to known and unknown hazardous substances in soil or groundwater. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 11**: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare Site Management Plans to cover all site development activities. The Site Management Plans will include requirements for worker health and safety plans and soil management plans, approved by applicable environmental regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 12: Site development activities associated with the Concentration and Conservation Alternative could substantially increase the risk of exposure of off-site residents or schools within 1/4 mile of the site to hazardous substances in wind-blown fugitive dust. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 12**: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare a Site Management Plan to cover all site development activities. The Site Management Plan will include requirements for dust control plans and perimeter air monitoring plans, approved and monitored by applicable environmental regulatory agencies such as the DTSC and the EPA. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Hazardous Materials 13: Land uses associated with the Concentration and Conservation Alternative could substantially increase the risk of exposure of future occupants to residual hazardous substances in soil or groundwater. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 13**: ~~Prior to approving any specific development projects at the site, the City shall require that new property owners implement response actions that are consistent with proposed land uses, with the approval of applicable environmental regulatory agencies. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.~~ Prior to approving any specific development project at the site, the City shall require that new property owners plan and implement response actions in consultation with the City and with the approval of applicable environmental regulatory agencies that is consistent with the proposed land uses for the specific development project. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the applicable regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 14: Building demolition or renovation activities associated with the Concentration and Conservation Alternative could expose construction workers, future occupants, or site visitors to hazardous building materials. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 14**: The City shall require that new property owners demolish or renovate buildings in accordance with appropriate federal, State, and local regulations addressing abatement of lead-based paint, asbestos, or other hazardous building materials. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Hazardous Materials 15: The Concentration and Conservation Alternative could substantially increase the risk of exposure of the public to inadvertent or accidental releases of hazardous substances to the environment from non-residential uses or transportation activities during project occupancy. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 15**: Prior to approving any occupancy permits, the City shall require the new property owners to prepare and update a Hazardous Materials Management Plan in accordance with local agency requirements. The plan shall detail the types and quantities of chemicals stored at a given location, the storage location and types of storage containers, and the emergency response equipment available at the property (i.e., location of fire hydrants and extinguishers), and provide a map showing the location of all of these items as well as major utilities. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Hazardous Materials 16: Site development activities associated with the Concentration and Conservation Alternative could interfere with ongoing soil and groundwater remediation efforts by the Navy. This impact is considered to be potentially significant.	**Mitigation Measure Hazardous Materials 16**: Site owners shall coordinate with the City, Navy, and appropriate regulatory agencies, as appropriate, to ensure that development activities do not interfere with any adjacent or on-site remediation system or activity, or unduly delay remediation activities. Specific responsibilities and requirements regarding protection of remediation systems and coordination of activities can be included in the property transfer documents. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
AIR QUALITY (CHAPTER 11)		
Preferred Alternative		
Impact Air Quality 1: The Preferred Alternative would result in the total ~~vehicular~~ emissions of ozone precursors exceeding the Bay Area Air Quality Management District (BAAQMD) quantitative thresholds. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 1**: Prior to approving development at the site, the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. To further reduce particulate matter emissions, wood-burning fireplaces will be banned within the CNWS or required to employ best available control technologies and households with such fireplaces must comply with all applicable Spare the Air Day restrictions. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Air Quality 2: As a result of implementing the Preferred Alternative the total population of the City of Concord, including the project, would exceed the maximum population forecast in the General Plan that would be consistent with the current clean air plan. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 2**: Prior to approving development at the site the City of Concord shall request updated population projections from the Association of Bay Area Governments (ABAG) and BAAQMD and the City shall coordinate with these agencies to update the applicable clean air plans so that the projections of Concord's 2030 population are updated (increased) by ABAG to reflect the size and scope of the Preferred Alternative. The updated projections shall be such that the additional population due to the implementation of the Preferred Alternative will not exceed the revised 2030 Concord total population. This updated population ceiling shall be incorporated into the applicable clean air plan. Unless ABAG and the BAAQMD revise Concord's 2030 population ceiling, and include it in the applicable clean air plan, this will remain a potential impact that is significant and unavoidable.	No
Impact Air Quality 3: The Preferred Alternative could result in increased population and vehicle miles traveled at rates that would be inconsistent with the most current clean air plan. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 3**: Prior to approving development at the site the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.	No
Impact Air Quality 4: The Preferred Alternative could result in an increased risk of cancer and other negative health effects due to toxic air contaminants (TACs) in the vicinity of SR 4. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 4**: Prior to approving development, the City of Concord shall establish through zoning, that residential uses, daycare centers, medical facilities, and other sensitive receptors are set back at least 500 feet from SR 4. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Air Quality 5: The Preferred Alternative could result in increased emissions of PM_{10}, diesel particulate matter, and other pollutants during construction. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 5**: Prior to approving development, the City of Concord shall require that all feasible construction activity control measures, as specified in Table 11-7, will be applied at the site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Concentration and Conservation Alternative		
Impact Air Quality 8: The Concentration and Conservation Alternative would result in the total vehicular emissions of ozone precursors exceed the BAAQMD quantitative thresholds. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 8**: Prior to approving development at the site the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. To further reduce particulate matter emissions, wood-burning fireplaces will be banned within the CNWS or required to employ best available control technologies and households with such fireplaces shall to comply with Spare the Air Day restrictions. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.	No
Impact Air Quality 9: As a result of implementing the Concentration and Conservation Alternative the total population of the City of Concord, including the project, would exceed the maximum population forecast in the General Plan that would be consistent with the current clean air plan. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 9**: Prior to approving development at the site the City of Concord the City shall request updated population projections from ABAG and BAAQMD and the City shall coordinate with these agencies to update the applicable clean air plans so that the projections of Concord's 2030 population are updated (increased) by ABAG to reflect the size and scope of the Concentration and Conservation Alternative. The updated projections shall be such that the additional population due to the implementation of the Concentration and Conservation Alternative will not exceed the revised 2030 Concord total population. This updated population ceiling shall be incorporated into the applicable clean air plan. Unless ABAG and the BAAQMD revise Concord's 2030 population ceiling, and include it in the applicable clean air plan, this will remain a potential impact that is significant and unavoidable.	No

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Air Quality 10: The Concentration and Conservation Alternative could result in increased population and vehicle miles traveled at rates that would be inconsistent with the most current clean air plan. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 10**: Prior to approving development at the site the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.	No
Impact Air Quality 11: The Concentration and Conservation Alternative could result in an increased risk of cancer and other negative health effects due to TACs in the vicinity of SR 4. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 11**: Prior to approving development, the City of Concord shall establish, through zoning, that residential uses, daycare centers, medical facilities, and other sensitive receptors are set back at least 500 feet from SR 4. With implementation of this mitigation measure, this potential significant impact would be reduced to a level that is less than significant.	Yes
Impact Air Quality 12: The Concentration and Conservation Alternative could result in increased emissions of PM_{10}, diesel particulate matter, and other pollutants during construction. This impact is considered to be potentially significant.	**Mitigation Measure Air Quality 12**: Prior to approving development, the City of Concord shall require that all feasible construction activity control measures, as specified in Table 11-7, will be applied at the site. Implementation of this mitigation measure would reduce this potential impact to a level that is less than significant. With implementation of this mitigation measure, this potential significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
NOISE AND VIBRATION (CHAPTER 12)		
Preferred Alternative		
Impact Noise and Vibration 1: Development of the Preferred Alternative would contribute to increases in traffic noise levels on West Street and Denkinger Road. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 1**: The City shall require that new extensions of West Street and Denkinger Road shall be constructed using low-noise road surfaces, and to incorporate grading measures such as berms or other barriers to screen noise. The City will also require developers to fund grants that will allow noise-sensitive receptors to install acoustical insulation. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.	No
Impact Noise and Vibration 2: Traffic and rail noise associated with the Preferred Alternative would result in significant increases in exterior noise levels. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 2a**: Before the City of Concord grants approval for any residential uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the City. New residential development must demonstrate that the City's "normally acceptable" noise standard can be achieved in exterior living spaces. **Mitigation Measure Noise and Vibration 2b**: Before the City of Concord grants approval for any commercial uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the City. Construction of buildings for commercial use on land that is exposed to noise levels above the City's noise standard shall include only be undertaken after a detailed analysis of the noise reduction and noise insulation features needed to comply with City standards. **Mitigation Measure Noise and Vibration 2c**: Before the City of Concord grants approval for any public parks on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require an acoustical analysis demonstrating city standards for conditionally acceptable noise levels would be achieved and that the analysis be submitted to and accepted by the City. Public parks shall use grading measures and setbacks to mitigate traffic noise from adjacent roads.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Noise and Vibration 2d: Before the City of Concord grants approval for any schools on parcels of land along Willow Pass Road, the City shall require an acoustical analysis demonstrating city standards for conditionally acceptable noise levels would be achieved and that the analysis be submitted to and accepted by the City. Schools shall use grading measures and setbacks to mitigate traffic noise from adjacent roads. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	
Impact Noise and Vibration 3: Traffic noise associated with the Preferred Alternative would result in significant interior noise levels for buildings along the BART and SR 4 corridors and along Willow Pass Road. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 3**: Before the City of Concord grants approval for any buildings that include habitable rooms on parcels of land along the BART and SR 4 corridors and along Willow Pass Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the City demonstrating that the 24-hour day-night average sound level standard of 45 decibels (dBLdn) is achieved. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Noise and Vibration 4: On-site stationary noise sources associated with the Preferred Alternative could expose sensitive noise receptors to exterior noise levels that are unacceptable. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 4**: The City of Concord shall require any new development of the site to include noise control measures at stationary sources to reduce impacts to noise-sensitive receptors. Prior to the issuance of building permits, the City shall require developers to submit engineering and acoustical specifications for project mechanical HVAC and utility transformers (including generators) to the Planning Department or other appropriate department, demonstrating that the equipment design (types, location, enclosure, specifications) could control noise from the equipment to at least 10 dB(A) below existing ambient noise levels at nearby residential and other noise-sensitive land uses. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Noise and Vibration 5: The construction associated with implementation of the Preferred Alternative would result in short-term construction noise and vibration. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 5**: Concord General Plan Policy S-2.2.5 requires developers to reduce noise impacts of new developments on adjacent properties through appropriate means. Prior to approving a permit for development at the site to ensure that the City's policy is achieved, the City shall require developers to demonstrate compliance with the following guidelines: • Whenever construction occurs adjacent to occupied residences (on or off site), temporary barriers shall be constructed around the construction sites to shield the ground floor from the noise-sensitive uses. These barriers shall be of 3/4-inch medium-density plywood sheeting, or equivalent, and shall achieve a Sound Transmission Class of 30 or greater, based on certified sound transmission loss data taken according to American Society for Testing and Materials Test Method E90, or as approved by the City of Concord Building Department. Construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and 12:00 p.m. to 4:00 p.m. on Sundays and holidays, or at such other hours as may be authorized or restricted by the permit, if they meet at least one of the following noise limitations: No individual piece of equipment shall produce a noise level exceeding 90 decibels equivalent continuous noise levels (dBL_{Aeq}) at a distance of 25 feet. If the device is housed within a structure or trailer on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible. The noise level at any point outside the site boundary shall not exceed 90 dBL_{Aeq}. • Construction equipment staging areas shall be located as far as feasible from residential areas while still serving the needs of construction contractors. • Quieter "sonic" pile drivers shall be used, unless engineering studies are submitted to the City showing this is not feasible and cost-effective, based on geotechnical considerations.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Noise and Vibration 5, continued: • Groundborne vibration impacts from construction activities shall be considered in the construction programs to minimize the disturbance to noise-sensitive receptors. • Routes for heavy construction site vehicles shall be identified and contractors shall be required to use them exclusively to minimize noise and vibration impact to residences and noise-sensitive receptors. • Activities that generate high noise levels—such as pile driving and the use of jackhammers, drills, and impact wrenches—shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	
Impact Noise and Vibration 6: Noise from operation of the Tournament Sports Facility component of the Preferred Alternative would result in increases to exterior noise levels. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 6**: Before the City of Concord grants approval for the Tournament Sports Facility, a noise analysis shall be carried out to determine the likely increase to exterior noise levels at noise-sensitive receptors during sporting events. Where applicable, the noise analysis should do the following: • Set forth the hours of operation of the Tournament Sports Facility that has been agreed upon with the City of Concord Planning Department. • Set forth the noise targets and noise-sensitive receptors agreed upon with the City of Concord Planning Department. • Establish the predicted noise levels from the Tournament Sports Facility at noise-sensitive receptors. • Demonstrate the mitigation measures that have been used to achieve the noise targets agreed upon with the City. Possible mitigation measures are constructing earth berms and increasing the distance between spectator seating and noise-sensitive receptors.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Noise and Vibration 6, continued: • If sound reinforcement and public address systems are to be provided, include electroacoustic computer model noise maps showing the noise level at the noise-sensitive receptors. The report should demonstrate that the orientation and directionality of loudspeakers has been considered in the design. Cutsheets for the proposed loudspeakers should be provided in the report appendices. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	
Concentration and Conservation Alternative		
Impact Noise and Vibration 9: Traffic and rail noise associated with the Concentration and Conservation Alternative would result in significant increases in exterior noise levels. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 9a**: Before the City of Concord grants approval for any residential uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. New residential development must demonstrate that the City's "normally acceptable" noise standard can be achieved in exterior living spaces. **Mitigation Measure Noise and Vibration 9b**: Before the City of Concord grants approval for any commercial uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. Construction of buildings for commercial use on land that is exposed to noise levels above the City's noise standard shall only be undertaken after a detailed analysis of the noise reduction requirement is made and noise insulation features needed to comply with City standards are included in the design.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Noise and Vibration 9c: Before the City of Concord grants approval for any public parks on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. Public parks shall use grading measures and setbacks to mitigate traffic noise from adjacent roads. **Mitigation Measure Noise and Vibration 9d**: Before the City of Concord grants approval for any schools on parcels of land along Willow Pass Road, the City shall require an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. Schools shall use grading measures and setbacks to mitigate traffic noise from adjacent roads. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	
Impact Noise and Vibration 10: Traffic and rail noise associated with the Concentration and Conservation Alternative would result in significant interior noise levels for buildings along the BART and SR 4 corridors and along Willow Pass Road. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 10**: Before the City of Concord grants approval for any buildings that include habitable rooms on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City demonstrating that the 45 dBLdn standard is achieved. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Noise and Vibration 11: On-site stationary noise sources associated with the Concentration and Conservation Alternative could expose sensitive noise receptors to exterior noise levels that are unacceptable. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 11**: The City of Concord shall require any new development of the site to include noise control measures at stationary sources to reduce impacts to noise-sensitive receptors. Prior to the issuance of building permits, the City shall require developers to submit engineering and acoustical specifications for project mechanical HVAC and utility transformers (including generators) to the Planning Department or other	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Noise and Vibration 11, continued: appropriate department, demonstrating that the equipment design (types, location, enclosure, specifications) could control noise from the equipment to at least 10 dB(A) below existing ambient noise levels at nearby residential and other noise-sensitive land uses. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	
Impact Noise and Vibration 12: The construction associated with implementation of the Concentration and Conservation Alternative would result in short-term construction noise and vibration. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 12**: Concord General Plan Policy S-2.2.5 requires developers to reduce noise impacts of new developments on adjacent properties through appropriate means. Prior to approving a permit for development at the site to ensure that the City's policy is achieved, the City shall require developers to demonstrate compliance with the following guidelines: • Whenever construction occurs adjacent to occupied residences (on or off site), temporary barriers shall be constructed around the construction sites to shield the ground floor from the noise-sensitive uses. These barriers shall be of 3/4-inch medium-density plywood sheeting, or equivalent, and shall achieve a Sound Transmission Class of 30 or greater, based on certified sound transmission loss data taken according to American Society for Testing and Materials Test Method E90, or as approved by the City of Concord Building Department. • Construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and 12:00 p.m. to 4:00 p.m. on Sundays and holidays, or at such other hours as may be authorized or restricted by the permit, if they meet at least one of the following noise limitations: No individual piece of equipment shall produce a noise level exceeding 90 dBLAeq at a distance of 25 feet. If the device is housed within a structure or trailer on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible. The noise level at any point outside the site boundary shall not exceed 90 dBLAeq.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Noise and Vibration 12, continued: • Construction equipment staging areas shall be located as far as feasible from residential areas while still serving the needs of construction contractors. • Quieter "sonic" pile drivers shall be used, unless engineering studies are submitted to the City showing this is not feasible and cost-effective, based on geotechnical considerations.	
	Mitigation Measure Noise and Vibration 12, continued: • Groundborne vibration impacts from construction activities shall be considered in the construction programs to minimize the disturbance to noise-sensitive receptors. • Routes for heavy construction site vehicles shall be identified, and contractors shall be required to use them exclusively to minimize noise and vibration impact to residences and noise-sensitive receptors. • Activities that generate high noise levels—such as pile driving and the use of jackhammers, drills, and impact wrenches—shall be restricted to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	
Impact Noise and Vibration 13: Noise from operation of the Tournament Sports Facility would result in increases to exterior noise levels. This impact is considered to be potentially significant.	**Mitigation Measure Noise and Vibration 13**: Before the City of Concord grants planning approval for the Tournament Sports Facility, a noise analysis shall be carried out to determine the likely increase to exterior noise levels at noise-sensitive receptors during sporting events. Where applicable, the noise analysis should do the following: • Set forth the hours of operation of the Tournament Sports Facility that has been agreed upon with the City. • Set forth the noise targets and noise-sensitive receptors agreed upon with the City. • Establish the predicted noise levels from the Tournament Sports Facility at the noise-sensitive receptors.	Yes`

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Noise and Vibration 13, continued: • Demonstrate the mitigation measures that have been used to achieve the noise targets agreed upon with the City. Possible mitigation measures are constructing earth berms and increasing the distance between spectator seating and noise-sensitive receptors. • If sound reinforcement and public address systems are to be provided, the noise analysis report should include electroacoustic computer model noise maps showing the noise level at the noise-sensitive receptors. The report should demonstrate that the orientation and directionality of loudspeakers has been considered in the design. Cutsheets for the proposed loudspeakers should be provided in the report appendices. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	
POPULATION, HOUSING, AND EMPLOYMENT (CHAPTER 13)		
Preferred Alternative		
None identified.		
Concentration and Conservation Alternative		
None identified.		
PUBLIC SERVICES (CHAPTER 14)		
Preferred Alternative		
None identified.		
Concentration and Conservation Alternative		
None identified.		
RECREATION (CHAPTER 15)		
Preferred Alternative		
None identified.		
Concentration and Conservation Alternative		
None identified.		

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
UTILITIES (CHAPTER 16)		
Preferred Alternative		
Impact Utilities 1: Implementation of the Preferred Alternative would result in an increase in demand for water that could exceed supply limits. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 1a**: The City of Concord will request that Contra Costa Water District (CCWD) provide a Water Supply Assessment (WSA) for incorporation as part of the Amendment of the General Plan. The City of Concord has provided CCWD with the programmatic data for the Preferred Alternative, to enable CCWD to assess the future water demand and prepare the WSA, per the requirements of Senate Bill (SB) 610 and SB 221. CCWD will prepare the WSA based on water usage that considers all available City of Concord and CCWD water conservation and recycling programs. No development of the site shall be approved by the City of Concord until CCWD can demonstrate that adequate supplies can be delivered to meet the identified water demands. **Mitigation Measure Utilities 1b**: Prior to approving any development of the site, CCWD and the City shall implement demand-side management practices to reduce water demand, in accordance with General Plan Policy PF-1.1.2. **Mitigation Measure Utilities 1c**: The City of Concord will require developers to install "purple pipe" in outdoor irrigation systems throughout the project area to maximize the potential use of recycled water to reduce demand on the potable and raw water supplies. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Utilities 2: Implementation of the Preferred Alternative would result in an increase in wastewater generation that could exceed the capability of the Contra Costa Central Sanitary District (CCCSD) wastewater treatment facilities to comply with the wastewater discharge requirements of the Water Board.	**Mitigation Measure Utilities 2**: The City of Concord shall reach an agreement with CCCSD such that CCCSD commits to improving its collection system and treatment process and to pursuing a sufficient effluent discharge limit, as needed over time, to accommodate the project. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Utilities 2, continued: In addition, implementation of the Preferred Alternative would result in an increase in wastewater generation that could exceed the capacity of CCCSD and City collection and transmission facilities, resulting in the need to construct additional facilities. This impact is considered to be potentially significant.		
Impact Utilities 3: Implementation of the Preferred Alternative could result in an increase in demand for untreated or raw water for irrigation or other non-potable uses. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 3a**: Prior to approving any development at the site, the City of Concord shall provide data to CCWD and request that CCWD assess the future demand for untreated or raw water supplies as part of the WSA, to demonstrate that it can supply the water to the site. **Mitigation Measure Utilities 3b**: Recycled water shall be utilized in preference to untreated or raw water where feasible. The City of Concord will work with CCWD and CCCSD to maximize the use of recycled water, and to determine if the potential recycled water supply will match the potential demand. **Mitigation Measure Utilities 3c**: Per Mitigation Measure Utilities 1b, CCWD and the City of Concord shall implement demand-side management practices to reduce indoor and outdoor water use at the project site. Per Mitigation Measure Utilities 1c, the City of Concord shall require developers to install "purple pipe" in outdoor irrigation systems, to maximize the potential use of recycled water. These measures will subsequently reduce the demand for untreated or raw water. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Utilities 4: Implementation of the Preferred Alternative could require construction of a new untreated water distribution system, possibly including pump stations and storage tanks. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 4a**: Based on agreement with CCWD on the amount of raw water to be supplied, the City of Concord shall ensure that future development at the site includes construction of the untreated water distribution system, storage tanks/ponds, filtering system, pump stations, and other facilities needed to supply the desired amount of untreated or raw water, in accordance with CCWD's requirements and standards.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Utilities 4b: The City of Concord shall ensure that any use of untreated or raw water at the site includes the measures identified by CCWD to upgrade or improve the Contra Costa Canal to supply the agreed to amount of water. **Mitigation Measure Utilities 4c**: The City of Concord shall ensure that any untreated or raw water obtained from the Contra Costa Canal will be at a metered location designated by CCWD. With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.	
Impact Utilities 5: Implementation of the Preferred Alternative would result in a need for potable water that could require the construction of new or expansion of existing facilities to provide treated water. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 5**: The City of Concord shall ensure that all required water distribution systems, water storage tanks, pump stations, and other facilities at the site to supply the demand for potable water are constructed to meet CCWD's requirements and standards. With the implementation of this mitigation measure, the potentially significant impact will be reduced to a level that is less than significant.	Yes
Impact Utilities 6: Implementation of the Preferred Alternative would result in an opportunity to use recycled water at the site. Recycled water could be provided by CCCSD's existing system, by an alternative off-site source, or by a future on-site treatment system. Additional treatment capacity will be required at the CCCSD WWTP to provide the additional recycled water. New recycled water distribution lines, pumping stations, and on-site storage reservoirs will be required to connect the project to CCCSD's existing recycled water system. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 6**: It will be incumbent upon the City of Concord, CCCSD, and CCWD to have an agreement in place regarding the provision of recycled water to the site, prior to recycled water being utilized on site. The City of Concord needs to reach an agreement with CCCSD, or an alternative off-site provider, to ensure that the recycled water treatment and transmission facilities are sufficiently expanded to serve the project. Alternatively, an on-site recycled water treatment plant may be constructed, which may eliminate the need for expanded off-site facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Utilities 7: Implementation of the Preferred Alternative would result in an increase in impervious surface, which would result in an alteration of the existing site drainage pattern and could increase the rate and volume of surface runoff. This increase could exceed the capacity of the existing stormwater drainage system, and require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 7**: Prior to approving any development at the site, the City of Concord shall require that the new development incorporate drainage facilities and BMPs to reduce the quantity and improve the quality of runoff in accordance with NPDES permit requirements. New development shall also be required to consult with the CCCFC&WCD to manage any additional stormwater generated at the site. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Utilities 8: Implementation of the Preferred Alternative would result in an increase in demand for electricity that could require or result in the construction of new electricity facilities, transformers, distribution systems, substations, or expansion of existing electricity facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 8a**: Prior to approving any development at the site, the City of Concord shall coordinate with Pacific Gas and Electric Company (PG&E) regarding the planned development and provide data for PG&E to assess the future electricity demand, and for the Project Proponent to study the environmental impacts of such facilities in its approval process. **Mitigation Measure Utilities 8b**: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing electrical supply infrastructure and construct new electrical substations either on or off site to meet potential energy demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in its approval process. With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.	Yes
Impact Utilities 9: Implementation of the Preferred Alternative would result in an increase in demand for natural gas that could require or result in the construction of new natural gas facilities, distribution systems, or expansion of existing natural gas facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 9a**: Prior to approving any development at the site, the City of Concord shall coordinate with PG&E regarding the planned development and provide data for PG&E to assess the future natural gas demand, and for the Project Proponent to study the environmental impacts of such facilities in its approval process.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Utilities 9b: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing gas supply infrastructure or construct new gas supply infrastructure to meet potential natural gas demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in its approval process. With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.	
Impact Utilities 10: Implementation of the Preferred Alternative would result in an increase in demand of information technology/communications (IT/COMM) services at the site that would require additional levels of service or construction of additional IT/COMM facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 10**: Prior to approving any development at the site, the City of Concord shall require that the IT/COMM providers demonstrate that they can provide the needed services and facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.	Yes
Concentration and Conservation Alternative		
Impact Utilities 12: Implementation of the Concentration and Conservation Alternative would result in an increase in demand for water that could exceed supply limits. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 12a**: The City of Concord will request that CCWD provide a WSA for incorporation as part of the Amendment of the General Plan. The City of Concord has provided CCWD with the programmatic data for the Concentration and Conservation Alternative, to enable CCWD to assess the future water demand and prepare the WSA, per the requirements of SB 610 and SB 221. CCWD will prepare the WSA based on water usage that considers all available City of Concord and CCWD water conservation and recycling programs. No development of the site shall be approved by the City of Concord until CCWD can demonstrate that adequate supplies can be delivered to meet the identified water demands. **Mitigation Measure Utilities 12b**: Prior to approving any development of the site, CCWD and the City shall implement demand-side management practices to reduce water demand, in accordance with General Plan Policy PF-1.1.2.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Utilities 12c: The City of Concord will require developers to install "purple pipe" in outdoor irrigation systems throughout the project area to maximize the potential use of recycled water to reduce demand on the potable and raw water supplies. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	
Impact Utilities 13: Implementation of the Concentration and Conservation Alternative would result in an increase in wastewater generation that could exceed the capability of the CCCSD wastewater treatment facilities to comply with the wastewater discharge requirements of the Water Board. In addition, implementation of the Concentration and Conservation Alternative would result in an increase in wastewater generation that could exceed the capacity of CCCSD and City collection and transmission facilities, resulting in the need to construct additional facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 13**: The City of Concord shall reach an agreement with CCCSD such that CCCSD commits to improving its collection system and treatment process and to pursuing a sufficient effluent discharge limit, as needed over time, to accommodate the project. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Utilities 14: Implementation of the Concentration and Conservation Alternative could result in an increase in demand for untreated or raw water for irrigation or other non-potable uses. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 14a**: Prior to approving any development at the site, the City of Concord shall provide data to CCWD and request that CCWD assess the future demand for untreated or raw water supplies as part of the WSA, to demonstrate that it can supply the water to the site. **Mitigation Measure Utilities 14b**: Recycled water shall be utilized in preference to untreated or raw water where feasible. The City of Concord will work with CCWD and CCCSD to maximize the use of recycled water, and to determine if the potential recycled water supply will match the potential demand.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Utilities 14c: Per Mitigation Measure Utilities 1b, CCWD and the City of Concord shall implement demand-side management practices to reduce indoor and outdoor water use at the project site. Per Mitigation Measure Utilities 1c, the City of Concord shall require developers to install "purple pipe" in outdoor irrigation systems, to maximize the potential use of recycled water. These measures will subsequently reduce the demand for untreated or raw water. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.	
Impact Utilities 15: Implementation of the Concentration and Conservation Alternative could require construction of a new untreated water distribution system, possibly including pump stations and storage tanks. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 15a**: Based on agreement with CCWD on the amount of raw water to be supplied, the City of Concord shall ensure that future development at the site includes construction of the untreated water distribution system, storage tanks/ponds, filtering systems, pump stations, and other facilities needed to supply the desired amount of untreated or raw water, in accordance with CCWD's requirements and standards. **Mitigation Measure Utilities 15b**: The City of Concord shall ensure that any use of untreated or raw water at the site includes the measures identified by CCWD to upgrade or improve the Contra Costa Canal to supply the agreed amount of water. **Mitigation Measure Utilities 15c**: The City of Concord shall ensure that any untreated or raw water obtained from the Contra Costa Canal will be at a metered location designated by CCWD. With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.	Yes
Impact Utilities 16: Implementation of the Concentration and Conservation Alternative would result in a need for potable water that could require the construction of new or expansion of existing facilities to provide treated water. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 16**: The City of Concord shall ensure that all required water distribution systems, water storage tanks, pump stations, and other facilities at the site to supply the demand for potable water are constructed to meet CCWD's requirements and standards. With the implementation of this mitigation measure, the potentially significant impact will be reduced to a level that is less than significant.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
Impact Utilities 17: Implementation of the Concentration and Conservation Alternative would result in an opportunity to use recycled water at the site. Recycled water could be provided by CCCSD's existing system, by an alternative off-site source, or by a future on-site treatment system. Additional treatment capacity will be required at the CCCSD WWTP to provide the additional recycled water. New recycled water distribution lines, pumping stations, and on-site storage reservoirs will be required to connect the project to CCCSD's existing recycled water system. This impact is considered to be potentially significant.'	**Mitigation Measure Utilities 17**: It will be incumbent upon the City of Concord, CCCSD, and CCWD to have an agreement in place regarding the provision of recycled water to the site, prior to recycled water being utilized on site. The City of Concord needs to reach an agreement with CCCSD, or an alternative off-site provider, to ensure that the recycled water treatment and transmission facilities are sufficiently expanded to serve the project. Alternatively, an on-site recycled water treatment plant may be constructed, that may eliminate the need for expanded off-site facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.	Yes
Impact Utilities 18: Implementation of the Concentration and Conservation Alternative would result in an increase in impervious surface, which would result in an alteration of the existing site drainage pattern and could increase the rate and volume of surface runoff. This increase could exceed the capacity of existing stormwater drainage systems, and require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 18**: Prior to approving any development at the site, the City of Concord shall require that the new development incorporate drainage facilities and BMPs to reduce the quantity and improve the quality of runoff in accordance with NPDES permit requirements. New development shall also be required to consult with the CCCFC&WCD to manage any additional stormwater generated at the site. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.	Yes
Impact Utilities 19: Implementation of the Concentration and Conservation Alternative would result in an increase in demand for electricity that could require or result in the construction of new electricity facilities, transformers, distribution systems, and substations; or expansion of existing electricity facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 19a**: Prior to approving any development at the site, the City of Concord shall coordinate with PG&E regarding the planned development and provide data for PG&E to assess the future electricity demand, and for the Project Proponent to study the environmental impacts of such facilities in its approval process.	Yes

Significant Impact	Mitigation Measures	Does Implementation of the Mitigation Measure(s) Reduce the Impact to Less-Than-Significant Levels?
	Mitigation Measure Utilities 19b: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing electrical supply infrastructure and construct new electrical substations either on or off site to meet potential energy demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in it is approval process. With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.	
Impact Utilities 20: Implementation of the Concentration and Conservation Alternative would result in an increase in demand for natural gas that could require or result in the construction of new natural gas facilities and distribution systems, or expansion of existing natural gas facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 20a**: Prior to approving any development at the site, the City of Concord shall coordinate with PG&E regarding the planned development and provide data for PG&E to assess the future natural gas demand, and for the Project Propoent to study the environmental impacts of such facilities in its approval process. **Mitigation Measure Utilities 20b**: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing gas supply infrastructure or construct new gas supply infrastructure to meet potential natural gas demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in its approval process. With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.	Yes
Impact Utilities 21: Implementation of the Concentration and Conservation Alternative would result in an increase in demand of IT/COMM services at the site that would require additional levels of service or construction of additional IT/COMM facilities. This impact is considered to be potentially significant.	**Mitigation Measure Utilities 21**: Prior to approving any development at the site, the City of Concord shall require that the IT/COMM providers demonstrate that they can provide the needed services and facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.	Yes



Concord
Community Reuse Plan

1. Introduction

1 Introduction

1.1 Introduction

This document is ~~a revised version of~~ the ~~Draft~~ Final Environmental Impact Report (Final EIR) addressing the Reuse Plan for the "Inland Area" of the U.S. Naval Weapons Station Seal Beach Detachment Concord, California (the reuse site also known as the Concord Naval Weapons Station, or CNWS), as shown on Figure 1-1 ~~that was released by the City of Concord in May 2008~~. ~~That Draft EIR addressed seven alternative reuse concepts for the portion of the former Concord Naval Weapons Station located within the City~~. This Final~~Draft Revised~~ EIR addresses the potential environmental impacts associated with implementing either of~~the~~ two alternatives ~~Preferred Alternative~~ for the reuse of the site. These alternatives were identified as a result of a comprehensive community planning process that was conducted by the City of Concord (City) to develop the Concord Community Reuse Plan (CCRP). This Final EIR is based on four previous documents addressing the potential environmental consequences of implementing a Reuse Plan at the site:

- The May 2008 Draft EIR for the CCRP
- The August 2009 Draft Revised EIR for the CCRP
- The Response to Comments on the May 2008 Draft EIR (January 2010)
- The Response to Comments on the August 2009 Draft Revised EIR (January 2010)

The California Environmental Quality Act (CEQA) requires that all State and local government agencies consider the environmental consequences of programs and projects over which they have discretionary authority before taking action on them. CEQA requires preparation of an EIR to inform agencies and the public of significant environmental effects associated with proposed projects, to identify ways to minimize the significant effects of the project, and to describe reasonable alternatives to the project that would avoid or reduce the project's significant effects (CEQA Guidelines, section 15121, subdivision (a)). CEQA also provides that an agency may prepare a program-level EIR to focus on "broad policy alternatives and program-wide mitigation measures," as well as "regional influences, secondary effects, cumulative impacts, and other factors that apply to the program as a whole." (CEQA Guidelines, section 15168, subdivisions (b)(4), (d)(2)). In preparing a program-level EIR, such as this document, the formulation of details regarding site-specific issues can be deferred until the preparation of later project EIRs or negative declarations.

~~California law provides a framework for Federal approval of the Redevelopment Plan before preparation of a Draft EIR under CEQA and the formal adoption of the plan~~. ~~The Local Reuse Authority (LRA) Redevelopment Plan does not have to be a project enforceable under state and local land use laws~~. ~~Guidance on this issue is found in the Base Redevelopment Planning for BRAC Sites, page 32, DoD Office of Economic Adjustment, May 2006 and is supported by HUD's Guidebook on Military Base Reuse and Homeless Assistance~~. ~~In addition, the State of California Governor's Office of Planning and Research has issued an advisory titled CEQA, NEPA and Base Closure illustrating how local agencies may proceed through the process of evaluating a base redevelopment plan pursuant to~~

~~CEQA while utilizing the environmental analysis prepared by a Federal agency under the NEPA~~.

This Final EIR~~Draft Revised EIR~~ has been prepared at a program level that broadly evaluates the two alternatives, called the Clustered Villages (hereafter referred to as the "Preferred Alternative") and the "Concentration and Conservation Alternative." These alternatives represent two potential reuse plans for the site. The analysis presented in this Final ~~Draft Revised~~ EIR identifies the potential significant impacts that would result from the reuse of the site through implementation of either alternative. This Final~~e Draft Revised~~ EIR also provides an analysis of the impacts of the No Project Alternative. The analysis ~~also~~ identifies possible mitigation measures to reduce some potentially significant impacts to less-than-significant levels and identifies potentially significant impacts that cannot be mitigated to a level that is less than significant.

~~The two reuse alternatives are located on the "Inland Area" of the U.S. Naval Weapons Station Seal Beach Detachment Concord, California (the reuse site) (also known as the Concord Naval Weapons Station, or CNWS), as shown on Figure 1-1~~. The site addressed in this Final EIR~~Inland Area~~ consists of approximately 5,028 acres that are entirely located within the incorporated City boundaries~~of Concord~~. In its September 2005 report to the President, the 2005 Defense Base Closure and Realignment Commission approved the recommendation of the Secretary of Defense to close the Inland Area of the CNWS. The Commission's recommendations were enacted in December 2005. In 2006, the Department of Defense designated the Concord City Council to serve as the Local Reuse Authority (LRA) for the reuse site, and the U.S. Navy designated the site as surplus in March 2007. As a result of the Navy's decision, the LRA is required to submit a Reuse Plan for future uses and in conjunction with a Homeless Assistance Submission (HAS) before the land can be transferred by the Navy for other uses. However, before a Reuse Plan can be adopted, the LRA must comply with the requirements of CEQA as codified in California Public Resources Code section 21000, et seq. To satisfy the requirements of CEQA, the City~~ of Concord~~ is serving in the role of Lead Agency, and as such is responsible for preparation of this document.

~~The two reuse alternatives are located on the "Inland Area" of the U.S. Naval Weapons Station Seal Beach Detachment Concord, California (the reuse site) (also known as the Concord Naval Weapons Station, or CNWS), as shown on Figure 1-1. The Inland Area consists of approximately 5,028 acres that are entirely located within the incorporated City of Concord. In its September 2005 report to the President, the 2005 Defense Base Closure and Realignment Commission approved the recommendation of the Secretary of Defense to close the Inland Area of the CNWS. The Commission's recommendations were enacted in December 2005. In 2006, the Department of Defense designated the Concord City Council to serve as the Local Reuse Authority (LRA) for the reuse site, and the U.S. Navy designated the site as surplus in March 2007. As a result of the Navy's decision, the LRA is required to submit a Reuse Plan for future uses and in conjunction with a Homeless Assistance Submission (HAS) before the land can be transferred. However, before a Reuse Plan can be adopted, the LRA must comply with the requirements of CEQA as codified in California Public Resources Code section 21000, et seq. To satisfy the requirements of~~

~~CEQA, the City of Concord is serving in the role of Lead Agency, and as such is responsible for preparation of this document.~~

Further introductory information in this chapter is organized in the following manner:

Section 1.2, Site Background

Section 1.3, Project Objectives

Section 1.4, Purpose and Use of This~~the~~ Final EIR

Section 1.5, Public Scoping and Environmental Review Process

~~**Section 1.6, Relationship Between This Draft Revised EIR and the May 2008 Draft EIR**~~

Section 1.~~6~~7, Organization of This Final EIR

1.2 Site Background

1.2.1 Site History

At the beginning of World War II in 1942, the Navy's presence in the Concord area began with the construction of an annex to the Mare Island Naval Shipyard ammunition magazine at nearby Port Chicago. This 7,000-acre area became known as the Tidal Area of the site. In June 1944, the Navy purchased the land (5,200 acres) that comprises the Inland Area of the site to expand what was then known as the U.S. Naval Magazine, Port Chicago. The Inland Area had previously been used for agricultural purposes, including a dairy, creamery, and granary, and was assembled from land owned by the Bollman, Keller, and Sulton families, as well as other local farmers. The initial Navy facilities in the Inland Area consisted of a group of high-explosive magazines and gun ammunition magazines, along with administration buildings, military barracks, and a weapons laboratory. The Navy also constructed a rail system on the site, as well as two runways that were designated as the "Naval Auxiliary Airfield, Concord."

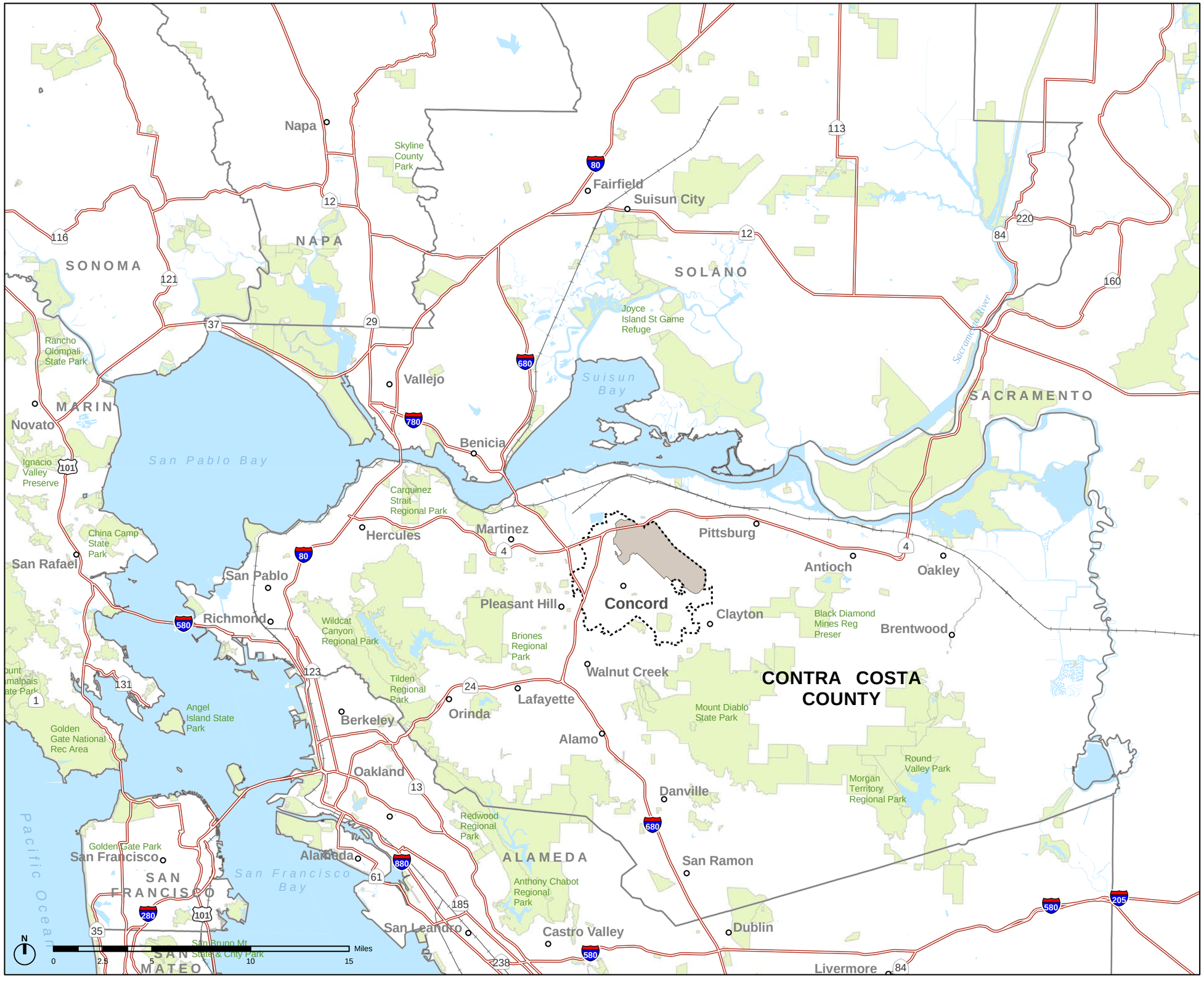
After World War II, the Navy made other improvements, and the site was very active during the Korean War. In 1957, the facility was renamed the Naval Ammunition Depot, Concord. At the time of the advent of modern-day weaponry, the site's mission changed and expanded. In 1963, the base was redesignated as the Naval Weapons Station, Concord. Beginning on October 1, 1999, due to changes in military operations, the Navy placed the Inland Area of the base into a reduced operational status.

In late 1999, Congressman George Miller, representing the 7th Congressional District, facilitated a study of potential joint uses for the Inland Area. Concord officials played a significant role in that study. As a result of the study, in 2000, a list of potential joint uses that primarily focused on recreation and open space was submitted to the Navy. The Navy favorably considered the proposals. However, before any of the joint uses could be implemented, the Navy revised its security operations following the events of September 11, 2001. Nearly all joint-use proposals became unworkable under the revised security requirements, with the exception of a proposal for a 154-acre portion of the site bordered on the south by Willow Pass Road and on the east by Olivera Road. The joint-use process

identified this area as a potential park site based on a proposal from Concord officials and others that participated in the study.

In October 2002, the City and the Navy initiated discussions on the City's acquisition of the 154 acres for development of a park through a lease agreement. A conceptual agreement was reached by the end of the year, and the City began a master plan process. Residents of nearby neighborhoods, youth sports organizations, open space advocates, and others participated in the process (via several public meetings), and the City developed a draft master plan for the Navy's review. The Navy asked the City to revise the master plan, removing approximately 40 acres from the original 154-acre area. The City then submitted a revised draft master plan for the Navy's review, but the project was put on hold when the Department of Defense announced that it planned to close a number of bases, including the Inland Area of the CNWS.

~~In November 2005, the BRAC Commission announced that the Inland Area of the CNWS was approved for closure. The Tidal Area would remain in operation as a port, but under the Federal-to-Federal Agency transfer mechanism, command of the Tidal Area was transferred to the U.S. Army in 2007. The BRAC legislation stipulated that the Navy would retain property ownership of the Inland Area until a Reuse Plan was completed by the City, acting as the LRA, and agreements about property transfers were reached. The Federal-to-Federal Agency transfer mechanism was also engaged in 2007 to transfer 115 acres of the Inland Area to the Army and 58.5 acres to the U.S. Coast Guard.~~ In its September 2005 report to the President, the 2005 Defense Base Closure and Realignment Commission approved the recommendation of the Secretary of Defense to close the Inland Area of the CNWS. The Commission's recommendations were enacted in December 2005. The Tidal Area and a small portion of the Inland Area would be transferred to the Army, who managed munition loading operations in the Tidal Area. The Tidal Area and 115 acres of the Inland Area were transferred to the Army on October 1, 2008. The Navy will retain property ownership of the Inland Area until a Reuse Plan was completed by the City, acting as the LRA, and agreements about property transfers were reached. The Federal-to-Federal Agency transfer mechanism was also engaged to transfer 58.5 acres to the U.S. Coast Guard.



Legend

- Proposed Reuse Site
- County Boundaries
- Concord City Limit
- Park or Open Space
- Cities
- Major Roads
- Railroad

Concord Community Reuse Plan

Revised April 27, 2009

Figure 1-1
Regional Location

1.2.2 General Site Characteristics

Existing development on the 5,028-acre site that is the subject of this EIR[1] consists of buildings, ammunition bunkers, and other infrastructure that supported the operations carried out by the Navy. Specifically, 217 explosive ordnance magazines, totaling 879,000 square feet; 77 other maintenance, storage, administrative, and miscellaneous structures, totaling 296,000 square feet; 55 miles of railroad track; an airfield runway and other paved areas (roads, parking lots, etc.), totaling 781,519 square yards; and utilities such as telephone, electric, water, sewer, gas, storm drainage, and fire protection systems exist on the site.[2] Networks of roads, railroads, and utilities link the buildings across the site. Not all areas of the site are equally developed. Most of the administration and maintenance buildings are located in the portion of the Inland Area that is known as the "Administrative Area" to the north of State Route (SR) 4. The remainder of the developed portion of the site is primarily populated with storage bunkers, other buildings for testing and maintenance, railroad tracks, and roads. A security fence is located along the perimeter of the site, and the site is patrolled by federal police.

Mt. Diablo Creek crosses the site from south to north. The area west of Mt. Diablo Creek is relatively flat with its lowest point at approximately 30 feet above sea level. The area east of the creek is generally hilly and rises to approximately 1,130 feet above sea level at the highest point of the site along the Los Medanos Hills. Large portions of the site are used for grazing and appear as open grassland with occasional stands of larger vegetation such as trees and shrubs, including the riparian area adjacent to Mt. Diablo Creek.

Of the 5,028 site acres, approximately 1,200 acres are potentially contaminated due to former military activities, and these areas may require environmental cleanup. The contamination can be broadly categorized as affecting three types of places: (1) munitions storage (bunker) areas, (2) groundwater contamination, and (3) explosive ordnance disposal areas. Up to 1,000 acres of the total 1,200 acres in and around the munitions storage areas may be impacted with arsenic in surface soil, due to application of herbicides. Approximately seven acres have groundwater contamination, with chlorinated solvents in the groundwater at two different sites. Approximately 174 acres of explosive ordnance disposal areas (burn pits) potentially contain spent (exploded) munitions or munitions constituents.

The Inland Area lies within the northeast quadrant of the City ~~of Concord~~. The western and southern edges of the site are bounded primarily by single-family neighborhoods and related uses such as parks and schools (in particular, Willow Pass Park and Concord High School). The area known as North Concord, north of SR 4 and west of the site, consists mainly of industrial uses. As shown on Figure 1-2, the unincorporated community of Clyde is

[1] Note that some analysis in this EIR extends past the site boundary in order to include and identify impacts to resources adjacent to the site; for example, the City-owned portion of land used for the Diablo Creek Golf Course and the North Concord/Martinez BART Station; however, 5,028 acres is generally the area that was addressed in the development of the Reuse Plan and that is analyzed in this EIR.
[2] U.S. Government, 2007, Federal Register Vol. 72 No. 43, p. 9935. Information on Surplus Land at a Military Installation Designated for Disposal: Naval Weapons Station Seal Detachment, Concord, CA. March.

adjacent directly to the north off Port Chicago Highway, and beyond Clyde is the Tidal Area that has been transferred to the Army for military logistics. Also to the north, and east of Willow Pass, is the unincorporated community of Bay Point. East and northeast of the site is the City of Pittsburg. Most of the development in Pittsburg near the site consists of single-family residences. A strip of unincorporated land separates portions of the site from the Pittsburg city limits. The Keller Canyon Landfill (KCL) to the southeast of Bailey Road is also in an unincorporated area within the City of Pittsburg's ~~-~~Planning Area, but outside ~~the~~ Pittsburg~~city~~'s Sphere of Influence (SOI). Another unincorporated area abuts the southern perimeter of the site and is known as the County Island. It is primarily developed with a mix of suburban-style housing and small ranches, and is situated along Myrtle Drive between Bailey Road and Kirker Pass Road, separating part of the site from other residential neighborhoods in Concord. To the east of the site, beyond Kirker Pass Road, is the City of Clayton, primarily a residential community. To the south of the City of Concord is the incorporated City of Walnut Creek, and to the west, near Interstate Highway (I-) 680, is the incorporated City of Pleasant Hill.

Three major highways serve the site directly or indirectly: I-680, SR 242, and SR 4. The site has a direct connection to SR 4 at the Willow Pass Road interchange. Two public roads traverse through the site: Willow Pass Road between downtown Concord and SR 4 (continuing north and then east to the City of Pittsburg), and Bailey Road from Clayton Road north through the site (continuing to the City of Pittsburg). Nearby roads include Port Chicago Highway and East Olivera Road along the western boundary; Willow Pass Road, Landana Drive, Concord Boulevard, and Myrtle Drive near the southern boundary; and Kirker Pass Road to the east. Kirker Pass Road is part of an important regional arterial that originates in Pittsburg as Railroad Avenue, becomes Kirker Pass Road between Pittsburg and Concord, and then becomes Ygnacio Valley Road at the intersection of Clayton Road. Ygnacio Valley Road continues through Concord to Walnut Creek and connects to I-680 and the Walnut Creek Bay Area Rapid Transit (BART) District Station. Denkinger Road, which originates along the southern boundary of the site, becomes Treat Boulevard at Clayton Road; this road becomes a major arterial through Concord, connecting to the Pleasant Hill BART station at I-680 and continuing through Pleasant Hill.

The BART metro rail system serves the area via one line, with nearby stations in Walnut Creek, Pleasant Hill, Concord, and Pittsburg/Bay Point. The North Concord/Martinez BART Station[3] abuts the western edge of the site along Port Chicago Highway at the terminus of Panoramic Drive. The County Connection bus transit system serves Central Contra Costa County, with routes that serve the areas around the site.

1.3 Project Objectives

The City Council, in conjunction with members of the community, developed the following overarching goals, which constitute the overall project objectives (with no priority implied), for the Reuse Plan:

[3] For purposes of this EIR, the North Concord/Martinez BART Station is labeled on all figures as the North Concord BART Station.

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.

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.

1.4 Purpose and Use of This ~~the~~ Final EIR

The purpose of this Final~~Draft Revised~~ EIR is to provide information to the LRA about the potential environmental consequences of implementing the Reuse Plan, as it has been defined through the public process to date either as the Preferred Alternative or the Concentration and Conservation Alternative.

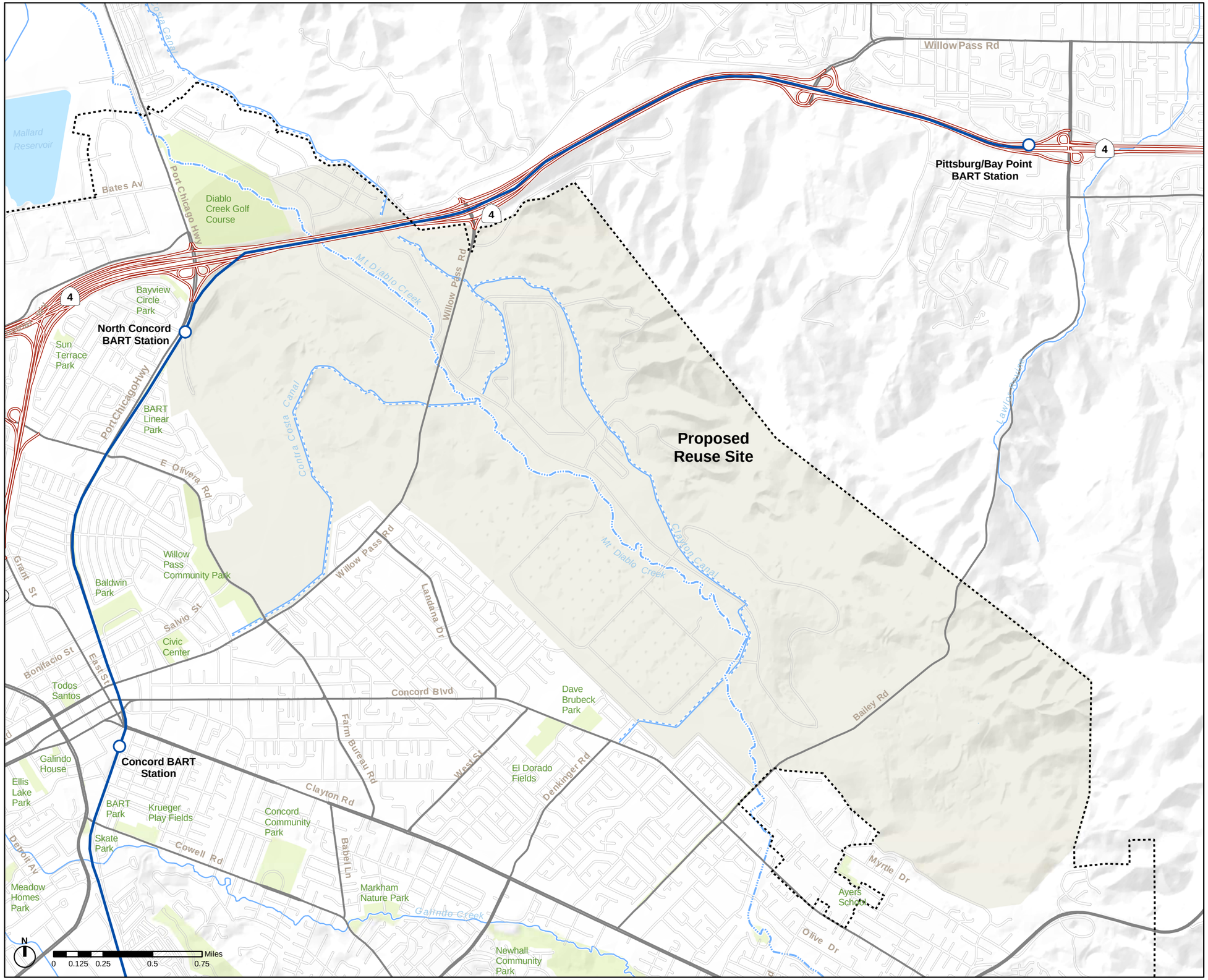
This Final ~~Draft Revised~~ EIR has been prepared at a program level. As stated in the CEQA implementing guidelines (California Code of Regulations Title 14, section 15000, et seq.), the advantages of preparing a program-level document are to (1) provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action, (2) ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis, (3) avoid duplicative reconsideration of basic policy considerations, (4) allow the Lead Agency, in this case the City, to consider broad policy alternatives and program-wide mitigation measures early in the process when the agency has greater flexibility to deal with basic problems or cumulative impacts, and (5) allow reduction in paperwork. Program-level EIRs are particularly effective for decisions such as the one currently before the City. The use of a program-level EIR allows a L~~l~~ead A~~a~~gency to characterize the overall program as the project being approved at the time, and acts as an analytical superstructure for subsequent, more detailed analysis.

As a program-level document, this Final~~Draft Revised~~ EIR analyzes the potential cumulative effects of each reuse alternative under consideration. This allows larger policy questions to be addressed appropriately at this time; later actions under consideration may be more detailed but limited in scope.

This document has been prepared in sufficient detail to support approval of the Reuse Plan, and can be augmented in connection with future, more site-specific approvals, depending on the nature of such approvals and where they occur within the overall project area. Because CEQA provides for streamlining site-specific approvals after a programmatic-type EIR has been prepared, this Final EIR may function in more than one manner with respect to future site-specific approvals.

Pursuant to CEQA Guidelines, section 15168, subdivision (c), an agency, such as the City of Concord, may determine, after conducting a written analysis, that a proposed site-specific activity is "within the scope of the project covered by the program EIR." Upon making such a determination, the City would conclude that no additional site-specific negative declaration or EIR is necessary, absent grounds for preparing a subsequent or supplemental EIR. Where the City cannot find the proposed activity to be "within the scope of the project covered by the program EIR," it would have to prepare an initial study leading either to a negative declaration, a mitigated negative declaration, or an EIR for the proposed activity. Among the factors the City would need to consider in determining whether proposed activities are indeed "within the scope" of the project analyzed in the program EIR are (1) the amount of site-specific information that was available for the affected area at the time of program EIR certification and project approval and (2) whether the development patterns proposed in connection with the activities are consistent with what was assumed in the program EIR.

After a Reuse Plan is adopted, it is anticipated that the certified EIR will be used to inform and support future actions. For example, it is assumed that the City's General Plan and Zoning Ordinance will be amended to reflect the new range of uses approved in the Reuse Plan. The City may also choose to designate the site, or a portion of the site, as a redevelopment area. More detailed planning may be undertaken for certain portions of the site (e.g., as a specific plan or district area plan), and ultimately, development approvals and permits would be required to implement the Reuse Plan. All of these types of land use decisions are required to comply with CEQA. Pursuant to CEQA Guidelines, section 15152, the environmental documents required for these types of future actions are allowed to "tier off" the program-level EIR once it is certified, as long as the underlying assumptions remain consistent with those analyzed in the program-level EIR. Thus, the analysis would remain focused on the potential impacts of the specific action in question at a more detailed level than that required for this program-level EIR.



Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials
- Local Streets
- Bay Area Rapid Transit
- BART Stations

Concord
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Revised April 27, 2009

Figure 1-2
Site Context

1.5 Public Scoping and Environmental Review Process

In May 2007, an Environmental Checklist/Initial Study (EC/IS) and a Notice of Preparation (NOP) were submitted to the California Office of Planning and Research (OPR) to initiate the EIR process. At that time, OPR assigned the EIR State Clearinghouse Number 2007052094. OPR also distributed the EC/IS and NOP to federal and State agencies for review. At the same time, the City sent the EC/IS to local public agencies for review, and sent notices to interested stakeholders that the EC/IS was available on the City's website (www.concordreuseproject.org). The EC/IS described the planning that had occurred to that time, and identified the range of potential impacts to be addressed in the EIR. The EC/IS was circulated for agency and public review and comment, and two public scoping meetings were held on June 14, 2007. A Scoping Summary Report was prepared following the meetings to summarize the initial scoping effort and record the comments received. The report contained the EC/IS, the NOP, and other information developed to support the scoping process. The initial scoping effort resulted in the conclusion that there was insufficient information to establish a basis of analysis of the reuse alternatives that would be addressed in the EIR. Thus, the City committed to conduct a second round of scoping after the LRA had established the range of alternatives to be considered.

On November 16, 2007, with concurrence on the seven alternative concepts, the City completed a revised EC/IS that provided information about the seven alternative reuse concepts and their potential environmental consequences. OPR circulated the revised EC/IS and NOP for a second round of agency and public review and comment. On November 29, 2007, additional scoping meetings were held in Concord to receive input on the environmental issues to be addressed in the Draft EIR. A second Scoping Summary Report was prepared and posted on the project website after completion of the scoping comment period. The comments received covered a wide range of environmental topics, but with particular focus on issues associated with local transportation and biological diversity.

Each Scoping Summary Report listed the reviewing agencies that received the EC/IS and recorded the comments received from those agencies and the public. The information presented in each Scoping Summary Report was used to help develop the Draft EIR that was subsequently released for public review on May 9, 2008.

The May 2008 Draft EIR was distributed ~~-~~directly to local agencies and to federal and State reviewing agencies through the OPR. In addition, the May 2008 Draft EIR was posted on the City's Reuse Project website. Notices of the availability of the EIR were sent to all stakeholders, including attendees of the scoping meetings; individuals who had expressed interest in the EIR; individuals who had attended any of the planning meetings; and all subscribers to the City's Reuse Project email list, which numbered approximately 1,700 people.

At the time the May 2008 Draft EIR was released, the City began a 60-day public review period that was later extended to a 90-day period. During that period, while the community reuse planning process was underway, the City held a public meeting on July 10, 2008 to receive oral and written comments specific to the Draft EIR. The comment period closed August 8, 2008. The comments that were received during the public review period were collected and reported in a document dated September 2, 2008 and titled, "Annotated

Comments on the Draft Environmental Impact Report" that was distributed to the Community Advisory Committee (CAC); the CAC was formed to provide input on the Reuse Plan process.

The analysis in the May 2008 Draft EIR and the comments received about it were used to help further the discussion of the alternatives as the community reuse planning process progressed through the summer and fall of 2008. That process is described in further detail in Chapter 2 of this Draft Revised EIR. On January 12, 2009, the City Council, acting as the LRA, selected the Clustered Villages Alternative as the Preferred Reuse Plan with some modifications. The subsequent land use diagram, development program spreadsheets, and supporting narrative released by the City of Concord dated January 30, 2009 formed the basis of the analysis presented in the August 2009~~of this~~ Draft Revised EIR.

The comments received on the May 2008 Draft EIR were used to further the public discussion of the alternatives. The City's intent in developing th~~eis~~ August 2009 Draft Revised EIR was~~is~~ to incorporate changes to address many of the comments received on the May 2008 Draft EIR. Further, in accordance with CEQA Guidelines, section 15088, each of the comments received on the May 2008 Draft EIR and the August 2009~~, along with any comments received on the~~ Draft Revised EIR were ~~, will be~~ addressed individually in the two previously referenced~~separate~~ Response to Comments documents that are to~~will~~ be incorporated into the EIR record.

~~This Draft Revised EIR is also subject to public review and comment. A new 45-day public review period will begin upon the release of this document, during which the City will solicit input from the public and from public agencies at the federal, State, and local level. Following the close of the public review period, as stated above, comments on the Draft Revised EIR will then be addressed in a Final EIR. The LRA will consider the comments and responses prior to deciding to certify the Final EIR and adoption of a Reuse Plan.~~

~~1.6 Relationship Between Thise Draft Revised EIR and the May 2008 Draft EIR~~

~~Throughout the duration of the Concord Community Reuse Project planning process, the City has closely integrated environmental analysis in the planning process for the reuse of the site.~~

~~The May 2008 Draft EIR was used to evaluate the environmental consequences of implementing any of the original seven alternative reuse concepts. The results of the initial environmental analysis, as reported in the May 2008 Draft EIR and at the public planning workshops, were used in combination with other criteria evaluations to help narrow the range of alternative concepts and to develop a consensus about the reuse of the site. In selecting a Preferred Alternative in January 2009, the LRA made a determination of which alternative would best meet the City's basic project objectives. This determination was based on the May 2008 Draft EIR, as well as all other project-related information available to the LRA at that time.~~

~~This Draft Revised EIR uses the subsequent land use diagram and development spreadsheets released by the City in January 2009 to analyze the potential environmental consequences of the Preferred Alternative and the Concentration and Conservation~~

~~Alternative. These alternatives are similar to the initial alternative reuse concepts, but also incorporate revisions to address many of the comments received on the May 2008 Draft EIR, as well as information gathered through additional studies and analysis conducted by the City and the Navy since release of the May 2008 Draft EIR. For example, this Draft Revised EIR benefits from new information collected and reported by the Navy about biological and cultural resources at the site. It also benefits from incorporation of the results of additional surveys of the site with respect to hydrology of Mt. Diablo Creek and the presence of wetlands on the site that were completed for the City. In addition, the Draft Revised EIR incorporates changes to address evolving State regulations and guidance, particularly with regard to climate change, which has required ongoing discussion between the City and public agencies to ensure that the analysis is consistent with current best practice.~~

~~In summary, this Draft Revised EIR represents the latest analysis in the ongoing reuse planning process. Building upon previous analysis and public consensus building, the analysis has been refined to more specifically address the Preferred Alternative and Concentration and Conservation Alternative, rather than the seven alternative reuse concepts. It addresses many of the comments received on the May 2008 Draft EIR, and has been updated to incorporate the latest information and guidance available to the City.~~

~~1.7~~1.6 Organization of ~~This~~ This Final EIR

The following chapters of this Final~~Draft Revised~~ EIR are organized in the following manner:

Chapter 1. Introduction. This chapter describes the site, discusses the objectives of the Draft EIR document, introduces the project process, and lists the top issues of interest to the public as expressed through the public scoping process.

Chapter 2. Project Description. This chapter describes development process of the alternatives, the Preferred Alternative, the Concentration and Conservation Alternative, and the No Project Alternative.

The next 14 chapters (Chapters 3 through 16) focus on the potential impacts of the alternatives on specific resources (land use, transportation, etc.). They are all organized the same way to provide information about the environmental consequences of the alternatives.

Section 1 of each chapter describes the existing conditions with respect to the specific topic. This description is based on a review of existing published material, field reconnaissance, discussions with individuals with specific knowledge about the topic, and other appropriate sources.

Section 2 of each chapter identifies the Standards of Significance that are applied to the environmental analysis. Some of the Standards of Significance are taken from Appendix G of the CEQA Guidelines, while others reflect either local or State requirements.

Section 3 of each chapter presents the potential impacts. The section begins, as appropriate, with a description of assumptions that have been incorporated in the analysis or information about the methodology that was used to complete the analysis. Then, impacts specific to the Preferred Alternative are identified, followed by impacts specific to the Concentration and Conservation Alternative. For each alternative, impacts that are

considered to be significant are presented first, accompanied by an explanation why the application of a standard resulted in a determination that the impact would be significant. When a significant impact is set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Following presentation of the significant impacts, impacts that are not significant are presented. The chapters conclude with a description of the potential impacts of the No Project Alternative.

The specific resource chapters are as follows:

Chapter 3. Land Use

Chapter 4. Transportation

Chapter 5. Visual Resources

Chapter 6. Earth Resources

Chapter 7. Hydrology and Water Quality

Chapter 8. Biological Resources

Chapter 9. Cultural Resources

Chapter 10. Hazardous Materials

Chapter 11. Air Quality

Chapter 12. Noise and Vibration

Chapter 13. Population, Housing, and Employment

Chapter 14. Public Services

Chapter 15. Recreation

Chapter 16. Utilities

Chapter 17. Other CEQA Considerations. This chapter provides a list of the cumulative and other impacts that would potentially result from development of the site. It also presents a discussion of the environmentally superior alternative.

Chapter 18. Document Preparation. The final chapter identifies those involved in preparing this EIR.

Appendices. The appendices contain additional data and information cited in the preceding chapters.



Concord
Community Reuse Plan

2.
Project Description

2 Project Description

2.1 Development of the Preferred Alternative

2.1.1 Developing the Initial Alternative Concepts

In 2006, the City of Concord (City) initiated a three-phase multiyear project to develop the Reuse Plan for the Concord Naval Weapons Station (CNWS) (the Reuse Plan). During the 6-month period of Phase 1, hundreds of residents and community leaders offered their ideas and thoughts about the issues, opportunities, and priorities to be addressed while planning for reuse of the site. Based on this input, the City developed a Vision Statement for a creative, innovative, world class Reuse Plan using a balanced approach to meet community interests, needs, and requirements. The Vision Statement also called for the Reuse Plan to be economically viable and sustainable, and to maintain and enhance the quality of life in Concord and the region.

The City's vision was developed into a set of overarching goals to direct the subsequent planning effort. These overarching goals, which constitute the overall project objectives, are:

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.

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.

The goals for the Reuse Plan were then developed into a set of Guiding Principles for the planning effort. Those Guiding Principles are incorporated herein by reference and are available for viewing at the project website, which is located at www.concordreuseproject.org.

As a result of the Phase 1 effort, the City Council approved recommendations for the formation of a 21-member Community Advisory Committee (CAC) and Technical Advisory Groups (TAGs) to provide input to the subsequent planning effort. The City Council also developed a Planning Framework, which it adopted and published in August 2006. This document is available online at the project website.

Phase 2 of the planning process began in November 2006. The first stage of this work culminated in a public, informational "Get the Facts" Open House on March 17, 2007. At the Open House, information was presented about the community and the site, including physical, environmental, economic, and social characteristics. Copies of the information displayed at the Open House are also on the project website.

Following the Open House, the City completed an analysis of the site capacities and constraints, which it shared at a public workshop (entitled "Applying Goals and Guiding Principles"), held on April 21, 2007. The workshop participants identified themes they would like to see incorporated into the reuse planning effort, expressing a strong preference for the following four planning themes:

- Higher-intensity uses around the North Concord/Martinez BART station
- Lower-intensity uses between Willow Pass Road and Bailey Road
- Preservation of the Los Medanos Hills above a 30 percent grade and the ridgeline, with incorporation of hiking trails
- Protection and enhancement of Mt. Diablo Creek with a trail along the creek for walking and biking

A second planning workshop (entitled "Balancing the Land Use Mix"), held on June 16, 2007, focused on examining the choices regarding scale, magnitude, and balance of land uses, as well as understanding the relationship between the site and the surrounding urbanized area. The workshop participants completed worksheets (15 total) representing their ideas for reuse of the site.

While the planning exercise at the June 2007 workshop provided a broad foundation for understanding the community's desires and expectations, the wide variety of schemes identified and the feedback from the CAC indicated that additional comment and discussion from policymakers was needed to help guide the development of alternatives. During June and July 2007, the City held a series of meetings with the CAC and other City boards and commissions to address the following four key reuse issues:

- Level of intensity of use
- Arrangement of land uses and transit
- Distribution of open space
- Role of buffers between and transitions to surrounding land uses

These four key issues shaped the development of the alternative concepts, and the City Council held public workshops on August 4 and September 11, 2007 to discuss these four

key issues. This input was used by staff to develop five alternative concepts for reuse of the site.

On September 18, 2007, the CAC met to review and discuss the five initial alternative concepts and to receive public comment. This resulted in a request for more information on the alternative concepts and a desire to expand the range under consideration. On October 2, 2007, the CAC adopted a resolution recommending that seven alternative concepts be approved by the City Council acting as the LRA for analysis in the Draft EIR. On October 9, 2007, the LRA reviewed the seven alternative concepts and approved them for analysis in the Draft EIR. Each of the seven alternatives was based on one of three themes. The themes were "Extending the Neighborhoods," "Clustered Villages," and "Concentration and Conservation."

2.1.2 Narrowing the Range of Alternatives

In spring 2008, at the same time that the seven alternatives were being evaluated for environmental impacts in compliance with CEQA in the May 2008 Draft EIR, the seven alternatives were also evaluated against a broader set of criteria established by the CAC. The 16 criteria were grouped into 5 categories and included the following:

- Green Planning: Resource Efficiency, Climate Change
- Transportation: Traffic, Travel Choices, Connectivity
- Community: Community Integration, Community-Serving Uses and Facilities, Housing Variety, Parkland
- Land Stewardship: Viewshed and Hillside Protection, Cultural Resources, Land Remediation, Biological Resources, Watershed Resources
- Economics: Fiscal Sustainability, Financial Feasibility

The results of the evaluations were shared with the public at CAC meetings in April and May 2008 and subsequently at public workshops held on May 28 and June 14, 2008.

At its July 15, 2008 meeting, the CAC decided to narrow the range of alternatives by removing the "Extending the Neighborhoods" theme (represented by Alternative 1) from further consideration and by adopting a process to select one alternative representing each of the two remaining themes. The next public workshop was held on August 2, 2008, at which participants discussed the evaluations of the alternative themes in small groups and reported their conclusions back to the broader group of attendees.

2.1.3 Modifying the Alternatives

The CAC used input from the workshop to modify and select two alternatives, one for each of the remaining themes under consideration ("Concentration and Conservation" and "Clustered Villages"). Modifications included changing density or intensity of development, moving major land uses to different areas of the site, improving financial performance, and considering the effect of Public Benefit Conveyance (PBC) applications.[1] The CAC also

[1] Public Benefit Conveyance is one of the methods the Navy may choose to dispose of property. The LRA must solicit and evaluate proposals from non-profit and public agencies who seek to obtain surplus federal land through PBC. The LRA may consider the proposed public benefit uses and provide for those uses in the Reuse Plan to the extent considered appropriate. After considering input from the LRA, the Navy will make the final decision whether to

discussed specific issues common to the alternatives, which included the number of housing units and their mix, the balance of jobs and housing density in a transit-oriented development area around the North Concord/Martinez BART Station, an education complex, a first responders training facility, a city-wide park, a tournament sports facility, and a golf course.

The community and the CAC reviewed and refined the two alternatives at workshops and meetings in August and September of 2008. At its September 30 meeting, the CAC decided it would send both alternatives forward to the LRA, but also express a preference for one of the alternatives. Also at this meeting the comment letters received on the May 2008 Draft EIR were distributed to the CAC members. On October 14, 2008, after more than 36 meetings (including 8 public workshops), the CAC adopted Resolution 08-1, sending forward both the Concentration and Conservation Alternative and the Clustered Villages Alternative. The resolution also recommended that the City Council, acting in its capacity as the Concord LRA, designate the Clustered Villages Alternative as the preferred CNWS Reuse Alternative. The CAC also forwarded a list of suggestions made by individual CAC members regarding additional potential modifications to each of the alternatives for the LRA to consider.

2.1.4 Selecting a Preferred Alternative

The LRA continued the discussion of the alternatives at its meetings on November 17, 2008, December 1, 2008, and January 12, 2009, taking public comment and discussing further modifications. The selection process culminated on January 12, 2009 when the LRA adopted Resolution 09-5, designating the Clustered Villages Alternative as the Preferred Alternative for the Concord Community Reuse Plan, subject to further environmental review under CEQA. On January 30, 2009, the City released a revised development program, land use diagram, and supporting narrative that incorporated changes requested by the LRA at its January 12, 2009 meeting. ~~The City submitted the updated materials comprising the Preferred Reuse Plan to the Navy, where it will undergo further environmental review, and to the U.S. Department of Housing and Urban Development (HUD) as part of the Homeless Assistance Submission (HAS)~~[2] ~~-~~These materials comprised the Preferred Reuse Plan. The City submitted a BRAC Application consisting of the Preferred Reuse Plan as well as a Homeless Assistance Submission (HAS) to the U.S. Department of Housing and Urban Development (HUD).[2] Following HUD's approval of the HAS, the Navy will begin its environmental analysis to comply with the National Environmental Policy Act (NEPA).

The August 2009 Draft Revised EIR, which analyzed the two alternatives, was issued in August 2009. The City received public comments from many agencies, organizations, and individuals. This document incorporates revisions to the August 2009 Draft Revised EIR that have been made i~~I~~n response to these comments.

allow the transfer of any land or facilities through a PBC, in accordance with the Defense Base Closure and Realignment Act of 1990.

[2] The Homeless Assistance Submission contains the City's proposed Homeless Assistance Plan, which is required by base closure law. The plan was based on a homeless needs assessment and letters of interest provided by a collaborative of homeless service providers. All of this was executed in accord with BRAC statutes.

2.2 Key Assumptions Incorporated in the Alternatives

Both the Preferred Alternative and the Concentration and Conservation Alternative represent the best distillation of the concepts of the former seven alternatives. While they approach the reuse of the site from different perspectives, they both embody key planning principles and guidance accumulated during the 3-year LRA community reuse planning process, and both achieve the four overarching goals established in the community's vision for the site.

The two alternatives represent a balanced approach, with economically viable and sustainable development that will maintain and improve the quality of life for existing Concord residents and establish a framework to support the development of a world class project. The project team has used concepts of scale, density and intensity, location, and connectivity to guide the community through planning for reuse of the former CNWS. Along the way, the community has articulated a refined list of key planning concepts that have also been incorporated into the reuse planning process, including:

- 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 travel choices (including transit, walking, and biking).
- Integrate the site with existing Concord to improve the quality of life for existing Concord residents and avoid creating "two Concords."
- Create balance in housing types and housing choices.
- Provide for community and cultural facilities including a library/performing arts center/community center, adequate schools for K–12 on-site 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 CNWS.
- 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 or endangered animal species.
- Avoid development south of Bailey Road.
- Avoid roads and development east of Mt. Diablo Creek and 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 on-site mitigation for any unavoidable loss of habitat or wetlands on other portions of the site.

- Balance on-site mitigation activities and habitat protection with the provision of public access and passive recreation activities.

A description of each alternative is presented in the following sections.

2.3 The Preferred Alternative: Clustered Villages

The Clustered Villages Alternative (Preferred Alternative) focuses on a series of villages connected by transit, allowing for a significant, new, diverse development balance while maintaining more than half of the site as parks, recreation, and open space. Living and working options would extend to Concord residents and others, offering a more sustainable lifestyle with mixed-use, walkable neighborhoods, and transit-oriented living along with single-family housing.

The land use diagram for the Preferred Alternative is shown on Figure 2-1 and the development program is shown in Table 2-1. Overall, the Preferred Alternative provides new land use to accommodate up to 12,272 residential units and 6.2 million square feet of commercial and retail uses.

The key elements of the alternative are described below.

2.3.1 Land Use

The highest-intensity uses on the site are focused around the North Concord/Martinez BART Station and within the cores of the villages along the western edge of the site. Additionally, the site accommodates various types of community facilities and park and open space areas (described in the sections further below). A flex space designation is included in this alternative.

North Concord/Martinez BART Station

Within a half-mile of the North Concord/Martinez BART Station, a transit-oriented development (TOD) land use category would allow for a mix of uses including residential, office, retail, community facilities, and parks and recreation. This is a plan, not a design, so specific locations of uses, block layouts, and building locations are as yet undefined. However, the overall intent of this area is to use the North Concord/Martinez BART Station as a focal point for providing a sufficient intensity and mix of uses to give residents and workers opportunities to use non-automobile transportation to meet their needs.[3] Some examples could include residents who are within walking distance of a variety of shops,

[3] Based on research within the San Francisco Bay Area, the Metropolitan Transportation Commission (MTC) reports that proximity to transit matters. Bay Area residents who live in TOD areas—that is, within 1/2 mile of rail or ferry stops—are four times as likely to use transit than residents who live more than 1/2 mile away from rail or ferry stations. Considering commute trips alone, automobile usage to get to work for households located in TOD areas drops by approximately 40 percent. MTC goes on to report that people who live and work within 1/2 mile of rail stations and/or ferry terminals use transit for 42 percent of their work commute trips versus a 4 percent transit share for those who neither live nor work within 1/2 mile of such facilities and who only use transit for 4 percent of their work commute trips. Furthermore, people who live within 1/2 mile of transit are found to drive approximately 50 percent fewer miles annually than their counterparts who live in low-density housing and who live more than 1 mile away from transit (Metropolitan Transportation Commission, "Transit-Oriented Development in the San Francisco Bay Area: New Places New Choices," November 2006, pp. 8 and 9).

services, and entertainment; residents who can walk or bike to a BART station to commute to other places; workers who arrive by BART or bus and can run errands by foot near their work during the day; and children who can reach their school or community park by walking or biking. To support these interactions and to better utilize BART service, residential densities would range from 15 dwelling units per gross acre to more than 50 units per acre, and a total of approximately 3,000 dwelling units would be provided in the area. The residential densities are within the density range of recent residential developments in downtown Concord.[4] Within the area around the North Concord/Martinez BART Station, new residential uses could be included as part of mixed-use buildings that would also include office, retail, and/or community uses, further encouraging walking. Parking would likely be structured to make more efficient use of the land. The inclusion of jobs in this area will also help fuel demand for services, provide services to workers and residents, and keep the area vibrant and active throughout the day.

Villages

A series of three villages are located between Mt. Diablo Creek and the western site boundary, south of Willow Pass Road. These villages are intended to have a neighborhood district character similar to, but at slightly lesser intensities than, the North Concord/Martinez BART Station area.

Residential densities would range between 4 and 30 dwelling units per gross acre. This range of densities would allow for a mix of single-family and other higher-density housing types similar to others being built in Concord.[5] A total of approximately 4,000 dwelling units would be provided across all the villages. Each village has a mixed-use town center that would act as its commercial, community, and transportation focal point. The town center would support neighborhood shopping and provide basic services, thereby encouraging walking and bicycling throughout each village. The villages are also intended to support a high-capacity, enhanced bus transit service (described further below) that would connect all of the villages to the North Concord/Martinez BART Station as well as to other parts of Concord. Almost all uses would be located within a 1/3-mile walk of each village center. While the villages each can be self-sufficient, they would be linked to each other and the adjacent neighborhoods in Concord by a series of park and open space “green fingers” and “transition buffers,” described in further detail below.

[4] The Legacy Apartments, completed in 2004, are approximately 55 dwelling units per gross acre. Renaissance Square, completed in 2008, is approximately 60 dwelling units per gross acre.

[5] Moderate-density developments often mix a limited number of single-family detached units with higher-density townhouse product. A recent example of such projects in Concord is the Willow Walk development located along Willow Pass Road between 3rd Street and Parkside Drive, a project with 17 single-family detached homes and 39 townhomes with a density of 16.4 dwelling units per acre.

Residential areas would also support a range of housing options for older adults, from active adult living to graduated care facilities. Developments could include a mix of independent, single-story “villas” and higher-density, two-to-three-bedroom apartments with common support and community facilities, appropriate to the general density categories indicated on the plan.

Flex Space

The Preferred Alternative provides for two areas of commercial/retail flex use (total 45 acres). These areas can be used as either commercial or retail use depending upon demand at the time. In addition, the plan allows for a flex area of 35 acres between low-density residential use and the tournament sports complex (described further below), allowing for expansion or contraction of the uses depending on future market demand. For purposes of the environmental analysis, each chapter assumes that the land use with the greatest potential impact will be developed in each flex area, in order to present a "worst-case" analysis. The assumption is made on a chapter-by-chapter basis because the uses are substantially different (i.e., residential versus sports complex), and the types of impacts generated by each use vary by topic.

2.3.2 Transportation

One of the fundamental planning concepts on which the Preferred Alternative is based is to provide transit choice to residents located outside of the TOD area through an enhanced transit system. Another prime consideration has been to provide an extensive biking and walking trail/path system to encourage the use of non-motorized transportation for everyday activities and outdoor recreation. The roadway also provides infrastructure not just for automobiles but also for other modes (transit, walking, and biking). While key features are noted here, additional assumptions are described in Chapter 4, Transportation.

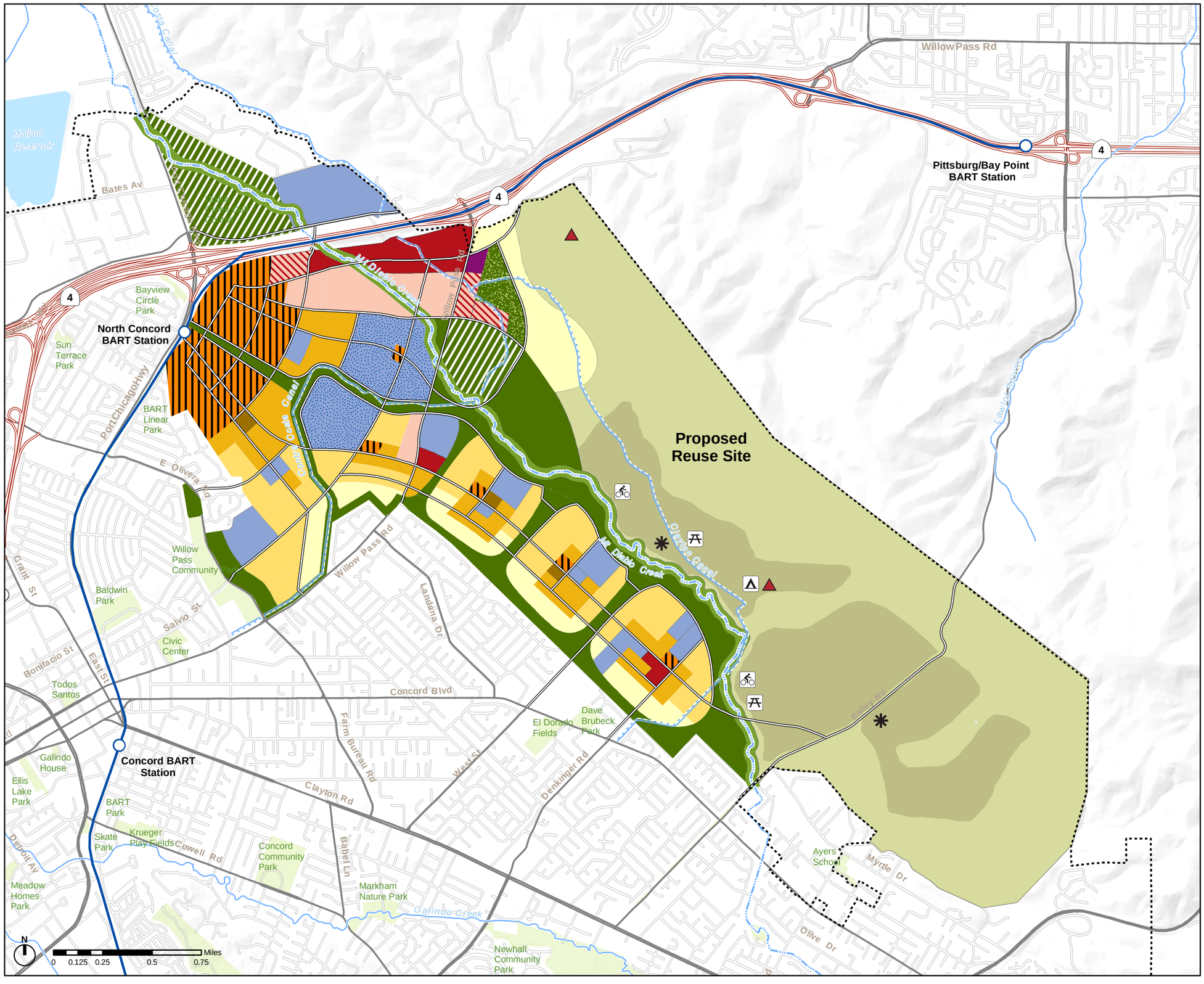
Transit Choices

In the Preferred Alternative, a high-capacity bus transit service would serve the site, connecting the North Concord/Martinez BART Station area to the villages and linking them to downtown Concord and existing neighborhoods. Stops for the bus service would be spaced at an average of every 1/2 mile and would have bus shelters and passenger amenities. The enhanced bus service would run more often than regular bus service during peak commute hours (approximately every 7 1/2 minutes during the peak and every 15 minutes during off-peak hours).

In addition, regular bus service is assumed to serve the rest of the site, connecting on-site development to the North Concord/Martinez BART Station and to the existing community. Standard bus shelters (with electricity and benches) and buses are assumed to serve the new routes. These bus routes could take the form of community shuttles to serve residents, workers, and university students just outside walking range of the North Concord/Martinez BART Station or high-capacity transit stops.

Trail Networks

While a trail system has not yet been designed for the site, the provision of robust on- and off-street bicycle and pedestrian networks, reflecting the Contra Costa Countywide Bike and Pedestrian Plan, Concord Trails Master Plan, and EBRPD proposal for PBC, is assumed for the Preferred Alternative. These networks are a key element in integrating the site with existing Concord to avoid creating "two Concords." Throughout the reuse planning process, bicycle and pedestrian networks have been envisioned to provide residents and on-site workers with the ability to connect to regional hiking and biking networks such as the Contra



Legend

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area
- Potential Recreation Areas (Subject to habitat restriction)
- Recreation Sites & Staging Areas (per East Bay Regional Park District (EBRPD) plan)
- Environmental Education, Historical Interpretation & Port Chicago Visitors Center (per EBRPD plan)

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Locations of icons are illustrative depictions only and subject to habitat mitigation constraints.

Concord Community Reuse Plan

Revised August 21, 2009

Figure 2-1
Preferred Alternative Land Use Diagram

Table 2-1: Preferred Alternative Development Program

Land Uses	Acres Total Acres	Units and Population Gross DU/Acre	Units	% of Units	Persons/ Unit	Population	SF and Jobs Gross FAR	SF	SF/Job	Jobs	Notes
Residential											
High-Density Residential	20.0	50.0	1,000	8.1%	1.85	1,850					**1. Recreation/Residential Low Density Flex Area:** The flex area adjacent to the Tournament Sports Facility is assumed to be Low-Density Residential use, but can be developed to support a larger recreation area, subject to a determination of financial feasibility and impact on the City's fiscal sustainability.
Medium-High Density Residential	36.0	30.0	1,080	8.8%	1.85	1,998					
Mixed-Use Residential/Retail	35.0	30.0	1,050	8.6%	1.85	1,943					
Medium-Density Residential	300.0	15.0	4,500	36.7%	2.11	9,495					
Medium-Low Density Residential	353.0	10.0	3,530	28.8%	2.94	10,378					
Low-Density Residential (see Note 1) *35 acres are designated as Recreation/Residential Low Density Flex Area*	278.0	4.0	1,112	9.1%	2.82	3,136					
Total	**1022.0**		**12,272**	**100.0%**		**28,800**					
Commercial											
Office/Transit-Oriented Development	12.0						1.70	888,624	225	3,949	
Office Park (see Note 2) *25 acres are designated as Commercial/Retail Flex use*	92.0						0.51	2,043,835	225	9,084	
Town Center Retail	10.0						0.68	296,208	500	592	**2. Commercial/Retail Flex Space:** The flex area between the North Concord BART Station and Willow Pass Road is assumed to be Commercial Retail use, but can be developed as Commercial Office use depending upon market conditions and impact on the City's fiscal sustainability. The flex area south of Willow Pass Road is assumed to be Commercial Office, but could be developed as Commercial Retail to support complementary uses to the Tournament Sports Facility, subject to a determination of financial feasibility and impact on the City's fiscal sustainability.
Neighborhood Commercial Center	16.0						0.34	236,966	500	474	
Regional Retail (see Note 2) *15 acres are designated as Commercial/Retail Flex use*	90.0						0.26	1,019,304	500	2,039	
Mid-Rise Hotel	10.0							400,000	840	476	
Family/Business Hotel	5.0							120,000	840	143	
Commercial Cluster 2 - Campus Setting	50.0						0.51	1,110,780	225	4,937	
Mixed-Use Residential/Retail	0.0						0.43	131,116	500	262	
Total	**285.0**							**6,246,833**		**21,956**	
Institutional											
Potential PBC - CSU East Bay Campus/Education Campus	150.0						0.35	2,286,900	500	4,574	
Total	**150.0**							**2,286,900**		**4,574**	
Community/Other											
Community Facilities (inc. K–12 schools)	103.0										
Other Uses - Health, Group Care, Homeless	10.0										
Other Uses - Religious Centers, Libraries, Community Centers	72.0										
Potential PBC - Sheriff and Fire Training	80.0										
Potential PBC - Center for Adaptive Learning	2.0										
Potential - Habitat for Humanity East Bay	3.0										
Transit Center/Yard	15.0										
Total	**285.0**										
Parks											**3. Open Space** creates potential for regional recreation per the EBRPD's PBC request and areas for habitat protection and restoration.
Neighborhood Parks	43.0										
Community Parks	415.0										
Recreation Facilities - Existing Golf Course	88.0										
Recreation Facilities - Sports Complex	75.0										
City-Wide Park	100.0										
Riparian Corridor	178.0										
Open Space (see Note 3)	2387.0										
Total	**3286.0**										
TOTAL	**5,028**		**12,272**			**28,800**		**8,533,733**		**26,530**	
		Average DU/Acre	**12.0**								
		Percent Open Space	**65.4%**								

DU = dwelling units; FAR = floor-to-area ratio; SF = square feet; PBC = Public Benefit Conveyance; CSU = California State University

Source: City of Concord, January 30, 2009

Costa Canal Trail, California Riding and Hiking Trail, Iron Horse Trail, and Delta De Anza Trail. Existing residents of Concord will also be able to easily access new services, facilities, and recreation opportunities provided on the site. With an extensive trail network, many day-to-day activities can be accomplished without driving.

To encourage non-motorized travel, the types of networks envisioned for the site would accommodate many different users and activities. Bicycle commuters could use both on-street bicycle lanes and off-street paths along the linear greenways. Recreational cyclists and walkers could use off-street paths exclusively. Children would be able to walk or ride their bikes to school. Hikers would be able to enjoy access to open space trails.

Figure 2-2 illustrates how the off-street (Class 1) trail network that has been planned for the site connects to other trails in and around Concord. The concept does not yet distinguish between unpaved hiking trails and paved paths, though it is assumed that there will be a mixture of both. Also it is assumed that bicycle lanes will be included alongside most if not all of the new roadways shown on site on Figure 2-1.

Roadway Network

Many factors were considered when planning the new roadway network for the site. The need for adequate roadway circulation was balanced with minimizing impacts to natural resources and to existing neighborhoods. Distributing the traffic generated by the site across a broader area of the city, rather than concentrating it in one or two neighborhoods, was also a consideration. As a result, characteristics of the roadway network of the Preferred Alternative include limited crossings of Mt. Diablo Creek and limited roadway access into the neighborhoods to the west of the site.

One issue addressed during the planning process was how Denkinger Road might be modified to serve traffic to and from the site. The Preferred Alternative assumes that Denkinger Road will remain a two-lane roadway (one lane in each direction).

Previous assessment of the Denkinger Road connection indicates that there is sufficient right of way to continue the existing roadway into the site without taking property (houses or yards), and that future traffic would be accommodated by a two-lane roadway. Furthermore, the continuation of Denkinger Road as a multimodal link for pedestrians, bicyclists, and automobiles into the site will provide access to facilities on the site as well as connect the site to existing neighborhoods.

The roadway and express bus corridor that extends from the North Concord/Martinez BART Station to Bailey Road will use design treatments for urban arterials to control and moderate traffic speed and flow. In contrast to the way in which suburban arterials are designed, an urban arterial includes such typical treatments as narrower lane widths, more frequent placement of intersections, bringing buildings up to the back of sidewalk with parking behind to create the feel of an urban corridor, and short signal timing cycles phased to moderate traffic speeds.

While several transportation features have been noted here, additional details particularly related to roadway network assumptions, analysis, and impacts are described in Chapter 4, Transportation.

2.3.3 Community

In the language used throughout the reuse planning process, "community" has referred to a range of topics including community integration, community-serving uses and facilities, housing variety, and parkland. The Preferred Alternative addresses community integration in the previous discussions of land use and transportation. This section highlights some of the key concepts and assumptions of the Preferred Alternative as they relate to community-serving uses and facilities, housing variety, and parkland.

Community-Serving Uses and Facilities

The Preferred Alternative sets aside a total of 435 acres for various community-serving uses and facilities, also called community facilities. The specific mix of uses will be determined at a design stage. However, the typical types of public and private community facilities include:

Public Community Facilities

- Police, fire, emergency response
- Libraries
- Schools (K–12)
- Colleges, universities, technical schools
- Community/cultural centers
- Performing arts centers
- Other municipal functions

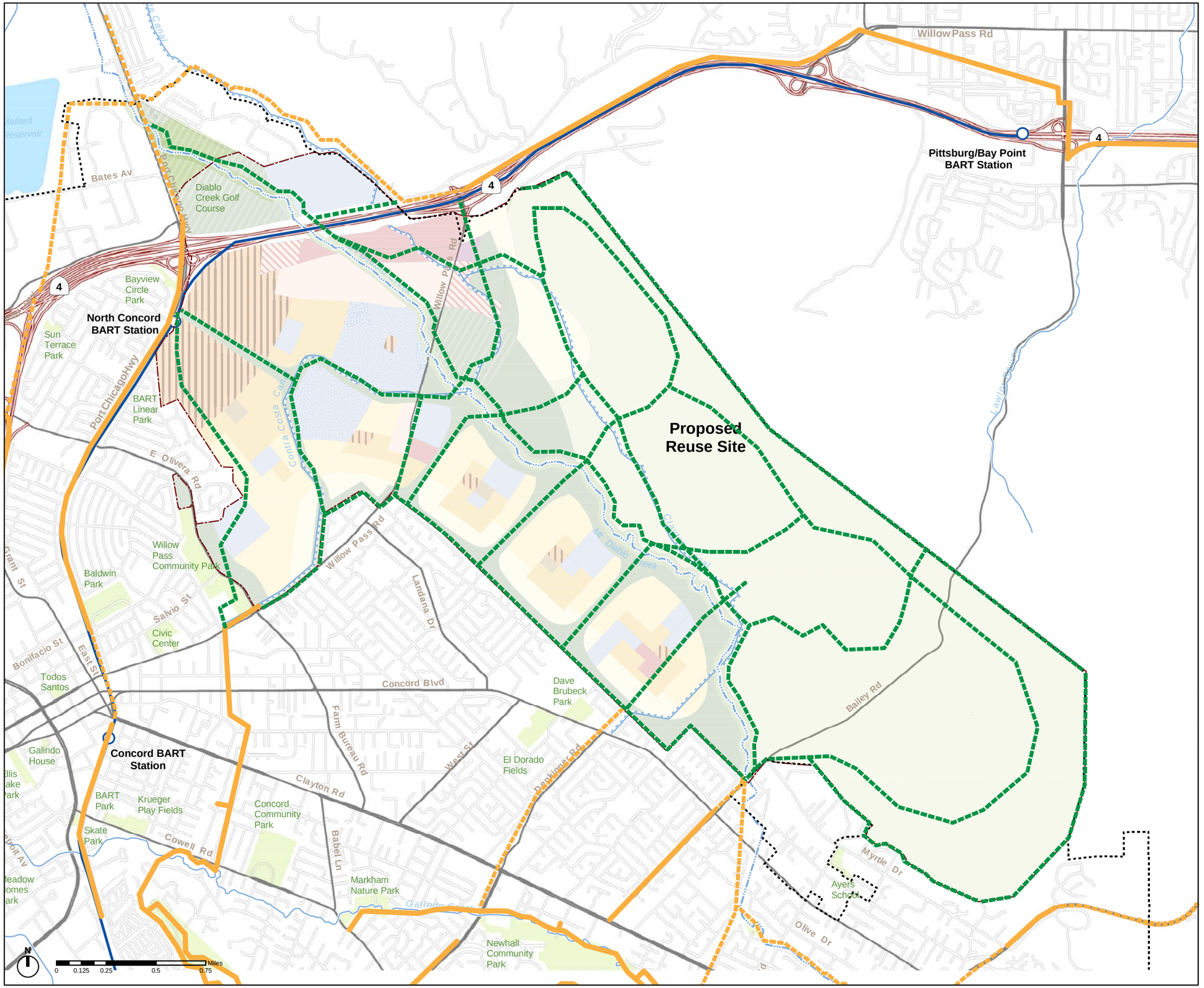
Private/Not-for-Profit Community Facilities

- Research and educational institutes
- Foundations/not-for-profit institutions
- Performing art centers
- Museums/cultural centers
- Veterans' facilities
- Hospitals, clinics, other medical facilities
- Senior care facilities
- Environmental education and interpretive centers
- Places of worship

Chapter 14, Public Services, describes community facilities and services that have been further defined and analyzed for the Preferred Alternative, including fire and life safety facilities and service providers, and public schools (K–12).

The Preferred Alternative also accommodates five specific community facilities introduced through the formal PBC request process. While the Navy is ultimately responsible for granting the PBC requests, the Preferred Alternative assumes accommodation of those uses, including:

- Four-year university campus (150 acres);
- Sheriff and fire department training and emergency command center (80 acres);
- Land set aside to provide self-help housing for low-income families (3 acres);
- Learning center to assist persons with neurological disabilities (2 acres); and
- Large open space areas to provide habitat protection/restoration and recreational opportunities on a regional scale (estimated at up to 2,500 acres, but exact acreage to be determined pending further discussions with wildlife agencies).



Legend

- Existing Class 1 Trails, Outside CNWS
- Proposed Class 1 Trails, Outside CNWS
- Proposed Onsite Class 1 Trails

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Proposed Class 1 Trails include conceptual trail network from EBRPD PBC request.

Sources: Concord Trails Master Plan, 2003; Contra Costa Countywide Bicycle and Pedestrian Plan, 2003; EBRPD, 2007 & 2008; Arup 2009

Concord Community Reuse Plan

Revised December 24, 2009

Figure 2-2
Preferred Alternative
Proposed Trail Network

In the Preferred Alternative, the university campus is featured prominently between the North Concord/Martinez BART Station and Willow Pass Road. The proposed location is the result of balancing several considerations, including access to the greenway system, adjacency to the tournament sports facility, balancing walk access to BART with the access needs of other land uses, access to enhanced bus transit and shuttle networks, access to regional roadways such as Willow Pass Road and SR 4, and a prominent visual landmark location. The amount of land set aside for the campus is generally less than suburban campuses of the California State University system, but is sizable for an urban-style campus and is assumed to accommodate approximately 10,000 full-time-equivalent students.

Land north of SR 4 is designated for the combined Contra Costa County sheriff and fire training and emergency command center. The site is assumed to be developed with indoor and outdoor fire and life safety and law enforcement training facilities, such as classrooms, a burn building/drill tower, a low-speed emergency vehicle operations course, specialized rescue training props, and in indoor gun range. It will also have an emergency command center to manage responses to local disasters (Interact Business Group, 2007). The lack of compatibility between these uses and residential/recreation uses elsewhere on site made it difficult to find other siting options that would be better than the proposed location north of SR 4. This facility would be in addition to smaller, local fire stations and police substations required to serve the site on a day-to-day basis.

The specific location of the land for self-help family housing is currently unidentified, but would be located within one of the medium-density residential land use categories in the Preferred Alternative. The location of the learning center for persons with neurological disabilities is also unidentified, but would likely be within a commercial land use designation or within the TOD area. Finally, the open space areas are discussed below in the “Land Stewardship” section.

Housing Variety

One of the earliest quality-of-life considerations in developing the alternatives was to provide for a variety and balance of housing options for Concord residents to satisfy the desire for affordability and to accommodate the housing needs of different age groups. The Preferred Alternative addresses the housing need by providing for a variety of housing types and densities. The alternative assumes that approximately 38 percent of the units would fall in the low-density range (4 to 10 dwelling units per gross acre), 37 percent would be in the medium-density category (approximately 15 units per acre), and 25 percent would be high density (30 or more units per acre). As noted earlier, depending on specific products or design, all residential land use categories could accommodate active senior or assisted-living communities.

In terms of affordability, the Preferred Alternative includes a base assumption for affordable housing (10 percent of all units built, or approximately 1,200 units) that is in accordance with current policies set in the City’s Inclusionary Housing Ordinance, which could increase to 15 percent (approximately 1,800 units) if portions of the site are within a redevelopment area. The needs of the homeless are also addressed in the LRA’s HAS to HUD on

January 30, 2009, and those units would qualify as meeting the "low-low" income affordability definition.

A more detailed discussion of housing is contained in Chapter 13, Population, Housing, and Employment.

Parkland

In the Preferred Alternative, up to 65 percent of the site is designated for parks and open space uses. Table 2-1 lists the various categories of parks and associated acreages. The land is broadly divided between "active parks and recreation" uses and "passive open space" uses. Active parks and recreation uses include neighborhood parks, community parks, recreation facilities such as the community golf course and a tournament sports complex, and a city-wide park. Open space uses include more passive recreation (hiking/biking) on overall unimproved terrain and land for habitat protection and restoration. Mt. Diablo Creek is included in the latter category. The analysis of potential parkland impacts is reported in Chapter 15, Recreation.

Neighborhood Parks

Neighborhood parks total 43 acres. They are generally small in size (1 to 2 acres) and fully developed and/or landscaped. Examples of typical neighborhood parks might include Todos Santos Plaza and Dave Brubeck Park. Note that the neighborhood park category is not shown on Figure 2-1. Neighborhood parks are assumed to be incorporated throughout the developed areas of the site.

Community Parks

Community parks, totaling 415 acres and generally shown in dark green on Figure 2-1, would be built that could include playgrounds, recreation facilities, sports fields for youth/adult tournaments, and picnic and group areas. Some examples of existing community parks include Willow Pass Park (40 acres) and Newhall Park (126 acres). The community park acreage would include an additional 45 acres provided opposite Willow Pass Park at East Olivera Road, essentially doubling the size of that park. A separate city-wide park, for which 100 acres are set aside just south of Willow Pass Road, would also offer significant opportunities for active recreation.

Green Corridors

A portion of the community park designation illustrated~~shown~~ on Figure 2-1 forms a system of green corridors that serve several purposes. The green corridors link together all the uses on the site, from the North Concord/Martinez BART Station to the village near Denkinger Road.

As discussed in the "Transportation" section above, they would support a Class 1 path network (separated from roadways), allowing many biking and walking activities for commuting and recreation. They could also be used to link the villages together, for example, or they could link existing Concord neighborhoods to the open space areas east of Mt. Diablo Creek. The green corridors also function as park areas serving the neighborhoods around them. In many cases, the corridors are wide enough to

accommodate entire sports fields and other park facilities, providing easy access to informal pick-up games and neighborhood events. Finally, the green corridors serve as transition zones between neighborhoods, both existing and new. The corridor between the two southern villages and the site boundary measures between 275 feet and 425 feet in width. The green corridors also serve to separate the villages from each other, increasing the access of village residents to recreation activities.

Golf Course

During the planning process in summer and fall 2008, the City considered a proposal to move the Diablo Creek Golf Course and decided that the existing community golf course would remain in its current location, but be renovated and upgraded with a new clubhouse and conference meeting facility.

Tournament Sports Complex

The Preferred Alternative includes 75 acres for a new tournament sports complex south of Willow Pass Road that would feature multiple regional tournament-quality adult and youth sports fields. During the planning process, review of existing facilities throughout California and elsewhere in the nation showed the range in size for recreation tournament sports complexes to be 40 to 80 acres. At 75 acres, the proposed facility is at the upper end of the range for recreation tournament facilities.[6]

It is estimated that the sports complex could accommodate up to 15 softball fields overlaid on 15 soccer fields or a mix of baseball fields, volleyball courts, batting cages, and soccer fields. When added to the existing soccer fields (16 large and 16 small), baseball/softball fields (15), and multiuse fields (7), this results in almost a doubling of Concord's recreation capacity.

In addition, the "Recreation/Residential Low Density Flex Area" designation shown on Figure 2-1 allows for either the tournament sports complex to be expanded, or for low-density residential development, depending on prevailing market conditions. Also, the Commercial/Retail Flex Space land use north/northeast of the sports complex will allow opportunities for shared parking and supporting uses such as retail, hotel/motel accommodations, and restaurants.

Open Space

Areas designated for open space use would include passive recreation and habitat protection. It is assumed that this could include hiking, biking, and picnicking. Campgrounds and interpretive facilities are possible uses, but detailed planning of such uses needs to be deferred until negotiations with permitting agencies progress further. Figure 2-1 includes illustrations of potential open space activities suggested by the East Bay Regional Park District to give an indication of the types of passive uses that are potential for the site.

[6] For information about the comparison sites, see City Council staff report dated January 12, 2009, agenda item number 2.a1, Attachment 1, Local Reuse Authority – December 1, 2008 Response to Questions, pages 5 and 6 and attached exhibits.

However, these are subject to habitat protection and restoration requirements that are yet to be determined.

Other open space elements featured in this alternative include:

- Preservation of the Los Medanos Hills where the slope is 30 percent or greater.
- A minimum 300-foot-wide riparian corridor along Mt. Diablo Creek.
- Preservation of prehistoric cultural sites.
- Wildlife habitat preservation areas for a variety of plant and animal species.
- Protection of oak woodlands and heritage trees in compliance with City of Concord requirements.

2.3.4 Green Planning

During the reuse planning process, the concept of green planning was introduced as a factor to consider in evaluating the original alternative reuse concepts. The two components of green planning were defined as climate change and resource efficiency. In this Draft Revised EIR, climate change and resource efficiency are addressed in different places. Climate change impacts are discussed in Chapter 17, Other CEQA Considerations, and impacts related to resource efficiency are discussed in Chapter 16, Utilities.

Climate Change

Greenhouse gases are emitted to the atmosphere by the burning of fossil fuels (e.g., petroleum for car engines, natural gas in homes for cooking and heating, and oil and natural gas in power stations to generate electricity). Land use planning can have a significant effect on greenhouse gas emissions.

A key contributing factor to greenhouse gas emissions is vehicle miles traveled (VMT). This is the total number of miles driven by all the vehicles attributed to the site (from residents, workers, students, etc. traveling to and from the site) over a period of time (per day, per year). A higher intensity and mix of land uses, combined with good access to alternate modes of travel such as transit, biking, and walking, help to reduce greenhouse gas emissions by reducing VMT. Reducing VMT is a key objective of State Senate Bill 375, legislation that targets greenhouse gas reductions through land use and transportation planning at a regional level. SB 375 is discussed in more detail in Chapter 3, Land Use, and Chapter 13, Population, Housing, and Employment.

In the same way, an efficient arrangement and intensity of land uses and buildings can also reduce greenhouse gases. Buildings are heated and cooled more efficiently when they are grouped together and share common walls and ceilings, reducing the amount of energy needed to keep the buildings comfortable when compared to smaller individual buildings. State Assembly Bill 32, the California Global Warming Solutions Act of 2006, requires the California Air Resources Board to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to adopt statewide greenhouse gas emission limits. AB 32 is discussed in more detail in Chapter 3, Land Use, and Chapter 13, Population, Housing, and Employment.

The Preferred Alternative features high-intensity transit-oriented development, mixed-use development, and emphasis on non-automotive transportation modes, which are all strategies to address climate change and reduce greenhouse gas emissions.

In developing the alternatives, attention was paid to the broader strategies that would help reduce greenhouse gases, and the Preferred Alternative includes many of these strategies as described above. The strategies will be tested during development of more detailed planning efforts such as the anticipated General Plan Amendment, Specific Plan(s), Climate Action Plan, or in the environmental analyses accompanying those planning actions. The identification of site-specific mitigation measures to address greenhouse gases is not appropriate at the programmatic level of this EIR; rather, this EIR provides a framework for the development of such measures in connection with subsequent planning efforts.

Resource Efficiency

The Preferred Alternative features higher-intensity uses and a mix of uses, and is therefore relatively efficient in its use of resources. However, resource efficiency is also highly dependent upon construction standards and technological solutions.

For the purposes of the EIR, the analysis of resource consumption assumes current best practices put forth by each utility provider and current construction standards in the City.

As planning progresses, there will be further investigation of strategies to reduce resource usage. These may include uses of renewable energy such as solar and wind; adoption of green building techniques; more specific arrangement of land uses; and more detailed incorporation of infrastructure to encourage walking, biking, and transit.

2.3.5 Land Stewardship

Land stewardship, as used in the reuse planning process, includes the categories of viewshed and hillside protection, cultural resources, land remediation, biological resources, and watershed resources.

The overall intent of the reuse planning process has been to first avoid and then minimize potential impacts to resources prior to considering mitigation. The City reviewed existing literature, performed focused verification studies, and conducted informal discussions with regulators to understand resources and their constraints on the site. This information was shared with the public to help define the initial alternative reuse concepts and, after further analysis provided through the May 2008 Draft EIR, to help develop the Preferred Alternative.

The Preferred Alternative will have impacts on natural resources on the site. Detailed discussion of constraints, assumptions, impact analysis, and recommended mitigations most directly related to land stewardship are contained in the following chapters:

- Chapter 5, Visual Resources
- Chapter 6, Earth Resources
- Chapter 7, Hydrology and Water Quality
- Chapter 8, Biological Resources

- Chapter 9, Cultural Resources
- Chapter 10, Hazardous Materials

Compared to the original Clustered Village–themed alternative reuse concepts, the Preferred Alternative generally retains more open space—65 percent of the reuse site is designated for parks and open space compared to 52 percent for Alternative Concept 2 ("Connected Villages"), 55 percent for Alternative Concept 3 ("Creek Park Villages"), and 72 percent for Alternative Concept 6 ("West Side Villages"). The Preferred Alternative also avoids more resources by reducing the amount of land developed east of Mt. Diablo Creek and eliminating development south of Bailey Road. From the Land Stewardship perspective, the Preferred Alternative conforms to the key assumptions for both alternatives in that ~~itCompared to the original Clustered Village–themed alternative reuse concepts, the Preferred Alternative generally retains more open space—65 percent of the site is designated for parks and open space compared to 52 percent for Alternative Concept 2, 55 percent for Alternative Concept 3, and 72 percent for Alternative Concept 6. The Preferred Alternative also avoids more resources by reducing the amount of land developed east of Mt. Diablo Creek and eliminating development south of Bailey Road. From the Land Stewardship perspective, the Preferred Alternative conforms to the key assumptions for both alternatives in that it~~:

- Preserves the hills and ridgelines on the eastern side of the CNWS.
- Limits development in areas of 30 percent slope or greater.
- Avoids and/or minimizes intrusion into wetlands and into breeding areas and habitat for threatened or endangered animal species.
- Avoids development south of Bailey Road.
- Avoids roads and development east of Mt. Diablo Creek and especially in resource areas containing habitat for threatened and endangered species.
- Maximizes open space with facilities and trails that will serve the public.
- Sets aside lands and designates them as open space in order to provide on-site mitigation for any unavoidable loss of habitat or wetlands on other portions of the site.

2.4 The Concentration and Conservation Alternative

The Concentration and Conservation Alternative blends two planning concepts that figured prominently during the reuse planning process. The alternative focuses a significant amount of housing, retail, commercial, and community facility uses to the north of Willow Pass Road, while maximizing open space conservation by minimizing development south of Willow Pass Road and east of Mt. Diablo Creek.

The Concentration and Conservation Alternative shares the same development history as the Preferred Alternative, and therefore the planning concepts behind the reuse planning process are also shared. For brevity, only major differences between the alternatives are described below; please refer to the discussion of the Preferred Alternative above for a fuller description of each topic, and to the relevant following chapters for discussions of assumptions, impact analysis, and mitigations. Table 2-3, included in Section 2.5 later in

this chapter, also summarizes key differences between the Preferred Alternative and the Concentration and Conservation Alternative.

2.4.1 Land Use

Both the residual open space area and intensified TOD area featured in this alternative potentially create signature components—a program that would minimize the development footprint, maximize densities, and offer a different way of living. The rest of the site would be left as open space with some limited active recreation. The developed area would be characterized by intensive mixed-use development. Uses would be layered, one above the other, and linked to structured parking. High densities combined with this pattern of development would establish walkable neighborhoods, work areas, and shopping areas.

The land use diagram for the Concentration and Conservation Alternative is shown on Figure 2-3 and the development program is shown in Table 2-2. The highest-intensity uses on the site consist of mixed-use residential and commercial development around the North Concord/Martinez BART Station and a mix of residential, commercial, community, and recreation uses in the area north of Willow Pass Road. Residential densities range between 4 and more than 50 units per acre, as in the Preferred Alternative. However, the residential mix is generally more intense, reflected in an average gross density of 13.9 units per acre, as compared to 12 units per acre in the Preferred Alternative. Overall, the Concentration and Conservation Alternative provides new land use to accommodate 10,203 residential units for more than 23,000 people, and 4.8 million square feet of commercial and retail uses that, with the education campus, allow for more than 21,000 jobs.

One major land use difference between this alternative and the Preferred Alternative is that it replaces the separate mixed-use villages south of Willow Pass Road with open space and parkland areas located adjacent to a group of residential and community land uses. The parkland provides opportunities for active recreation and offers a transition to the open space beyond. A total of 73 percent of the site land area is designated for parks and open space while 27 percent of the site is planned for development, compared to 65 percent parks and open space and 35 percent development for the Preferred Alternative.

Land is set aside for an education campus and sports complex. The size of the education campus is the same, at 150 acres, as it is in the Preferred Alternative, but it is located slightly farther north of Willow Pass Road. The size and location of the tournament sports complex is largely unchanged from the Preferred Alternative, with 75 acres adjacent to Willow Pass Road, although there are no flex space areas for further expansion of the sports complex as there are in the Preferred Alternative. Diablo Creek Golf Course is proposed to be upgraded in place, and the land next to it north of SR 4 is set aside for the combined Contra Costa County sheriff and fire training and emergency command center, identical to the Preferred Alternative.

2.4.2 Transportation

The Concentration and Conservation Alternative offers some degree of transit choice for residents, workers, and students on site. Similar to the Preferred Alternative, an extensive biking and walking trail/path system is assumed.

Transit Choices

The North Concord/Martinez BART Station would be the focal point for transit service in the Concentration and Conservation Alternative. A high-capacity bus transit system would not be featured in this alternative. Regular bus service is assumed to serve the site, connecting on-site development to the North Concord/Martinez BART Station and to the existing community. New standard bus shelters with electricity and benches are assumed to serve the new routes. Bus service could take the form of community shuttles to serve residents, workers, and university students outside walking range of the BART station.

Trail Networks

As with the Preferred Alternative, the provision of robust on- and off-street bicycle and pedestrian networks reflecting the Contra Costa Countywide Bike and Pedestrian Plan, the Concord Trails Master Plan, and the EBRPD proposal for PBC is assumed for the Concentration and Conservation Alternative. Figure 2-4 illustrates the proposed off-street (Class 1) trail network.

Roadway Network

This alternative does not have any roadway connections to the existing community between Willow Pass Road and Bailey Road, and does not extend any roads to the neighborhoods west of the site between those roads because this alternative does not have the villages extending southwest through the site.

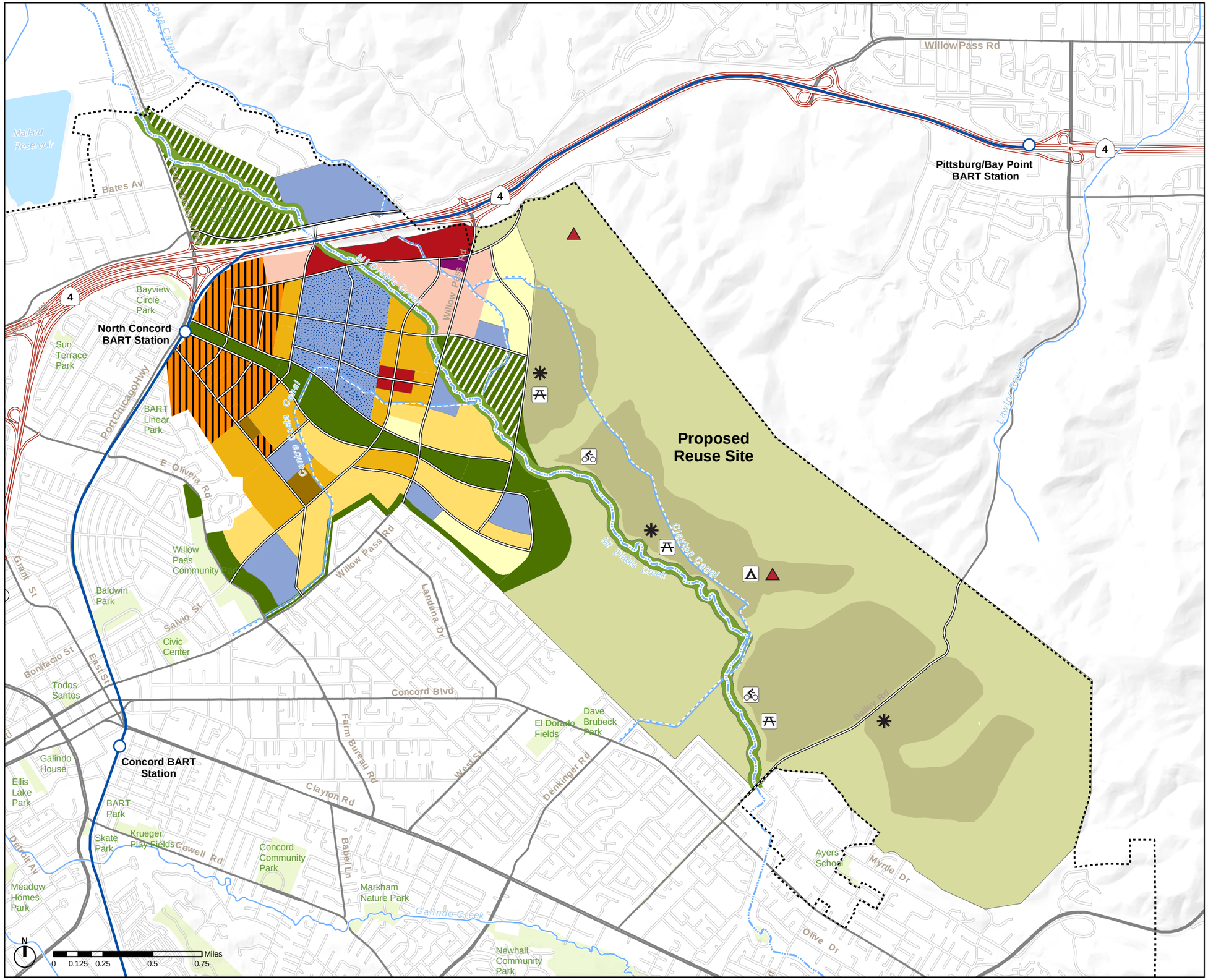
2.4.3 Community

Community-Serving Uses and Facilities

The Concentration and Conservation Alternative sets aside a total of 395 acres for various community-serving uses and facilities, nearly the same number of acres as the Preferred Alternative. The Concentration and Conservation Alternative also accommodates the same community facilities introduced through the PBC request process and in roughly the same locations.

The university campus is located northeast of the alternative's central greenway, which follows the low ridgeline stretching from the North Concord/Martinez BART Station south to Willow Pass Road. The campus is located closer to the North Concord/Martinez BART Station than it is in the Preferred Alternative. The location provides space for a mixed-use neighborhood district to be located between the campus and Willow Pass Road. The sports complex, while further away from the education campus in this alternative compared to the Preferred Alternative, is the same size (75 acres) and is situated to take advantage of potential shared parking opportunities among the adjacent commercial office uses. Given that office buildings are largely closed evenings and weekends, it is much more likely that shared parking opportunities will be found with the commercial uses than with an educational complex.

The amount of land set aside for the campus (150 acres) is the same as with the Preferred Alternative, and is assumed to accommodate the same number of full-time-equivalent students (10,000).



Legend

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Potential Recreation Areas (Subject to habitat restriction)
- Recreation Sites & Staging Areas (per East Bay Regional Park District (EBRPD) plan)
- Environmental Education, Historical Interpretation & Port Chicago Visitors Center (per EBRPD plan)

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Locations of icons are illustrative depictions only and subject to habitat mitigation constraints.

Concord
Community Reuse Plan

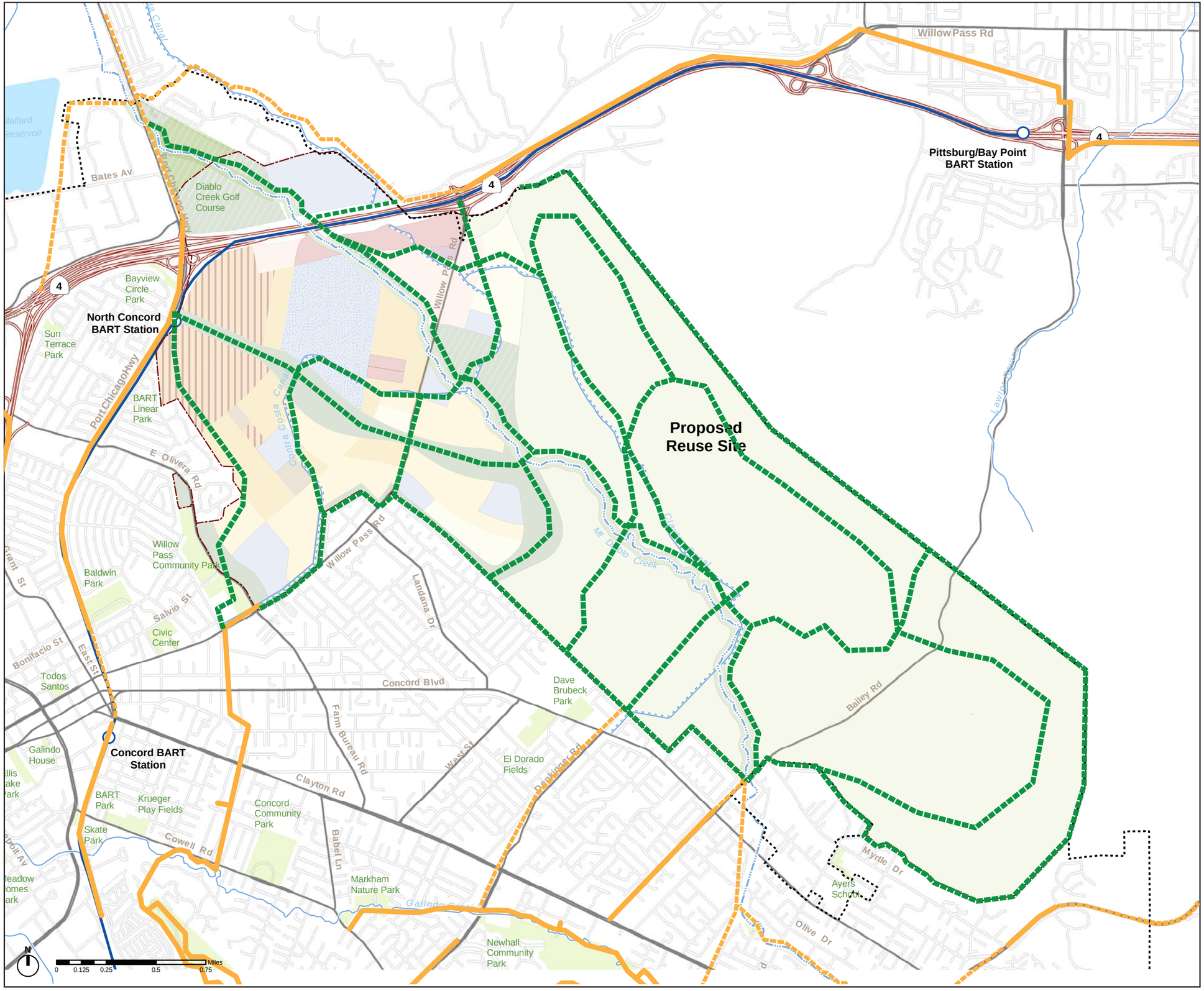
Revised August 21, 2009

Figure 2-3
Concentration and Conservation Alternative Land Use Diagram

Table 2-2: Concentration and Conservation Alternative Development Program

Land Uses	Acres Total Acres	Units and Population Gross DU/Acre	Units	% of Units	Persons/ Unit	Population	SF and Jobs Gross FAR	SF	SF/Job	Jobs	Notes
Residential											1. **Open Space** creates potential for regional recreation per the EBRPD's PBC request and areas for habitat protection and restoration.
High-Density Residential	20.0	50.0	1,000	9.8%	1.85	1,850					
Medium-High Density Residential	42.0	30.0	1,260	12.3%	1.85	2,331					
Mixed-Use Residential/Retail	25.0	30.0	750	7.4%	1.85	1,388					
Medium-Density Residential	275.0	15.0	4,125	40.4%	2.11	8,704					
Medium-Low Density Residential	264.0	10.0	2,640	25.9%	2.94	7,762					
Low-Density Residential	107.0	4.0	428	4.2%	2.82	1,207					
Total	**733.0**		**10,203**	**100.0%**		**23,241**					
Commercial											
Office/Transit-Oriented Development	10.0						1.70	740,520	225	3,291	
Office Park	80.0						0.51	1,777,248	225	7,899	
Town Center Retail	8.0						0.68	236,966	500	474	
Neighborhood Commercial Center	13.0						0.34	192,535	500	385	
Regional Retail	60.0						0.26	679,536	500	1,359	
Mid-Rise Hotel	10.0							400,000	840	476	
Family/Business Hotel	5.0							120,000	840	143	
Commercial Cluster 2 - Campus Setting	25.0						0.51	555,390	225	2,468	
Mixed-Use Residential/Retail	0.0						0.43	93,654	500	187	
Total	**211.0**							**4,795,850**		**16,683**	
Institutional											
Potential PBC - CSU East Bay Campus/Education Campus	150.0						0.35	2,286,900	500	4,574	
Total	**150.0**							**2,286,900**		**4,574**	
Community/Other											
Community Facilities (inc. schools)	78.0										
Other Uses - Health, Group Care, Homeless	9.0										
Other Uses - Religious Centers, Libraries, Community Centers	58.0										
Potential PBC - Sheriff and Fire Training	80.0										
Potential PBC - Center for Adaptive Learning	2.0										
Potential - Habitat for Humanity East Bay	3.0										
Transit Center/Yard	15.0										
Total	**245.0**										
Parks											
Neighborhood Parks	35.0										
Community Parks	269.0										
Recreation Facilities - Existing Golf Course	88.0										
Recreation Facilities - Sports Complex	75.0										
City-Wide Park	0.0										
Riparian Corridor	178.0										
Open Space (see Note 1)	3044.0										
Total	**3689.0**										
TOTAL	**5,028**		**10,203**			**23,241**		**7,082,750**		**21,257**	
		Average DU/Acre	**13.9**								
		Percent Open Space	**73.4%**								

DU = dwelling units; FAR = floor-to-area ratio; SF = square feet; PBC = Public Benefit Conveyance; CSU = California State University
Source: City of Concord, January 30, 2009



Legend

- Existing Class 1 Trails,Outside CNWS
- Proposed Class 1 Trails, Outside CNWS
- Proposed Onsite Class 1 Trails

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
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- Low-Density Residential
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- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Proposed Class 1 Trails include conceptual trail network from EBRPD PBC request.

Sources: Concord Trails Master Plan, 2003; Contra Costa Countywide Bicycle and Pedestrian Plan, 2003; EBRPD, 2007 & 2008; Arup 2009

Concord Community Reuse Plan

Revised December 24, 2009

Figure 2-4
Concentration and Conservation Alternative Proposed Trail Network

Housing Variety

The Concentration and Conservation Alternative addresses housing balance and variety by providing for a roughly even range, in terms of percent, of various housing types and densities. The alternative assumes that approximately 30 percent of the units would fall in the low density range (4 to 10 dwelling units per gross acre), 40 percent would be in the medium density category (approximately 15 units per acre), and 30 percent would be high density (30 or more units per acre). This compares to the Preferred Alternative, which has mixes of 38 percent, 37 percent, and 25 percent, respectively.

In aggregate, the Concentration and Conservation Alternative has close to the same number of high density and medium density units (7,135 units combined in these categories compared to 7,630 in the Preferred Alternative). Most of the difference between total units (10,203 compared to 12,272) is attributed to the fact this alternative has fewer low-~~-~~density units than the Preferred Alternative (3,068 compared to 4,642).

As with the Preferred Alternative, the Concentration and Conservation Alternative includes a base assumption for affordable housing (10 percent of all units built) that is in accordance with current policies set forth in the Housing Element of the City's General Plan.

Parkland

The Concentration and Conservation Alternative has similar types of parks, recreation, and open space elements as described for the Preferred Alternative, but there are several key differences. The alternative reserves a greater acreage for open space (3,044 acres compared to 2,387 acres), does not have a "city-wide park" (100 acres in the Preferred Alternative), and has less acreage for improved neighborhood and community parks (304 acres rather than 458 acres). Other elements that are consistent between both alternatives include the golf course (88 acres), sports complex (75 acres), and riparian corridor (178 acres). Overall, with all parks and open space uses combined, 73 percent of the site is designated for parks and open space uses in the Concentration and Conservation Alternative compared to 65 percent in the Preferred Alternative. The total "improved" parks (neighborhood and community parks, golf course, sports complex, city-wide park) comprise 9 percent of the site compared to 14 percent in the Preferred Alternative. Table 2-2 lists the various categories of parks and the acreages set aside for them.

Neighborhood Parks

The Concentration and Conservation Alternative includes 35 acres of neighborhood parks compared to 43 acres in the Preferred Alternative.

Community Parks

The Concentration and Conservation Alternative features 269 acres of community parks, generally shown in dark green on Figure 2-3, compared to 415 acres in the Preferred Alternative. This alternative does not include a separate city-wide park.

Green Corridors

The Concentration and Conservation Alternative features green corridors, which are counted within the Community Parks acreage. The green corridors are generally fewer in number in this alternative but wider than in the Preferred Alternative. The central green corridor connects the North Concord/Martinez BART Station area to the furthest extent of development south of Willow Pass Road. Here, too, the green corridors serve several purposes as described for the Preferred Alternative, including linking the site uses together, functioning as active park areas, and serving as a transition zone between the existing neighborhoods and new neighborhoods to be developed on-site.

Golf Course

As with the Preferred Alternative, the Diablo Creek Golf Course will be renovated and upgraded with a new clubhouse and conference meeting facility.

Tournament Sports Complex

The Concentration and Conservation Alternative includes 75 acres for a new tournament sports complex south of Willow Pass Road, in approximately the same location as in the Preferred Alternative, and would offer the same features and facilities, except that flex spaces for expansion are not designated adjacent to the complex as they are in the Preferred Alternative.

Open Space

Figure 2-3 includes illustrations of potential open space activities suggested by the East Bay Regional Park District to give an indication of the types of passive uses that are envisioned for the site. However, these uses, like those in the Preferred Alternative, are subject to habitat protection and restoration requirements that have yet to be determined.

2.4.4 Green Planning

The green planning components for the Concentration and Conservation Alternative are the same as that for the Preferred Alternative; however, to the extent that resource use and climate change are dependent on the size of population or development footprint, the analysis in Chapters 16 and 17 will show marked differences between the two alternatives.

2.4.5 Land Stewardship

The land stewardship components for the Concentration and Concentration Alternative are the same as that for the Preferred Alternative. The analysis in each chapter related to land stewardship will show some differences between the two alternatives.

2.5 Summary of Differences Between the Alternatives

While both alternatives reflect the planning concepts described in the preceding sections, they represent different approaches to reuse of the site. The Concentration and Conservation Alternative, as its name suggests, concentrates all of the development onto the northwest portion of the site. This concentration of development provides the greatest amount of open space dedicated to protection of wildlife and habitat, and it leaves

undisturbed larger amounts of land fronting the existing residential properties along the western boundary of the site. Most of the development is located in close proximity to the North Concord/Martinez BART Station, providing for transit-oriented/walkable neighborhoods. A smaller development footprint leads to less commercial/retail space, fewer residential units, lower job creation on the site, less connectivity, and fewer acres for neighborhood and community parks. The smaller footprint also leads to higher overall density.

The Preferred Alternative proposes development on a larger percentage of the site. As a regional infill site, it takes advantage of the opportunity to place transit-oriented, sustainable development across the site. Development is arranged around the North Concord/Martinez BART Station and around a series of transit nodes to provide a vibrant mix of uses and densities that support high-capacity transit and transit choice. It distributes traffic more evenly through the site. The village concept creates pedestrian- and bicycle-friendly neighborhoods that not only serve new residents, but because it has more linkages and connectivity, provides greater access for existing Concord residents to facilities on site. The Preferred Alternative provides for more improved recreational parkland and balances the provision of open space with an emphasis on a higher number of jobs and housing units.

Table 2-3 summarizes the key differences in land use and attributes between the Preferred Alternative and the Concentration and Conservation Alternative.

Table 2-3: Summary of Differences Between Alternatives

Attribute	Preferred Alternative	Concentration and Conservation Alternative
Proportion of the site designated for the following categories of land uses:		
Residential	20% (1,022 acres)	15% (733 acres)
Commercial	6% (285 acres)	4% (211 acres)
Institutional (Education Campus)	3% (150 acres)	3% (150 acres)
Community/Other	6% (285 acres)	5% (245 acres)
Parks (Active Recreation)	14% (721 acres)	9% (467 acres)
Riparian Corridor	4% (178 acres)	4% (178 acres)
Open Space	47% (2,387 acres)	61% (3,044 acres)
Total	5,028 acres	5,028 acres
Population	28,800 people	23,241 people
Housing Units	12,272 units	10,203 units
Housing Mix	25% high density 37% medium density 38% low density	30% high density 40% medium density 30% low density
Average Residential Density	12.0 gross units per acre	13.9 gross units per acre
Employment	26,530 jobs	21,257 jobs
Commercial Floor Area	6.2 million square feet	4.8 million square feet

Source: Arup, 2009

2.6 No Project Alternative

Under CEQA, the No Project Alternative is the continuation of an existing plan, policy, or procedure, or the failure to implement an action. The No Project Alternative provides a baseline from which to compare the magnitude of the environmental effects of the two alternatives. Under the No Project Alternative for the Reuse Project, the Navy would retain ownership of the site. Except for buildings currently used for maintenance of the site, all buildings would remain vacant, and all other facilities would remain but would be unused. The property would be held in an inactive or caretaker status. This is consistent with current City of Concord zoning and General Plan designations that indicate military use and no other adopted land use plans specifying different future uses at the site. Also, the site would not be expected to be used actively by the military, given the Navy's mandate to close the Inland Area. Assumptions consistent with the No Project Alternative include:

- Maintain structures to limit deterioration.
- Maintain existing perimeter fencing; continue fire/security service patrols of the site, and control access.
- Provide limited maintenance of roads to ensure access.
- Provide limited grounds maintenance of open areas to eliminate fire, health, and safety hazards.
- Maintain and renew existing grazing leases.
- Continue operation of the portion of the Diablo Creek Golf Course on the land leased from the Navy.
- Continue site remediation of areas with identified contamination.

2.7 Rationale for Choosing the Preferred Alternative

The Clustered Villages Alternative has been developed through the hard work of the community, the CAC, TAGs, a range of local and regional stakeholders, and the LRA. Perhaps most importantly, it moves past the compilation of ideas developed at the start of the planning process to define a coherent, sustainable direction for growth. The Preferred Alternative draws upon the best features of Concord—the diversity of its people; the balance of jobs and housing; and the provision of city services that support families, seniors, and a wide range of incomes and age groups. It assures their continuity and takes bold steps toward significant improvements in opportunities and services. The plan defines a future for the City, holding to core values while moving carefully and thoughtfully toward a new way of living on the land and at densities sufficient to support a more sustainable lifestyle. As a plan for all Concord, every move to support viable transit, compact development, and expanded open space is harvested for benefits across the City, whether it is more frequent passenger-serving transit or finally meeting the demand for sports fields and trails. In summary, this new model:

- Is of Concord—providing major new, accessible attractions where all of its citizens may work, live, and play

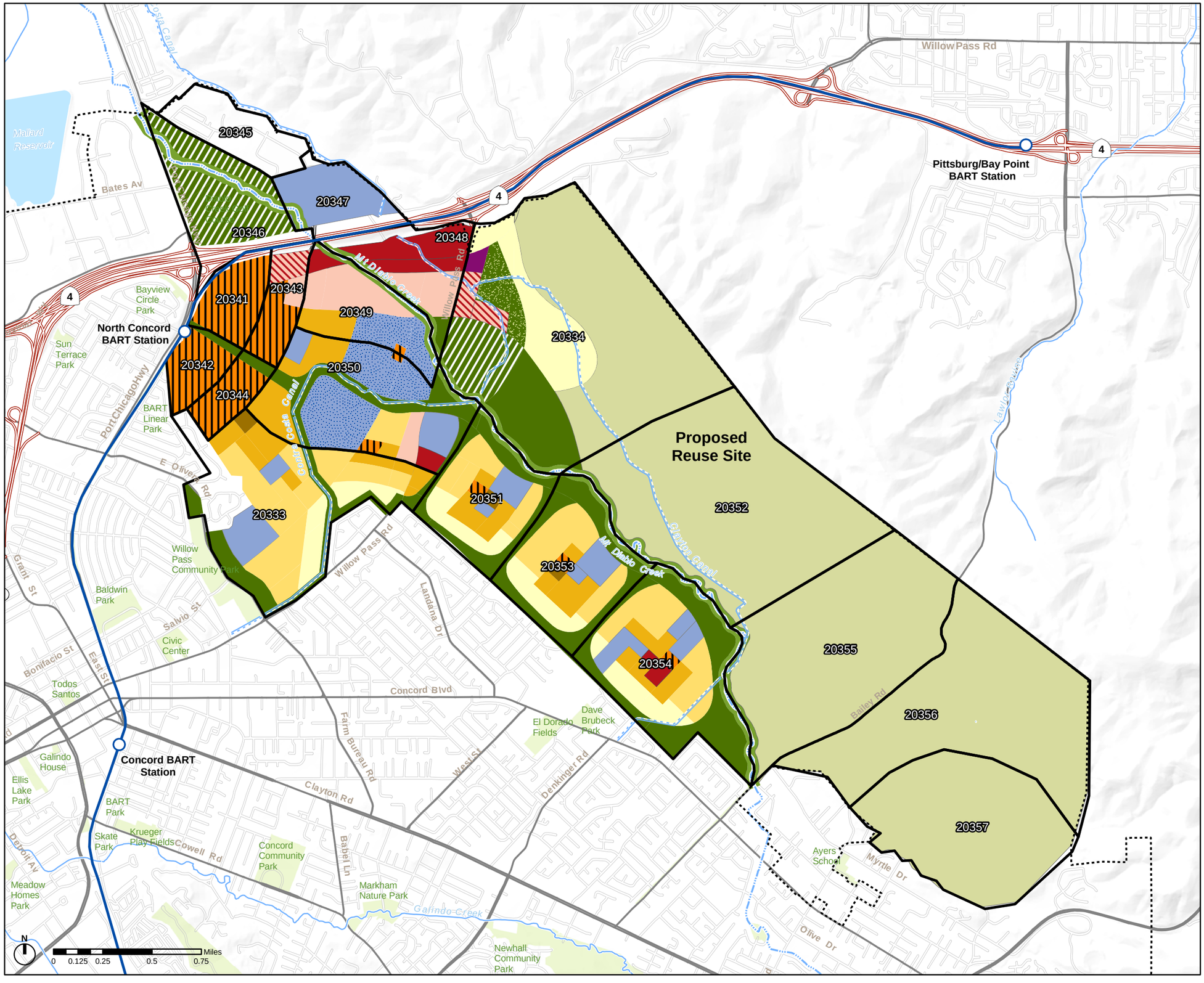
- Is an opportunity for permanent open space resources on a regional scale, raising the bar in Concord for both quantity and quality
- Provides a powerful transit bonus, working toward the clustering of housing and services sufficient to support high-capacity transit with benefits beyond the CNWS borders
- Creates a welcoming environment to attract the Bay Area's best 21st century jobs
- Builds a skilled labor pool, with excellent education and training facilities within easy reach of jobs
- Constructs a ladder of housing opportunity through a variety of diverse housing types and programs to support housing access for all income levels
- Plans for healthy people and healthy ecosystems, offering Concord as a model for using resources in support of healthy living
- Connects but does not overwhelm, by planning for selected small-scale linkages between new city resources and neighborhoods and existing settled areas, assuring access to the vast new menu of activities and experiences, and properly managing any impacts that may be created

2.8 Summary Tables of Key Characteristics of the Alternatives

The development programs that are the basis of the analysis in this Draft Revised EIR are introduced earlier in this chapter as Tables 2-1 and 2-2 (for the Preferred Alternative and Concentration and Conservation Alternative, respectively). These detail the nature, intensity, and amount of specific types of development and facilities across the site for each alternative and include 36 separate land use designations.

For transportation modeling purposes, the development program for each alternative was allocated into 19 traffic analysis zones (TAZs). A map of these TAZs is shown on Figure 2-5 and Figure 2-6 for each alternative.

In order to allocate the development programs to TAZs, the data was aggregated into 17 generalized land use types. The assumptions for each generalized land use type, and resulting allocation in each alternative, are shown in Tables 2-4 and 2-5. The aggregation process (allocating 36 land use designations into 17 generalized land use types) results in some loss of definition, although the overall numbers of jobs and housing units are generally consistent (within 5 percent). The TAZ analysis is used to analyze traffic impacts (discussed in Chapter 4, Transportation), and as an input to the air quality analysis (Chapter 11, Air Quality) and the noise analysis (Chapter 12, Noise and Vibration). All other discussions of potential impacts are based on the development programs as shown in Tables 2-1 and 2-2.



Legend

Traffic Analysis Zone Boundaries

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

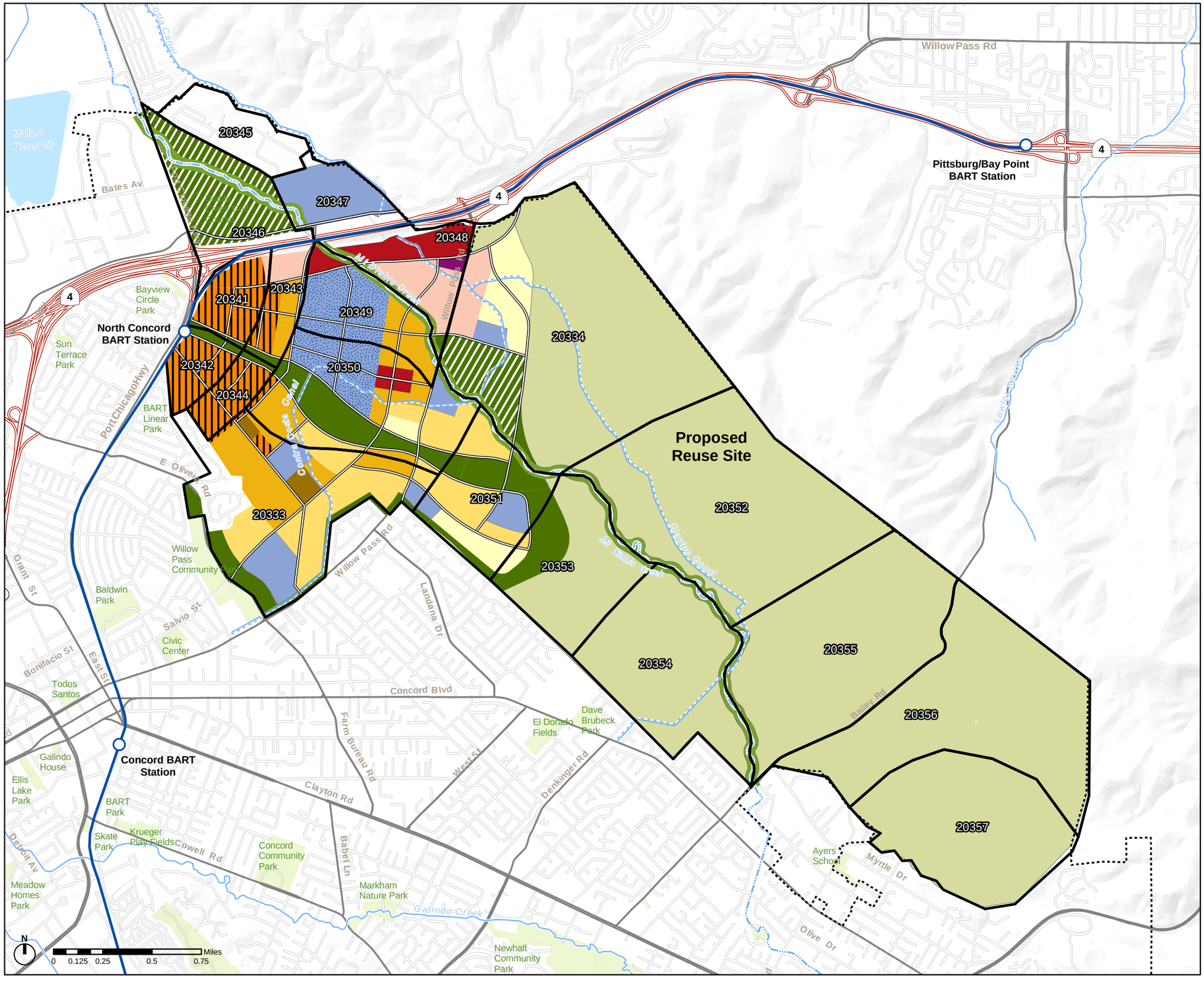
Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

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Figure 2-5
Preferred Alternative
Traffic Analysis Zone Boundaries



Legend

- Traffic Analysis Zone Boundaries

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

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Figure 2-6
Concentration and Conservation Alternative Traffic Analysis Zone Boundaries

Table 2-4: Preferred Alternative Traffic Analysis Zone Program Allocation

Land Uses	Acres	Units and Population				Jobs		Notes
	Acres	Gross DU/Acre	Units	Persons/ Unit	Population	Jobs/Ac	Jobs	
Residential								
High-Density Residential	12.0	40	480	1.85	888			1. Includes Recreation/Residential Low Density flex space, which is assumed to be Low Density Residential for modeling purposes, but can be developed to support a larger recreation area, subject to a determination of financial feasibility and impact on the City's fiscal sustainability.
Medium-Density Residential	235.7	15	3,536	2.11	7,460			
Medium-Low-Density Residential	360.9	10	3,609	2.82	10,178			
Low-Density Residential - see Note 1	282.9	4	1,131	2.82	3,191			
Total			**8,756**		**21,717**			
Commercial								
Commercial Office	116.6					65	7,580	2. Commercial/Retail Flex Space areas are assumed to be Commercial Retail for modeling purposes, but can be developed as Commercial Office use depending upon market conditions and impact on the City's fiscal sustainability.
Commercial Retail	92.7					30	2,780	
Commercial/Retail Flex Space - see Note 2	43.1					30	1,292	
Commercial Hotel - see Note 3	6.6					22	143	3. Includes Family/Business Hotel.
Total							**11,795**	
Mixed Use								
Transit-Oriented Development (BART Station Area) - see Note 4	223.9	16	3,582	1.85	6,626	53	11,864	4. Includes BART Station.
Transit-Oriented Development (Villages)	18.7	20	373	1.85	691	30	560	
Total			**3,955**		**7,317**		**12,424**	
Institutional								
Educational Campus - see Note 5	150.2					11.5	1,727	5. Includes University Campus.
Community/Other								
Community Facilities - see Note 6	249.8					4	999	6. Includes all PBC facilities; K–12 public schools; health, group care, and homeless facilities; religious centers, libraries, and community centers.
Parks								
Open Space	2472.9							
Active Recreation - see Note 7	102.2							7. Includes potential tournament facilities.
Riparian Corridor	168.6							
Parks and Recreation - see Note 8	527.0							8. Includes city-wide park, community parks, and neighborhood parks.
Golf Course	59.8							
TOTAL			**12,711**		**29,034**		**26,945**	

Note: The above data is relevant for transportation analysis purposes; for detailed information, see the January 30, 2009 Preferred Alternative: Clustered Villages Development Program.

Source: Arup, April 2009

Table 2-5: Concentration and Conservation Alternative Traffic Analysis Zone Program Allocation

Land Uses	Acres	Units and Population				SF and Jobs		Notes
	Acres	Gross DU/Acre	Units	Persons/ Unit	Population	Jobs/Ac	Jobs	
Residential								
High-Density Residential	17.5	40	700	1.85	1,295			
Medium-Density Residential	222.3	15	3,334	2.11	7,034			
Medium-Low-Density Residential	264.7	10	2,647	2.82	7,464			
Low-Density Residential	117.7	4	471	2.82	1,328			
Total			**7,151**		**17,121**			
Commercial								
Commercial Office	111.3					65	7,237	
Commercial Retail	73.6					30	2,207	
Commercial Hotel - see Note 1	5.8					24.82	143	1. Includes Family/Business Hotel.
Total							**9,586**	
Mixed Use								
Transit-Oriented Development (BART Station Area) - see Note 2	211.2	16.0	3,379	1.85	6,250	53	11,191	2. Includes BART Station.
Total			**3,379**		**6,250**		**11,191**	
Institutional								
Educational Campus - see Note 3	153.0					11.2881828	1,727	3. Includes University Campus.
Community/Other								
Community Facilities - see Note 4	205.6					3.02229011	622	4. Includes all PBC facilities; K–12 public schools; health, group care, and homeless facilities; religious centers, libraries, and community centers.
Parks								
Open Space	3127.5							
Active Recreation - see Note 5	105.8							5. Includes potential sports center.
Riparian Corridor	168.6							
Parks and Recreation - see Note 6	279.9							6. Includes city-wide park, community parks, and neighborhood parks.
Golf Course	59.8							
TOTAL			**10,530**		**23,371**		**23,126**	

Note: The above data is relevant for transportation analysis purposes; for detailed information, see the January 30, 2009 Concentration and Conservation Development Program.
Source: Arup, April 2009



3.
Land Use

3 Land Use

This chapter summarizes the effects on land use patterns and regulations that would result from the implementation of either of the two alternatives. This chapter also includes proposed mitigation measures that will reduce the identified impacts to the extent feasible.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised EIR, the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on land use. This has resulted in the land use impacts of both alternatives being substantially less than they would have been had land use impacts not been taken into account during all stages of the planning and environmental analysis process.

3.1 Existing Conditions

The 5,028-acre site is located approximately 25 miles northeast of San Francisco in central Contra Costa County, as shown on Figure 3-1. The site is situated within a broad valley that runs south to north from the base of Mt. Diablo to Suisun Bay, part of the Sacramento–San Joaquin river delta that discharges into San Francisco Bay. The site is the former Inland Area of the Concord Naval Weapons Station (CNWS) and is located entirely within the City of Concord. The City is bounded by the cities of Walnut Creek and Clayton to the south, Pleasant Hill to the west, Martinez to the northwest, and Pittsburg and the unincorporated communities of Clyde and Bay Point to the north and east, respectively.

This section describes the regional land use context, surrounding land uses, and existing land uses on the site, as well as the applicable regulatory framework related to land use for the site and the region.

3.1.1 Historic Regional Development

The area surrounding the site was used for agriculture through most of the late 19th and early 20th centuries, and experienced rapid suburban housing development after the opening of the Caldecott Tunnel through the East Bay hills in 1937. Development of freeways and the construction of the Bay Area Rapid Transit (BART) District system through the central part of Contra Costa County in the early 1970s spurred further commercial and residential development in Concord and the surrounding cities. In 1967, the first large shopping development, Sunvalley Shopping Center, was opened; throughout the 1970s, other major business and corporate office parks were constructed in the area.

The most rapid development of suburban housing in Concord occurred between 1950 and 1970 in the farmland surrounding the town center, known today as Todos Santos Plaza. Single-family development and some commercial areas expanded outward from the traditional farm roads of Port Chicago Highway and Willow Pass, Farm Bureau, and Clayton

Roads. By 1970, Concord had the largest population of any city in Contra Costa County (DOF, 2007).

In the 1980s, a concerted effort was made to expand the job base in Concord's downtown area adjacent to the Concord BART Station; this resulted in the construction of several mid- and high-rise office buildings associated with the banking and financial industries. The retail and office market along the Interstate Highway (I-) 680 and State Route (SR) 242 corridors rapidly expanded, reinforced in Concord by development of additional mid- and high-rise office buildings. As development occurred, hillside areas such as Lime Ridge Open Space; Briones Regional Park, operated by the East Bay Regional Park District (EBRPD); and Mt. Diablo State Park were preserved.

The Contra Costa Canal Regional Trail, Iron Horse Regional Trail, and California Riding and Hiking Trail of the EBRPD all pass through Concord. The Contra Costa Canal Regional Trail ends at the southwestern edge of the site and the Delta de Anza Regional Trail, which travels through Bay Point and Pittsburg, terminates near the site at the intersection of Willow Pass Road and Evora Road. The EBRPD Master Plan Map (November, 2007) shows an extension of the Contra Costa Canal Regional Trail through the site as a potential regional trail. It also shows an extension of the Delta de Anza Regional Trail traversing the area of the site north of SR 4 and connecting to the Iron Horse Regional Trail. Finally, it shows a potential regional trail extending from the site to Black Diamond Mines Regional Preserve 2.5 miles to the southeast.

3.1.2 Regional Land Uses

Current land uses in adjoining areas in central and eastern Contra Costa County include a diverse mix of residential and commercial uses in lowland areas and low-density residential and open space in the hillside areas. Single-family residential is the primary land use in the areas adjacent to the project site, with a mix of commercial uses along major arterial streets. Office and light industrial parks are found along the I-680, SR 4, and SR 242 corridors. The area to the north near the waterfront accommodates industrial uses, including two major refineries: one in Avon and the other near Martinez.

The BART system has two stations in Concord, connecting Concord and the cities of Pittsburg, Pleasant Hill, Walnut Creek, Lafayette, and Orinda with other communities in Contra Costa, Alameda, San Francisco, and San Mateo counties. Some mixed-use, higher-density transit-oriented development has occurred around the BART stations in Pleasant Hill and Walnut Creek, and is continuing to develop around the downtown Concord BART Station.

3.1.3 Site Land Use

As previously introduced, the 5,028-acre site is owned by the U.S. Navy (Navy). It was originally developed in the late 1800s for agricultural use, and later transferred to military use in 1944. Thus, much of the land, especially in the lower, flatter areas below the Los Medanos Hills, has been disturbed by grading, construction, and military activities. The site is surrounded by perimeter fencing, with an extensive system of security and livestock fences throughout the site. While many of the former military facilities are still visible from the site perimeter and from the public roads, livestock grazing is the most evident current

use on approximately 90 percent of the site, including the lowlands and the Los Medanos Hills, as shown on Figure 3-2.

The existing main entrance and the remaining Navy administrative buildings are located in the area north of SR 4. Most of the existing administrative buildings, as well as other structures such as barracks and storage facilities in this area, are not in use. Approximately half of the Diablo Creek Golf Course (75 acres) is located on Navy-owned land and is leased to the City. An additional 5-acre parcel that houses a complex of Little League fields is located on the part of the site west of Olivera Road.

The majority of the decommissioned defense-related facilities—the most noticeable remains of which include large concrete earth-covered storage bunkers (also known as magazines), unused warehouses and other military-related buildings, and the system of rail lines and paved and unpaved roads—are located south of SR 4. An abandoned concrete airfield runway occupies the portion of the site bordered by Willow Pass and Olivera Roads, but this feature is not very visible from outside the site.

As stated above, most of the site is used presently for livestock grazing. A number of agriculture research areas are also located within the site. The site does not contain any areas designated Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance (FMMP, 2009). These classifications are used to describe land that has soils critical to support agriculture.

Additionally, no areas of the site are under a Williamson Act contract.[1] The agriculture research areas contain plots dedicated to the cultivation of non-native trees; they are most visible from Bailey Road, upland areas, and various neighborhoods adjacent to the western edge of the site.

Public roads that cross the site include SR 4 along the northern part of the site; Willow Pass Road, which runs perpendicular to SR 4 down the center of the site; and Bailey Road, which crosses through the southern portion of the site. Kinne Boulevard, a road that is not accessible to the public, runs parallel to the east side of Mt. Diablo Creek from the northern portion of the site to Bailey Road in the south. Kirker Pass Road runs near the southern border of the site.

Table 3-1 summarizes the existing land uses on the site by approximate acreage. Precise acreages of defense facilities such as bunkers, warehouses, rail lines, parking, and storage areas are difficult to assess because these facilities are widely spread across the site.

[1] The Williamson Act is the common reference to the California Land Conservation Act of 1965, which provides lower tax assessment of land set aside for long-term agricultural or open space uses, as an incentive for preservation. It applies to privately owned land, not to land owned by governmental entities.

Table 3–1: Existing Land Use Approximate Acreages

Use	Approximate Acreage
Military administrative area	115
Open space used for grazing and other purposes	3,553
Other military-related buildings and areas	15
Military areas with known contamination[1]	1,200
Agricultural research areas	65
Golf course[2]	75
Little League ball fields[3]	5
Total	5,028

[1] Discussed in Chapter 10, Hazardous Materials.
[2] Portion of golf course on Navy property.
[3] Reference to an approximate 5-acre parcel west of Olivera Road and north of the Pixieland Recreation Area in Willow Pass Park.
Source: Department of the Navy, 2007

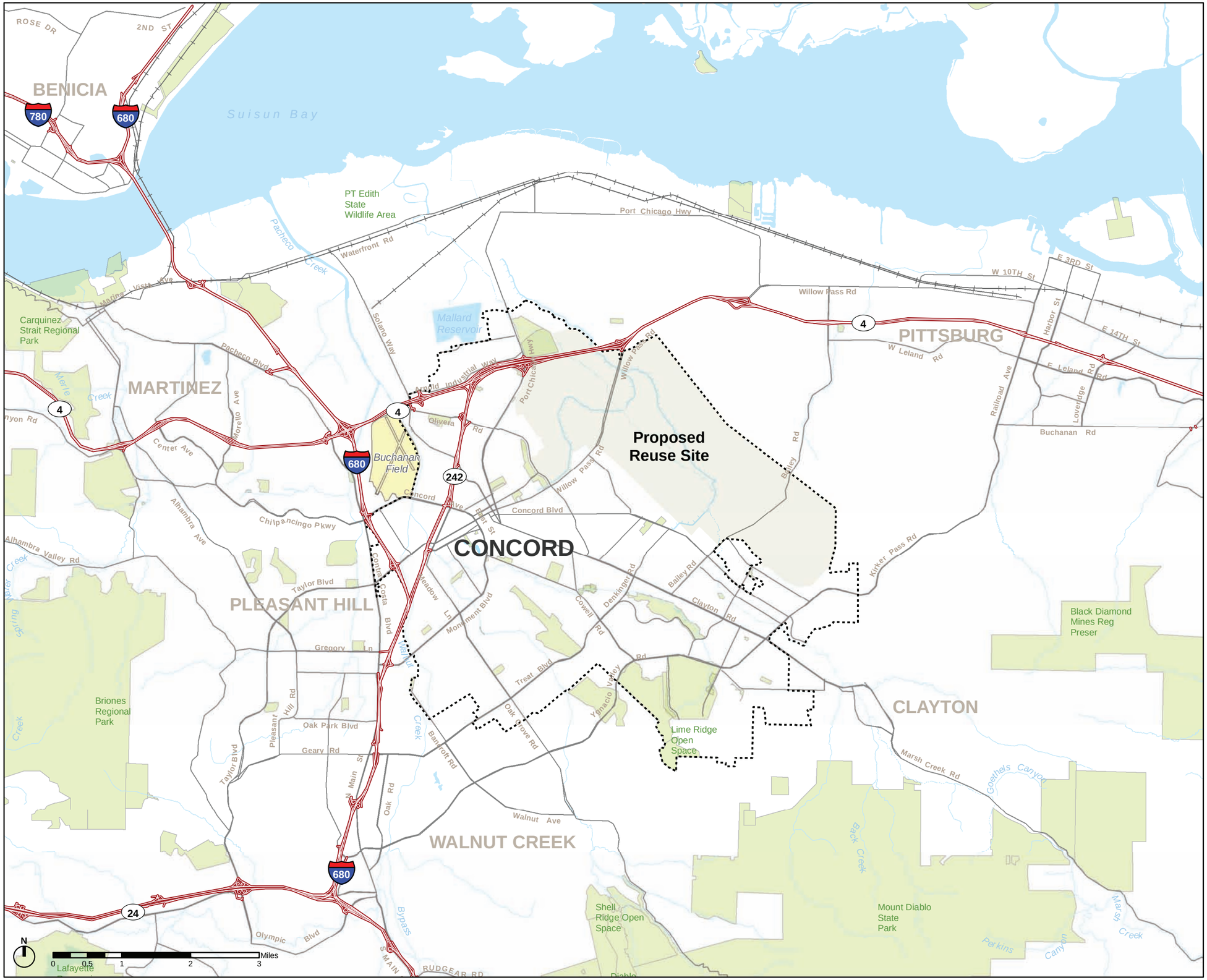
3.1.4 Adjacent Uses

Figures 3-3 and 3-4 show how land adjacent to the site is designated by the City of Concord and by Contra Costa County, respectively. While discussed specifically in the following section, the figures are provided here for general context.

3.1.4.1 West

Most of the western and southern edges of the site are bounded by existing developed areas within the City of Concord, although a small area of unincorporated land (known as the County Island) exists south of Bailey Road along Myrtle Drive.

The primary land use along the western edge of the site is single-family homes developed in the 1970s on 5,000- to 10,000-square-foot lots, which represents a density range of four to six dwelling units per acre. This largely contiguous area of single-family home development includes the following neighborhoods, from north to south: Sun Terrace, Holbrook and Holbrook Heights (near Willow Pass Park), San Vicente (along Willow Pass Road), Dana Estates (generally along Landana Drive), Bishop Estates (between Concord High School and Bailey Road), and Myrtle Drive (between Bailey Road and Kirker Pass Road, including the County Island). Abutting the western edge of the site, along East Olivera Road between the North Concord/Martinez BART Station and Salvio Street, is former Navy housing located on 58 acres that has been transferred to the U.S. Coast Guard. The Coast Guard housing is divided into two distinct developments; one, with single-story duplexes, is arranged along Hamilton Avenue between Esperanza Drive and East Olivera Road; the other consists of two-story fourplexes grouped around Mt. Hood Circle and is accessed from East Olivera Road via Pyro Street and Mars Street.



Legend

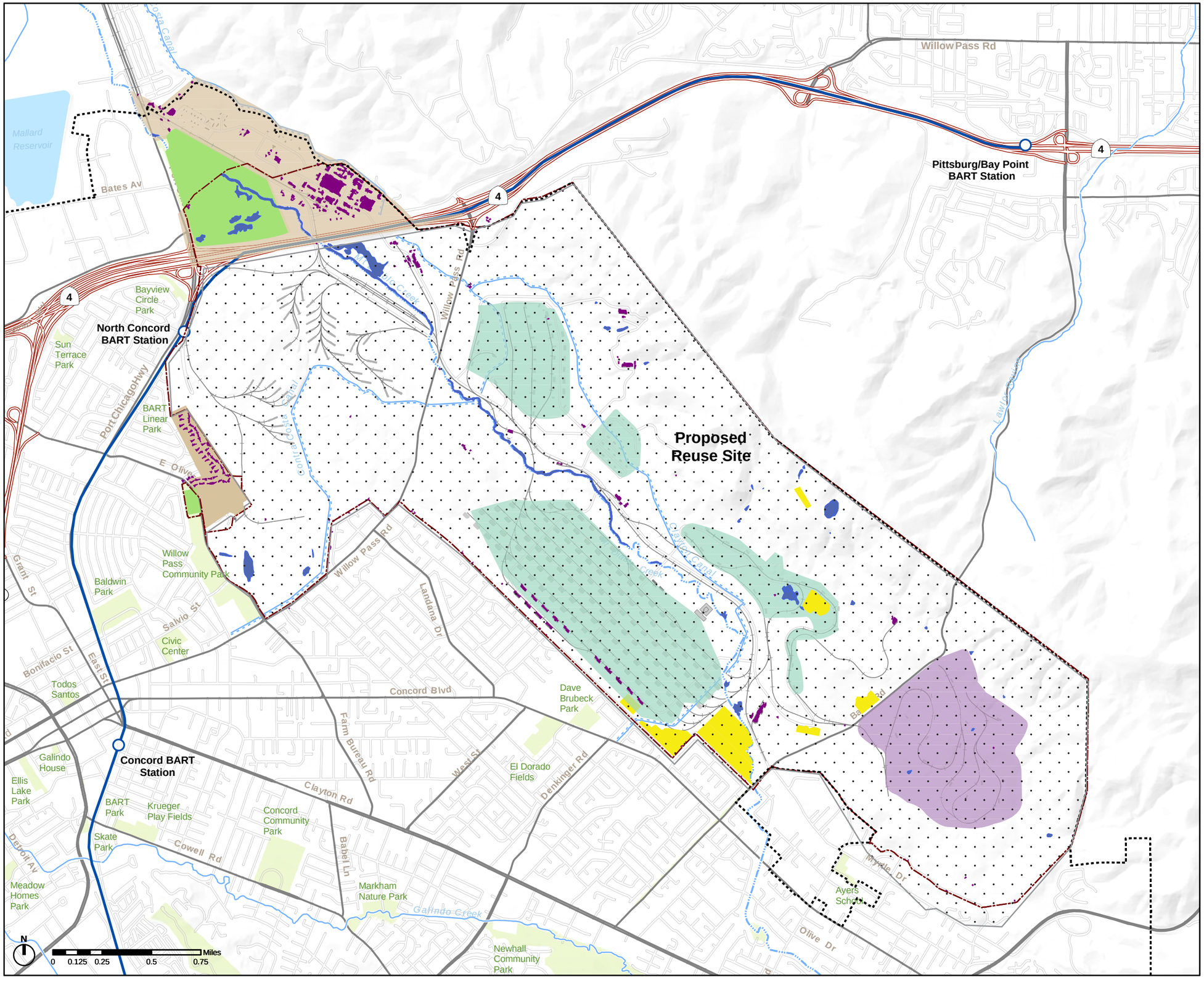
Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials
- Local Streets
- Bay Area Rapid Transit
- BART Stations

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Figure 3-1
Regional Location



Legend

- 5 AT Magazine Area
- Other Magazine Areas
- Golf Course
- Wetland/Riparian
- Grassland/Grazing Leases
- Agriculture Research Areas
- Operational/Administrative/Housing
- Existing Buildings Inland Area

Basemap

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Data Sources: NAVWPNSTA Seal Beach Det Concord GIS
Land Use: U.S. Navy Final Environmental Condition of Property Report, 2006

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Figure 3-2
Site Land Use

Concord High School is located along the western boundary of the site near West Street. Four City parks, Dave Brubeck Park, El Dorado Middle School Play Fields, Willow Pass Park, and BART Linear Park, are located near the western boundary. Within the unincorporated land south of Bailey Road is a mixture of large-lot, single-family ranch-style and estate homes, with some open land adjacent to Myrtle and Laurel Drives. Adjacent to the northwestern part of the site, the North Concord/Martinez BART Station and 20 acres of dedicated parking are located between Port Chicago Highway and Panoramic Drive.

Downtown Concord and the Concord BART Station are about 1 mile away from the site's western boundary. The Concord Civic Center is located within 1/2 mile of the site's western boundary, as is the Senior Center located in John F. Baldwin Park. Other significant land uses west of the site and within the City of Concord, the City of Pleasant Hill, or on adjacent County land include the following:

- Buchanan Field Airport, a general aviation airport in Contra Costa County, located on County land just outside the western boundary of the City of Concord but within the City's Sphere of Influence (SOI), near the intersection of I-680 and SR 4, is less than 2 miles away.
- Sunvalley Shopping Center, a major regional shopping mall developed in the late 1960s, located southwest of the site in Concord, along I-680, is approximately 2 1/2 miles away.
- The Concord Campus of California State University, East Bay, located west of the site in Concord, along Ygnacio Valley Road at Ayers Road, is 2 miles away.
- Diablo Valley College, a community college, located west of the site in the City of Pleasant Hill, is 3 miles away.

3.1.4.2 North

SR 4 bisects the site just north of the North Concord/Martinez BART Station. The Diablo Creek Golf Course, the City of Concord's municipal golf course, is located north of SR 4 along Port Chicago Highway. Approximately half of the golf course, including the first nine holes, and half of the clubhouse are located on land currently owned by the Navy that is leased to the City. West of the golf course and Port Chicago Highway is the Arnold Industrial Area, an area of light industrial buildings developed over the past 20 to 30 years. ~~East of the golf course is 115 acres of land that has been transferred to the U.S. Army~~ East of the golf course is 115 acres of the ~~a~~Administrative ~~a~~Area that was transferred to the Army in 2008 to be developed as the administrative support area for the Military Ocean Terminal Concord, operated by the Army's Surface Deployment and Distribution Command. The Tesoro Golden Eagle Refinery is located to the northwest of the industrial area.

The unincorporated community of Clyde lies to the north of the site, providing a variety of single-family homes directly adjacent to the northern site boundary. Although Clyde has little available area for development, according to the Contra Costa County General Plan (County General Plan) (Contra Costa County, 2005), vacant parcels in the community are to be developed at a density of less than six units per acre and must conform to the existing architectural framework as much as possible. The main portion of the Military Ocean Terminal Concord is located north of Clyde in the area formerly known as the Tidal Area of the CNWS. An additional narrow parcel of privately owned County land exists adjacent to and to the north of the site between SR 4 and the site boundary to the west of Willow Pass

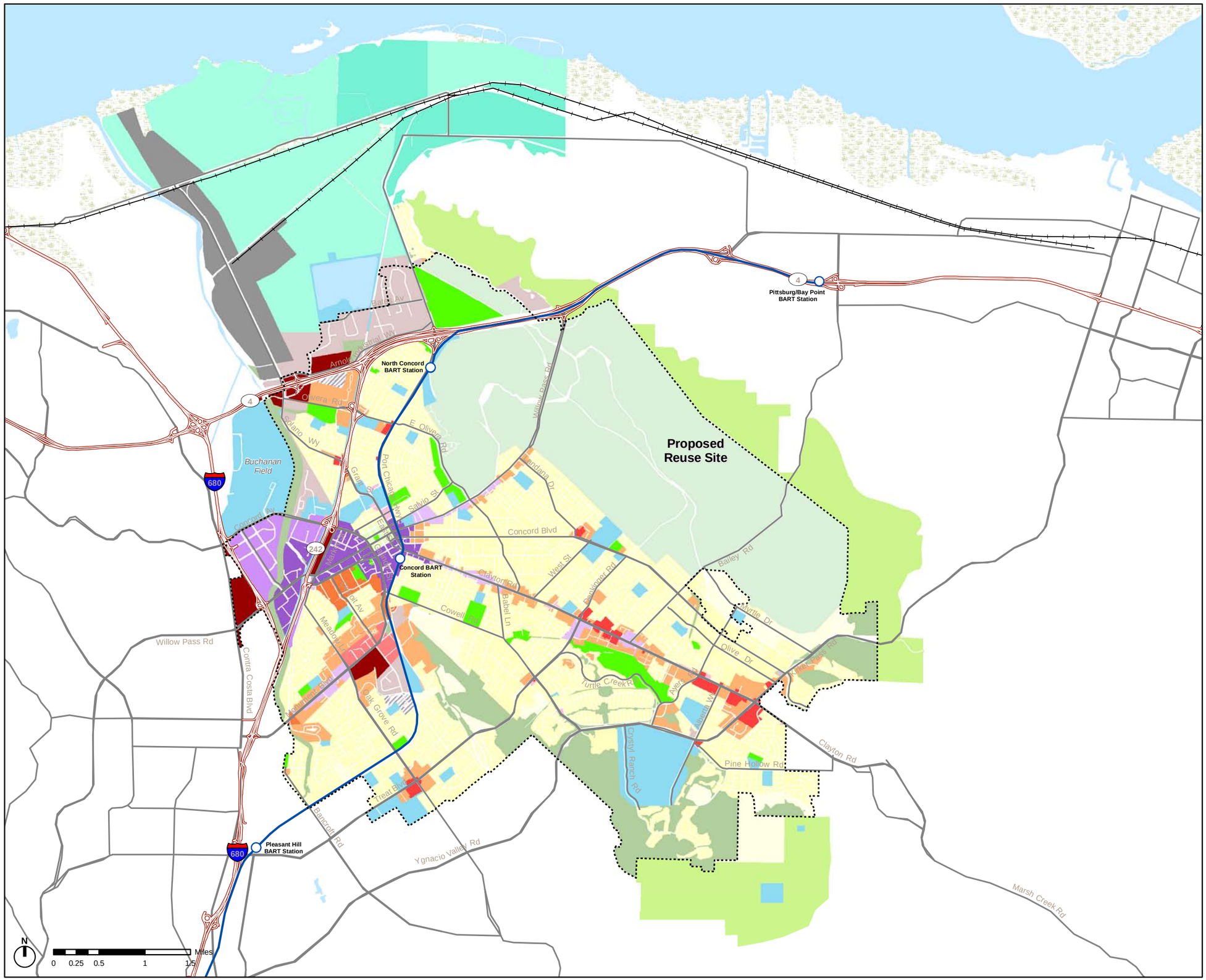
Road. The parcel currently has an agricultural designation in the County General Plan, and is surrounded by California Department of Transportation public lands.

3.1.4.3 East

A portion of the Contra Costa Canal and the Willow Pass Business Park, a new commercial development, are located to the east of the site just north of the intersection of SR 4 and Willow Pass Road. The business park, on completion, will comprise 350,000 square feet of commercial and light industrial buildings and business condominiums ranging from 2,500 to 35,000 square feet in size. The first two of three phases of development are complete, with 13 companies occupying space in the park as of late 2008.

Generally, the eastern edge of the site south of SR 4 is composed of a patchwork of undeveloped, unincorporated County land and City of Pittsburg land along the highlands of the Los Medanos Hills. Several new single-family home developments have been built in these hills over the past decade, and more large single-family home developments are planned, approved by the City of Pittsburg, or under development. These developments correspond with a November 2005 amendment to Pittsburg's urban limit line (ULL) established by Measure P, and reflected in Contra Costa County's ULL in November 2006 through Measure L. A draft ~~ordinance~~ amendment governing hillside development, including areas that could be visible from the City of Concord, was reviewed by the City of Pittsburg in 2008, but that City did not go forward with the ~~ordinance amendment~~ amendment. The City of Pittsburg has in place an adopted ordinance (Pittsburg Municipal Code [PMC] chapter 18.56) that governs development in hillside areas zoned in the Hillside Planned District (HPD). On July 8, 2009, the Contra Costa Local Agency Formation Commission (LAFCo) approved the expansions of the SOIs of the City of Pittsburg, Delta Diablo Sanitation District, and Contra Costa Water District to be coterminous with the ULL established by Measure P. While specific development projects were not included in the SOI expansions, the approvals allow for expansion of municipal services to currently unincorporated areas in the hills between Concord and Pittsburg.

The Keller Canyon Landfill, located east of Bailey Road and operated by Republic Services, Inc., a private environmental services company, is immediately adjacent to the eastern boundary of the reuse site. ~~Just over two miles east of the site is the Keller Canyon Landfill, located east of Bailey Road and operated by Republic Services, Inc., a private environmental services company.~~ The landfill covers approximately 2,600 acres of land, with 244 acres permitted for disposal, and currently handles about 2,500 tons of waste per day. It has been in operation since 1992.



Legend

- Business Park (Max 0.8 FAR)
- Commerical Mixed Use (Up to 40 du/acre; Max 1.0 FAR)
- CNWS Inland
- CNWS Tidal
- Community Office (Max 1.0 FAR)
- Downtown Mixed Use (Up to Max 100 du/acre; 6.0 FAR)
- Downtown Pedestrian District (Up to 100 du/acre; Max 4.0 FAR)
- High Density Residential (33-100 du/acre)
- Heavy industrial (Max 0.6 FAR)
- Industrial Mixed Use (Max 1.0 FAR)
- Low Density Residential (2.5-10 du/acre)
- Medium Denstiy Residential (11-32 du/acre)
- Neighborhood Commerical (Up to 24 du/acre; Max 0.35 FAR)
- Open Space
- Parks
- Public/Quasi Public (Max 1.5 FAR)
- Hospital/Medical Center (Max 1.5 FAR)
- Regional Commerical (Max 0.5 FAR)
- Rural Conservation (1 du/20 acre)
- Rural Residential (<2.5 du/acre)
- Service Commercial (Max 0.8 FAR)
- West Concord Mixed Use (Max 4.0 FAR)
- Wetlands/Resource Conservation

Base Map

- Concord City Limit
- Lakes
- Bay Area Rapid Transit Line
- BART Station
- Highway
- Arterial Street

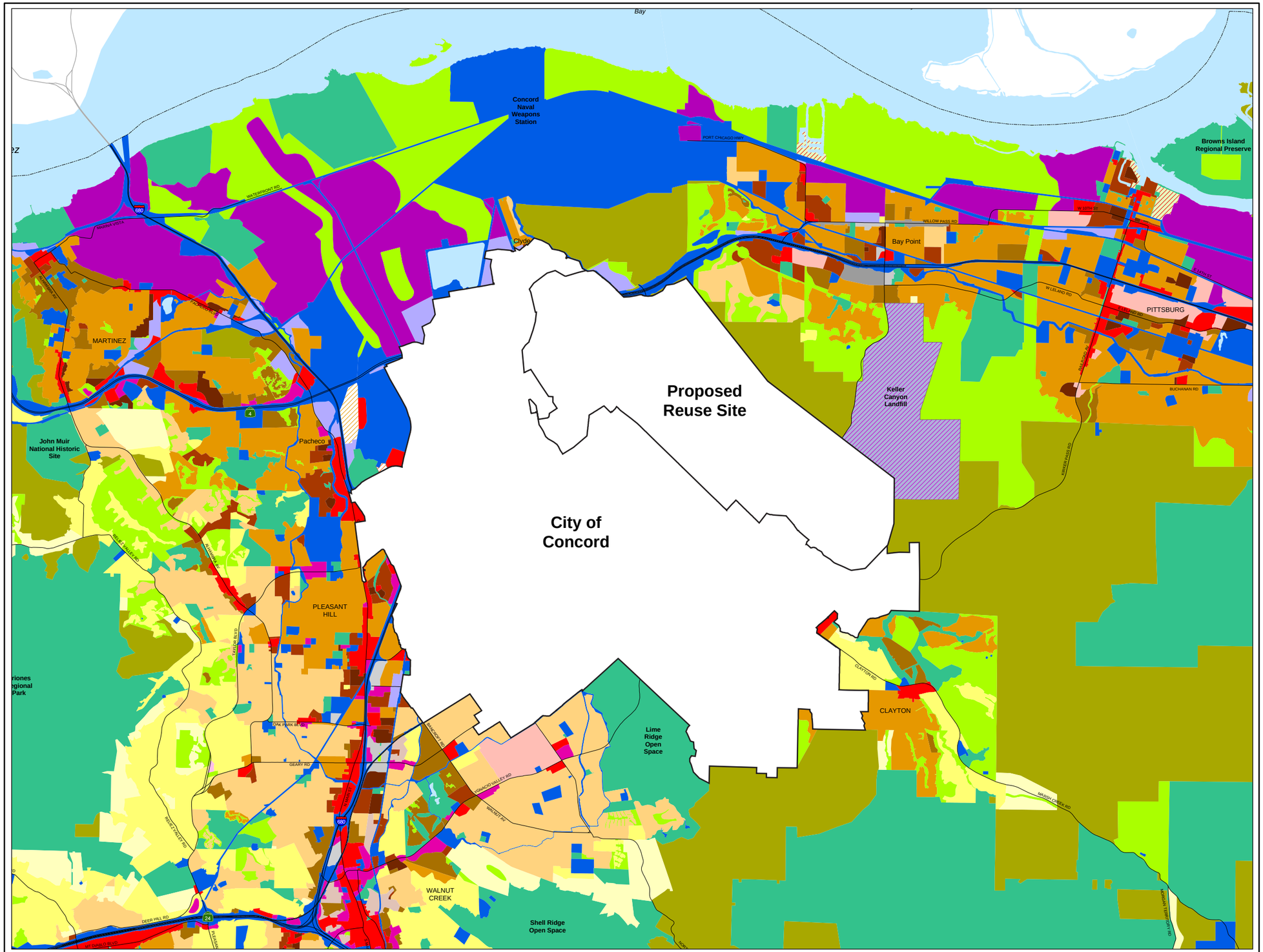
Notes and Sources

City of Concord, 2009.

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Community Reuse Plan

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Figure 3-3
2030 General Plan Designations in Concord



Legend

- M-1 (Parker Avenue)
- M-2 (Downtown/Waterfront Rodeo)
- M-3 (Pleasant Hill BART)
- M-4 (Willow Pass Road)
- M-5 (Willow Pass Road Commercial)
- M-6 (Bay Point Residential)
- M-7 (Pittsburg/Bay Point BART Station)
- M-8 (Dougherty Valley Village Center)
- M-9 (Montalvin Manor)
- SV (Single Family Residential - Very Low)
- SL (Single Family Residential - Low)
- SM (Single Family Residential - Medium)
- SH (Single Family Residential - High)
- ML (Multiple Family Residential - Low)
- MM (Multiple Family Residential - Medium)
- MH (Multiple Family Residential - High)
- MV (Multiple Family Residential - Very High)
- MS (Multiple Family Residential - Very High Special)
- CC (Congregate Care/Senior Housing)
- MO (Mobile Home)
- CO (Commercial)
- OF (Office)
- BP (Business Park)
- LI (Light Industry)
- HI (Heavy Industry)
- AL, OIBA (Agricultural Lands & Off Island Bonus Area)
- CR (Commercial Recreation)
- ACO (Airport Commercial)
- LF (Landfill)
- MU (Mixed Use)
- PS (Public/Semi-Public)
- PR (Parks and Recreation)
- OS (Open Space)
- AL (Agricultural Lands)
- AC (Agricultural Core)
- DR (Delta Recreation)
- WA (Water)
- WS (Watershed)

Notes & Sources

Source: Contra Costa County Community Development Department, 2004

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Figure 3-4
General Plan Designations for Land Within Contra Costa County

3.1.4.4 South

Kirker Pass Road, a regional arterial that connects Pittsburg, Concord, and Walnut Creek, is located to the south of the site. Off Kirker Pass Road, just south of the site, is the Sleep Train Pavilion, formerly known as the Concord or Chronicle Pavilion—a major outdoor concert amphitheatre with several acres of surface parking. Concerts and special events at this facility require appropriate security and traffic enforcement. Farther south is the City of Clayton, primarily comprised of single-family homes with associated commercial/retail and community facilities, constructed over the past 20 years.

Additionally, several park and resource areas lie to the south and southeast of the site. Black Diamond Mines Regional Preserve is 2.5 miles to the southeast, Mt. Diablo State Park is 2.6 miles to the south, and a permit area of the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCC HCP/NCCP) is also adjacent and southeast of the site.

3.1.5 Regulatory Framework

3.1.5.1 Reuse Planning Process

As introduced in Chapter 1, Introduction, the Navy currently owns the site, but the Concord City Council, acting as the Local Reuse Authority (LRA), is working with residents and interested parties to prepare the Reuse Plan. The LRA is the one point of contact for negotiating with the U.S. Department of Defense, and is the single community point of contact for all matters relating to closure and disposition of the site. The LRA is responsible for preparing the Reuse Plan, which establishes the vision for the site by specifying the future use and development pattern on the land. As described in Chapter 2, Project Description, at the current stage of the planning process, the City has developed two alternative land use diagrams and supporting narratives from which an implementation plan for reuse (a Reuse Plan) will be developed. A General Plan Amendment will be required to adopt the Reuse Plan.

Although the site is currently under military jurisdiction, the City of Concord 2030 Urban Area General Plan (General Plan) (City of Concord, 2007) policies assume that a reuse plan will be amended into the General Plan and the land transferred for civilian uses. This will be accomplished to comply with the requirements of the Base Realignment and Closure Act of 1990, as amended in 2007. Following the conveyance and disposition of the property by the Navy, the regulatory framework for any future use and development will be required to comply with the General Plan as amended to address the site. In addition, the Zoning Ordinance and other applicable land use regulations will need to be updated to reflect the Reuse Plan, and those requirements will also be applied to the site.

3.1.5.2 City of Concord General Plan

The General Plan, updated in 2007, sets a long-range vision for Concord, as well as priorities for planned and future development in the City. The General Plan themes and key initiatives are to:

- Integrate economic development into the General Plan
- Protect community assets

- Support mixed-use development and transit-supportive land uses around the BART stations and in commercial corridors with bus service
- Protect ridgelines, visible hillsides, and significant environmental resources
- Create a safe and efficient multimodal transportation system
- Preserve and enhance environmental resources
- Provide effective disaster response and planning
- Plan for environmental justice

As shown on Figure 3-3, the General Plan designates the site as Public/Quasi-Public – Concord Naval Weapons Station – Inland Area. It does not provide a specific policy framework for future uses and development at the site, but recognizes this will be established by the Reuse Plan. As stated in the adopted General Plan:

> The Plan does not address potential development of the CNWS because the City, acting as the Local Reuse Authority, has initiated a separate base reuse planning program for the Inland Portion of the CNWS following approval of the base closure in November 2005. This means that when this separate planning effort is completed and a land use plan is approved by the City, the General Plan will be amended to incorporate the Naval Weapon Station reuse plan. (General Plan, pages 1–3)

As required by this policy, the City will amend the existing General Plan after adoption of the Reuse Plan. The Reuse Plan will be amended into the General Plan.

The site is within three planning subareas defined by the General Plan, as follows:

- The Inland Planning Subarea includes all areas of the site south of SR 4 that are less than 15 percent slope outside the Los Medanos Hills.
- The North Concord Planning Subarea includes the areas of the site north of SR 4.
- The Los Medanos Hills Planning Subarea constitutes the rest of the site. This includes all land above 15 percent slope and contiguous with the Los Medanos Hills.

The General Plan includes a number of plan “Elements” that have importance to the development of the Reuse Plan for the site. These elements include the Growth Management Element (Chapter 4 of the General Plan) and other provisions to implement the principles of sustainable development and encourage the highest and best use of land.

Land use designations around the site are mainly low-density residential to low-density and rural residential communities interspersed with public/quasi-public facilities. The residential neighborhoods are focused along the western edge of the site. To the north, the land is designated for business park use, along with the City’s municipal golf course. Open space and rural conservation designations lie to the east.

3.1.5.3 City of Concord Redevelopment Plan

The Central Concord Redevelopment Strategy and Implementation Action Plan (Redevelopment Plan) (City of Concord, 2000) addresses a substantial area of Concord’s downtown and commercial areas west of downtown and SR 242. While the site is not

currently within a redevelopment area, it may be considered for inclusion during amendment of the General Plan. There are two redevelopment areas that are relevant to the site.

The Redevelopment Plan for the downtown area has focused on the development of new office and high-density residential uses within a 20-minute walk of the Concord BART Station. More recently, the development of mixed-use projects near Todos Santos Plaza has combined higher-density residential uses with street-level retail.

The Redevelopment Plan was amended in 2006 to include three additional subareas, two of which are relevant to the site. The 89-acre Willow Pass Subarea extends from the current downtown redevelopment area eastward along Willow Pass Road. At the eastern terminus, the Subarea shares a boundary with the site. The 188-acre North Concord Subarea lies approximately 1/2 mile from the northern area of the site, primarily north of SR 4.

The Willow Pass Subarea currently supports various uses: retail, class-C office, single-family residential, and multi-family residential. Willow Pass Road in the subarea currently represents the major transportation link between downtown Concord and the northwestern corner of the site. The transportation linkages and related land uses established along this corridor represent both a great development opportunity and a potential constraint to urban connections between downtown Concord and the site.

Current land uses in the North Concord Subarea range from office commercial to primarily industrial (both light and heavy). Some of this subarea and adjacent areas are transitioning from warehouse, distribution, and industrial uses to office and research-type uses.

Furthermore, the Redevelopment Plan sets out several key guiding strategies for redevelopment in the area, including:

- Utilize the City's redevelopment powers to redevelop underutilized and undesirable uses at high-visibility and strategic locations.
- Take advantage of continuing development opportunities as they arise in the redevelopment area to achieve the Redevelopment Agency's vision.
- Play a lead role in providing better pedestrian/bicycle and shuttle connections to mass transit connections with reduced automobile dependence. (Concord, 2000)

3.1.5.4 City of Concord Zoning

Based on Chapter 122 of the Concord Municipal Code (Municipal Code) (City of Concord, 2002), the purpose of zoning in the City of Concord is "to promote the growth of the city in an orderly manner, and to promote and protect the public health, safety, peace, comfort, and general welfare." In general, zoning is the instrument that implements the land use designations in a General Plan. In addition to establishing permitted uses, zoning may also establish development standards relating to issues such as development intensity, building setbacks and height, and parking. Specific development projects designed to implement the Reuse Plan will be submitted for review and approval to the City for consistency with the zoning code.

The site is currently zoned as an "(S) Study District." Along the western and southern boundary of the site, the zoning is predominantly Single Family Residential with very limited areas of Low Density Multi-family Residential, Medium Density Multi-family Residential, and Planned District. There is also limited zoning for Neighborhood Commercial on the western

side of the site. North of SR 4, along Port Chicago Highway and adjacent to the site, the area is zoned Planned Industrial, Special Light Industrial, and Planned District.

The City's Zoning Ordinance is currently being updated to reflect the 2007 Urban Area General Plan. This will involve a substantial update to the planning and design standards to conform to the land use designations as specified in the General Plan. Some of these new zoning designations include consideration for transit villages, varying commercial formats, and mixed-use developments. However, the Zoning Ordinance update will not reflect recent planning for the CNWS. It is assumed the Zoning Ordinance will further be updated for consistency with the General Plan after the General Plan has been amended to reflect the Reuse Plan.

3.1.5.5 Contra Costa County General Plan

The Contra Costa County Board of Supervisors adopted the County General Plan in January 2005. The plan's land use designations, as shown on Figure 3-4, provide guidance for areas located outside the city limits of Concord or other unincorporated areas within the County.

County lands adjacent to the site include mainly agricultural and some residential designations. Lands situated along the site's eastern boundary with Pittsburg north of Bailey Road are designated as Agricultural Lands. The area south of Bailey Road on the eastern border of the site is designated landfill for the Keller Canyon Landfill. Approximately 1,036 acres of the Keller Canyon Landfill would be preserved as open space and agricultural uses and would serve as buffer space (Keller Canyon Landfill Project EIR, Chapter 2, page 2-1, 1989). An application has been submitted to Contra Costa County to amend the Keller Canyon Landfill land use permit to allow an increase in the amount of waste allowed to be deposited. Amendments to the land use permit may allow modifications to existing regional trail connections and augment opportunities for additional open space adjacent to the eastern boundary of the Reuse Plan. This land is to be used for agriculture until it is needed for the landfill operations. County land on the western boundary of the site is designated as Single Family Residential – Low Density. Just to the north of the site is a small strip of agricultural land surrounded by public lands and the Willow Pass Business Park just to the north of SR 4 and east of the Contra Costa Canal.

3.1.5.6 Contra Costa County Urban Limit Line

The County's ULL was established in the late 1980s, and was affirmed by Contra Costa County voters with the adoption of Measure C in 1988. Measure C holds that, during the term of the County General Plan, no areas outside the ULL may obtain General Plan Amendments that would redesignate them for an urban land use. The ULL was established to help enforce the 65/35 Land Preservation Standard, a fundamental component of Measure C, and has been updated by Measure J in 2004 and Measure L in 2006.

This standard limits urban development, through the horizon of the current County General Plan, to no more than 35 percent of land in the County, and preserves the remaining 65 percent of County land as open space. The County's ULL, published as part of the County's General Plan update in January 2005, is coterminous with the Concord city limit. The City adopted the ULL in November, 2007 to comply with Measure L. The site lies within the city limit and the ULL.

Some unincorporated land adjacent to the site's eastern boundary lies outside the ULL, both north and south of Bailey Road in the Los Medanos Hills. In 2005, the City of Pittsburg, through voter approval of Measure P, changed the location of the ULL in the area between SR 4 and Bailey Road to include all of the unincorporated land within the ULL. Coupled with the City of Pittsburg's recent actions toward potential annexation, this may open up the hillsides and ridgeline areas east of the site that were previously restricted by the ULL to residential development. As discussed above in Section 3.1.4.3, in July 2009, LAFCo approved expansion of the SOIs of the City of Pittsburg, Delta Diablo Sanitation District, and Contra Costa Water District to allow future extension of municipal services to then-unserviced areas of the hillside to allow for further development. At this time, the County's Agricultural Lands designation on lands adjacent to the site's eastern boundary is still in effect, but it is unknown when the designation will be changed to reflect future anticipated land use changes occurring in that area.

3.1.5.7 County Airport Land Use Compatibility Plan

The County Airport Land Use Compatibility Plan (Contra Costa County, 2000) addresses land uses around Buchanan Field Airport. Various airspace safety zones and protective surfaces based on federal regulations are designated within the Airport Land Use Compatibility Plan, as shown on Figure 3-5. Portions of the site north of Willow Pass Road and north of SR 4 are identified as being in the Airport Influence Area. A General Plan Amendment in 2002 brought the Airport Land Use Compatibility Plan into agreement with the Concord General Plan. At the countywide level, compatibility criteria applicable to the site include 4.3.5, Tall Structures in Locations Outside of Airport Influence Areas, which requires Federal Aviation Administration review for any structure more than 200 feet above the surface level of its site.

Specific to Buchanan Field Airport, the CNWS site does not fall within defined noise contours or safety zones, but the parts of the site identified as being within the Airport Influence Area are also within defined Airspace Protection Surfaces. This area is subject to airspace protection criteria that specify height limits according to Federal Aviation Regulations, Part 77, Subpart C. The height limit for the areas of the site within 10,000 feet of the ends of runways 1L-19R and 14L-32R (essentially, the area adjacent to the North Concord/Martinez BART Station and extending south to the corner of Willow Pass Road and East Olivera Road) is 173 feet above mean sea level. Beyond that radius out to a maximum radius of 14,000 feet, the height limit increases at a ratio of 50 feet in height for every 1,000 feet in distance (1:20). On the CNWS site, the 14,000-foot radius approximately covers the area including the Diablo Creek Golf Course south to the intersection of Willow Pass Road and Landana Drive, and has a height limit of 373 feet. The site does not fall within the area defined as critical Terminal Instrument Procedures (TERPS) Airspace, which has separate height limits.

The Airport Land Use Commission (ALUC) has jurisdiction for reviewing projects that exceed certain height limits established by the Airport Land Use Compatibility Plan, and can grant case-specific exceptions or establish a Height Exception Overlay Zone. Currently, no overlay zones are established over the site, though there are two such zones in and around downtown Concord.

3.1.5.8 City of Pittsburg

The City of Pittsburg General Plan (City of Pittsburg, 2004) establishes guidelines for land use within that community, with a focus on the historic downtown area and adjacent industrial waterfront along the Sacramento River. Land uses allowed by the Pittsburg General Plan adjacent to the site include a mix of low- and medium-density residential uses along the hillsides. The Pittsburg General Plan reinforces this use pattern, emphasizing housing growth opportunities in the hills and commercial development in the SR 4 corridor.

The City of Pittsburg is currently involved in creating transit-oriented development (TOD) planning programs for priority development areas. Although not yet approved, these planning efforts prioritize high-density residential development and mixed-use commercial and employment centers in the vicinity of the Pittsburg/Bay Point BART station. Recently the City of Pittsburg approved a mixed use development project located approximately one half mile from that BART station.

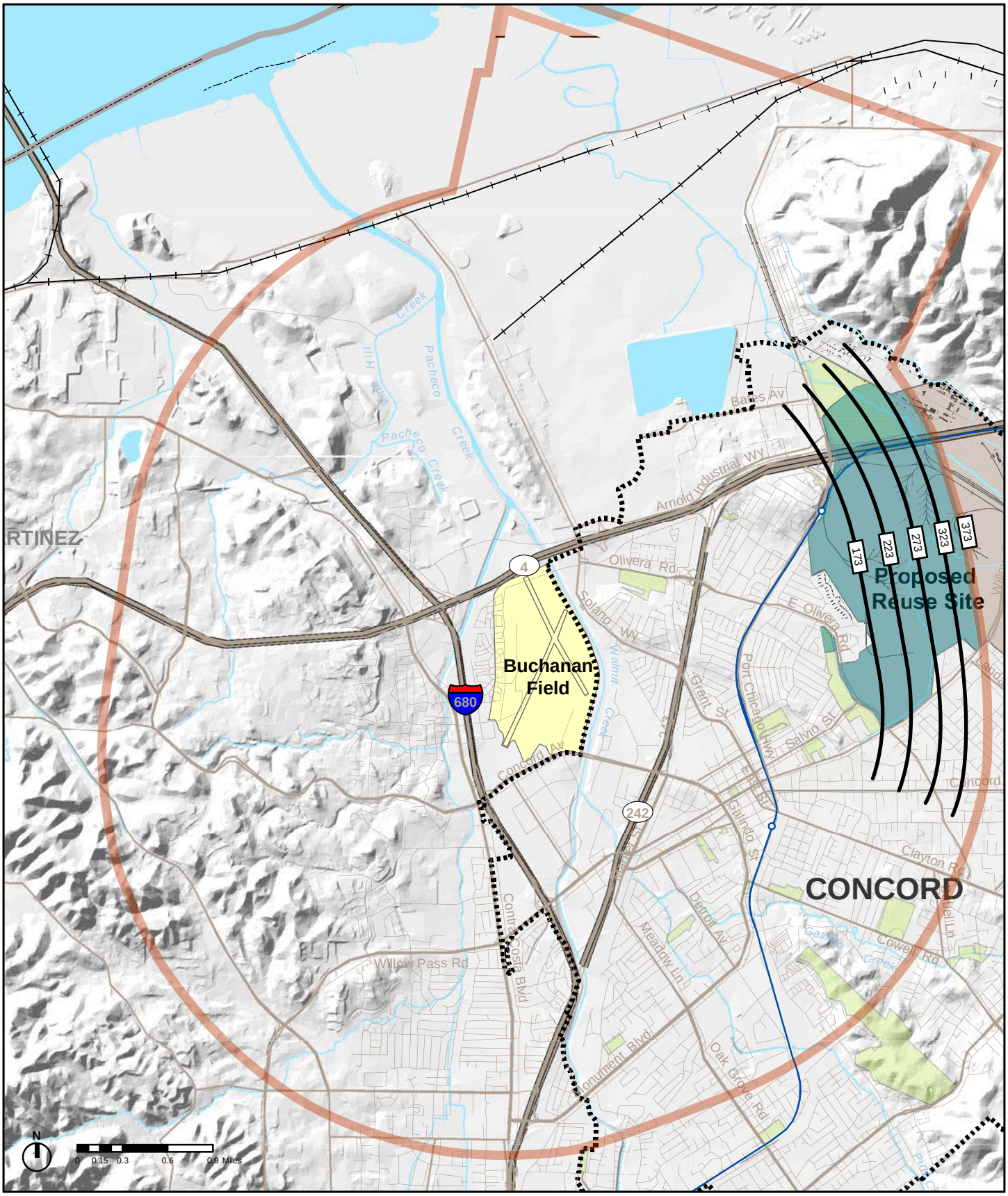
The recent addition of the voter-approved ULL through the passage of Measure P, along with a draft Hillside Development Standards and Design Guidelines (Hillside Ordinance) (City of Pittsburg, 2007), was intended to provide protection to sensitive hillsides, viewsheds, and skylines critical to Concord and other communities. As discussed in Section 3.1.4.3, LAFCo approved the expansion of Pittsburg's SOI, which would allow expansion of municipal services to currently unincorporated, unserviced areas of the hillsides.

LAFCo approved a Negative Declaration for the expansion, stating that an initial study showed the expansion would have no significant environmental impacts.

3.1.5.9 Bay Area Rapid Transit District

The BART Strategic Plan, updated in ~~2003~~ 2008, calls for BART to promote transit-oriented development on BART property and to encourage transit-oriented development (TOD) within walking distance of its stations as a way of increasing transit ridership. The BART TOD Policy, adopted in 2005, supports these Strategic Plan objectives and further states that BART should pursue value capture strategies of TOD to enhance BART's financial stability, and should increase the non-automobile access mode share of people traveling to and from BART stations. BART has published additional guidelines to support implementation of its stated policies, including an Access Policy Methodology, TOD Guidelines, Station Access Guidelines, and Parking Management Toolkit (BART, 2009).

BART station area planning emphasizes collaboration with local communities and transit agencies. BART planning staff commented at the Reuse Plan workshops and meetings in 2007 and 2008, indicating BART's support for TOD at the North Concord/Martinez BART Station as a way to encourage off-peak and reverse direction commuting, and expressing the desire for providing multimodal access to the North Concord/Martinez BART Station and examining the possibility of replacing parking lost to TOD at a less than one-to-one ratio (BART, 2008).



Legend

- Airport Influence Area
- Portion of Site within Airport Influence Area
- Conical Surface
- 173 Surface Height
- Concord City Limit
- Parks
- Site Area
- Airport

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Figure 3-5
Influence Area of Buchanan Field Airport

3.1.5.10 Association of Bay Area Governments

The Association of Bay Area Governments (ABAG) is the regional planning agency for the nine-county Bay Area and provides guidance on issues such as land use, housing, environmental quality, and economic development. Among its many responsibilities, ABAG provides projections on housing and employment growth in the Bay Area. The ABAG projections include the allocation and distribution of housing and employment growth within Concord and the site.

ABAG currently projects an additional population growth of 22.3 percent in Concord between 2010 and 2035, when the population is projected to increase from 125,800 to reach 153,900 people. This is compared to a projected population of 1,300,600 people in Contra Costa County. Concord is projected to increase its jobs from 64,670 in 2010 to 96,360 in 2035. This is compared to an increase from 371,310 jobs to 591,650 jobs within the County as whole. Concord is targeted as a regional employment center, with more jobs than housing or employed residents.

ABAG is also responsible for distributing the region's housing needs, including affordable units, to local governments. These needs are allocated to ABAG and other regional councils of governments by the California Department of Housing and Community Development (HCD) as part of the state-mandated Regional Housing Needs Allocation (RHNA) process. The San Francisco Bay Area Housing Needs Plan produced by ABAG in 2007 states that:

> [Housing element law] recognizes that in order for the private sector to adequately address housing needs and demand, local governments must adopt land-use plans and regulations, i.e., zoning, that provide opportunities for housing development, rather than constrain opportunities. (ABAG, 2007)

A more detailed discussion of the RHNA process and potential associated impacts can be found in Chapter 13, Population, Housing, and Employment.

3.1.5.11 Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is responsible for coordinating transportation planning and funding in the Bay Area. The 2030 Regional Transportation Plan (RTP) (MTC, 2005) and the ongoing regional transportation planning process set policies that are applicable to Concord and the site. The stated visions of the 2030 RTP are:

- A desire to reduce trips of excessive distance and duration
- Provision of a better range of travel options in the future for those who now endure congestion and gridlock every day
- A transit system that is second to none in its upkeep and performance
- An easier and safer way to walk and bike around the region
- Less reliance on the auto for various types of trips—to enhance community safety, ease environmental pressures, and restore a healthful level of physical activity into people's lives

- Better access to jobs, medical centers, schools, and grocery stores for those who do not own a car
- A sustainable transportation system the region can afford to operate over the long term and one that uses available public funds wisely
- A funding process that ensures major new transportation investments have been well scrutinized for cost-effectiveness

Although the RTP is a regional, goal-setting document, it sets objectives for livable communities with an emphasis on transit-oriented development and efficient movement of people and goods to market. Various specific freeway and transportation system efficiency projects are proposed in the details of the appendices of the RTP, which are intended to increase the mobility and accessibility for residents and those employed within the Bay Area.

3.1.5.12 California Regional Water Quality Control Board, San Francisco Bay Region

The State Water Resources Control Board and the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) are responsible for setting the water quality standards with which development in Concord must comply. The Water Board's objective is to "preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations." Within the Bay Area, the Water Board's San Francisco Bay Basin (Region 2) Water Quality Control Plan (2006) specifies the allowed uses for water resources, and sets targets for regional water quality. In Concord, much of this centers on the water quality and related use of land.

3.1.5.13 Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional agency responsible for regulating air quality. Although the BAAQMD does not specifically provide land use guidance for Bay Area communities, it does establish requirements for measures to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources, in cooperation with the MTC and ABAG. Thus, while the BAAQMD does not exercise specific land use authority, its policy can have land use implications with regard to how development occurs, including the encouragement of mixed-use development, in-fill development, jobs/housing balance, and limits on suburban growth that have a positive effect on air quality.

3.1.5.14 Joint Policy Committee/FOCUS Program

The Joint Policy Committee is a partnership of four Bay Area region agencies: ABAG, the MTC, the BAAQMD, and the Bay Conservation and Development Commission. Through the Joint Policy Committee, ABAG and the MTC lead the FOCUS program, which offers incentives and resources to promote planning and development throughout the nine-county Bay Area that support an array of regional "smart growth" goals. These goals cover topics including compact, healthy communities; housing supply, choices, and affordability;

transportation efficiency and choices, natural habitat protection; social and economic equity; economic and fiscal health; sustainability, resource conservation, and environmental quality; and public health and safety. The FOCUS program is implemented by directing resources to Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs). The CNWS site is recognized as a PDA under the FOCUS program (Joint Policy Committee/FOCUS, 2009).

3.1.5.15 Habitat Conservation Plan

The site is not encompassed by any regional HCP, and no site-specific HCP exists. However, there is an ECCC HCP/NCCP that addresses the area east of the site. The ECCC HCP/NCCP for the adjacent area in east Contra Costa County is addressed in Chapter 8, Biological Resources.

3.1.5.16 California Global Warming Solutions Act of 2006: Assembly Bill 32

Provisions under Assembly Bill (AB) 32 relate to air pollution and what has now come to be known as the GHG effect. This bill was added to Division 25.5 (Section 38500) of the Health and Safety Code, relating to air pollution.

Under State law, the State Air Resources Board (ARB), the State Energy Resources Conservation and Development Commission (Energy Commission), and the California Climate Action Registry all have responsibilities related to the control of emissions of GHGs. In addition, the Secretary for Environmental Protection is required to coordinate emission reductions of GHGs and climate change activity in State government.

AB 32 required the ARB to adopt regulations to require the reporting and verification of statewide GHG emissions and to monitor and enforce compliance with this program. The bill requires the ARB to adopt statewide GHG emission limits equivalent to the statewide GHG emissions levels experienced in 1990, and this goal is to be achieved by 2020. The ARB is to attain this goal by adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

The bill authorized the ARB to adopt market-based compliance mechanisms and required the board to monitor compliance with, and enforcement of, rules and regulations adopted by the ARB, pursuant to the provisions of the law.

The bill required the ARB to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions by January 1, 2008
- Adopt mandatory reporting rules for significant sources of GHGs by January 1, 2008
- Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms, and other actions
- Adopt regulations by January 1, 2011 to achieve the maximum technologically feasible and cost-effective reductions in GHGs, including provisions for using both market mechanisms and alternative compliance mechanisms

- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise the ARB
- Ensure public notice and opportunity for comment for all ARB actions
- Prior to imposing any mandates or authorizing market mechanisms, evaluate several factors, including but not limited to the following: impacts on California's economy, the environment, and public health; equity between regulated entities; electricity reliability, conformance with other environmental laws; and ensure that the rules do not disproportionately impact low-income communities
- Adopt a list of discrete, early action measures by July 1, 2007 that can be implemented before January 1, 2010 and adopt such measures

The ARB established a schedule of fees to be paid by identified regulated sources of GHG emissions, and because the bill required the determination of emissions limits and other requirements, the violation of which would be a crime, the bill had the status of a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state, and established statutory procedures are in place for making such reimbursements.

The project has been designed to provide a jobs/housing balance and a range of housing opportunities in proximity to employment opportunities resulting in reduced traffic congestion, travel times, and environmental pollution from GHG emissions. ~~AB 32 is discussed in further detail in Chapter 17, Other CEQA Considerations.~~

3.1.5.17 Senate Bill 375

In September 2008, Governor Schwarzenegger signed Senate Bill (SB) 375. SB 375 is regarded as the first of its kind to target GHG reductions through land use and transportation planning at a regional level. The legislation is designed to control GHG emissions by curbing sprawl and by providing incentives for local governments and developers to follow conscientiously planned growth patterns.

The Reuse Plan responds to SB 375 in that it is designed to provide a jobs/housing balance and a range of housing opportunities in proximity to employment opportunities resulting in reduced traffic congestion, travel times, and environmental pollution from GHG emissions. SB 375 requires the ARB to develop regional GHG emission reduction targets to be achieved by automobile and light truck use for 2020 and 2035. The law directs the ARB to work with California's 18 metropolitan planning organizations (MPOs) to align their transportation, housing, and regional land use plans with GHG reduction targets. The 18 MPOs in the State are charged to prepare a "sustainable communities strategy" to reduce the amount of vehicle miles traveled (VMT) in their respective regions and to demonstrate the ability for the region to attain the ARB's targets.

SB 375 provides emissions-reducing goals for ~~regions, that~~regions that can integrate disjointed planning activities, but also provides incentives for local governments and developers to follow new conscientiously planned growth patterns. SB 375 strengthens the

ARB's ability to reach AB 32 goals in that the ARB would determine if each region is on track to meet their targets.

The implementation of SB 375 authorizes and requires various measures to help reduce GHG emissions, including the following:

- Authorizes the ARB to set regional GHG emission reduction targets.
- Requires regional agencies to create Sustainable Communities Strategies (SCSs) as part of the RTP process. SCSs will need to demonstrate how a region will achieve emission reduction targets.
- Links the RHNA process to the SCS process.
- Requires the funding outlined in the RTP to match the outcome of the SCS.
- Creates California Environmental Quality Act (CEQA) exemptions for housing and mixed-use projects located near transit and in areas targeted by the SCS.

The effect on local government resulting from the implementation of SB 375 will be noticeable:

- While SB 375 preserves local land use authority, explicit language included in SB 375 states that an SCS will not supersede or interfere with local land use plans. Projects that conflict with local land use plans but conform to the SCS will still qualify for CEQA exemptions (see the CEQA streamlining/exemptions bullet point below).
- Local governments will need to prepare housing elements on an 8-year cycle (versus the current 5-year cycle).
- New zoning requirements as a result of new Housing Elements will include rezoning to match the Housing Element within 3 years and creating minimum density requirements for rezoned areas.
- Regional transportation funding will increasingly focus on communities willing to develop compact housing and transit programs.
- CEQA streamlining/exemptions will be available to development projects that promote compact development under certain conditions. Projects that specifically conform to the SCS or that are designated "transit priority projects" may qualify for CEQA exemptions. These projects are residential or mixed-use projects that are located near to transit locations and meet specific density and floor area ratio requirements. These kind of projects can qualify for CEQA exemptions even if they conflict with local land use plans.
- RHNA numbers will likely increase for communities near transit and in existing urban areas.

The ARB has moved forward with its implementation of SB 375 by assembling a Regional Targets Advisory Committee (RTAC). The RTAC is tasked with creating a recommended methodology for creating regional GHG emissions targets. The RTAC is currently considering a number of important issues for the ARB to consider. These include:

- The mechanisms that metropolitan planning organizations can use to reduce vehicle miles traveled and the resulting emissions
- The magnitude of change possible by these measures
- The influence of economic and other factors on land use and transportation
- Understanding current and needed data quality and modeling standards, and other tools for measuring GHG emissions
- Issues related to goods movement and inter-regional travel
- How emissions targets should be reported

The RTAC will report their findings to the ARB by September 30, 2009. The ARB will then propose draft targets by June 2010 and final targets by September 2010.

3.2 Standards of Significance

Criteria for determining the significant impacts associated with land use have been developed based on Appendix G of the CEQA Guidelines (1970) and any relevant agency thresholds. For purposes of this Environmental Impact Report (EIR), an alternative may have significant impact on land use if it would:

- Conflict with land use plans, policies, or regulations
- Create short- or long-term land use conflicts due to the placement of incompatible uses in proximity to one another
- Physically divide an established community
- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
- Conflict with existing zoning for agricultural use or Williamson Act contracts
- Cause other impacts on conversions of farmland

3.3 Potential Land Use Impacts

This section begins with a description of assumptions that have been incorporated in the analysis of potential land use impacts. Then, impacts associated with each of the two alternatives are identified, with the Preferred Alternative presented first, followed by the Concentration and Conservation Alternative. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented. The section concludes with a description of the potential impacts of the No Project Alternative.

Land uses that potentially produce excessive noise, light, dust, odors, traffic, hazardous emissions above accepted standards, or other physical impacts can be undesirable when

they intrude on places where people reside, work, sleep, and recreate (actively and passively). In addition, commercial or industrial uses that produce noise and odors would not be considered compatible with residential uses, unless open space, landscape buffering, or physical screening can be used to protect residents from potential health hazards or nuisances. While these effects are related to land use, this section analyzes direct impacts of land use only, according to the standards of significance outlined above in Section 3.2. Impacts resulting from land use but relating to specific technical disciplines (e.g., noise, transportation, or air quality) are analyzed in their respective chapters.

3.3.1 Assumptions about Potential Land Use Impacts

Following are the assumptions that have been applied in the analysis of potential land use impacts of the alternative reuse concepts. The assumptions are based on information gathered during the planning process to develop the two alternatives. As appropriate, this information has been incorporated into the alternatives as ways to avoid or minimize their environmental consequences.

- The site is currently incorporated into the City's General Plan as a Public/Quasi-Public use. The Reuse Plan, when adopted, will set forth the allowed future uses of the site. At that time, the General Plan will be amended to ensure that future uses of the site comply with the General Plan.
- Adoption of the Reuse Plan would require updating the Zoning Ordinance regulations regarding land use, density/intensity of development, design and development, resource conservation, public safety, and other pertinent topics to ensure consistency with the General Plan.
- Both alternatives have been developed to help achieve key General Plan themes to expand economic development; protect community, environmental, and visual resources; promote higher-density mixed-use development around transit; and provide multimodal transit options. Further, both alternatives fully incorporate key initiatives in the General Plan, such as providing varying amounts of mixed-use development and TOD around the North Concord/Martinez BART Station, and protecting ridgelines and visible hillsides and significant environmental resources. The key General Plan themes are broadly defined and require large-scale balancing of goals, such that there are many potential approaches that would result in a very high level of compliance with the General Plan. The alternatives have been developed in this spirit, with extensive involvement and input from City officials and the local community.
- The Preferred Alternative and the Concentration and Conservation Alternative include a broad range of categories and intensities for uses, including higher-density housing with new mixed-use designations, retail and commercial services and educational uses, and public facilities and open space. These will be incorporated into the amended General Plan and Zoning Ordinance.
- While the site is currently not part of the Redevelopment Plan, implementation of either of the alternatives could be incorporated into the Redevelopment Plan through an

amendment. Furthermore, this implementation would be consistent with the goals of redevelopment outlined in Section 3.1.5.3 of this chapter.

- Development at the site will not conflict with the County's ULL constraints. The site is entirely within the City of Concord and the City complies with the ULL restrictions.
- With respect to compatibility with other applicable plans, policies, and regulations, as discussed in Chapter 13, Population, Housing, and Employment, both alternatives have been developed to meet the ABAG requirements addressing Concord's future housing and employment targets. As discussed in Chapter 4, Transportation, both alternatives have incorporated measures to address the visions set forth in the MTC's 2030 RTP. Also, as addressed in Chapter 7, Hydrology and Water Quality, both alternatives have been developed to incorporate measures to comply with the Water Board's requirements. And, as addressed in Chapter 2, Project Description, both alternatives have been developed to address the BAAQMD policies to encourage mixed-use development, in-fill developments, and a jobs/housing balance that will have a positive impact on air quality.
- Much of the site, including the hillsides above 30 percent slope, major wetlands, and areas adjacent to Mt. Diablo Creek, will be dedicated to use as mitigation and restoration of natural resources, open space, and possible use for parks and recreation, complementing other local and regional assets. Specific conservation programs and policies such as conservation easements will be considered during the development of future plans for the site to ensure long-term preservation of the open space designated in the alternatives. These uses of the land will not split or divide the community, but will provide opportunities for active and passive public uses of the site that are currently precluded.
- As set forth in Section 3.1, the site does not contain any areas designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance. The site is zoned "S" for Study District and is not part of the Williamson Act program. Therefore, three of the standards of significance are not exceeded or impacted.
- Although there are several older structures and unused facilities on the site, along with aboveground and belowground infrastructure and equipment, the majority of the site is currently used for livestock grazing along a section of the site used for agricultural research. The conversion of the site from current uses is not expected to cause an impact on agriculture because there remains substantial land available for grazing in Contra Costa and other counties in the State. As a result, neither alternative would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; conflict with existing zoning for agricultural use or Williamson Act contracts; or cause other impacts on or conversions of farmland. Any future development of the site that would impact the existing stands of trees would have to comply with City of Concord requirements with respect to heritage trees. There is a possibility that future uses of the site could incorporate the stands of trees into plans for active or passive recreation or open space uses.

3.3.2 Land Use Impacts of the Preferred Alternative

3.3.2.1 Potentially Significant Land Use Impacts of the Preferred Alternative

Impact Land Use 1: The Preferred Alternative could introduce short- or long-term land use compatibility conflicts by placing higher-intensity uses and non-residential uses in close proximity to the existing lower-density residential uses in the Sun Terrace and Holbrook neighborhoods and Coast Guard Housing complex along East Olivera Road. This impact is considered to be potentially significant.

The Sun Terrace neighborhood is an existing single-family residential area to the north of the North Concord/Martinez BART Station and Port Chicago Highway. The Holbrook neighborhood is an existing single-family residential area south of the Sun Terrace neighborhood and adjacent to the existing North Concord/Martinez BART Station parking lot. The Coast Guard housing complex is a moderate-density area along the western boundary of the site south of the North Concord/Martinez BART Station parking lot. The Preferred Alternative could result in a significant impact to these neighborhoods because it proposes some level of high-density, mixed-use TOD adjacent to the North Concord/Martinez BART Station and moderate-to-high-density residential uses along the western boundary of the site south to Willow Pass Road. The intensity of the new development with mixed land use is potentially incompatible with the existing neighborhoods. Additionally, the conceptual plan for the Preferred Alternative does not specifically define a transition buffer between the site and the two neighborhoods and Coast Guard housing complex.

However, a parkland buffer is defined between development on the site and existing neighborhoods along the site's southern and western boundaries along Willow Pass Road and south of Willow Pass Road parallel to Landana Drive. Further, the Preferred Alternative would introduce single-family residential, community/institutional, parks and recreation, or open space uses adjacent to the other existing residential neighborhoods to the west of the site. These new uses would be compatible with those neighborhoods, and the Preferred Alternative includes buffers between any new development and those existing neighborhoods.

> **<u>Mitigation Measure Land Use 1</u>: Prior to approving any specific public or private development that would impact the Sun Terrace or Holbrook neighborhoods or the Coast Guard housing complex, the City of Concord shall require the implementation of the following measures:**
>
> - **Prepare design standards that incorporate measures to transition and integrate new development with adjacent uses.**
> - **Incorporate such measures into development plans.**
> - **Notify adjacent property owners in the Sun Terrace and Holbrook neighborhoods and the Coast Guard housing complex to review specific plans or proposals for development adjacent to the North Concord/Martinez BART Station.**

The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to the granting of land use entitlements. However, the new development is anticipated to continue to be incompatible with these residential areas. Even with implementation of this mitigation measure, this impact will remain significant and unavoidable.

Design standards could include measures that include orientation of internal streets and building envelopes, site coverage limits, height and bulk controls, and architectural design standards. Standards could also be considered for set backs, fencing, and landscape features that would provide a transition from the existing neighborhoods to the new development. Site or area plans could include additional green transition buffers similar to those included for other boundaries around the site. However, even with the implementation of these measures, the impact of such a drastic change in neighboring land use is considered to be too drastic to be mitigated to a level that is less than significant. The Preferred Alternative will significantly alter the character of the surrounding community by introducing dense, mixed-use TOD into an area with existing low-density neighborhoods and inaccessible open space on Navy land with low levels of activity. The impact of this change will only be mitigated in small part by any potential mitigation measures, and is thus considered significant and unavoidable.

Impact Land Use 2: The Preferred Alternative could result in a conflict with the Contra Costa County Airport Land Use Compatibility Plan because potential development heights may exceed the height limits established in the Plan. This impact is considered to be potentially significant.

While planning to date for the Preferred Alternative has not specified future building heights on the site including the areas within the Airport Influence Area of Buchanan Field Airport, the site topography indicates there is likelihood for a height conflict on some parts of the site. The area of the site between the North Concord/Martinez BART Station and Willow Pass Road, part of which lies within the designated Airspace Protection Surface, ranges in height from 100 to 220 feet above mean sea level. The height limit in that area ranges from 173 to 373 feet above mean sea level. Coupled with the expectation that the Preferred Alternative proposes some level of high-density, mixed-use TOD near the North Concord/Martinez BART Station, this could result in a conflict between future proposed development and established height limits.

Mitigation Measure Land Use 2: Prior to approving any specific public or private development that would exceed the established height limits within the Airport Influence Area, the City of Concord shall require that site-specific plans be approved by the Contra Costa County Airport Land Use Commission according to the criteria outlined in the Contra Costa County Airport Land Use Compatibility Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

During its review of any site-specific development plans, the ALUC will require that building heights conform to the Airspace Protection Surfaces as delineated in the Land Use Compatibility Plan. Alternatively, the development could be granted a case-specific height exception, or the City could coordinate with the ALUC to establish a Height Exception Overlay for a broader area of the site. Implementing any of these options would result in the Preferred Alternative being in compliance with the Airport Land Use Compatibility Plan, and therefore this impact would be mitigated to a level that is less than significant.

3.3.2.2 Land Use Impacts of the Preferred Alternative That Are Less Than Significant

Impact Land Use 3: The Preferred Alternative would result in opening the site to civilian uses and to the public. These new land uses would help achieve the goals of the General Plan. Therefore, this impact is considered to be less than significant.

There are currently no civilian uses at the site, and the public has limited, if any, access to it. Implementation of the Preferred Alternative would result in opportunities to develop new residential and commercial uses at the site, providing for economic development in compliance with the General Plan. Also, the Preferred Alternative would provide community facilities and parks and recreation spaces that would be open to the public. As mentioned in the assumptions in Section 3.3.1, either alternative would be adopted through amendments to the General Plan and Zoning Ordinance, which would necessitate compliance of any new land uses with those regulations, respectively.

Mitigation Measure Land Use 3: None required.

Impact Land Use 4: The Preferred Alternative would result in new development that could create short- or long-term land use compatibility conflicts because a range of intensity and mix of land uses on the site are designated in proximity to existing uses in Concord. This impact is considered to be less than significant.

Except in the area adjacent to the North Concord/Martinez BART Station, as discussed with Impact Land Use 1, the Preferred Alternative would result in land uses that do not conflict with adjacent uses. It would allocate approximately 1,022 acres to development of residential land uses with approximately 631 acres allocated to low-density, single-family residential uses; 300 acres allocated to moderate-density, multi-family residential uses; and 91 acres allocated to high-density, multi-family uses. In addition, approximately 285 acres are allocated to commercial uses, 74 acres more than the Concentration and Conservation Alternative; and approximately 285 acres are allocated to community/institutional uses, 40 acres more than the other alternative. These new land uses would be arranged in villages that would link them and the existing community with a system of green corridors.

The majority of the proposed development would be separated from the adjacent neighborhoods by areas designated for parks and active recreation. The higher-density areas of the villages would be concentrated along proposed transit lines and located approximately 1/4 mile away from existing neighborhoods, providing a buffer but also allowing access to retail and commercial uses within a short walking distance. The area within this 1/4 mile is designated as low- or medium-density residential, with densities of 4 to

15 dwelling units per acre, to be compatible with land use in existing neighborhoods. This alternative would allocate approximately 3,286 acres of the site to parks, recreation, and open space. This open space would be concentrated in the eastern half of the site, which would directly connect it with existing open space areas on nearly all boundaries. The new land uses at the site would provide new housing, employment, and leisure opportunities that would help meet the goals of the General Plan. Therefore, this impact is considered to be less than significant.

Mitigation Measure Land Use 4: None required.

3.3.3 Land Use Impacts of the Concentration and Conservation Alternative

3.3.3.1 Potentially Significant Land Use Impacts of the Concentration and Conservation Alternative

Impact Land Use 5: The Concentration and Conservation Alternative could introduce short- or long-term land use compatibility conflicts by placing higher-intensity uses and non-residential uses in close proximity to the existing lower-density residential uses in the Sun Terrace and Holbrook neighborhoods and Coast Guard Housing complex along East Olivera Road. This impact is considered to be potentially significant.

Similar to the discussion for Impact Land Use 1, the Concentration and Conservation Alternative could result in a significant impact because the intensity of the new development with mixed land use is potentially incompatible with the existing neighborhoods. Additionally, the conceptual plan for the Concentration and Conservation Alternative does not specifically define a transition buffer between the site and the two neighborhoods and Coast Guard housing complex.

Mitigation Measure Land Use 5: Prior to approving any specific public or private development that would impact the Sun Terrace or Holbrook neighborhoods or the Coast Guard housing complex, the City of Concord shall require the implementation of the following measures:

- **Prepare design standards that incorporate measures to transition and integrate new development with adjacent uses.**
- **Incorporate such measures into development plans.**
- **Notify adjacent property owners in the Sun Terrace and Holbrook neighborhoods and the Coast Guard housing complex to review specific plans or proposals for development adjacent to the North Concord/Martinez BART Station.**

The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to the granting of land use entitlements. However, the new development is anticipated to continue to be incompatible with these residential areas. Even with implementation of this mitigation measure, this impact will remain significant and unavoidable.

Please see the discussion for Mitigation Measure Land Use 1. As with Impact Land Use 1, the impact of this change will only be mitigated in small part by any potential mitigation measures, and is thus considered significant and unavoidable.

Impact Land Use 6: The Concentration and Conservation Alternative could result in a conflict with the Contra Costa County Airport Land Use Compatibility Plan because potential development heights may exceed the height limits established in the Plan. This impact is considered to be potentially significant.

Please see the discussion for Impact Land Use 2. The Concentration and Conservation Alternative proposes similar intensities and types of land use within the areas that fall within the Airport Influence Area, and therefore could also result in a conflict between future proposed development and established height limits.

> **Mitigation Measure Land Use 6: Prior to approving any specific public or private development that would exceed the established height limits within the Airport Influence Area, the City of Concord shall require that site-specific plans be approved by the Contra Costa County Airport Land Use Commission according to the criteria outlined in the Contra Costa County Airport Land Use Compatibility Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Please see the discussion for Mitigation Measure Land Use 2. Implementing any of the options described would result in the Concentration and Conservation Alternative being in compliance with the Airport Land Use Compatibility Plan, and therefore this impact would be mitigated to a level that is less than significant.

3.3.3.2 Land Use Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Land Use 7: The Concentration and Conservation Alternative would result in opening the site to civilian uses and to the public. These new land uses would help achieve the goals of the General Plan. Therefore, this impact is considered to be less than significant.

There are currently no civilian uses at the site, and the public has limited, if any, access to it. Implementation of the Concentration and Conservation Alternative would result in opportunities to develop new residential and commercial uses at the site, providing for economic development in compliance with the General Plan. Also, the Concentration and Conservation Alternative would provide community facilities and parks and recreation spaces that would be open to the public. As mentioned in the assumptions in Section 3.3.1, either alternative would be adopted through amendments to the General Plan and Zoning Ordinance, which would necessitate compliance of any new land uses with those regulations, respectively.

> **Mitigation Measure Land Use 7: None required.**

Impact Land Use 8: The Concentration and Conservation Alternative would result in new development that could create short- or long-term land use compatibility

conflicts because a range of intensity and mix of land uses on the site are designated in proximity to existing uses in Concord. This impact is considered to be less than significant.

The Concentration and Conservation Alternative would only allocate development adjacent to existing neighborhoods in the area north of Willow Pass Road, and Impact Land Use 5 has addressed the potential consequences to the adjacent neighborhoods of development in that area. It would allocate approximately 3,689 acres to open space, 403 acres more than the Preferred Alternative. However, it would only allocate 467 acres to parks and recreation, 254 acres less than the Preferred Alternative. In addition, this alternative would only allocate approximately 733 acres for residential uses, 211 acres for commercial uses, and 395 acres for community facility/institutional uses, all substantially lower allocations than the Preferred Alternative. The proposed open space would be compatible with existing land uses on all boundaries, the majority of which is also currently designated as open space. The exception is the southern boundary, which would be compatible with the adjacent existing low-density neighborhoods. The new land uses at the site would provide new housing, employment, and recreation opportunities that would help meet the goals of the General Plan. Therefore, this impact is considered to be less than significant.

Mitigation Measure Land Use 8: None required.

3.3.4 Land Use Impacts of the No Project Alternative

3.3.4.1 Potentially Significant Land Use Impacts of the No Project Alternative

Impact Land Use 9: The No Project Alternative would leave the site in its current condition. This impact is considered to be potentially significant.

The No Project Alternative would result in no change in land use, and the site would continue to provide no tax benefit to the City of Concord and it would be inaccessible to the public. Ongoing Navy land use activities would include caretaker actions and continued grazing. Future development could potentially still occur on the site, but could lack a level of City and public input that was featured during the planning process to develop the two alternatives. The need to fulfill regional housing requirements in other areas of the City could also have land use implications due to the need for rezoning existing areas from open space or to higher densities than currently allowed. These issues are discussed more in Chapter 13, Population, Housing, and Employment. The implementation of either of the reuse concepts would alleviate these implications, but the No Project Alternative would not. For this reason, this impact is considered potentially significant.

Mitigation Measure Land Use 9: None is identified at this time. This impact would be considered significant and unavoidable.

3.3.4.2 Land Use Impacts of the No Project Alternative That Are Less Than Significant

None identified.

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4. Transportation

4 Transportation

This chapter describes the current transportation network and summarizes the effects on the transportation and circulation system that would result from the implementation of either of the two alternative concepts. The impact analysis examines the roadway, transit, and bike and pedestrian components of the overall transportation system. This chapter also includes proposed mitigation measures that will reduce the identified impacts to the extent feasible.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on transportation. This has resulted in the transportation impacts of both alternatives being substantially less than they would have been had transportation impacts not been taken into account during all stages of the planning and environmental analysis process.

4.1 Existing Conditions

4.1.1 Introduction

The site is located in the northeast area of the City of Concord, which is served by a network of roadways, transit services, and bicycle and pedestrian facilities that comprise the transportation system.

4.1.2 Regulatory Setting

Existing transportation policies, plans, laws, and regulations that apply to the site are summarized below. This information provides a context for the impact discussion relevant to the two alternative reuse concepts' consistency with applicable regulatory conditions.

4.1.2.1 State

The California Department of Transportation (Caltrans) is responsible for planning, design, construction, and maintenance of all State highways. Caltrans' jurisdictional interest extends to improvements to these roadways at the interchange ramps serving area freeways. Several State and federal transportation funding programs require project review by Caltrans staff and funding allocation by the California Transportation Commission.

The Guide for the Preparation of Traffic Impact Studies (Caltrans Guide) (Caltrans, 2002) provides consistent guidance for Caltrans staff who review local development and land use change proposals as well as inform local agencies of the information needed for Caltrans to analyze the traffic impacts to State highway facilities including freeway segments, on- or off-ramps, and signalized intersections. Caltrans facilities in the study area include Interstate Highway (I-) 680, State Route (SR) 4, and SR 242, as well as the on- and off-ramps from these State facilities.

Proposition 111 was passed in 1990 and included the requirement that each of California's urban counties prepare and update a Congestion Management Program (CMP). The Contra Costa Transportation Authority (CCTA) is responsible for preparing and monitoring the preparation of the Contra Costa CMP. The CMP requires each jurisdiction to identify existing and future transportation facilities that would operate below an acceptable service level and provide mitigation where future growth would degrade that service level.

Recent State climate change legislation (i.e., Assembly Bill [AB] 32 and Senate Bill [SB] 375) requires the reduction of greenhouse gas emissions from mobile and stationary sources. The single largest source of greenhouse gases in California is emissions from passenger vehicles, and in order to reduce those emissions, vehicle miles traveled (VMT) must be reduced. SB 375 addresses the relationship between land use and transportation and provides incentives for local governments and developers to follow new conscientiously planned growth patterns that will create more sustainable, walkable communities, with alternative transportation options and increased quality of life. The City of Concord will consider and prioritize mitigations to impacted transportation facilities in light of the State's priorities and this important legislation. Specifically, the City of Concord will implement transportation demand management strategies to mitigate impacted transportation facilities to reduce traffic rather than mitigating impacts through increased capacity (e.g., adding lanes to roadways and intersections). This mitigation strategy also supports preexisting City policy to promote a walkable environment to increase transit, bicycling, and walking trips (described below in Section 4.1.2.3).

4.1.2.2 Regional

The Metropolitan Transportation Commission (MTC) is the regional transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area responsible for prioritizing transportation projects in a Regional Transportation Improvement Program (RTIP) for federal and State funding. The process is based on evaluating each project for need, feasibility, and adherence to federal transportation policies and the local CMP, and overall compatibility with the RTIP.

In Contra Costa County, both the MTC and CCTA are involved in the decision-making process over the selection of state highway projects for the State Transportation Improvement Program (STIP) and other federal- or State-funded programs. The STIP program provides a primary source of funding for many regional transportation improvements in Contra Costa County in conjunction with other sources of funding. Regional improvements involving freeways or multimodal transportation facilities are typically sponsored and implemented by the CCTA and Caltrans with support from local agencies and/or transit operators. Regional improvements involving local arterials are usually sponsored and implemented by local agencies.

In addition to its involvement in sponsoring and implementing regional transportation improvements in Contra Costa County, the City of Concord also contributes local funding for regional improvements through its Off-site Street Improvement Program (OSIP). OSIP is a citywide traffic mitigation fee program that requires developers to pay their fair share of the costs to construct transportation improvements to support future growth. The list of OSIP

improvements includes regional facilities such as freeways and major arterials within Concord.

Government Code 66000 and AB 1600 require that there is a reasonable relationship or a proportionality between the amount of a traffic impact fee and the development on which that fee is imposed. Further, the legislation requires that an analysis should be presented in enough detail to demonstrate that logical, thorough consideration was applied in the process of defining the fee imposed on new development.

4.1.2.3 Local

Standards for roadway operations in Concord are defined on a countywide basis. In 1988, Contra Costa County voters passed Measure C, which raised the sales tax to provide funding for regional transportation improvements. Measure C included the Growth Management Program, which established a cooperative, multi-jurisdictional planning process requiring participation of all cities and towns and the County in managing the impacts of growth in Contra Costa County. The transportation analysis in this document was prepared in accordance with the Technical Procedures (CCTA, 2006), which was developed to assist local agencies in implementing the Growth Management Program.

Measure J, approved by County voters in 2004, authorized the extension of Measure C and established the Transportation Sales Tax Expenditure Plan, which extends the transportation sales tax initially authorized by the passage of Measure C. It provides for $2 billion in funding for programs and projects. These expenditures are “for the construction and improvement of State highways, the construction, maintenance, improvement, and operation of local streets, roads, and highways, and the construction, improvement, and operation of public transit systems,” including paratransit services as required by the California Public Utilities Code §180205, and for specific efforts supporting such investments. Measure J’s Growth Management Program simplifies Measure C’s requirements; it also requires a binding urban limit line (ULL) for the County and all of the cities within the County.

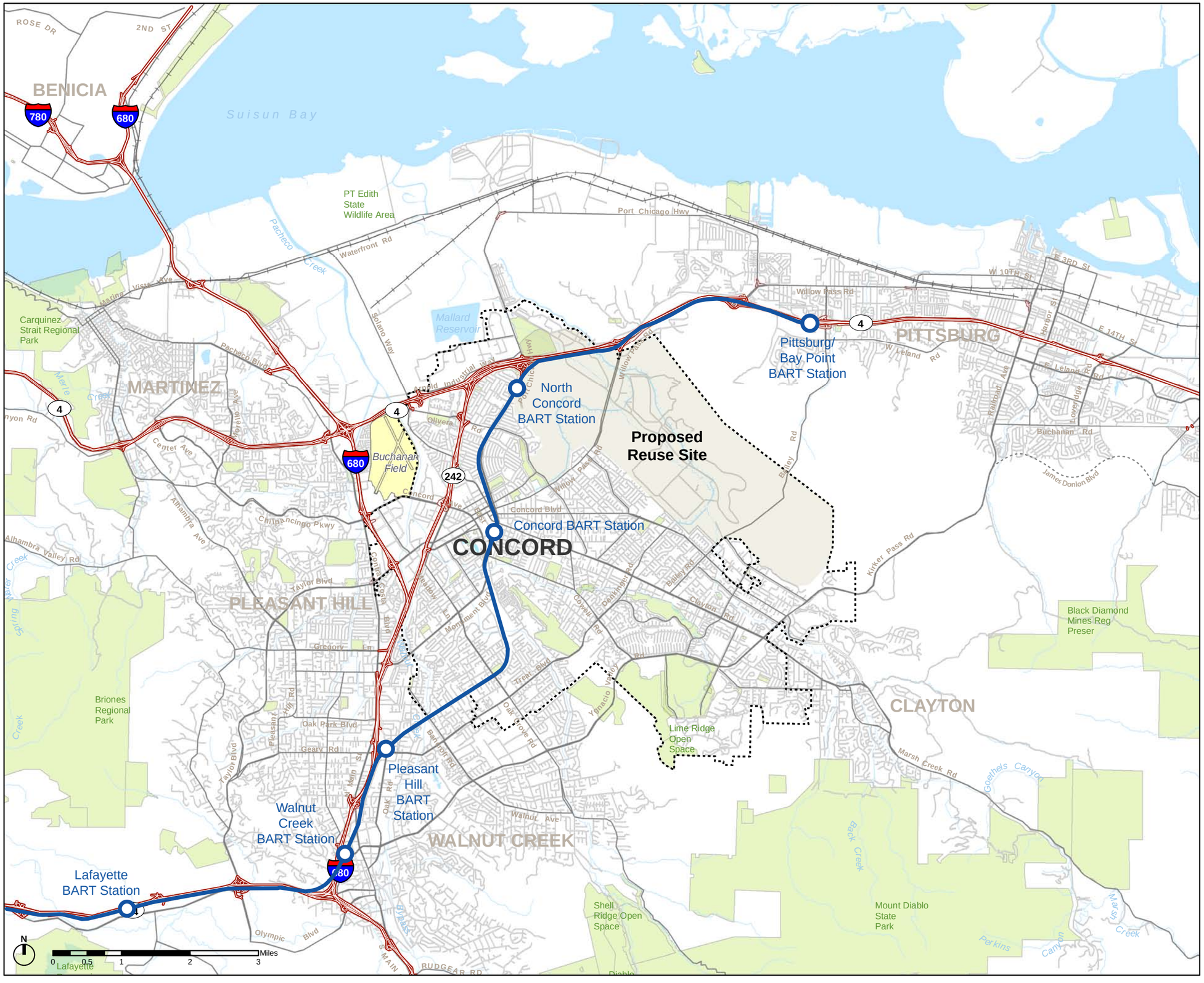
The CCTA was established to implement Measure C and its overall goals. Local jurisdictions work through their respective Regional Transportation Planning Committees (RTPCs). As part of Central County, the City of Concord worked with other Central County jurisdictions through their RTPC—the Transportation Partnership and Cooperation Committee (TRANSPAC)—to develop the Central Contra Costa Action Plan for Routes of Regional Significance (RRS). The Action Plan identifies traffic service objectives (TSOs) for RRS, which in Concord includes the freeways (SR 4, SR 242, I-680) and arterial streets (Clayton Road, Treat Boulevard, and Ygnacio Valley Road/Kirker Pass Road). The CCTA recently completed updating the Action Plans throughout the County in coordination with the RTPCs. Similar to TRANSPAC, TRANSPLAN is the RTPC that represents the interests of communities in East County, including the City of Pittsburg, located to the northeast of the site. TRANSPLAN developed its own Action Plan, which identifies its unique set of TSOs for RRS. RRS in Pittsburg currently include arterial streets (Kirker Pass Road, Bailey Road, Buchanan Road, Evora Road, Leland Road, Railroad Avenue, and Willow Pass Road). In the future, the James Donlon Boulevard Extension and Avila Road will be RRS. The TSOs for east and Central County include the delay index, level of service (LOS), average travel

speed, average vehicle occupancy, and transit ridership, which are described in Section 4.1.3.4.

In the course of updating the Action Plans in 2008, the Technical Advisory Committees for TRANSPAC and TRANSPLAN held coordination discussions concerning SR 4 operations within Central County. Based on these discussions, TRANSPAC incorporated a new action into the Central County Action Plan to partner with TRANSPLAN and WCCTAC to develop a Corridor Management Plan for SR 4 from East County through Central County including connecting and/or supporting arterials. This process will update the MTSO(s) for SR 4, identify actions and improvements, and define an approach to managing arterials in the corridor. CCTA has committed necessary funding for the Corridor Management Plan.

Both Central County and East County have Action Plans for RRS that identify the specific RRS and the TSOs for each RRS. When the analysis for this EIR was developed, Central County and East County had adopted Action Plans for their RRS that included the TSOs for each RRS. In addition to those Action Plans, Central County and East County had developed proposed Action Plans for RRS, which replace the TSOs with Multi-modal Transportation Service Objectives (MTSOs). The CCTA Board certified the Final EIR for the Countywide Transportation Plan (CTP), and adopted the CTP at its June 17, 2009 meeting. Subsequently, TRANSPAC adopted the Final Central County Action Plan at its July 9, 2009 meeting. TRANSPLAN is expected to adopt its proposed Action Plan shortly. The analysis performed under the previously adopted Action Plans (i.e., those including TSOs) is included in this chapter. However, for informational purposes, the alternatives were also analyzed by applying the MTSOs in the recently adopted and soon-to-be-adopted Action Plans (i.e., those including MTSOs). The results of this analysis are in Appendix 4A. As proposed, the MTSOs generally set forth less stringent thresholds for acceptable operations than those established by the TSOs. Therefore, as shown in Appendix 4A, fewer impacts are identified for the alternatives when analyzed using the MTSOs. The analysis presented in this chapter, which relies on the TSOs, is a more conservative analysis.

The Measure C Growth Management Program sets standards for the regional and non-regional routes in Contra Costa County, which the City has incorporated into the Growth Management Element of the City of Concord 2030 Urban Area General Plan (General Plan) (City of Concord, 2007). These standards are tied to land use and provide for a tiered system of transportation systems in Concord, with different standards used for different types of streets. These standards are described in Section 4.2.1. ~~The County's CMP's provisions for Infill Opportunity Zones – as implemented through Policy T-1.1.4 of the General Plan – allow for these standards to be exceeded within 1/2 mile of Bay Area Rapid Transit (BART) District stations and within 1/4 mile of transit corridors as a means of encouraging in-fill development at densities necessary to support public transportation, walking, and bicycling.~~ General Plan Policies T-1.5.1 through T-1.5.5 support safe and convenient pedestrian circulation, and Policies T-1.6.1 through T-1.6.4 provide for a safe and comprehensive bicycle network.



Legend

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 24, 2009

Figure 4-1
Study Area

4.1.3 Transportation Network

Regional vehicular access to the site is provided primarily by major roadways and freeway corridors that serve Central and East Contra Costa County. The roadway network in the site vicinity is comprised of RRS, including freeways and major arterial streets, and of local roads. The study area, which encompasses the specific project analysis locations, is illustrated on Figure 4-1.

4.1.3.1 Freeways and Ramps

I-680 is a north-south route on the west side of the City of Concord. I-680 is a major north-south freeway that serves the cities of Concord, Walnut Creek, Pleasant Hill, and Martinez. I-680 varies from a seven-lane highway (north of SR 4), to an eight-lane highway (north of Concord Avenue), to a 12-lane highway (north of Monument Boulevard). The posted speed limit for I-680 is 65 miles per hour (mph).

SR 242 is the main north-south route through the center of the City of Concord. It is a six-lane highway north of I-680 and south of SR 4, with a posted speed limit of 65 mph.

SR 4 is the main east-west roadway located along the north side of the City of Concord. SR 4 varies from a four-lane divided highway (east of I-680), to a six-lane highway (east of Arnold Industrial Way), to a nine-lane highway (east of Willow Pass Road), and then returns to a four-lane highway at Railroad Avenue in Pittsburg. SR 4 has a posted speed limit of 65 mph and is the primary connection to East County over Willow Pass. The site has access to SR 4 from Port Chicago Highway and Willow Pass Road.

Analysis Freeway Segments

Nineteen mainline freeway segments along I-680, SR 242, and SR 4 in the site vicinity were selected for analysis. The segments span between north of SR 4 and south of Monument Boulevard on I-680, between north of Olivera Road to north of I-680 on SR 242, and between east of I-680 and east of Railroad Avenue on SR 4. The peak hour mainline traffic volumes were derived from Caltrans' most recently available (2006) estimate of average daily traffic by applying Caltrans' peak (K) and directional (D) factors and using hourly counts. A list of analysis freeway mainline segments and their corresponding AM and PM peak hour existing (2006) volumes is shown in Table 4-1. The analysis freeway mainline segments are shown on Figure 4-2.

Table 4–1: Analysis Freeway Mainline Segments - Existing (2006) Volumes

			Lanes		Existing (2006) Peak Hour Volume	
	Mainline Segment	Direction	Freeway	Aux	AM	PM
	Interstate 680					
1	I-680 s/o Monument Blvd	NB	5	0	4,794	11,537
	I-680 s/o Monument Blvd	SB	6	0	10,234	7,574
2	I-680 n/o Monument Blvd	NB	6	0	4,716	11,350
	I-680 n/o Monument Blvd	SB	6	0	10,067	7,451
3	I-680 n/o SR 242	NB	3	0	4,713	11,360
	I-680 n/o SR 242	SB	4	0	10,062	7,457
4	I-680 n/o Willow Pass Rd	NB	3	1	2,884	6,734
	I-680 n/o Willow Pass Rd	SB	4	1	6,157	4,421
5	I-680 n/o Concord Av	NB	4	0	2,845	6,847
	I-680 n/o Concord Av	SB	4	1	6,074	4,495
6	I-680 n/o SR 4	NB	4	0	2,475	5,956
	I-680 n/o SR 4	SB	3	0	5,283	3,910
	State Route 242					
7	SR 242 n/o I-680	NB	3	0	2,078	5,817
	SR 242 n/o I-680	SB	3	0	5,258	3,621
8	SR 242 n/o Clayton Rd	NB	3	0	1,567	4,388
	SR 242 n/o Clayton Rd	SB	3	0	4,015	2,765
9	SR 242 n/o Concord Av	NB	3	1	2,166	6,064
	SR 242 n/o Concord Av	SB	3	1	5,879	4,049
10	SR 242 n/o Grant Av	NB	3	1	2,042	5,719
	SR 242 n/o Grant Av	SB	3	1	5,736	3,950
11	SR 242 n/o Olivera Rd	NB	4	0	1,814	5,078
	SR 242 n/o Olivera Rd	SB	3	0	5,115	3,522
	State Route 4					
12	SR 4 e/o I-680	EB	2	0	3,380	3,859
	SR 4 e/o I-680	WB	2	0	4,199	3,269
13	SR 4 e/o Arnold Industrial Wy	EB	2	1	3,301	3,768
	SR 4 e/o Arnold Industrial Wy	WB	2	1	4,100	3,192
14	SR 4 e/o SR 242	EB	4	0	3,818	4,358
	SR 4 e/o SR 242	WB	2	0	4,742	3,692
15	SR 4 e/o Port Chicago Hwy	EB	4	0	6,284	7,173
	SR 4 e/o Port Chicago Hwy	WB	4	0	7,805	6,076

			Lanes		Existing (2006) Peak Hour Volume	
	Mainline Segment	Direction	Freeway	Aux	AM	PM
16	SR 4 e/o Willow Pass Rd	EB	5	0	6,244	7,128
	SR 4 e/o Willow Pass Rd	WB	4	0	7,756	6,038
17	SR 4 e/o San Marco Blvd	EB	4	0	3,207	6,289
	SR 4 e/o San Marco Blvd	WB	4	0	7,214	3,726
18	SR 4 e/o Bailey Rd	EB	4	0	3,243	5,145
	SR 4 e/o Bailey Rd	WB	4	1	5,620	3,604
19	SR 4 e/o Railroad Av	EB	3	0	3,002	3,624
	SR 4 e/o Railroad Av	WB	3	0	3,998	2,877

n/o = north of; s/o = south of; e/o = east of; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; Aux = auxiliary lanes

The number of freeway lanes and the traffic counts include high-occupancy vehicle (HOV) lanes.

Source: Caltrans

Analysis Freeway Ramps

Forty freeway ramps were selected for evaluation. The most recently available ramp volume data (2006) were obtained from Caltrans. Table 4-2 shows the analysis ramp locations and existing peak hour volumes. Figure 4-3 shows the analysis ramps.

4.1.3.2 Other Routes of Regional Significance and Local Roadways

Kirker Pass Road lies to the southeast of the site. It connects Pittsburg, where it is named Railroad Avenue and connects to SR 4, and runs southwest through Concord, where it becomes Ygnacio Valley Road at the Clayton Road junction, terminating in Walnut Creek near I-680 and the Walnut Creek BART District Station. In the study area, the corridor varies between four- and six-lane roads.

Treat Boulevard runs almost parallel with Ygnacio Valley Road from Clayton Road to North Main Street west of I-680 where it becomes Geary Road to continue through Pleasant Hill. North of Clayton Road, it becomes Denkinger Road and terminates at the site boundary. The major roadway varies between four and six lanes in the study area.

Clayton Road between Treat Boulevard and Kirker Pass Road is a six-lane roadway. The roadway continues northwest to downtown Concord and southeast to become Marsh Creek Road in Clayton.

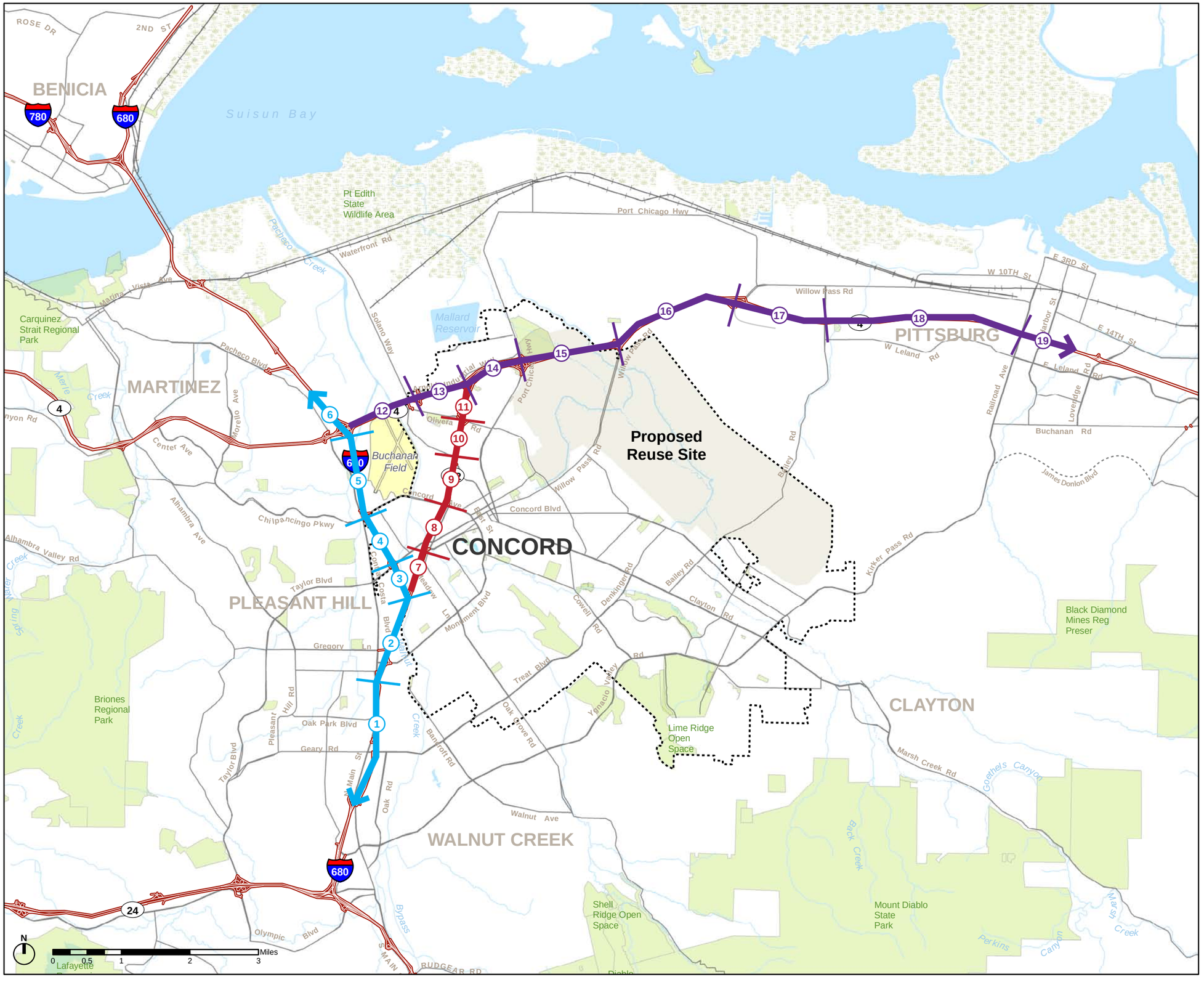
Concord's local road network is based on a traditional grid pattern in the downtown surrounded by a radial pattern of arterial roadways. It is comprised of a variety of street types.

Two local roads traverse the site: Willow Pass Road between downtown Concord and SR 4, and Bailey Road from Clayton Road north to Pittsburg. Other key local roadways that serve the site include Port Chicago Highway and East Olivera Road along the western boundary, and Concord Boulevard and Myrtle Drive near the southern boundary.

Analysis Roadway Segments

Major corridors between the site and the freeway were identified and selected for analysis. These included arterial roads as well as the RRS identified in the Central County Action Plan and East County Action Plan. The CCTA Technical Procedures Update (CCTA, 2006) recommends that links in suburban and urban areas with volume-to-capacity (v/c) ratios (see page 4-17) greater than 0.80 should be identified for analysis. Analysis could include either or both intersection LOS and/or select link analysis. The roadway segments selected for analysis focused on the RRS and major corridors serving the site.

The analysis roadway segments are shown on Figure 4-4. The existing peak hour traffic volumes on the roadway segments are listed in Table 4-3. The peak hour volumes were derived primarily from intersection turning movement volumes. Where intersection data are not adequate, machine counts on the roadway segments were collected between October 30 and November 8, 2007 or in January 2009.



Legend

- I-680 Segments
- SR 242 Segments
- SR 4 Segments

1. I-680 south of Monument Boulevard
2. I-680 north of Monument Boulevard
3. I-680 north of SR 242
4. I-680 north of Willow Pass Road
5. I-680 north of Concord Avenue
6. I-680 north of SR 4
7. SR 242 north of I-680
8. SR 242 north of Clayton Road
9. SR 242 north of Concord Avenue
10. SR 242 north of Grant Avenue
11. SR 242 north of Olivera Road
12. SR 4 east of I-680
13. SR 4 east of Arnold Ind Way
14. SR 4 east of SR 242
15. SR 4 east of Port Chicago Highway
16. SR 4 east of Willow Pass Road
17. SR 4 east of San Marco Road
18. SR 4 east of Bailey Road
19. SR 4 east of Railroad Avenue

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 13, 2009

Figure 4-2
Analysis Freeway Segments

Table 4–2: Analysis Freeway Ramps - Existing (2006) Volumes

		Lanes		Existing (2006) Peak Hour Volume	
		Upstream	Downstream	AM	PM
	Interstate 680				
1	Willow Pass Rd NB off-ramp	4	4	1,031	1,153
2	Willow Pass Rd NB on-ramp	4	5	580	949
3	Concord Av NB off-ramp	5	4	898	738
4	Concord Av Burnett Av NB on-ramp	4	4	257	528
5	Concord Av WB to NB on-ramp	4	4	217	456
6	Concord Av SB off-ramp	4	4	965	810
7	Concord Av WB to SB on-ramp	4	4	497	799
8	Concord Av EB to SB on-ramp	4	5	325	294
9	Willow Pass Rd SB off-ramp	5	4	1,283	1,003
10	Willow Pass Rd WB to SB on-ramp	4	4	456	698
11	Willow Pass Rd EB to SB on-ramp	4	4	248	570
	State Route 242				
12	Clayton Rd NB off-ramp	3	3	1,062	1,451
13	Concord Av EB to NB on-ramp	3	3	215	647
14	Concord Av WB to NB on-ramp	3	4	706	1,411
15	Concord Av SB off-ramp	4	3	1,825	1,276
16	Clayton Rd SB on-ramp	3	3	926	1,260
17	Concord Av SB on-ramp	3	3	150	227
	State Route 4				
18	Port Chicago Hwy EB off-ramp	2	2	717	471
19	Port Chicago Hwy EB on-ramp	3	3	318	1,365
20	Port Chicago Hwy WB on-ramp	2	2	277	478
21	Port Chicago Hwy WB off-ramp	5	5	1,060	337
22	Willow Pass Rd EB off-ramp	4	4	364	583
23	Willow Pass Rd EB on-ramp	4	5	253	530
24	Willow Pass Rd WB on-ramp	4	4	1,265	464
25	Willow Pass Rd WB off-ramp	5	4	940	315
26	San Marco Blvd EB off-ramp	5	4	431	1269
27	San Marco Blvd SB to WB on-ramp	4	5	1725	447
28	San Marco Blvd SB to EB on-ramp	4	4	273	155
29	San Marco Blvd NB to WB on-ramp	4	4	359	118
30	San Marco Blvd NB to EB on-ramp	4	4	37	32
31	San Marco Blvd WB off-ramp	4	4	153	281
32	Bailey Rd SB from EB off-ramp	5	5	284	838
33	Bailey Rd WB on-ramp	4	4	2064	571
34	Bailey Rd SB from WB off-ramp	5	4	247	228
35	Bailey Rd NB from EB off-ramp	5	4	202	809

		Lanes		Existing (2006) Peak Hour Volume	
		Upstream	Downstream	AM	PM
36	Bailey Rd NB from WB off-ramp	5	5	223	221
37	Bailey Rd EB on-ramp	4	4	522	503
38	Railroad Av WB on-ramp	4	4	1622	727
39	Railroad Av EB off-ramp	5	4	693	1857
40	Railroad Av EB on-ramp	3	3	454	336

NB = northbound; SB = southbound; EB = eastbound; WB = westbound
Caltrans uses “Willow Pass Rd” as the label for the San Marco Boulevard ramps

Source: Caltrans

Table 4–3: Analysis Roadway Segments - Existing (2007) Two-Way Peak Hour Volumes

				Existing (2007) Two-Way Peak Hour Vol.	
	Link	Location	# of Lanes	AM	PM
1	Clayton Rd	East of Treat Blvd	6	3,026	3,054
2	Kirker Pass Rd	East of Concord Blvd	6	1,998	2,410
3	Kirker Pass Rd	South of Myrtle Dr	6	2,003	2,406
4	Kirker Pass Rd	North of James Donlon Blvd Ext (future)	4	1,722	1,937
5	Treat Blvd	East of Oak Grove Rd	6	3,229	3,871
6	Ygnacio Valley Rd	East of Cowell Rd	4	3,299	3,830
7	Bailey Rd	East of Concord Blvd	2	1,947	1,733
8	Clayton Rd	East of Market St	6	1,972	2,556
9	Concord Blvd	West of Denkinger Rd	4	2,425	1,916
10	Denkinger Rd	Between Clayton Rd and Concord Blvd	2	863	612
11	Monument Blvd	West of Oak Grove Rd	6	2,601	2,960
12	Port Chicago Hwy	North of Olivera Rd	2	1,664	1,562
13	Willow Pass Rd	North of Landana Dr	2	1,924	1,991
14	Willow Pass Rd	East of Farm Bureau Rd	4	1,895	1,964
15	Willow Pass Rd	East of Galindo St	4	1,574	1,912
16	Willow Pass Rd	Between Diamond Blvd and SR 242	6	2,372	3,410
17	Avila Rd	East of Willow Pass Rd	2	108	62
18	Evora Rd	East of Willow Pass Rd	2	1,069	662

Source: Dowling, 2009

4.1.3.3 Intersections

The intersections to be analyzed were selected based on guidance provided in the CCTA Technical Procedures Update (CCTA, 2006), which specifies that the "analysis should include any signalized intersection to which at least 50 project trips would be added." The Technical Procedures allow for the use of engineering judgment to eliminate intersections that are not "controlling intersections or where critical movements are not affected [since] the project only adds through movements." The analysis intersections include signalized and unsignalized intersections adjacent to the site where vehicular access to the site could occur. A list of potential analysis intersections was compiled based on the location of the project site, the local and regional roadway network, and trip distribution patterns from the CCTA model and City staff reviewed the list. The list includes intersections where project traffic is more likely to contribute to critical movements, in particular left-turns. In addition, the reporting intersections from the CMP were included. Table 4-4 lists the analysis intersections, and they are shown on Figure 4-5.

In order to establish a basis for analysis, turning movement volumes for the analysis intersections were collected for the morning (AM) and afternoon (PM) peak periods on typical weekdays in April 2007, October and November 2007, September 2008, and January 2009. See Appendix 4B for intersection geometries and Appendix 4C for traffic volumes by turning movement.

Table 4–4: Analysis Intersections

	Intersection	Control
1	Arnold Industrial Way/Port Chicago Hwy	Signal
2	Port Chicago Hwy/Panoramic Dr	Signal
3	Port Chicago Hwy/Olivera Rd	Signal
4	Olivera Rd/Salvio St	One-way stop
5	Clayton Way/Willow Pass Rd	One-way stop
6	Farm Bureau Rd/Willow Pass Rd	Signal
7	Diamond Blvd/Willow Pass Rd	Signal
8	Market St/Concord Av	Signal
9	Oakland Av/Clayton Rd	Signal
10	Beechwood Dr/Landana Dr	All-way stop
11	West St/Concord Blvd	Signal
12	West St/Clayton Rd	Signal
13	Denkinger Rd/Concord Blvd	Signal
14	Clayton Rd/Treat Blvd	Signal
15	Cowell Rd/Treat Blvd	Signal
16	Oak Grove Rd/Treat Blvd	Signal
17	Oak Rd/Treat Blvd	Signal
18	Bailey Rd/Myrtle Dr	One-way stop
19	Bailey Rd/Concord Blvd	Signal
20	Bailey Rd/Clayton Rd	Signal
21	Kirker Pass Rd/Clearbrook Dr	Signal
22	Kirker Pass Rd/Concord Blvd	Signal
23	Clayton Rd/Ygnacio Valley Rd	Signal
24	Cowell Rd/Ygnacio Valley Rd	Signal
25	Oak Grove Rd/Ygnacio Valley Rd	Signal
26	Galindo St/Willow Pass Rd	Signal
27	Market St/Willow Pass Rd	Signal
28	I-680 NB Ramp/Willow Pass Rd	Signal
29	I-680 SB Ramp/Willow Pass Rd	Signal
30	Market St/Clayton Rd	Signal
31	Commerce Av - SR 242 SB/Concord Av	Signal
32	Diamond Blvd/Concord Av	Signal
33	Monument Blvd/Oak Grove Rd	Signal
34	Walnut Bl/Ygnacio Valley Rd	Signal
35	Bancroft Rd/Ygnacio Valley Rd	Signal
36	Alberta Wy/Ygnacio Valley Rd	Signal
37	Ayers Rd/Ygnacio Valley Rd	Signal
38	North Main St/Geary Rd	Signal
39	Bates Av/Port Chicago Hwy	Signal
40	Bancroft Rd/Treat Blvd	Signal
41	Kirker Pass Rd/Myrtle Dr	Signal

	Intersection	Control
42	Buskirk Ave - NB I-680 off-ramp/Treat Blvd	Signal
43	North Main St/Sunnyvale Ave - SB I-680 ramps	Signal
44	NB I-680 off-ramp/Ygnacio Valley Rd	Signal
45	SB I-680 on-ramp/Ygnacio Valley Rd	Signal
46	Willow Pass Rd/Evora Rd (East) - SR 4 WB off-ramp [in Pittsburg]	Signal
47	Willow Pass Rd/Evora Rd (West) [at project site]	Signal
48	Willow Pass Rd/Avila Rd	One-way stop
49	Bailey Rd/Willow Pass Rd	Signal
50	San Marco Blvd/W Leland Rd	Signal
51	Bailey Rd/W Leland Rd	Signal
52	Railroad Ave/W Leland Rd	Signal
53	Railroad Ave/Buchanan Rd	Signal
54	Kirker Pass Rd/James Donlon Blvd Ext [future intersection]	Signal
55	San Marco Blvd - Willow Pass Rd/SR 4 EB ramps	Signal
56	Bailey Rd/SR 4 EB Ramps - BART access	Signal
57	Bailey Rd/SR 4 WB on-ramp - Canal Rd	Signal
58	Railroad Ave/SR 4 WB on-ramp - California Ave	Signal
59	Railroad Ave/SR 4 EB ramps	Signal
60	Willow Pass Rd/SR 4 WB ramps	All-way stop
61	Willow Pass Rd/SR 4 EB ramps	All-way stop
62	Port Chicago Hwy/SR 4 WB ramps	Signal

Source: Dowling, 2009

Roadway Operations

LOS describes the operating conditions experienced by motorists. LOS is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. LOS is designated A through F from best to worst, which covers the entire range of traffic operations that might occur. LOS A through E generally represent traffic volumes at less-than-roadway capacity, while LOS F represents over-capacity and/or forced flow conditions. These conditions are generally described in Table 4-5. The measures and thresholds for each LOS grade differ by facility type and are also described below.

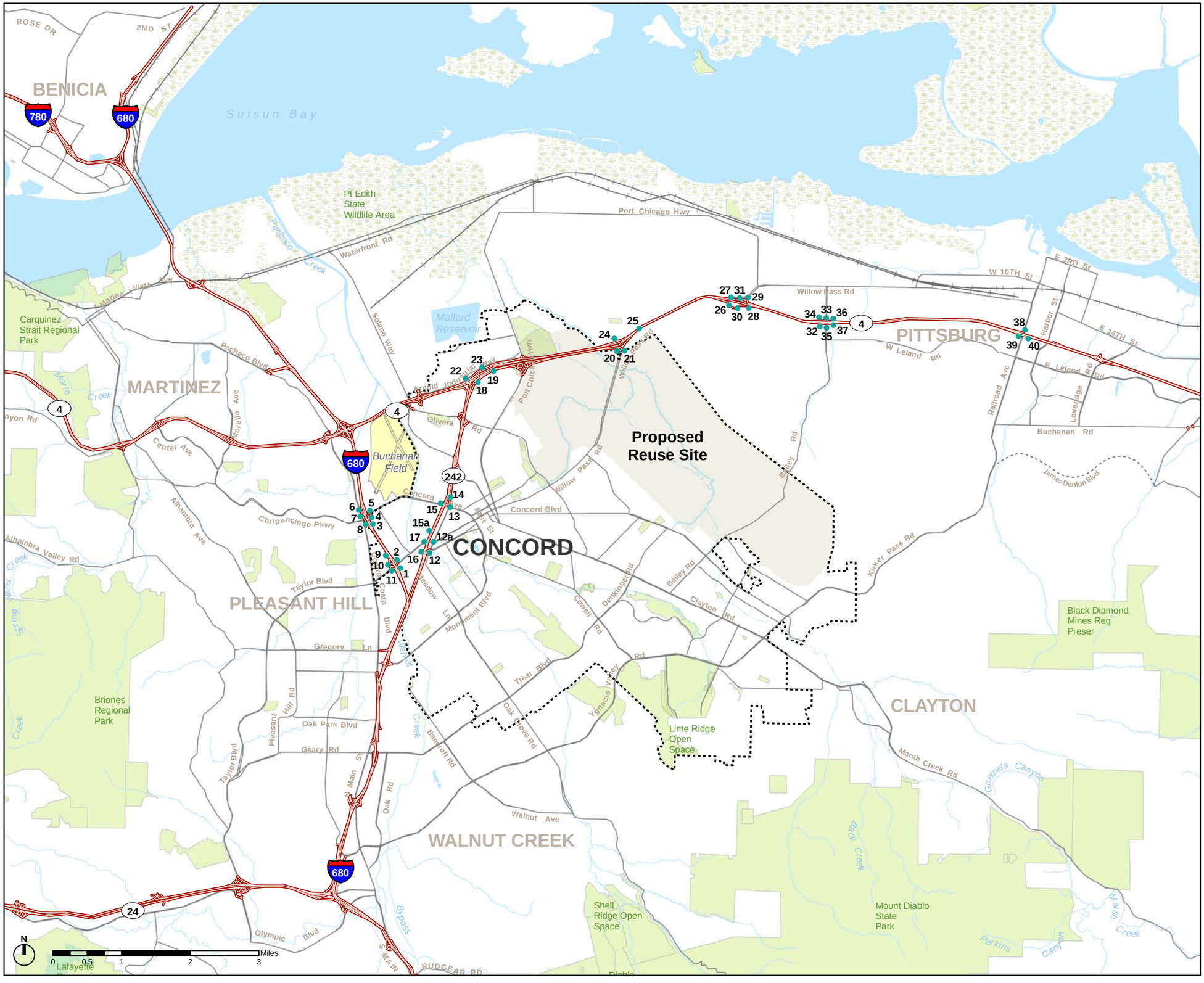
Table 4–5: General Level of Service Definitions

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. For example, vehicles experience less than 10-second delays at unsignalized intersections.
B	**Stable Operation or Minimal Delays**: The ability to maneuver within the traffic stream is only slightly restricted, and control delay at signalized intersections are less than significant. For example, vehicles experience between 10- and 15-second delays at unsignalized intersections.
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. For example, vehicles experience between 15- and 25-second delays at unsignalized intersections.
D	**Approaching Unstable or Tolerable Delays**: Small increases in flow may cause substantial increases in delay and decreases in travel speed. For example, vehicles experience between 25- and 35-second delays at unsignalized intersections.
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. For example, vehicles experience between 35- and 50-second delays at unsignalized intersections.
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. For example, vehicles experience more than 50-second delays at unsignalized intersections.

Source: Highway Capacity Manual, Transportation Research Board, Washington D.C., 2000

Freeway Segments

As specified in the Caltrans guide, the Highway Capacity Manual (HCM) procedures were used to calculate average daily capacities for each LOS threshold from A to F for the freeway segments. The LOS was determined using the v/c ratio given an estimated free-flow speed of 70 mph for all the highway/freeway segments, which is the base free-flow speed for urban areas from the HCM. The v/c ratio is the ratio of flow rate to capacity for a transportation facility. Therefore, as the number of vehicles on a roadway increases to the point of maximum capacity of the roadway, the v/c ratio nears 1.0. Table 4-6 contains the v/c ratio thresholds for each LOS.



Legend

- Freeway Ramps

1. I-680: Willow Pass Rd NB off-ramp
2. I-680: Willow Pass Rd NB on-ramp
3. I-680: Concord Av NB off-ramp
4. I-680: Concord Av Burnett NB on-ramp
5. I-680: Concord Av WB to NB on-ramp
6. I-680: Concord Av SB off-ramp
7. I-680: Concord Av WB to SB on-ramp
8. I-680: Concord Av EB to SB on-ramp
9. I-680: Willow Pass Rd SB off-ramp
10. I-680: Willow Pass Rd WB to SB on-ramp
11. I-680: Willow Pass Rd EB to SB on-ramp
12. SR 242: Clayton Rd NB off-ramp

12a. SR 242: Clayton Rd NB on-ramp (proposed)

13. SR 242: Concord Av EB to NB on-ramp
14. SR 242: Concord Av WB to NB on-ramp
15. SR 242: Concord Av SB off-ramp

15a. SR 242: Clayton Rd SB off-ramp (proposed)

16. SR 242: Clayton Rd SB on-ramp
17. SR 242: Concord Ave SB on-ramp
18. SR 4: Port Chicago EB off-ramp
19. SR 4: Port Chicago EB on-ramp
20. SR 4: Willow Pass Rd EB off-ramp
21. SR 4: Willow Pass Rd EB on-ramp
22. SR 4: Port Chicago WB on-ramp
23. SR 4: Port Chicago WB off-ramp
24. SR 4: Willow Pass Rd WB on-ramp
25. SR 4: Willow Pass Rd WB off-ramp
26. SR 4: San Marco Rd EB off-ramp
27. SR 4: SB San Marco Rd WB on-ramp
28. SR 4: SB San Marco Rd EB on-ramp
29. SR 4: NB San Marco Rd WB on-ramp
30. SR 4: NB San Marco Rd EB on-ramp
31. SR 4: San Marco Rd WB off-ramp
32. SR 4: SB Bailey Rd EB off-ramp
33. SR 4: Bailey Rd WB on-ramp
34. SR 4: SB Bailey Rd WB off-ramp
35. SR 4: NB Bailey Rd EB off-ramp
36. SR 4: NB Bailey Rd WB off-ramp
37. SR 4: Bailey Rd EB on-ramp
38. SR 4: Railroad Ave WB on-ramp
39. SR 4: Railroad Ave EB off-ramp
40. SR 4: Railroad Ave EB on-ramp

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials

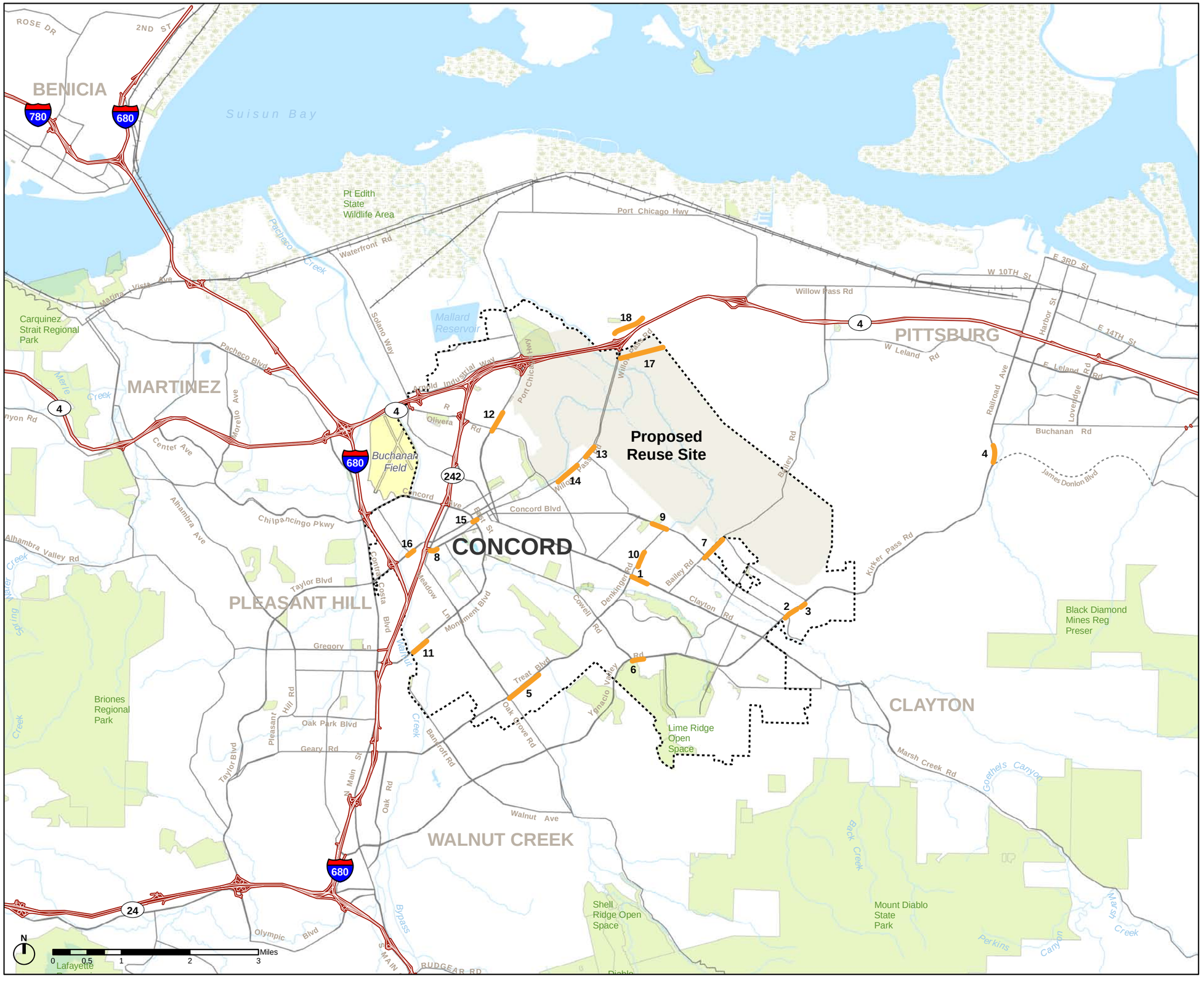
Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 14, 2009

Figure 4-3
Analysis Ramps



Legend

Segment Locations

1. Clayton Road east of Treat Boulevard
2. Kirker Pass Road east of Concord Boulevard
3. Kirker Pass Road south of Myrtle Drive
4. Kirker Pass Road north of James Donlon Boulevard
5. Treat Boulevard east of Oak Grove Road
6. Ygnacio Valley Road east of Cowell Road
7. Bailey Road east of Concord Boulevard
8. Clayton Road east of Market Street
9. Concord Boulevard west of Denkinger Road
10. Denkinger Road between Clayton Road and Concord Boulevard
11. Monument Boulevard west of Oak Grove Road
12. Port of Chicago Highway north of Olivera Road
13. Willow Pass Road north of Landana Drive
14. Willow Pass Road east of Farm Bureau Road
15. Willow Pass Road east of Galindo Street
16. Willow Pass Road between Diamond Boulevard and SR242
17. Avila Road east of Willow Pass Road
18. Evora Road east of Willow Pass Road

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

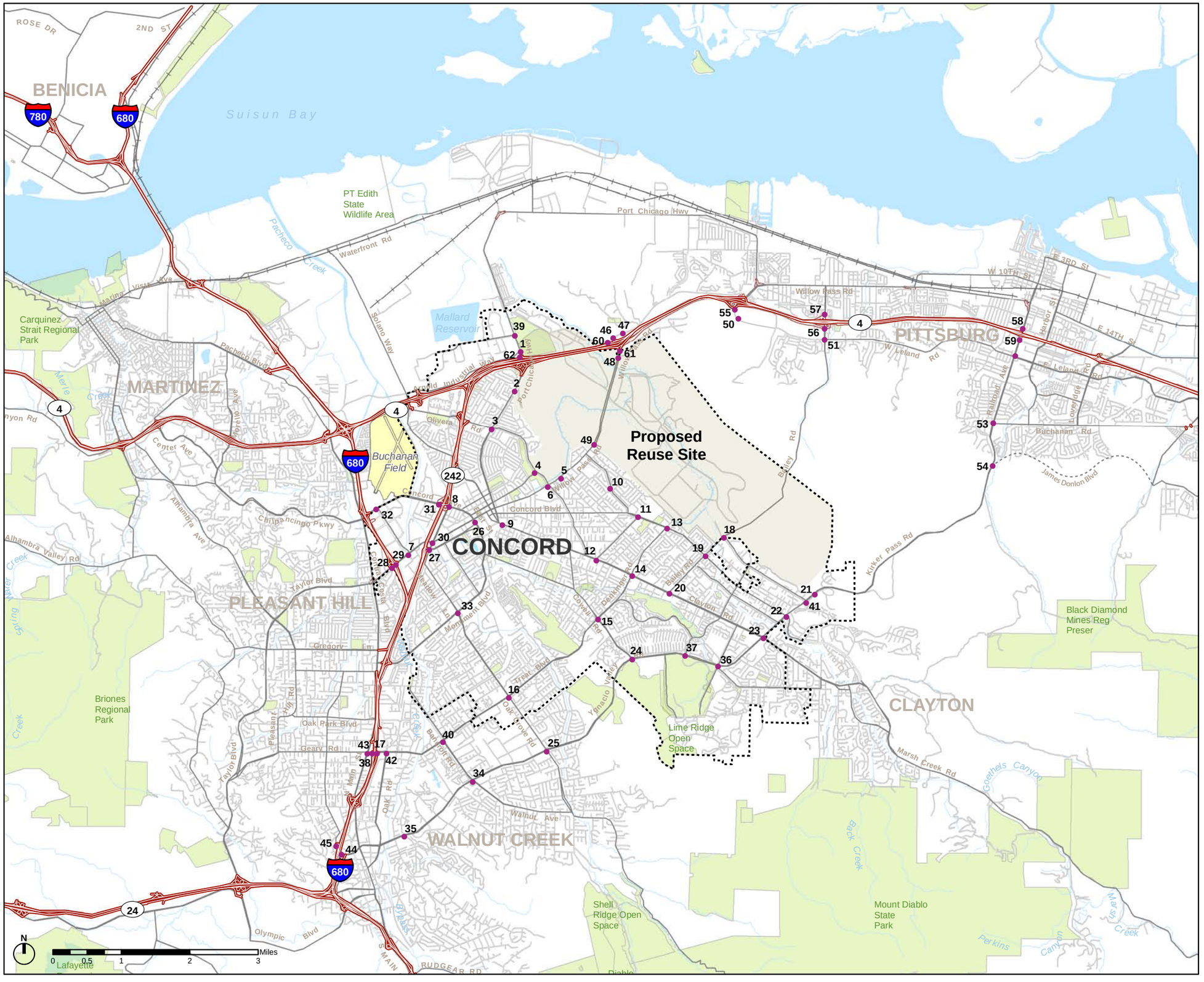
Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 13, 2009

Figure 4-4
Analysis Roadway Segments



Legend

- Intersection Locations

1. Arnold Industrial Way / Port Chicago Hwy
2. Port Chicago Hwy / Panoramic Dr
3. Port Chicago Hwy / Olivera Rd
4. Olivera Rd / Salvio St
5. Clayton Wy / Willow Pass Rd
6. Farm Bureau Rd / Willow Pass Rd
7. Diamond Blvd / Willow Pass Rd
8. Market St / Concord Av
9. Oakland Av / Clayton Rd
10. Beechwood Dr / Landana Dr
11. West St / Concord Blvd
12. West St / Clayton Rd
13. Denkinger Rd / Concord Blvd
14. Clayton Rd / Treat Blvd
15. Cowell Rd / Treat Blvd
16. Oak Grove Rd / Treat Blvd
17. Oak Rd / Treat Blvd
18. Bailey Rd / Myrtle Dr
19. Bailey Rd / Concord Blvd
20. Bailey Rd / Clayton Rd
21. Kirker Pass Rd / Clearbrook Dr
22. Kirker Pass Rd / Concord Blvd
23. Clayton Rd / Ygnacio Valley Rd
24. Cowell Rd / Ygnacio Valley Rd
25. Oak Grove Rd / Ygnacio Valley Rd
26. Galindo St / Willow Pass Rd
27. Market St / Willow Pass Rd
28. I-680 NB Ramp / Willow Pass Rd
29. I-680 SB Ramp / Willow Pass Rd
30. Market St / Clayton Rd
31. Commerce Av - SR242 SB / Concord Av
32. Diamond Blvd / Concord Av
33. Monument Blvd / Oak Grove Rd
34. Walnut Blvd / Ygnacio Valley Rd
35. Bancroft Rd / Ygnacio Valley Rd
36. Alberta Wy / Ygnacio Valley Rd
37. Ayers Rd / Ygnacio Valley Rd
38. North Main St / Geary Rd
39. Bates Av / Port Chicago Hwy
40. Bancroft Rd / Treat Blvd
41. Kirker Pass Rd / Myrtle Dr
42. Burskirk Ave-NB I-680 Off Ramp / Treat Blvd
43. North Main St / Sunnyvale Ave-SB I-680 Ramps
44. NB I-680 Off Ramp / Ygnacio Valley Rd
45. SB I-680 On Ramp / Ygnacio Valley Rd
46. Willow Pass Rd / Evora Rd (East)
47. Willow Pass Rd / Evora Rd (West)
48. Willow Pass Rd / Avila Rd
49. Bailey Rd / Willow Pass Rd
50. San Marco Blvd / W Leland Rd
51. Bailey Rd / W Leland Rd
52. Railroad Ave / W Leland Rd
53. Railroad Ave / Buchanan Rd
54. Kirker Pass Rd / James Donlon Blvd
55. San Marco Blvd-Willow Pass Road / SR 4 EB ramps
56. Bailey Rd / SR 4 EB ramps - BART access
57. Bailey Rd / SR 4 WB onramp - Canal Rd
58. Railroad Ave / SR 4 WB onramp - California Ave
59. Bailey Rd / SR 4 EB ramps
60. Willow Pass Rd / SR 4 WB ramps
61. Willow Pass Rd / SR 4 EB ramps
62. Port Chicago Hwy / SR 4 WB ramps

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials
- Local Street

Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 13, 2009

Figure 4-5
Analysis Intersections

Table 4–6: Level of Service and Volume-to-Capacity Ratio for Free-Flow Speed

Level of Service	Maximum v/c (70 mph)
A	0.32
B	0.53
C	0.74
D	0.90
E	1.00
F	Demand exceeds capacity

v/c = volume-to-capacity ratio

Source: Highway Capacity Manual 2000, 23-4

The existing LOS on the analysis freeway segments is shown in Table 4-7. The LOS calculation is based on the existing volumes, as shown in Table 4-1, and the LOS threshold in Table 4-6.

Table 4–7: Existing (2006) Peak Hour Level of Service on Freeway Segments

			Existing Conditions			
	Mainline Segment	Direction	AM		PM	
			v/c	LOS	v/c	LOS
	Interstate 680					
1	I-680 s/o Monument Blvd	NB	0.46	B	1.1	F
	I-680 s/o Monument Blvd	SB	0.81	D	0.6	C
2	I-680 n/o Monument Blvd	NB	0.37	B	0.9	E
	I-680 n/o Monument Blvd	SB	0.8	D	0.59	C
3	I-680 n/o SR 242	NB	0.75	D	1.8	F
	I-680 n/o SR 242	SB	1.2	F	0.89	D
4	I-680 n/o Willow Pass Rd	NB	0.41	B	0.95	E
	I-680 n/o Willow Pass Rd	SB	0.67	C	0.48	B
5	I-680 n/o Concord Av	NB	0.34	B	0.82	D
	I-680 n/o Concord Av	SB	0.66	C	0.49	B
6	I-680 n/o SR 4	NB	0.29	A	0.71	C
	I-680 n/o SR 4	SB	0.84	D	0.62	C
	State Route 242					
7	SR 242 n/o I-680	NB	0.33	B	0.92	E
	SR 242 n/o I-680	SB	0.83	D	0.57	C
8	SR 242 n/o Clayton Rd	NB	0.25	A	0.7	C
	SR 242 n/o Clayton Rd	SB	0.64	C	0.44	B
9	SR 242 n/o Concord Av	NB	0.31	A	0.85	D

			Existing Conditions			
	Mainline Segment	Direction	AM		PM	
			v/c	LOS	v/c	LOS
	SR 242 n/o Concord Av	SB	0.83	D	0.57	C
10	SR 242 n/o Grant Av	NB	0.29	A	0.81	D
	SR 242 n/o Grant Av	SB	0.81	D	0.56	C
11	SR 242 n/o Olivera Rd	NB	0.22	A	0.6	C
	SR 242 n/o Olivera Rd	SB	0.81	D	0.56	C
	State Route 4					
12	SR 4 e/o I-680	EB	0.8	D	0.92	E
	SR 4 e/o I-680	WB	1	E	0.78	D
13	SR 4 e/o Arnold Industrial Wy	EB	0.66	C	0.75	D
	SR 4 e/o Arnold Industrial Wy	WB	0.82	D	0.64	C
14	SR 4 e/o SR 242	EB	0.45	B	0.52	B
	SR 4 e/o SR 242	WB	1.13	F	0.88	D
15	SR 4 e/o Port Chicago Hwy	EB	0.75	D	0.85	D
	SR 4 e/o Port Chicago Hwy	WB	0.93	E	0.72	C
16	SR 4 e/o Willow Pass Rd	EB	0.59	C	0.68	C
	SR 4 e/o Willow Pass Rd	WB	0.92	E	0.72	C
17	SR 4 e/o San Marco Blvd	EB	0.38	B	0.75	D
	SR 4 e/o San Marco Blvd	WB	0.86	D	0.44	B
18	SR 4 e/o Bailey Rd	EB	0.39	B	0.61	C
	SR 4 e/o Bailey Rd	WB	0.61	C	0.39	B
19	SR 4 e/o Railroad Av	EB	0.48	B	0.58	C
	SR 4 e/o Railroad Av	WB	0.63	C	0.46	B

n/o = north of; s/o = south of; e/o = east of; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; v/c = volume-to-capacity ratio; LOS = level of service

The HCM basic freeway methodology does not apply to or take into account HOV lanes. Although a lower capacity may be appropriate for the HOV lane, the model forecasts assume the same capacity for the HOV lane and the mixed-flow lane, so no adjustment to the HOV lane capacity was applied.

Source: Dowling, 2009

All analysis freeway segments currently operate at LOS E or better except for two segments along I-680 and one segment of SR 4. The I-680 freeway segment to the north of the SR 242 junction operates at LOS F with v/c ratios exceeding 1.0 in the southbound direction during the AM peak hour and in the northbound direction during the PM peak hour. The I-680 segment to the south of Monument Boulevard also operates at LOS F in the northbound direction during the PM peak hour. SR 4 east of SR 242 operates at LOS F in the westbound direction during the AM peak hour.

Freeway Ramps

For freeway ramps, HCM procedures, as specified by Caltrans, were used to calculate the density[1] for each LOS threshold from A to F. First, the peak hour demand flow rate immediately upstream of a merge influence area or at the beginning of the deceleration lane at the point of divergence was calculated. In addition, several capacity values were computed to determine the critical capacity. The determining capacities are maximum total flow approaching a major diverge area on the freeway, maximum total flow departing from a merge or diverge area on the freeway, maximum total flow entering the ramp influence area, and maximum flow on a ramp. When demand flow is greater than the critical capacity, the LOS would be F. Otherwise, given a length of the acceleration lane or deceleration lane, the LOS was determined using the density of flow within the ramp influence area according to HCM procedures. Table 4-8 contains the LOS and density thresholds for merge and diverge areas.

Table 4–8: Level of Service and Density Thresholds for Merge and Diverge Areas

Level of Service	Density (pc/mi/ln)
A	≤ 10
B	> 10–20
C	> 20–28
D	> 28–35
E	> 35
F	Demand exceeds capacity

pc/mi/ln = passenger car per mile per lane

Source: Highway Capacity Manual 2000, page 25-4

For a single-lane ramp with a dedicated freeway lane, a density calculation is not used. The LOS was determined using the same approach for the basic freeway segments methodology. Given a ramp design speed and its flow volume, HCM speed flow curves were used to determine the LOS of the ramp (Highway Capacity Manual 2000, page 23-3). For single-lane ramps with a dedicated freeway lane, the HCM does not allow for LOS better than C.

The existing LOS on the analysis freeway ramp locations is shown in Table 4-9. The calculation uses the existing volumes, as shown in Table 4-2.

[1] Density is the number of vehicles on a roadway segment averaged over space, usually expressed as vehicles per mile or vehicles per mile per lane.

Table 4–9: Existing (2006) Peak Hour Level of Service on Freeway Ramps

		Existing Conditions					
		AM			PM		
		v/c	Density	LOS	v/c	Density	LOS
	Interstate 680						
1	Willow Pass Rd NB off-ramp	0.67	23.21	C	1.42	51.64	F
2	Willow Pass Rd NB on-ramp	0.32	n/a	C	0.53	n/a	C
3	Concord Av NB off-ramp	0.50	n/a	C	0.41	n/a	C
4	Concord Av Burnett Av NB on-ramp	0.28	9.26	A	0.74	25.56	C
5	Concord Av WB to NB on-ramp	0.31	10.07	B	0.79	27.48	C
6	Concord Av SB off-ramp	0.81	28.54	D	0.61	21.11	C
7	Concord Av WB to SB on-ramp	0.65	22.24	C	0.54	18.08	B
8	Concord Av EB to SB on-ramp	0.18	n/a	C	0.16	n/a	C
9	Willow Pass Rd SB off-ramp	0.38	14.95	B	0.29	10.74	B
10	Willow Pass Rd WB to SB on-ramp	0.61	20.81	C	0.48	16.26	B
11	Willow Pass Rd EB to SB on-ramp	0.65	22.21	C	0.55	18.75	B
	State Route 242						
12	Clayton Rd NB off-ramp	0.44	14.43	B	0.95	33.76	D
13	Concord Av EB to NB on-ramp	0.28	9.20	A	0.80	27.58	C
14	Concord Av WB to NB on-ramp	0.39	n/a	C	0.79	n/a	D
15	Concord Av SB off-ramp	0.54	17.85	B	0.37	12.29	B
16	Clayton Rd SB on-ramp	0.81	27.89	C	0.71	24.07	C
17	Concord Av SB on-ramp	0.63	21.76	C	0.46	15.65	B
	State Route 4						
18	Port Chicago Hwy EB off-ramp	0.65	27.05	C	0.80	32.84	D
19	Port Chicago Hwy EB on-ramp	0.62	25.10	C	0.95	36.42	E
20	Port Chicago Hwy WB on-ramp	1.22	45.82	F	1.01	38.33	F
21	Port Chicago Hwy WB off-ramp	0.86	35.29	E	0.63	26.60	C
22	Willow Pass Rd EB off-ramp	0.75	30.67	D	0.88	35.57	E
23	Willow Pass Rd EB on-ramp	0.14	n/a	C	0.3	n/a	C
24	Willow Pass Rd WB on-ramp	0.70	28.45	C	0.40	22.2	C
25	Willow Pass Rd WB off-ramp	0.52	n/a	C	0.18	n/a	C
26	San Marco Blvd EB off-ramp	0.24	n/a	C	0.707	n/a	D
27	San Marco Blvd SB to WB on-ramp	0.96	n/a	E	0.249	n/a	C
28	San Marco Blvd SB to EB on-ramp	0.25	12.46	B	0.45	19.70	B

		Existing Conditions					
		AM			PM		
		v/c	Density	LOS	v/c	Density	LOS
29	San Marco Blvd NB to WB on-ramp	0.52	21.96	C	0.27	13.09	B
30	San Marco Blvd NB to EB on-ramp	0.24	12.06	B	0.46	20.00	C
31	San Marco Blvd WB off-ramp	0.82	33.86	D	0.45	19.98	B
32	Bailey Rd SB from EB off-ramp	0.39	17.74	B	0.72	30.08	D
33	Bailey Rd WB on-ramp	0.48	20.48	C	0.29	14.21	B
34	Bailey Rd SB from WB off-ramp	0.14	n/a	C	0.13	n/a	C
35	Bailey Rd NB from EB off-ramp	0.11	n/a	C	0.45	n/a	C
36	Bailey Rd NB from WB off-ramp	0.57	24.60	C	0.43	19.33	B
37	Bailey Rd EB on-ramp	0.28	13.27	B	0.38	17.04	B
38	Railroad Av WB on-ramp	0.45	19.31	B	0.31	14.51	B
39	Railroad Av EB off-ramp	0.20	7.88	A	0.54	12.50	B
40	Railroad Av EB on-ramp	0.47	20.28	C	0.55	23.08	C

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; v/c = volume-to-capacity ratio; LOS = level of service; n/a = not applicable

Caltrans uses “Willow Pass Rd” as the label for the San Marco Boulevard ramps

Source: Caltrans; Dowling, 2009

The results indicate that ramps are currently operating at LOS F at three locations. The northbound off-ramp from I-680 to Willow Pass Road operates at LOS F during the PM peak hour, the westbound on-ramp from Port Chicago Highway to SR 4 operates at LOS F during both AM and PM peak hours, and the westbound on-ramp from Willow Pass Road to SR 4 also operates at LOS F during the AM peak hour.

Roadway Segments

LOS for roadway links was estimated using the Federal Department of Transportation methodology for roadway segment analysis. This methodology was applied for the Concord Urban Area General Plan EIR and is based on the HCM, which is generally accepted as standard practice for traffic engineering. This methodology uses peak hour traffic volumes to determine LOS for general planning applications, as shown in Table 4-10. The capacity of a roadway is based on the number of signalized intersections per mile, number of lanes, presence of left turn lanes and medians, and other factors from the HCM method. The volumes shown are the upper limit for that service level; therefore a peak hour volume greater than what is shown in LOS E would be LOS F.

Table 4–10: Generalized Peak Hour Two-Way Volumes for Urban Areas

Class I (less than 0.00 to 1.99 signalized intersections per mile)							
	Lanes	Divided	Level of Service				
			A	B	C	D	E
1	2	Undivided	**	400	1,310	1,560	1,610
2	4	Divided	460	2,780	3,300	3,390	**
3	6	Divided	700	4,240	4,950	5,080	**
4	8	Divided	890	5,510	6,280	6,440	**
Class II (2.00 to 4.50 signalized intersections per mile)							
	Lanes	**Divided**	**Level of Service**				
			A	**B**	**C**	**D**	**E**
5	2	Undivided	**	180	1,070	1,460	1,550
6	4	Divided	**	390	2,470	3,110	3,270
7	6	Divided	**	620	3,830	4,680	4,920
8	8	Divided	**	800	5,060	6,060	6,360
Class III (more than 4.5 signalized intersections per mile and not within primary City central business district)							
	Lanes	**Divided**	**Level of Service**				
			A	**B**	**C**	**D**	**E**
9	2	Undivided	**	**	500	1,200	1,470
10	4	Divided	**	**	1,180	2,750	3,120
11	6	Divided	**	**	1,850	4,240	4,690
12	8	Divided	**	**	2,450	5,580	6,060
Class IV (more than 4.5 signalized intersections per mile and within primary City central business district)							
	Lanes	**Divided**	**Level of Service**				
			A	**B**	**C**	**D**	**E**
13	2	Undivided	**	**	490	1,310	1,420
14	4	Divided	**	**	1,170	2,880	3,010
15	6	Divided	**	**	1,810	4,350	4,520
16	8	Divided	**	**	2,460	5,690	5,910

Source: http://www.dot.state.fl.us/planning/systems/sm/los/pdfs/tables-051707.pdf

The existing LOS for the analysis roadway segment locations is shown in Table 4-11. The calculation uses the existing volumes, as shown in Table 4-3, and the LOS threshold in Table 4-10.

Table 4–11: Existing Peak Hour Roadway Segment Level of Service

	Link	Location	Number of Lanes	Class	AM Peak	v/c	LOS	PM Peak	v/c	LOS
1	Clayton Rd	East of Treat Blvd	6	II	3,026	0.62	C	3,054	0.62	C
2	Kirker Pass Rd	East of Concord Blvd	6	II	1,998	0.41	C	2,410	0.49	C
3	Kirker Pass Rd	South of Myrtle Dr	6	II	2,003	0.51	C	2,406	0.49	C
4	Kirker Pass Rd	North of James Donlon Blvd Ext (future)	4	II	1,722	0.53	C	1,937	0.59	C
5	Treat Blvd	East of Oak Grove Rd	6	II	3,229	0.66	C	3,871	0.79	D
6	Ygnacio Valley Rd	East of Cowell Rd	4	I	3,299	0.97	C	3,830	1.13	F
7	Bailey Rd	East of Concord Blvd	2	I	1,947	1.21	F	1,733	1.08	F
8	Clayton Rd	East of Market St	6	III	1,972	0.42	D	2,556	0.54	D
9	Concord Blvd	West of Denkinger Rd	4	II	2,425	0.78	D	1,916	0.62	C
10	Denkinger Rd	Btw. Concord Blvd and Clayton Rd	2	II	863	0.56	C	612	0.39	C
11	Monument Blvd	West of Oak Grove Rd	6	II	2,601	0.80	D	2,960	0.91	D
12	Port Chicago Hwy	North of Olivera Rd	2	I	1,664	0.98	E	1,562	0.92	D
13	Willow Pass Rd	North of Landana Dr	2	I	1,924	1.20	F	1,991	1.24	F
14	Willow Pass Rd	East of Farm Bureau Rd	4	II	1,895	0.58	C	1,964	0.60	C
15	Willow Pass Rd	East of Galindo St	4	IV	1,574	0.52	D	1,912	0.64	D
16	Willow Pass Rd	Btw. Diamond Blvd and SR 242	6	IV	2,372	0.52	D	3,410	0.75	D
17	Avila Rd	East of Willow Pass Rd	2	I	108	0.08	A	62	0.05	A
18	Evora Rd	East of Willow Pass Rd	2	I	1,069	0.83	D	662	0.51	C

v/c = volume-to-capacity ratio; LOS = level of service

Source: Dowling, 2009

As shown in Table 4-11, three roadway segments currently have peak hour two-way volumes that exceed the capacity of the roadway and operate at LOS E or F, corresponding to the appropriate threshold:

- Ygnacio Valley Road east of Cowell Road (PM)
- Bailey Road east of Concord Boulevard (AM and PM)
- Willow Pass Road north of Landana Drive (AM and PM)

These roadways provide alternatives to the freeways through Concord. Ygnacio Valley Road with its continuation east as Kirker Pass Road provides regional connections from East Contra Costa to downtown Walnut Creek. Bailey Road connects Concord with Pittsburg to the east. Willow Pass Road east of Landana Drive is a two-lane roadway that provides access from SR 4 into downtown Concord.

Intersections

Signalized intersections were analyzed using the procedures developed for the CCTA (CCTA, 2006). The CCTA LOS concept measures the amount of traffic that a roadway or intersection can accommodate, based on maneuverability, driver dissatisfaction, and delay. LOS ranges are based on the v/c ratios for the signalized intersections shown in Table 4-12. For unsignalized intersection analysis, the methodology outlined in the Transportation Research Board's Highway Capacity Manual 2000 was applied. The unsignalized intersection LOS was based on average vehicle delay. The LOS ranges for unsignalized intersections are shown in Table 4-12. The existing peak hour LOS for the analysis intersections is shown in Table 4-13.

Table 4–12: Intersection Level of Service Definitions

Level of Service	Signalized Intersection v/c	Unsignalized Intersection Average Vehicle Delay (sec)
A	0.00–0.6	< 10
B	0.61–0.70	> 10 and < 15
C	0.71–0.80	> 15 and < 25
D	0.81–0.90	> 25 and < 35
E	0.91–1.00	> 35 and < 50
F	Varies*	> 50

* In general, v/c ratios cannot be greater than 1.00, unless the lane capacity assumptions are too low. Also, if future demand projections are considered for analytical purposes, a ratio greater than 1.00 might be obtained, indicating that the projected demand would exceed the capacity.

Source: Technical Procedures Update, Contra Costa Transportation Authority, July 19, 2006; Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2000

Table 4–13: Existing (2007–2008) Peak Hour Intersection Level of Service

			Existing Conditions			
			AM		PM	
	Intersection	Control	LOS	v/c or Delay (sec)	LOS	v/c or Delay (sec)
1	Arnold Industrial Way/Port Chicago Hwy	Signal	A	0.36	A	0.51
2	Port Chicago Hwy/Panoramic Dr	Signal	A	0.43	A	0.42
3	Port Chicago Hwy/Olivera Rd	Signal	B	0.69	D	0.82
4	Olivera Rd/Salvio St	One-way stop*	A	1.60	A	2.70
5	Clayton Way/Willow Pass Rd	One-way stop*	A	1.30	A	1.80
6	Farm Bureau Rd/Willow Pass Rd	Signal	A	0.58	B	0.70
7	Diamond Blvd/Willow Pass Rd	Signal	A	0.35	B	0.62
8	Market St/Concord Av	Signal	C	0.74	D	0.86
9	Oakland Av/Clayton Rd	Signal	A	0.52	B	0.67
10	Beechwood Dr/Landana Dr	All-way stop*	B	11.8	A	9.70
11	West St/Concord Blvd	Signal	A	0.53	A	0.45
12	West St/Clayton Rd	Signal	B	0.61	A	0.43
13	Denkinger Rd/Concord Blvd	Signal	A	0.58	A	0.54
14	Clayton Rd/Treat Blvd	Signal	B	0.64	C	0.71
15	Cowell Rd/Treat Blvd	Signal	D	0.86	C	0.75
16	Oak Grove Rd/Treat Blvd	Signal	F	1.33	E	0.93
17	Oak Rd/Treat Blvd	Signal	C	0.77	E	0.92
18	Bailey Rd/Myrtle Dr	One-way stop*	A	1.70	A	1.50
19	Bailey Rd/Concord Blvd	Signal	A	0.60	A	0.52
20	Bailey Rd/Clayton Rd	Signal	B	0.63	A	0.45
21	Kirker Pass Rd/Clearbrook Dr	Signal	A	0.47	A	0.46
22	Kirker Pass Rd/Concord Blvd	Signal	B	0.65	B	0.69
23	Clayton Rd/Ygnacio Valley Rd	Signal	A	0.57	B	0.62
24	Cowell Rd/Ygnacio Valley Rd	Signal	D	0.83	E	0.95
25	Oak Grove Rd/Ygnacio Valley Rd	Signal	C	0.78	D	0.89
26	Galindo St/Willow Pass Rd	Signal	A	0.55	C	0.75
27	Market St/Willow Pass Rd	Signal	A	0.56	B	0.64
28	I-680 NB Ramp/Willow Pass Rd	Signal	B	0.66	C	0.78
29	I-680 SB Ramp/Willow Pass Rd	Signal	A	0.55	A	0.49
30	Market St/Clayton Rd	Signal	B	0.63	B	0.65
31	Commerce Av - SR 242 SB/Concord Av	Signal	B	0.63	D	0.83
32	Diamond Blvd/Concord Av	Signal	A	0.53	C	0.71
33	Monument Blvd/Oak Grove Rd	Signal	A	0.51	A	0.57
34	Walnut Blvd/Ygnacio Valley Rd	Signal	C	0.78	E	1.00
35	Bancroft Rd/Ygnacio Valley Rd	Signal	D	0.90	C	0.70
36	Alberta Wy/Ygnacio Valley Rd	Signal	D	0.82	D	0.82

			Existing Conditions			
			AM		PM	
	Intersection	Control	LOS	v/c or Delay (sec)	LOS	v/c or Delay (sec)
37	Ayers Rd/Ygnacio Valley Rd	Signal	E	0.92	D	0.81
38	North Main St/Geary Rd	Signal	C	0.8	E	0.93
39	Bates Av/Port Chicago Hwy	Signal	A	0.52	C	0.74
40	Bancroft Rd/Treat Blvd	Signal	D	0.82	D	0.89
41	Kirker Pass Rd/Myrtle Dr	Signal	A	0.37	A	0.56
42	Buskirk Av - NB I-680 off-ramp/Treat Blvd	Signal	F	1.32	F	1.57
43	North Main St/Sunnyvale Av - SB I-680 ramps	Signal	E	0.93	C	0.79
44	NB I-680 off-ramp/Ygnacio Valley Rd	Signal	F	1.27	F	1.26
45	SB I-680 on-ramp/Ygnacio Valley Rd	Signal	B	0.61	A	0.53
46	Willow Pass Rd/Evora Rd (east) - SR 4 WB off-ramp	Signal	A	0.40	A	0.31
47	Willow Pass Rd/Evora Rd (west)	Signal	A	0.55	A	0.33
48	Willow Pass Rd/Avila Rd	One-way stop*	A	0.20	A	0.10
49	Bailey Rd/Willow Pass Rd	Signal	A	0.42	B	0.63
50	San Marco Blvd/W Leland Rd	Signal	A	0.52	A	0.28
51	Bailey Rd/W Leland Rd	Signal	B	0.60	A	0.45
52	Railroad Av/W Leland Rd	Signal	B	0.63	E	0.98
53	Railroad Av/Buchanan Rd	Signal	A	0.54	C	0.70
54	Kirker Pass Rd/James Donlon Blvd Ext (future intersection)	Signal	n/a	n/a	n/a	n/a
55	San Marco Blvd - Willow Pass Rd/SR 4 EB ramps	Signal	A	0.30	A	0.39
56	Bailey Rd/SR 4 EB ramps - BART access	Signal	A	0.44	F	1.12
57	Bailey Rd/SR 4 WB on-ramp - Canal Rd	Signal	A	0.54	B	0.60
58	Railroad Av/SR 4 WB on-ramp - California Av	Signal	A	0.54	A	0.58
59	Railroad Av/SR 4 EB ramps	Signal	A	0.53	B	0.60
60	Willow Pass Rd/SR 4 WB ramps	All-way stop*	C	19.9	B	13.00
61	Willow Pass Rd/SR 4 EB ramps	All-way stop*	D	26.1	B	14.50
62	Port Chicago Hwy/SR 4 WB ramps	Signal	A	0.49	A	0.47

* v/c denotes volume-to-capacity ratio and is used for signalized intersections; average vehicle delay in seconds is used for unsignalized intersections; LOS = level of service

The v/c ratios in Table 4-13 were calculated using the data shown in Appendix 4C and the LOS thresholds in Table 4-12.

Source: Dowling, 2009

As the LOS results in Table 4-13 indicate, six analysis intersections currently operate at LOS F levels:

1. Oak Grove Road and Treat Boulevard (AM peak hour)
2. Buskirk Avenue and I-680 northbound off-ramp and Treat Boulevard (AM and PM peak hours)
3. I-680 northbound off-ramp and Ygnacio Valley Road (AM and PM peak hours)
4. Bailey Road and SR 4 EB ramps - BART access (PM peak hour)
5. Market Street and Concord Avenue (AM and PM peak hours)
6. Walnut Boulevard and Ygnacio Valley Road (PM peak hour)

Except for the intersection of Bailey Road and Concord Boulevard, these intersections are located on regional routes, two of which are at freeway access ramps. The intersection of Bailey Road and Concord Boulevard is the first signalized intersection on Bailey Road from East County upon entering the City of Concord.

Traffic Service Objectives

In addition to LOS, TRANSPAC and TRANSPLAN have selected several additional TSOs to measure the effectiveness of regional freeways, arterial routes, and transit use. Freeways and arterials that are designated RRS are measured by peak hour travel speeds, delay index (DI), and average vehicle occupancy (AVO). In East County, the intersection LOS at signalized intersections on RRS and roadway LOS on Kirker Pass Road are applied as TSOs.

DI is used to measure travel congestion on a corridor. It compares the amount of time required to travel between two points during the peak hour and during non-congested, off-peak hours, which is proposes to be between 10:00 a.m. and 3:00 p.m. The TSOs set a target DI of 2.0 for the RRS (except for SR 4 east of SR 242), which means that the peak hour travel time is not more than twice the off-peak travel time. In Central County, t~~T~~he target is meant to be applied to a corridor; while individual segments may violate the target DI. In East County the target is applied to a segment.

According to the 2007 Traffic Service Objective Monitoring Report (CCTA, 2007), I-680 southbound and SR 242 southbound do not meet the DI or the average speed TSOs during the AM peak hour, while Ygnacio Valley Road from Oak Grove Road to Clayton Road and Evora Road exceed the target DI during the AM peak hour in the westbound direction, and Leland Road west of Bailey Road exceeds the target DI during the PM peak hour in the eastbound direction, as shown in Table 4-14. In terms of the AVO, the freeways do not meet the target 1.4 persons per vehicle, while the arterials, Clayton Road and Treat Boulevard, during the AM peak hour do not meet the target 1.2 persons per vehicle.

Table 4–14: Traffic Service Objectives Monitoring - 2007

	Route of Regional Significance	Dir.	Delay Index AM Peak	Delay Index PM Peak	Average Speed (mph) AM Peak	Average Speed (mph) PM Peak	AVO AM Peak	AVO PM Peak
1	I-680	NB	n/a	1.40	n/a	46.4	n/a	1.31
		SB	2.30	n/a	28.3	n/a	1.25	n/a
2	SR 4 from I-680 to SR 242	EB	n/a	2.0	n/a	32.5	*	n/a
		WB	1.7	n/a	38.2	n/a	n/a	*
3	SR 4 from SR 242 to Willow Pass Rd	EB	n/a	1.2	n/a	54.2	1.02*	n/a
		WB	1.9	n/a	34.2	n/a	n/a	1.07*
4	SR 4 from Bailey Rd to Loveridge Rd	EB	n/a	1.0	n/a	65	1.02*	n/a
		WB	1.3	n/a	n/a	n/a	n/a	1.07*
5	SR 242	NB	n/a	1.5	n/a	43.3	n/a	1.36
		SB	3.10	n/a	21.0	n/a	1.27	n/a
6	Clayton Rd from Treat Blvd to Ygnacio Valley Rd - Kirker Pass Rd	EB	1.31	1.44	26.87	24.38	1.16	n/a
		WB	1.37	1.21	25.70	29.13	n/a	1.33
7	Ygnacio Valley Rd from Oak Grove Rd to Clayton Rd	EB	1.10	1.14	40.77	39.36	1.21	n/a
		WB	2.81	1.07	15.99	42.05	n/a	1.21
8	Treat Boulevard from I-680 to Clayton Rd	EB	1.34	1.32	28.14	28.41	1.17	n/a
		WB	1.66	1.21	22.67	31.22	n/a	1.29
9	Kirker Pass Rd from Clayton Rd to TRANSPLAN boundary	EB	0.94	0.98	42.52	41.62	1.36	n/a
		WB	1.10	1.13	36.91	36.00	n/a	1.25
10	Evora Rd from Willow Pass Road to Willow Pass Rd (east)	EB	1.05	1.06	n/a	n/a	n/a	n/a
		WB	2.82	1.16	n/a	n/a	n/a	n/a
11	Willow Pass Rd from Evora Rd to Port Chicago Hwy	EB	1.04	1.32	n/a	n/a	n/a	n/a
		WB	1.12	1.16	n/a	n/a	n/a	n/a
12	Leland Rd from Woodhill Dr to Bailey Rd	EB	1.38	2.14	n/a	n/a	n/a	n/a
		WB	1.13	1.53	n/a	n/a	n/a	n/a
13	Leland Rd from Bailey to Railroad Av	EB	1.06	1.44	n/a	n/a	n/a	n/a
		WB	0.94	0.96	n/a	n/a	n/a	n/a
14	Buchanan Rd from Railroad to Somersville Rd	EB	1.16	1.87	n/a	n/a	n/a	n/a
		WB	1.82	1.21	n/a	n/a	n/a	n/a
15	Bailey Rd from Willow Pass Rd to Leland Rd	EB	0.96	0.93	n/a	n/a	n/a	n/a
		WB	1.04	1.29	n/a	n/a	n/a	n/a
16	Kirker Pass Rd from TRANSPAC to Contra Costa County boundary	EB	0.74	0.79	n/a	n/a	n/a	n/a
		WB	0.70	0.80	n/a	n/a	n/a	n/a
17	Railroad Ave from Pheasant Dr to Buchanan Rd	EB	1.63	1.81	n/a	n/a	n/a	n/a
		WB	1.09	0.91	n/a	n/a	n/a	n/a

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; Dir = direction; mph = miles per hour; AVO = average vehicle occupancy (measured in the peak direction only); n/a = specific TSO does not apply to the facility per the applicable Action Plan for the Routes of Regional Significance. Not all TSOs apply to all Routes of Regional Significance. Refer to Section 4.2.1.2 for more information on TSOs.

Specific TSO does apply to the facility per the applicable Action Plan for the Routes of Regional Significance. Not all TSOs apply to all Routes of Regional Significance. Refer to Section 4.2.1.2 for more information on TSOs.

* This AVO for SR 4 is based on observations between Willow Pass Road and Bailey Road. AVO is based on observations at a specific location on the corridor for the peak direction.

Source: CCTA, Draft 2007 TSO Monitoring Report, November 13, 2007, Table 17: Delay Index and Average Speed - AM Peak Hour, Table 18: Delay Index and Average Speed - PM Peak Hour, and Table 21: Vehicle Occupancy Rates

4.1.4 Transit

The transit system serving Contra Costa County is well-developed in the urbanized areas. Transit services in the study area include BART as well as County Connection and Tri-Delta Transit buses. Figure 4-6 shows the existing transit routes that pass through or are adjacent to ~~in~~ the study area.

BART provides rail service from three locations in the study area. The Concord BART Station is located on Oakland Avenue near the historic downtown. The North Concord/Martinez BART station is located on Port Chicago Highway at the terminus of Panoramic Drive, abutting the site. The Pittsburg/Bay Point Station, the terminus, is located on Bailey Road south of State Route 4. All three stations are along the Pittsburg/Bay Point line with direct service to downtown Oakland and downtown San Francisco. Service to Richmond, Fremont, Dublin/Pleasanton, the San Francisco International Airport, and the Oakland International Airport is available by transfer. Park-and-ride facilities, bicycle lockers, and County Connection and/or Tri-Delta Transit bus feeder services are provided at all three stations.

Bus service in Concord is provided by County Connection with 11 bus routes serving Concord. The Central Contra Costa Transit Authority (CCCTA) operates the County Connection buses. In addition to local service and BART feeder service, these lines link Concord with Walnut Creek, Martinez, Lafayette, Orinda, Clayton, Alamo, and San Ramon.

Tri-Delta Transit provides bus service in East Contra Costa County with 15 bus routes Monday through Friday and 3 on weekends and holidays. The Eastern Contra Costa Transit Authority operates Tri-Delta Transit buses, which serve Martinez, Pittsburg, Bay Point, Oakley, Antioch, Discovery Bay, Brentwood, Livermore, Dublin, and Pleasanton. Transit service types provided are local, commuter, BART feeders, door-to-door services for senior citizens and people with disabilities, and shuttle services for community events.

4.1.5 Pedestrian and Bicycle Network

Bicycle and walking travel are viable non-vehicular transportation modes in the City of Concord and Contra Costa County. Non-vehicular trips are made for both commuter and recreational trips. The existing multiuse trail network within the city and the county provide linkages to both local and regional trails, as well as to other transportation connections, such as the BART stations in Concord.

Bicycle routes and paths are typical examples of bicycle transportation facilities. Bicycle facilities are defined as the following three classes according to Chapter 1000 of the Caltrans Highway Design Manual:

- Class I: Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
- Class II: Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.
- Class III: Provides a right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.

The City of Concord currently has several Class I and Class III trails. Contra Costa County delineates its bikeway classification into “existing off-street” and “existing on-street” trails.

The City of Concord and Contra Costa County have identified a number of proposed multiuse trails in and around the project area. For the City of Concord, this includes additional Class I and Class III trails and additional off-street and on-street facilities for the county. The existing trail facilities for the project area and the area surrounding the project area are illustrated on Figure 4-7.

The Contra Costa Countywide Bike and Pedestrian Plan, adopted most recently in 2003, provides policy and infrastructure recommendations to improve bicycle and pedestrian facilities throughout the region. It is currently being updated to reflect current conditions and provide further guidance for improvements to the bicycle and pedestrian network.

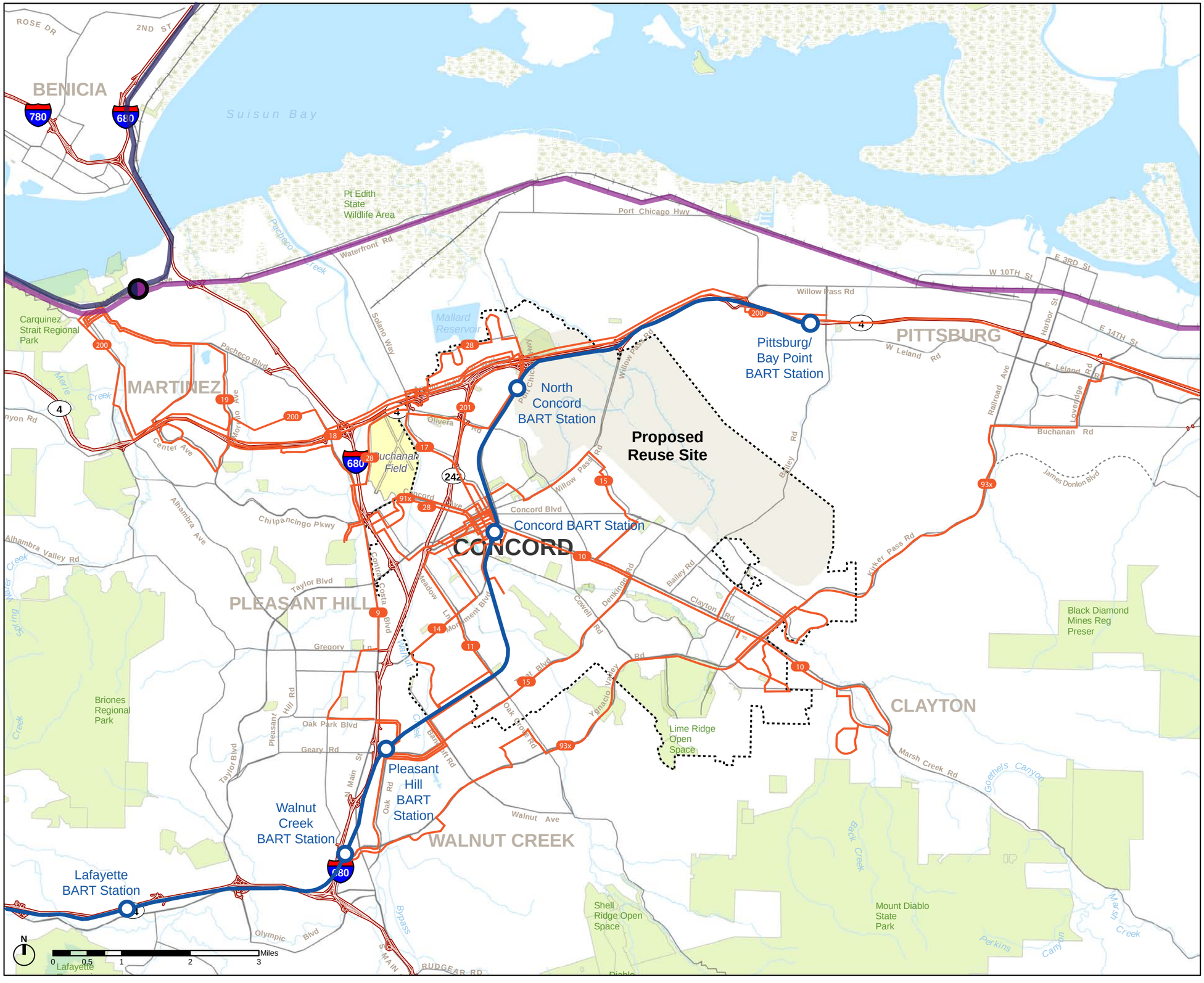
Contra Costa County currently has several Class I trails in the study area, including the Contra Costa Canal Trail and the Iron Horse Trail, as well as Class II Bike Lane and Class III Bike Route facilities. The existing ~~and proposed~~ bicycle facilities, according to the 2003 plan, are illustrated on Figure 4-7.

Sidewalks provide access and circulation in key pedestrian activity areas, such as the downtown area and around BART station areas. Jurisdictions in the study area typically require the installation of sidewalks for any new development. As reflected in the Concord Trails Master Plan (Wilbur Smith Associates, April 2003), opportunities exist to improve the convenience and safety of existing facilities, and to increase the extent of bicycle and pedestrian facilities throughout the city’s developed areas. The Concord Trails Master Plan, which was adopted in 2002, provides a framework for planning trails in Concord with the purpose of promoting the use of trails for recreation as well as an alternative mode of transportation. The Trails Master Plan includes recommended trail alignments and design guidelines. Within the site, the Trails Master Plan identifies several potential trail routes, including a connection to the Delta De Anza Trail and Class I collector trails that follow either rail lines or creeks that run through the site.

4.2 Standards of Significance

Criteria for determining the significant impacts associated with transportation have been developed based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines and any relevant agency thresholds. For purposes of this Environmental Impact Report (EIR), a significant impact may occur where an alternative would:

- Exceed a performance standard as described below in Section 4.2.1
- Not meet the transit ridership goals set by TRANSPAC in the 2000 Update to the Central County Action Plan, which is to increase transit trips by 2 percent per year by 2010 or not meet the goal set by TRANSPLAN in the 2000 Update to the East County Action Plan, which is to achieve a 25 percent increase in total East County public transit ridership by 2010 compared to 2000
- Conflict with existing and proposed pedestrian and bicycle facilities as identified on the Trails Master Plan



Legend

- Bus Transit Route
- BART Line
- BART Station
- Amtrak - Capitol Corridor
- Amtrak - San Joaquin
- Martinez Intermodal Terminal

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

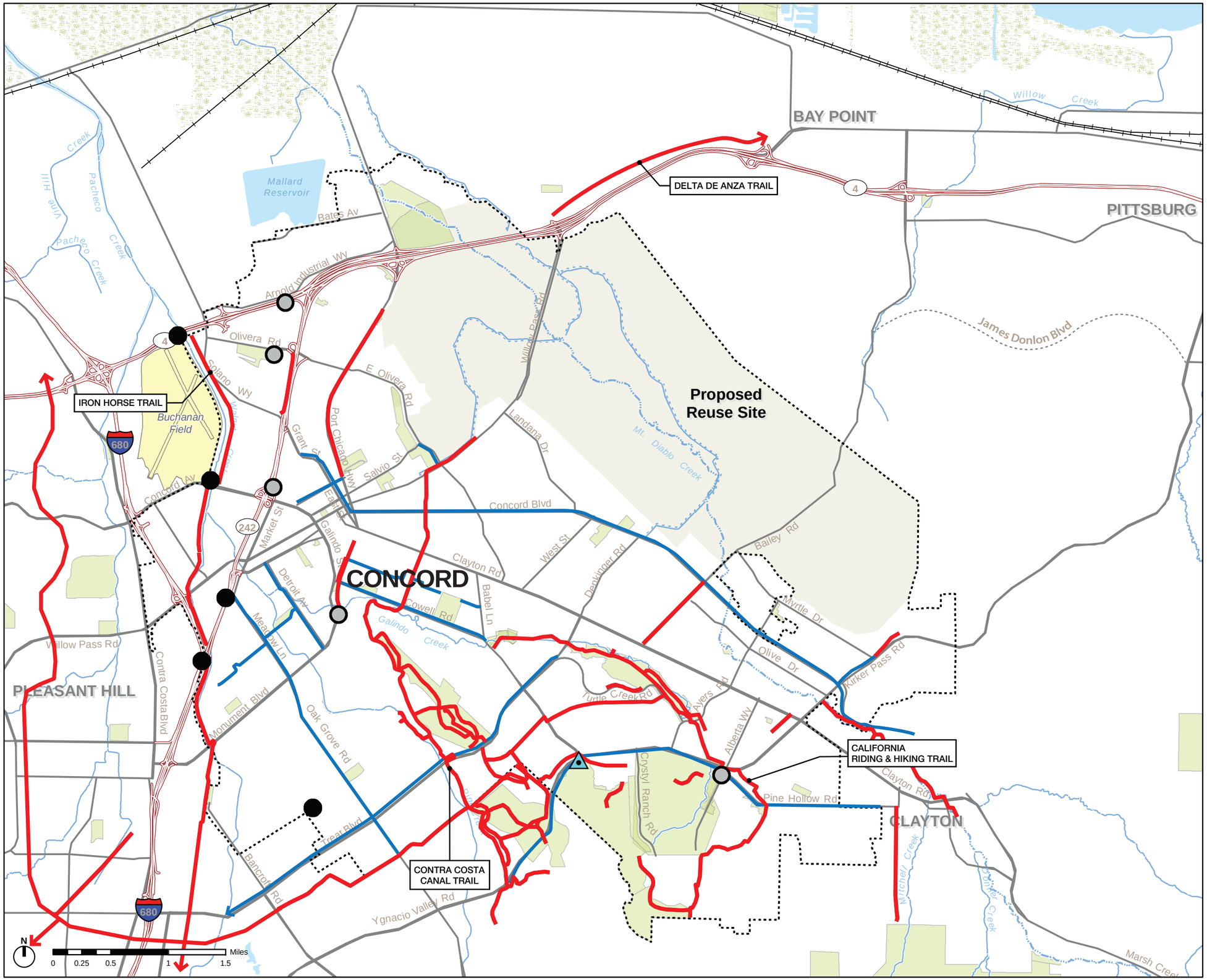
Notes & Sources

Sources: County Connection System Map(3/22/09), Amtrak, Tri-Delta Route Map (7/5/09), BART

Concord Community Reuse Plan

Revised August 13, 2009

Figure 4-6
Existing Transit Routes



Legend

- Existing Class 1 Trails
- Existing Class 3 Bike Routes
- Existing Over/Undercrossings
- Available Over/Undercrossings
- Existing Staging Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

Notes & Sources

Sources: Concord Trails Master Plan, 2003
Contra Costa Countywide Bicycle and Pedestrian Plan, 2003
East Bay Regional Park District, 2009

Concord
Community Reuse Plan

Revised August 20, 2009

Figure 4-7
Existing Trails Network

4.2.1 Performance Standards

4.2.1.1 Congestion Management Program Network

The 2007 update to the CMP applies to both alternatives with respect to analysis of freeway segments, corresponding ramps, and certain site analysis intersections. Adoption of either of the two alternatives may have a significant impact on the analysis location if the LOS is degraded below specific CMP thresholds for the applicable locations that are shown in Tables 4-16, 4-17, and 4-19.

4.2.1.2 Action Plan for Routes of Regional Significance

As described in Section 4.1.2.3, this analysis is performed using the TSOs from the previously adopted Action Plans for RRS for central and East County. See Appendix 4A for the results of the analysis for the MTSOs under the recently adopted and soon-to-be-adopted Action Plans. The MTSOs generally set forth less stringent thresholds for acceptable operations than those established by the TSOs. Therefore, as shown in Appendix 4A, fewer impacts are identified for the alternatives when analyzed using the MTSOs. The analysis presented in this chapter, which relies on the TSOs, is a more conservative analysis.

The Central County Action Plan and East County Action Plan for RRS apply to both alternatives with respect to analysis freeway segments and certain analysis roadway segments. Adoption of either of the two alternatives may have a significant impact on an analysis location if the target TSOs established in the Central County or East County Action Plan for RRS, as shown in Tables 4-~~14~~15 and 4-20, is exceeded.

TRANSPAC also has set an objective to increase transit ridership by 2 percent in 2010, while TRANSPLAN included an increase in transit ridership on SR 4 of 25 percent by 2010 compared to 2000.

In Central County, TSOs are intended to be evaluated on a corridor basis while in East County, TSOs are evaluated by segment. A corridor as a whole might meet the TSOs while an individual segment of that corridor might not. However, this analysis reports the TSOs for certain individual segments. The CCTA model forecasts provide congested speeds by link that can be used to estimate congested travel times for the DI as well as average vehicle occupancy by link, which can be aggregated by corridor. However, the congested speeds from the model are based on roadway segment forecast volumes and roadway capacities that do not account for the delays at intersections due to signals on arterial roadways. As a result, the TSOs from the model are not necessarily comparable to those monitored in the field (and reported in Table 4-~~15~~14). The segment-based TSOs in this EIR provide the relative differences between the two alternatives as compared with the existing conditions to determine the impacts, and this approach was also used for developing the General Plan.

Table 4–15: Traffic Service Objectives for Routes of Regional Significance

	Route of Regional Significance	Delay Index	Average Speed (mph)	Average Vehicle Occupancy (persons per vehicle)	Level Of Service
1	Regional freeways (I-680, SR 4, SR 242), except segments 2 and 3, below	2.0	30	1.4	n/a
2	SR 4 east of SR 242 to TRANSPLAN boundary	< 2.5	24	1.4	n/a
3	SR 4 freeway in East County	< 2.5	n/a	1.2	n/a
3	Central County arterial routes	2.0	15	1.2	n/a
4	East County arterial routes, except segments 5 and 6 below	2.0	n/a	n/a	Mid-D
5	Bailey Rd north of W Leland Rd	2.0	n/a	n/a	E
6	Kirker Pass Rd from TRANSPAC boundary	2.0	n/a	n/a	Mid-E

mph = miles per hour; LOS = level of service; DI = delay index

Source: Contra Costa Transportation Authority, Action Plans for Routes of Regional Significance

4.2.1.3 Central Business District, North Concord/Martinez BART Station Area, and Transit Routes

Concord's General Plan Polic~~y~~ies GM-1.3.1 ~~and T-1.1.4 aa~~ppli~~es~~y~~s~~ to basic routes (non-CMP and non-RRS). Adoption of either of the two alternatives may have a significant impact on basic roadway segments and intersections (non-RRS and non-CMP) in the Central Business District, North Concord/Martinez BART Station area, and on transit routes (i.e., locations serving two or more transit routes), if the LOS is degraded below LOS E. Specific General Plan thresholds for the applicable locations are shown in Tables 4-18 and 4-19.

4.2.1.4 Basic Routes

Concord's General Plan Policy GM-1~~P~~.3.1 applies to basic routes (non-CMP and non-RRS). Adoption of either of the two alternatives may have a significant impact on basic roadway segments and intersections (non-RRS and non-CMP) outside the Central Business District, North Concord/Martinez BART Station area, but not on transit routes, if the LOS is degraded below LOS D. Specific General Plan thresholds for the applicable locations are shown in Tables 4-18 and 4-19.

Tables 4-16 through 4-~~19~~ 20 list each site analysis location by facility type and show the specific impact thresholds that apply to each location. However, Tables 4-16 through 4-~~19~~ 20 do not show analysis results; analysis results are in Tables 4-22 through 4-27.

Table 4–16: Summary of Impact Thresholds for Freeways

	Mainline Segment	Direction	CMP LOS
	Interstate Highway (I) 680		
1	I-680 s/o Monument Blvd	NB	F
	I-680 s/o Monument Blvd	SB	F
2	I-680 n/o Monument Blvd	NB	F

	Mainline Segment	Direction	CMP LOS
	I-680 n/o Monument Blvd	SB	F
3	I-680 n/o SR 242	NB	E
	I-680 n/o SR 242	SB	F
4	I-680 n/o Willow Pass Rd	NB	E
	I-680 n/o Willow Pass Rd	SB	F
5	I-680 n/o Concord Av	NB	E
	I-680 n/o Concord Av	SB	F
6	I-680 n/o SR 4	NB	F
	I-680 n/o SR 4	SB	F
	State Route 242		
7	SR 242 n/o I-680	NB	E
	SR 242 n/o I-680	SB	F
8	SR 242 n/o Clayton Rd	NB	E
	SR 242 n/o Clayton Rd	SB	F
9	SR 242 n/o Concord Av	NB	E
	SR 242 n/o Concord Av	SB	F
10	SR 242 n/o Grant Av	NB	E
	SR 242 n/o Grant Av	SB	F
11	SR 242 n/o Olivera Rd	NB	E
	SR 242 n/o Olivera Rd	SB	F
	State Route 4 (SR 4)		
12	SR 4 e/o I-680	EB	E
	SR 4 e/o I-680	WB	E
13	SR 4 e/o Arnold Ind Wy	EB	E
	SR 4 e/o Arnold Ind Wy	WB	E
14	SR 4 e/o SR 242	EB	F
	SR 4 e/o SR 242	WB	F
15	SR 4 e/o Port Chicago Hwy	EB	F
	SR 4 e/o Port Chicago Hwy	WB	F
16	SR 4 e/o Willow Pass Rd	EB	F
	SR 4 e/o Willow Pass Rd	WB	F
17	SR 4 e/o San Marco Blvd	EB	F
	SR 4 e/o San Marco Blvd	WB	F
18	SR 4 e/o Bailey Rd	EB	F
	SR 4 e/o Bailey Rd	WB	F
19	SR 4 e/o Railroad Av	EB	F
	SR 4 e/o Railroad Av	WB	F

CMP = Congestion Management Program; LOS = level of service; NB = northbound; SB = southbound; EB = eastbound; WB = westbound; n/o = north of; s/o = south of; e/o = east of

Source: Central Contra Costa Transit Authority, Contra Costa County Congestion Management Program, 2007

Table 4–17: Impact Thresholds for Ramps

	Freeway Ramp Location	CMP LOS
	Interstate Highway (I) 680	
1	Willow Pass Rd NB off-ramp	E
2	Willow Pass Rd NB on-ramp	E
3	Concord Av NB off-ramp	E
4	Concord Av Burnett NB on-ramp	E
5	Concord Av WB to NB on-ramp	E
6	Concord Av SB off-ramp	F
7	Concord Av WB to SB on-ramp	F
8	Concord Av EB to SB on-ramp	F
9	Willow Pass Rd SB off-ramp	F
10	Willow Pass Rd WB to SB on-ramp	F
11	Willow Pass Rd EB to SB on-ramp	F
	State Route (SR) 242	
12	Clayton Rd NB off-ramp	E
13	Concord Av EB to NB on-ramp	E
14	Concord Av WB to NB on-ramp	E
15	Concord Av SB off-ramp	F
16	Clayton Rd SB on-ramp	F
17	Concord Av SB on-ramp	F
	State Route (SR) 4	
18	Port Chicago Hwy EB off-ramp	F
19	Port Chicago Hwy EB on-ramp	F
20	Port Chicago Hwy WB on-ramp	F
21	Port Chicago Hwy WB off-ramp	F
22	Willow Pass Rd EB off-ramp	F
23	Willow Pass Rd EB on-ramp	F
24	Willow Pass Rd WB on-ramp	F
25	Willow Pass Rd WB off-ramp	F
26	San Marco Blvd EB off-ramp	F
27	SB San Marco Blvd WB on-ramp	F
28	SB San Marco Blvd EB on-ramp	F
29	NB San Marco Blvd WB on-ramp	F
30	NB San Marco Blvd EB on-ramp	F
31	San Marco Blvd WB off-ramp	F
32	SB Bailey Rd EB off-ramp	F
33	Bailey Rd WB on-ramp	F
34	SB Bailey Rd WB off-ramp	F

	Freeway Ramp Location	CMP LOS
35	NB Bailey Rd EB off-ramp	F
36	NB Bailey Rd WB off-ramp	F
37	Bailey Rd EB on-ramp	F
38	Railroad Av WB on-ramp	F
39	Railroad Av EB off-ramp	F
40	Railroad Av EB on-ramp	F

CMP = Congestion Management Program; LOS = level of service; NB = northbound; SB = southbound; EB = eastbound; WB = westbound

Source: Contra Costa Transportation Authority, Contra Costa County Congestion Management Program, 2007

Table 4–18: Impact Thresholds for Roadway Segments

	Link	Location	CBD/ BART/ Transit Route	Basic Route	Other
1	Clayton Rd	East of Treat Blvd	E		
2	Kirker Pass Rd	East of Concord Blvd			D
3	Kirker Pass Rd	South of Myrtle Dr			D
4	Kirker Pass Rd	North of James Donlon Blvd Ext			E
5	Treat Blvd	East of Oak Grove Rd	E		
6	Ygnacio Valley Rd	East of Cowell Rd	E		
7	Bailey Rd	East of Concord Blvd		D	
8	Clayton Rd	East of Market St	E		
9	Concord Blvd	West of Denkinger Rd	E		
10	Denkinger Rd	Between Clayton Rd and Concord Blvd	E		
11	Monument Blvd	West of Oak Grove Rd	E		
12	Port Chicago Hwy	North of Olivera Rd	E		
13	Willow Pass Rd	North of Landana Dr		D	
14	Willow Pass Rd	East of Farm Bureau Rd	E		
15	Willow Pass Rd	East of Galindo St	E		
16	Willow Pass Rd	Between Diamond Blvd and SR 242	E		
17	Avila Rd	East of Willow Pass Rd		D	
18	Evora Rd	East of Willow Pass Rd		D	

CBD = Central Business District

Source: City of Concord, Urban Area General Plan; Contra Costa Transportation Authority, Growth Management Program; Central Contra Costa Transit Authority, Congestion Management Program

Table 4–19: Impact Thresholds for Intersections

	Intersection	Control	CMP	CBD/ BART/ Transit Route	RRS or Basic Route
1	Arnold Industrial Way/Port Chicago Hwy	Signal		E	
2	Port Chicago Hwy/Panoramic Dr	Signal		E	
3	Port Chicago Hwy/Olivera Rd	Signal		E	
4	Olivera Rd/Salvio St	One-way stop			D
5	Clayton Way/Willow Pass Rd	One-way stop		E	
6	Farm Bureau Rd/Willow Pass Rd	Signal		E	
7	Diamond Blvd/Willow Pass Rd	Signal		E	
8	Market St/Concord Av	Signal		E	
9	Oakland Av/Clayton Rd	Signal		E	
10	Beechwood Dr/Landana Dr	All-way stop		E	
11	West St/Concord Blvd	Signal		E	
12	West St/Clayton Rd	Signal		E	
13	Denkinger Rd/Concord Blvd	Signal		E	
14	Clayton Rd/Treat Blvd	Signal	E	E	
15	Cowell Rd/Treat Blvd	Signal	E	E	
16	Oak Grove Rd/Treat Blvd	Signal	F	E	
17	Oak Rd/Treat Blvd	Signal	E		
18	Bailey Rd /Myrtle Dr	One-way stop			D
19	Bailey Rd/Concord Blvd	Signal		E	
20	Bailey Rd/Clayton Rd	Signal	E	E	
21	Kirker Pass Rd/Clearbrook Dr	Signal	E		
22	Kirker Pass Rd/Concord Blvd	Signal	E	E	
23	Clayton Rd/Ygnacio Valley Rd	Signal	E	E	
24	Cowell Rd/Ygnacio Valley Rd	Signal	F	E	
25	Oak Grove Rd/Ygnacio Valley Rd	Signal	F		
26	Galindo St/Willow Pass Rd	Signal		E	
27	Market St/Willow Pass Rd	Signal		E	
28	I-680 NB ramp/Willow Pass Rd	Signal		E	
29	I-680 SB ramp/Willow Pass Rd	Signal		E	
30	Market St/Clayton Rd	Signal		E	
31	Commerce Av - SR 242 SB/Concord Av	Signal		E	
32	Diamond Blvd/Concord Av	Signal		E	
33	Monument Blvd/Oak Grove Rd	Signal		E	
34	Walnut Blvd/Ygnacio Valley Rd	Signal	F		
35	Bancroft Rd/Ygnacio Valley Rd	Signal	F		

	Intersection	Control	CMP	CBD/ BART/ Transit Route	RRS or Basic Route
36	Alberta Wy/Ygnacio Valley Rd	Signal	F	E	
37	Ayers Rd/Ygnacio Valley Rd	Signal	E	E	
38	North Main St/Geary Rd	Signal	F		
39	Bates Av/Port Chicago Hwy	Signal		E	
40	Bancroft Rd/Treat Blvd	Signal	F		
41	Kirker Pass Rd/Myrtle Dr	Signal	E		
42	Buskirk Av - NB I-680 off-ramp/Treat Blvd	Signal	E		
43	North Main St/Sunnyvale Av - SB I-680 ramps	Signal	F		
44	NB I-680 off-ramp/Ygnacio Valley Rd	Signal	E		
45	SB I-680 on-ramp/Ygnacio Valley Rd	Signal	E		
46	Willow Pass Rd/Evora Rd (east) - SR 4 WB off-ramp [in Pittsburg]	Signal			D
47	Willow Pass Rd/Evora Rd (west) [at project site]	Signal			D
48	Willow Pass Rd/Avila Rd	One-way stop			D
49	Bailey Rd/Willow Pass Rd	Signal			E
50	San Marco Blvd/W Leland Rd	Signal			D
51	Bailey Rd/W Leland Rd	Signal			E
52	Railroad Av/W Leland Rd	Signal			D
53	Railroad Av/Buchanan Rd	Signal			D
54	Kirker Pass Rd/James Donlon Blvd Ext [future extension of James Donlon Blvd]	Signal			E
55	San Marco Blvd - Willow Pass Rd/SR 4 EB ramps	Signal			D
56	Bailey Rd/SR 4 EB ramps - BART access	Signal			E
57	Bailey Rd/SR 4 WB on-ramp - Canal Rd	Signal			E
58	Railroad Av/SR 4 WB on-ramp - California Av	Signal			D
59	Railroad Av/SR 4 EB ramps	Signal			D
60	Willow Pass Rd/SR 4 WB ramps	All-way stop			D
61	Willow Pass Rd/SR 4 EB ramps	All-way stop			D
62	Port Chicago Hwy/SR 4 WB ramps	Signal		E	

CMP = Congestion Management Program; CBD = Central Business District; RRS = Route of Regional Significance

Source: City of Concord, Urban Area General Plan; Central Contra Costa Transit Authority, Growth Management Program; Central Contra Costa Transit Authority, Congestion Management Program

Table 4–20: Impact Thresholds for Routes of Regional Significance

	Roadway	Location	Adopted Action Plans TSO		
			Avg Speed	Delay Index	AVO
	Central County		(mph)		
1	Clayton Rd	East of Treat Blvd	15	2.0	1.2
2	Kirker Pass Rd	East of Concord Blvd	15	2.0	1.2
3	Treat Blvd	East of Oak Grove Rd	15	2.0	1.2
4	Ygnacio Valley Rd	East of Cowell Rd	15	2.0	1.2
5	I-680	South of Monument Blvd	30	2.0	1.4
6	I-680	North of Monument Blvd	30	2.0	1.4
7	I-680	North of SR 242	30	2.0	1.4
8	I-680	North of Willow Pass Rd	30	2.0	1.4
9	I-680	North of Concord Av	30	2.0	1.4
10	I-680	North of SR 4	30	2.0	1.4
11	SR 242	North of I-680	30	2.0	1.4
12	SR 242	North of Willow Pass Rd	30	2.0	1.4
13	SR 242	North of Concord Av	30	2.0	1.4
14	SR 242	North of Solano Way	30	2.0	1.4
15	SR 242	North of Olivera Rd	30	2.0	1.4
16	SR 4	East of I-680	30	2.0	1.4
17	SR 4	East of Solano Way	30	2.0	1.4
18	SR 4	East of SR 242	24	2.5	1.4
19	SR 4	East of Port Chicago Hwy	24	2.5	1.4
20	SR 4	East of Willow Pass Rd	24	2.5	1.4
	East County				
21	SR 4	East of San Marco Blvd	n/a	2.5	1.2
22	SR 4	East of Bailey Rd	n/a	2.5	1.2
23	SR 4	East of Railroad Av	n/a	2.5	1.2
24	Kirker Pass Rd	East of James Donlon Blvd Ext	n/a	2.0	n/a
25	Railroad Av	North of Buchanan Rd	n/a	2.0	n/a
26	Bailey Rd (proposed)	South of W Leland Rd	n/a	2.0	n/a
27	Bailey Rd	North of W Leland Rd	n/a	2.0	n/a
28	Buchanan Rd	East of Railroad Av	n/a	2.0	n/a
29	Evora Rd	West of Willow Pass Rd (Pittsburg)	n/a	2.0	n/a
30	James Donlon Blvd Ext	East of Kirker Pass Rd	n/a	2.0	n/a
31	Leland Rd	West of Railroad Av	n/a	2.0	n/a
32	Leland Rd	West of Bailey Road	n/a	2.0	n/a
33	Leland Rd (proposed)	East of San Marco Blvd	n/a	2.0	n/a
34	Avila Rd (proposed)	West of San Marco Blvd	n/a	2.0	n/a
35	Willow Pass Rd	East of Evora Rd	n/a	2.0	n/a

mph = miles per hour; AVO = average vehicle occupancy; n/a = not applicable
Source: Central Contra Costa Transit Authority, Action Plans for Routes of Regional Significance

4.3 Potential Transportation Impacts

This section begins with a description of assumptions that have been incorporated in the analysis of potential transportation impacts. For the purpose of this program-level analysis, the project-specific impacts of the project alternatives were analyzed by comparing the Preferred Alternative and the Concentration and Conservation Alternative to existing conditions. In describing these impacts, the conditions existing at the time the Notice of Preparation (NOP) was issued (Existing Conditions) are used as a baseline from which to describe the transportation effects of each of the alternatives (in conjunction with other expected regional growth). A discussion of cumulative impacts, which compares the effects of each of the alternatives against the 2030 No Project Alternative, appears in Chapter 17.

CEQA Guidelines, section 15125, subdivision (a) provides that "the physical environmental conditions in the vicinity of the project, as they exist at the time the NOP is published," will "*normally* constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." (Italics added.) This formulation reflects longstanding CEQA case law holding generally that existing conditions, rather than some hypothetical future scenario, should be the basis for determining the significance of impacts. (See, e.g., *Environmental Planning and Information Council v. County of El Dorado* [1982] 131 Cal.App.3d 350, 352 [*EPIC*]; and *Christward Ministry v. Superior Court* [1986] 184 Cal.App.3d 180, 186–187 [*Christward Ministry*].) The primary underlying legal principle set forth in these cases is that the use of a future scenario as an impact baseline should be avoided where the practical consequence of such an approach would be to artificially understate the true environmental consequences of proposed projects.

Based on these legal principles, it is common practice in many EIRs, even those for long-term land use plans as opposed to discrete development projects, to analyze an "Existing Plus Project" traffic impact scenario, in which the proposed project is superimposed upon existing conditions to determine the project's impacts as compared to today's setting. For many project-level analyses of specific development proposals, this approach to transportation impact identification not only comports with the abovementioned legal principles, but also makes practical sense and provides decision-makers with useful information.

However, in the case of a long-range planning process like the one being undertaken for the reuse plan, which will be developed and implemented over a period of many years, the conventional "Existing Plus Project" transportation analysis approach may not be logical nor useful, and can even be confusing to decision-makers and the general public. Because such plans may take as long as 20 to 30 years to build out, in the real world there is often no plausible factual scenario in which all of the traffic associated with build-out will be serviced by roads and other transportation facilities as they exist today or in the recent past without improvement, as typically a number of capacity-increasing transportation improvements are programmed and funded and thus almost certainly will be built during that 20- to 30-year build-out period.

In such factual situations, the "Existing Plus Project" analysis tends to grossly overstate the actual impacts of proposed long-term plans, and thus provides decision-makers and the public with unreliable information. Although CEQA case law instructs agencies not to

understate the impacts of projects (see, e.g., *Citizens to Preserve the Ojai v. County of Ventura* (1985) 176 Cal.App.3d 421, 431), nothing in CEQA requires an agency to go out of its way to use an exaggerated "worst-case" analysis (see *Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 373). Thus, because CEQA Guidelines, section 15125, subdivision (a) contemplates some situations in which existing conditions are not the appropriate baseline, the City here has opted to follow a different approach in order to provide the most accurate impact assessment for the public and City decision-makers. As explained below, this approach does not dispense with the use of "existing conditions" as a baseline for some purposes, but nevertheless avoids the artificial "Existing Plus Project" approach in which a lead agency assumes that a long-term plan would be built out on an existing transportation grid with no changes in the surrounding region occurring in the meantime.

Specifically, the impacts analyzed in this chapter, though using existing conditions as a baseline, do not employ a standard "Existing Plus Project" approach because, in addition to impacts resulting from either of the alternatives, the impacts of other foreseeable regional growth are reflected in the impact conclusions. In other words, the project reuse alternatives were analyzed under a future 2030 condition and therefore traffic related to other development that will occur between now and 2030 is incorporated into the traffic model. For that reason, the approach is very conservative, and tends to overstate the actual impacts of the alternatives compared to what a pure "Existing Plus Project" approach would yield. The discussion, though yielding useful information for consideration by City decision-makers and members of the public, is less accurate and authoritative, however, than the cumulative impact analysis that appears in Chapter 17, as the latter analysis reflects the City's best judgment about how the impacts of the alternatives would actually unfold over time, while surrounding regional growth also continues, and while reasonably foreseeable planned and programmed improvements are also put into place.

As stated above, adjustments were made to the model to reflect the alternative concepts. For the Preferred Alternative, Concentration and Conservation Alternative, and 2030 No Project Alternative, the land use assumptions for the City of Concord (outside the CNWS) are consistent with those used to develop the traffic analysis of the Concord Urban Area General Plan. However, the assumptions for the rest of Contra Costa County were updated to the more recent ABAG Projections 2005, resulting in updated 2030 No Project Alternative traffic projections when compared to the General Plan. The model was run for the year 2030 without any of the alternative reuse concepts (2030 No Project Alternative) as well as with the two alternatives.

The section includes a description of the forecasting model methodology, the street network improvements incorporated into the 2030 No Project Alternative model forecast analysis, and the intersection improvements incorporated into the analysis of the two alternative reuse concepts. The results of the operations analysis are presented in Tables 4-25 through 4-30. A list of all potential alternative reuse concepts' impacts follows the tables with the potential impacts organized in the following manner:

4.3.1 Transportation Impacts of a Specific Alternative (First the Preferred Alternative, Followed by the Concentration and Conservation Alternative)

4.3.1.1 Potentially Significant Transportation Impacts That Remain Significant after Mitigation

Of the potentially significant impacts that remain significant after mitigation, project-specific significant impacts (described below) are presented first, followed by the contributing significant impacts (described below), accompanied by an explanation why the application of a standard resulted in a determination that the impact would be significant.

- Project-specific significant impacts: Of the instances where the applicable significance standard, as described in Section 4.2, has been exceeded, the significant impacts of the specific alternative reuse concept are presented first. These are impacts for which Existing Conditions did not exceed the threshold, but adding traffic from the specific alternative resulted in exceedance of the threshold. For intersections and roadway segments where the acceptable LOS is F, and therefore there is no standard for an unacceptable LOS, the impact was considered a project-specific significant impact if the specific alternative resulted in a worse condition compared to Existing Conditions based on the measure being applied (i.e., for intersections, if the v/c increased with the specific alternative reuse concept). There are two types of project-specific significant impacts:

    a. The significance threshold is *not* exceeded under Existing Conditions, but the specific alternative resulted in an exceedance of the threshold and the specific alternative worsens the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in a worse condition based on the measure being applied (i.e., for intersections, if the v/c increased with the specific alternative reuse concept). These contributing significant impacts are highlighted in yellow in Tables 4-25 through 4-30.

    b. The significance threshold is *not* exceeded under Existing Conditions, but the threshold is exceeded in the future; however, the specific alternative either improves or does not contribute to the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in either the same or an improved condition based on the measure being applied (i.e., for intersections, if the v/c increased with the specific alternative reuse concept). While these impacts are identified under the project-specific impact heading because the threshold will be exceeded in the future, these impacts are not actually attributable to the project and do not require mitigation. They are highlighted in light green in Tables 4-25 through 4-30.

Contributing significant impacts: Of the instances where the applicable significance standard, as described in Section 4.2, has been exceeded under Existing Conditions, the contributions made by the specific alternative reuse concept are presented second. There are two types of contributing significant impacts:

a. The significance threshold is exceeded under Existing Conditions and the specific alternative contributes to (worsens) the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in a worse condition based on the measure being applied (i.e., for intersections, if the v/c increased with the specific alternative reuse concept). These contributing significant impacts are highlighted in orange in Tables 4-25 through 4-30.

b. The significance threshold is exceeded under Existing Conditions, but the specific alternative either improves or does not contribute to the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in either the same or an improved condition based on the measure being applied (i.e., for intersections, if the v/c increased with the specific alternative reuse concept). These impacts are not attributable to the project and do not require mitigation. They are highlighted in bright blue in Tables 4-25 through 4-30.

4.3.1.2 Potentially Significant Transportation Impacts That Are Less Than Significant after Mitigation

Of the potentially significant impacts that are less than significant after mitigation, project-specific significant impacts (as described above) are presented first, followed by the contributing significant impacts (as described above), accompanied by an explanation why the application of a standard resulted in a determination that the impact would be significant. Mitigation measures are discussed and the result after the mitigation is presented.

4.3.1.3 Less Than Significant Transportation Impacts of a Specific Alternative

Impacts that are less than significant are presented last. Impacts that are considered less than significant are impacts for which the specific alternative contributes traffic to site analysis locations that do not exceed the thresholds described in Section 4.2 for either Existing Conditions or the specific alternative in the year 2030. Mitigation measures are not presented for impacts that are less than significant. Impacts that are considered less than significant are set forth in bold in Tables 4-25 through 4-30, but are not shaded.

Locations where the specific alternative would result in a condition that exceeds the threshold, but results in less traffic or an improvement in the measure being applied when compared to Existing Conditions, are neither significant nor less than significant impacts and are neither shaded nor set forth in bold in Tables 4-25 through 4-30.

4.3.2 Transportation Impacts of the 2030 No Project Alternative

4.3.2.1 Potentially Significant Transportation Impacts of the 2030 No Project Alternative

Impacts that are significant are presented first, accompanied by an explanation why the application of a standard resulted in a determination that the impact would be significant. Impacts are determined by comparing the 2030 No Project Alternative to Existing Conditions.

Impacts that are considered to be significant are shaded gray and set forth bold in Tables 4-25 through 4-30. Mitigation measures are set forth. Where the impacts will not be significant after mitigation, the result after the mitigation is presented.

4.3.2.2 Less Than Significant Transportation Impacts of the 2030 No Project Alternative

Impacts that are less than significant are presented last. Impacts that are considered less than significant are impacts for which the 2030 No Project Alternative contributes traffic to site analysis locations that do not exceed the thresholds described in Section 4.2 for either the existing condition or the 2030 No Project Alternative. Mitigation measures are not presented for impacts that are less than significant. Impacts that are considered less than significant are shown in bold and are not shaded in Tables 4-25 through 4-30.

Locations where the 2030 No Project Alternative exceeds the threshold, but results in less traffic or an improvement in the measure being applied when compared to the existing condition, are neither significant nor less than significant impacts, and are neither shaded nor shown in bold in Tables 4-25 through 4-30.

4.3.3 Model Forecast Methodology

The transportation analysis was prepared using the CCTA Decennial Model. The latest model databanks were modified to reflect the 2030 No Project Alternative and the two alternatives in the year 2030. The modifications included land use and socioeconomic inputs as well as roadway and transit networks for the site.

For the 2030 No Project Alternative, the land use assumptions and transportation network improvements were modified to reflect the General Plan inside Concord, while maintaining the Projections 2005 land use allocations for areas outside of Concord and the roadway and transit networks from the financially constrained CCTA scenario. This analysis is conservative because the land uses included in this model for the site (i.e., residential and employment uses) are in addition to the ABAG Projections 2005. That is, the employment and residences that could be developed at this site as a result of the two alternatives do not replace any forecasted employment and residential growth elsewhere in the County or the region.

The CCTA Model reflects the density of development, diversity of jobs and housing, and accessibility to other activity destinations. However, the model may not fully quantify the effects of the “smart growth” policies (e.g., mixed use, higher densities, compact development, and pedestrian-oriented design) on trip generation rates and mode choice. Research conducted for the U.S. Environmental Protection Agency (EPA, 2008) has shown that density (population and employment per square mile), diversity (ratio of jobs to housing), design (pedestrian environment variables, including street grid density, completeness of sidewalk system, and route directness), and destinations (accessibility to other activity concentrations) can reduce per capita vehicle trip generation and total VMT. The following adjustments w~~h~~ere made to the CCTA model based on review of local data sources, including the U.S. Census CTPP journey-to-work data for the City of Concord, and the travel patterns and characteristics from the Pleasant Hill TOD survey and Bay Area

Travel Survey (BATS), to adjust the transit sensitivity to the transit-oriented development (TOD) proposed as a part of each of the two alternatives:

- The traffic analysis zones (TAZs) around the North Concord/Martinez BART Station at the site were split into smaller dense zones to represent TOD. This change allows for a more sensitive analysis and helps capture a more reasonable distribution of trips within a pedestrian-oriented landscape.
- Edits were made to walk and drive access connectors for each zone to the North Concord/Martinez BART Station and all the transit lines at the site.
- The transit/highway travel time weight variables were adjusted to reflect those used for the Walnut Creek BART Station.

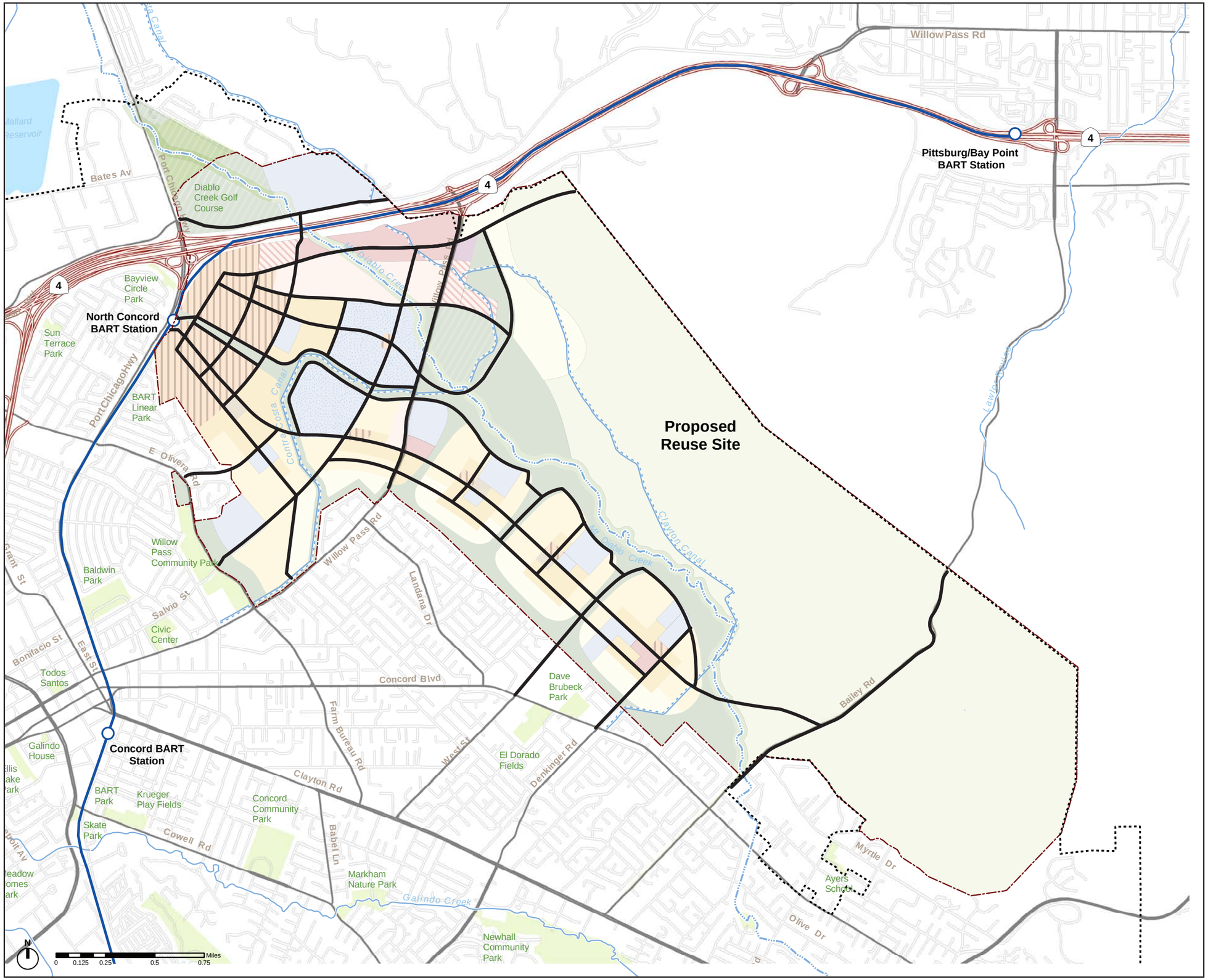
Each TAZ surrounding the North Concord/Martinez BART Station reflects the demographic and travel patterns for similar TOD areas within Central County (i.e., Pleasant Hill), as well as observed survey data such as the Journey-to-Work reports (Federal Highway Administration). The transit and auto weights from the TOD zones at the Walnut Creek BART Station were applied as best representatives of the zone sizes and development around the central Contra Costa BART stations to those being proposed at the North Concord/Martinez BART Station. BATS, the Pleasant Hill TOD survey, and U.S. Census CTPP journey-to-work data were used to estimate the existing work and non-work trip distribution for the Pleasant Hill BART Station, and the trip distribution patterns for the North Concord TOD zones were adjusted to reflect a similar pattern.

In addition to the CCTA model, the Urbemis model was run for each alternative. The results of the Urbemis analysis are included in Appendix 4D. This is for informational purposes only, as the Urbemis model does not provide impact information at specific locations and cannot therefore be used to determine whether a threshold is exceeded at a specific location. Additionally, the California Air Pollution Control Officers Association (CAPCOA) states:

> When a traffic study has been prepared for the project, the user must overwrite default trip length and trip rates in Urbemis to match the total number of trips and vehicle mile traveled (VMT) contained in the traffic study to successfully conduct a project-specific model run. Urbemis is recommended as a calculation tool to combine the transportation study (if available) and EMFAC emission factors for mobile-sources.
>
> CAPCOA, CEQA & Climate Change, January 2008, page 60

4.3.3.1 On-Site Roadway Network

The on-site roadway network modeled for the alternatives is shown on Figures 4-8 and 4-9. The model forecasts include morning and evening peak hour traffic volumes on the roadway network.



Legend

Proposed Onsite Roadway Network

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

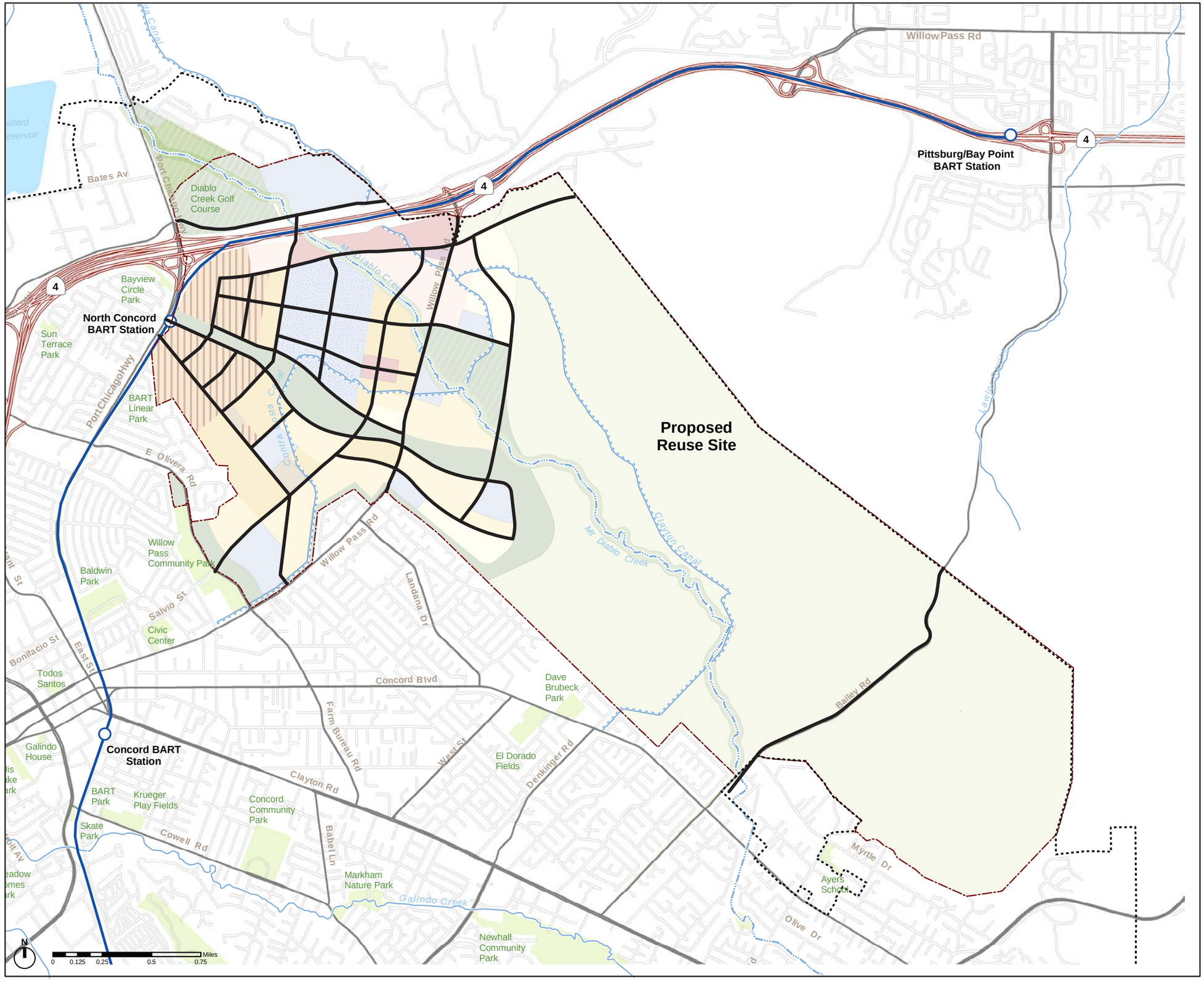
Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 24, 2009

Figure 4-8
Preferred Alternative
Proposed Roadway Network



Legend

Proposed Onsite Roadway Network

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

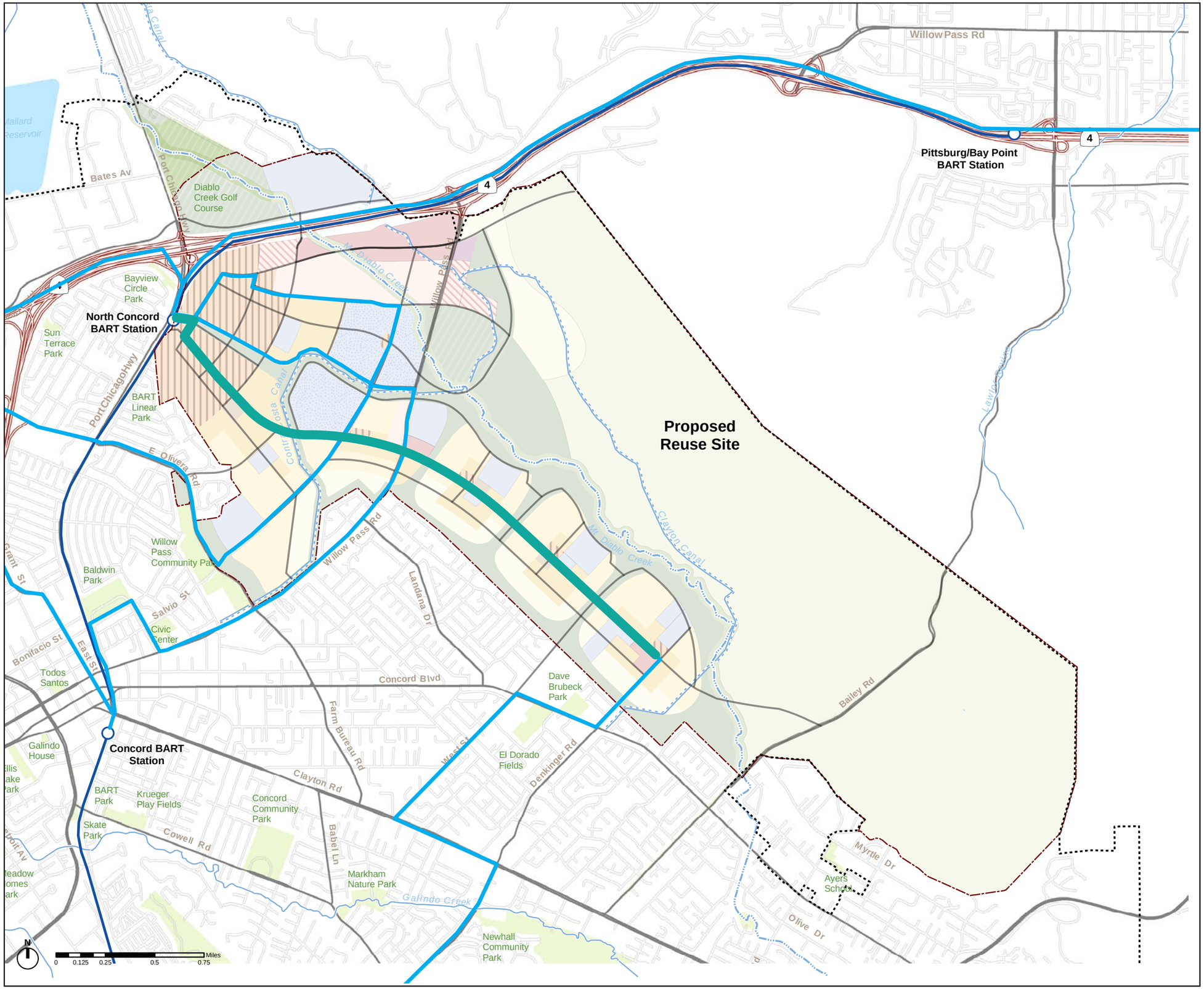
Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 24, 2009

Figure 4-9
Concentration and Conservation Alternative Proposed Roadway Network



Legend

- Proposed Onsite Roadway Network
- Site Serving Local Transit Network
- High Capacity Transit Network

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
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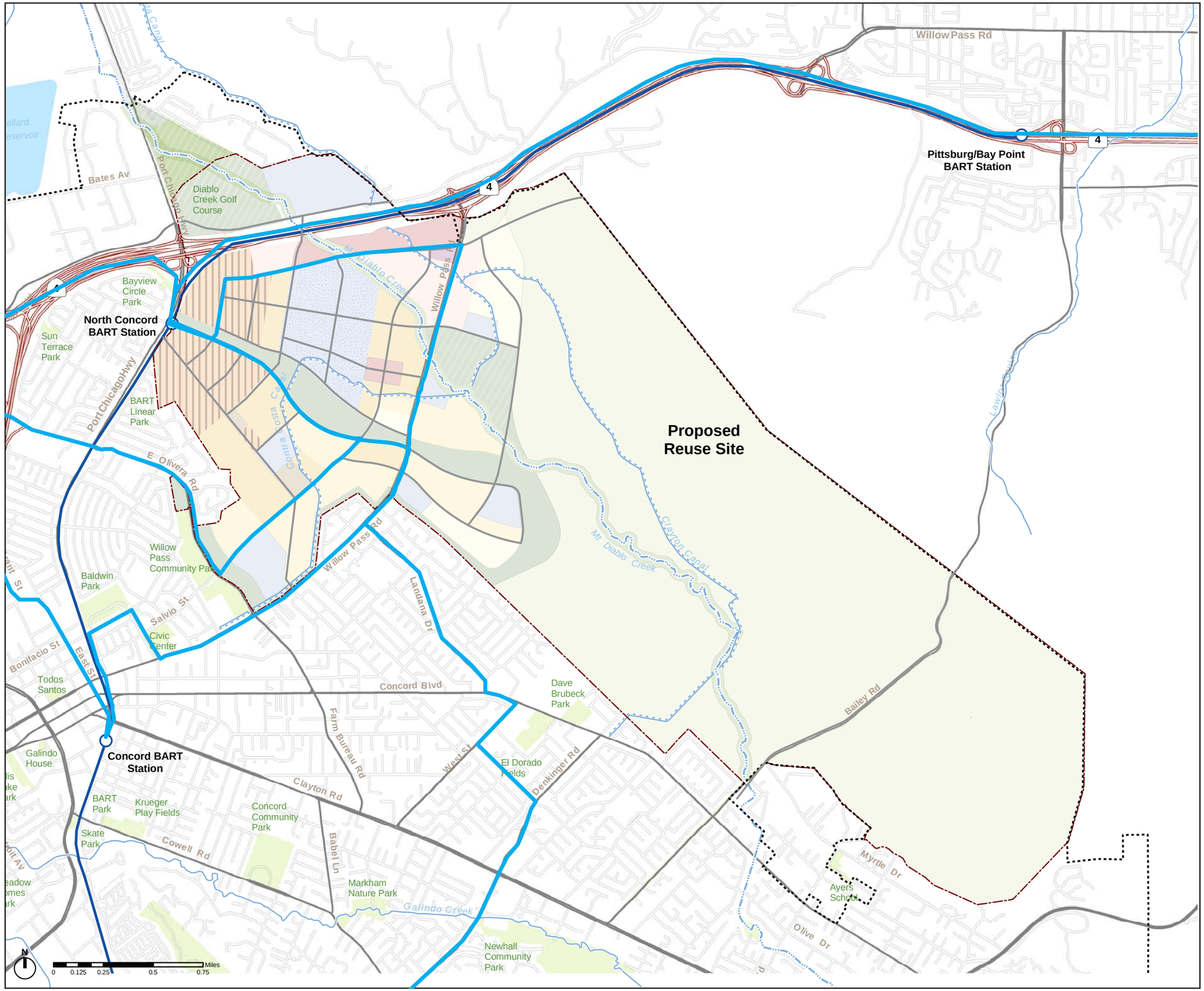
Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 24, 2009

Figure 4-10
Preferred Alternative
Proposed Transit Network



Legend

- Proposed Onsite Roadway Network
- Site Serving Local Transit Network

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
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Base Map

- Concord City Limit
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- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Source: Arup 2009

Concord Community Reuse Plan

Revised August 24, 2009

Figure 4-11
Concentration and Conservation Alternative Proposed Transit Network

4.3.3.2 On-Site Transit Network

The proposed transit network for both alternatives includes additional bus service and extension of existing bus service into the CNWS. The Preferred Alternative includes a high-capacity (e.g., more frequent service with further stop spacing) bus line connecting the Villages directly to the North Concord/Martinez BART Station. The Preferred Alternative and the Concentration and Conservation Alternative include several local bus lines connecting new development on the CNWS with major destinations such as downtown Concord and other BART stations. The proposed transit networks are shown on Figures 4-10 and 4-11.

4.3.3.3 On-Site Bicycle and Pedestrian Network

The proposed multiuse trail network for the CCRP Preferred Alternative identifies Class I trail facilities that provide both commuter and recreational access for all bicyclists and pedestrians. The trails link the different areas within the project to one another, as well as provide recreational access through the open space areas. Beyond the project area boundaries, the proposed trail network connects to existing and other City and County proposed trail networks. This creates a continuous trail network for both local and regional access to and from the project area.

The proposed multiuse trail network does not outline any Class II or Class III facilities. This level of detail will be determined during future planning efforts.

The proposed multiuse trail network for the Preferred Alternative is illustrated on Figures 4-12 and 4-13.

4.3.4 Assumptions about Potential Impacts with Respect to Transportation

Potential traffic impacts on the transportation system were analyzed based on the scenarios listed below.

- Existing Conditions
- 2030 No Project Alternative
- Preferred Alternative and Concentration and Conservation Alternative in the year 2030

As individual projects are proposed for the site in the future, specific traffic impact studies will be required to determine the individual projects' traffic impacts and the trigger/timing of improvements and mitigation measures. In addition to future specific plans, future planning activities include a Concord General Plan Amendment Package (Area Plan, Climate Action Plan, and related amendments to establish consistency with the 2030 Urban Area General Plan). The General Plan Amendment Package will incorporate the City's plans for the Concord Naval Weapons Station into the General Plan. The Area Plan will outline necessary implementation activities including preparation of designs and standards for future development and~~,~~ financing and phasing studies. The financing and phasing studies will be performed on the entire site and project fees will be based on an AB 1600 study for the entire site. A project list for the AB 1600 study and Area Plan implementation activities will be developed collaboratively with affected jurisdictions and the City of Concord will

consider requests for additional analysis locations. Further, the ~~project sponsor w~~City of Concord will work with affected jurisdictions to identify additional mitigation measures that would facilitate a reasonable mitigation plan, if necessary.

The City of Concord shall implement transportation demand management strategies to mitigate transportation impacts rather than mitigating impacts through increased capacity (e.g., adding lanes to roadways and intersections) in support of national, state, regional, and local policies to reduce greenhouse gas emissions through reduced auto travel and increased transit, bicycle, and walk trips. The transportation demand management (TDM) measures will be identified and adopted through an amendment to the Concord General Plan.

Major street improvements planned or programmed for Concord and surrounding communities and included in the model assumptions for the 2030 No Project Alternative and the two alternatives in the year 2030 are listed below and shown on Figure 4-14:

1. I-680/Marina Vista Interchange modifications.
2. Bates Avenue: Widen to four lanes from Arnold Industrial Way to Mason Circle.
3. Port Chicago Highway: Widen to four lanes from Bates Avenue north to the Union Pacific Railroad (UPRR) crossing.
4. Evora Road: Widen from Willow Pass to Pomo Street ~~and extend to Port Chicago Highway~~.
5. West Leland Road Extension and Avila Road widening.
6. Pacheco Boulevard: Widen to four lanes north of SR 4.
7. SR 4 and I-680 connector ramps and high-occupancy vehicle (HOV) connection.
8. Marsh Drive: Widen to four lanes from Center Avenue to Concord city limit.
9. Panoramic Drive: Four lane extension of Panoramic Drive from North Concord BART Station to Willow Pass Road.
10. Willow Pass Road: Widen to four lanes between Landana Drive and SR 4.
11. Galaxy Way Gap Closure: Construct a bridge over Walnut Creek to close the gap in Galaxy Way.
12. Commerce Avenue Extension: Extend existing two-lane arterial.
13. Waterworld Parkway ~~bridge~~Bridge over Walnut Creek: Construct a two-lane bridge with bicycle lanes over Walnut Creek connecting Waterworld Parkway with Meridian Park Boulevard.
14. Clayton Road/SR 242 Interchange: New northbound on-ramp and new southbound off-ramp.
15. Meadow Lane: Widen to four lanes between Monument Boulevard and Clayton Road.
16. Monument Boulevard: Widen to six lanes from Systron Drive to Cowell Road.

17. Concord Boulevard: Widen to four lanes from 6th Street to Farm Bureau Road.
18. Farm Bureau Road: Widen to four lanes between Willow Pass Road and Clayton Road.
19. Denkinger Road: Widen to four lanes between Clayton Road and Concord Boulevard.
20. Cowell Road: Widen to four lanes between Monument Boulevard and Treat Boulevard.
21. I-680 northbound HOV lane from North Main Street to SR 242 and I-680 southbound HOV lane from North Main Street to Livorna Road.
22. Ygnacio Valley Road: Widen to six lanes between Cowell Road and Michigan Boulevard.
23. Kirker Pass Road: Add climbing lane from Clearbrook Drive to Pittsburg city limit.
24. James Donlon Boulevard Extension to Kirker Pass Road.
25. SR 4 additional lane eastbound and westbound between SR 242 and I-680.

Future studies will be conducted to determine specific improvements needed at the SR 4/Willow Pass Road interchange. Model assumptions for this analysis include the existing interchange configuration with signals at the ramps (to replace the existing all-way stops).

In addition to the above improvements, the following intersections are modeled with improvements in place for the 2030 No Project Alternative and for the two alternatives in the year 2030.

The improvements in Concord are programmed in the Capital Improvement Program (CIP) and are planned under No Project Alternative conditions. Future development that would add traffic to these intersections would be required to contribute its fair share of the costs to construct these improvements. See Appendix 4A for intersection geometries reflecting these improvements.

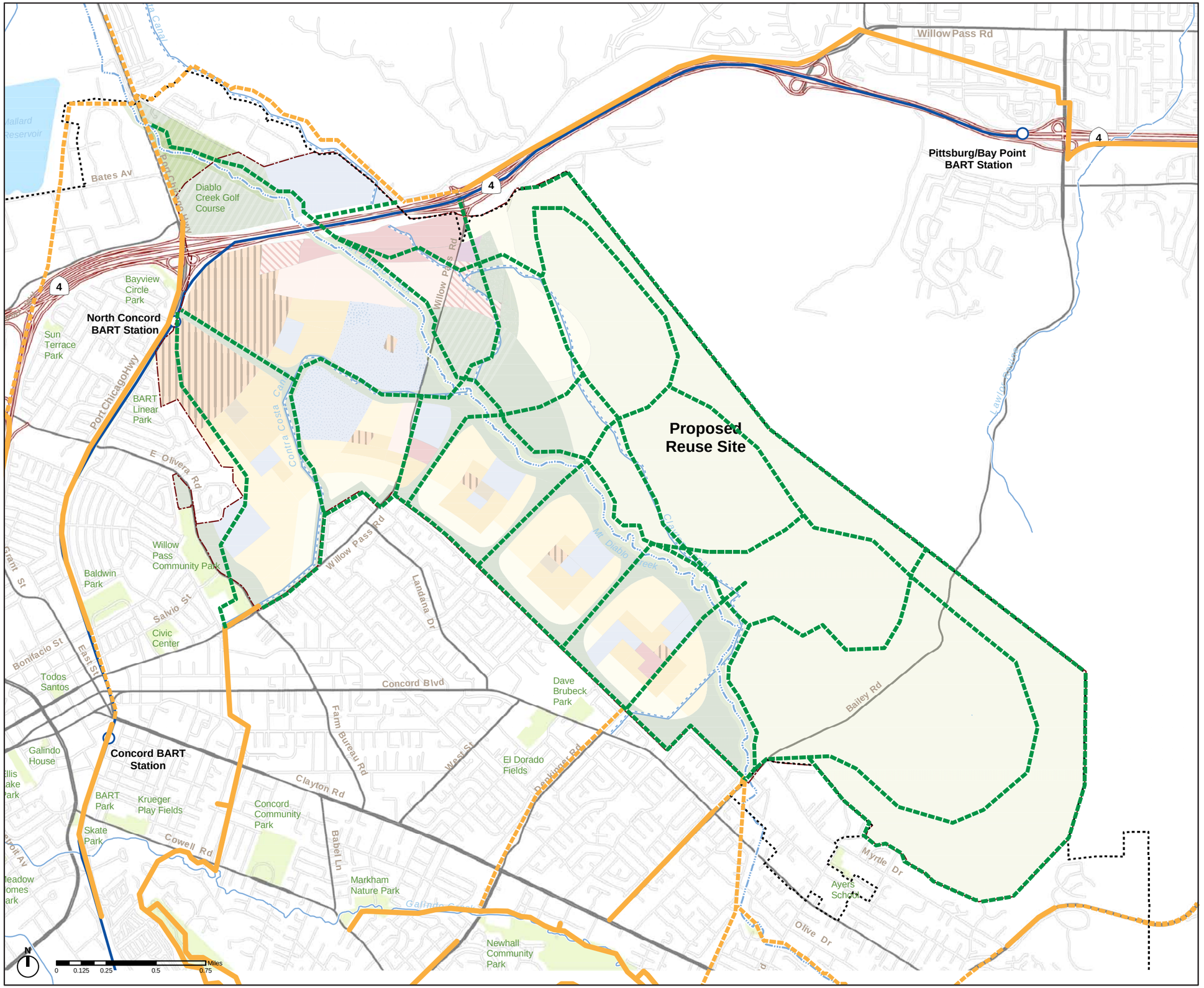
- Clayton Road/Treat Boulevard
- Bailey Road/Concord Boulevard
- Bailey Road/Myrtle Drive
- Cowell Road/Ygnacio Valley Road*
- Alberta Way/Ygnacio Valley Road*
- Ayers Road/Ygnacio Valley Road*
- San Marco Boulevard/West Leland Road
- Bailey Road/West Leland Road
- Kirker Pass Road/James Donlon Boulevard Extension (future)

* These intersection improvements are part of the Ygnacio Valley Road widening project.

The following intersections are modeled with improvements to extend existing roadways into the site for the two alternative reuse concepts in the year 2030. Any development at the site would be fully responsible for the costs to construct these improvements. These improvements were therefore not included in the 2030 No Project Alternative intersection modeling.

- Arnold Industrial Way/Port Chicago Highway (both alternatives)
- Port Chicago Highway/Panoramic Drive (both alternatives)
- East Olivera Road/Salvio Street (both alternatives)
- Clayton Way/Willow Pass Road (both alternatives)
- West Street/Concord Boulevard (Preferred Alternative)
- Denkinger Road/Concord Boulevard (Preferred Alternative)
- Avila Road/Willow Pass Road (both alternatives)
- Willow Pass Road/SR 4 eastbound ramps (both alternatives)
- Willow Pass Road/SR 4 westbound ramps (both alternatives)

See Appendix 4A for complete intersection geometries for Existing Conditions, the 2030 No Project Alternative, and the two alternatives in the year 2030.



Legend

- Existing Class 1 Trails, Outside CNWS
- Proposed Class 1 Trails, Outside CNWS
- Proposed Onsite Class 1 Trails

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

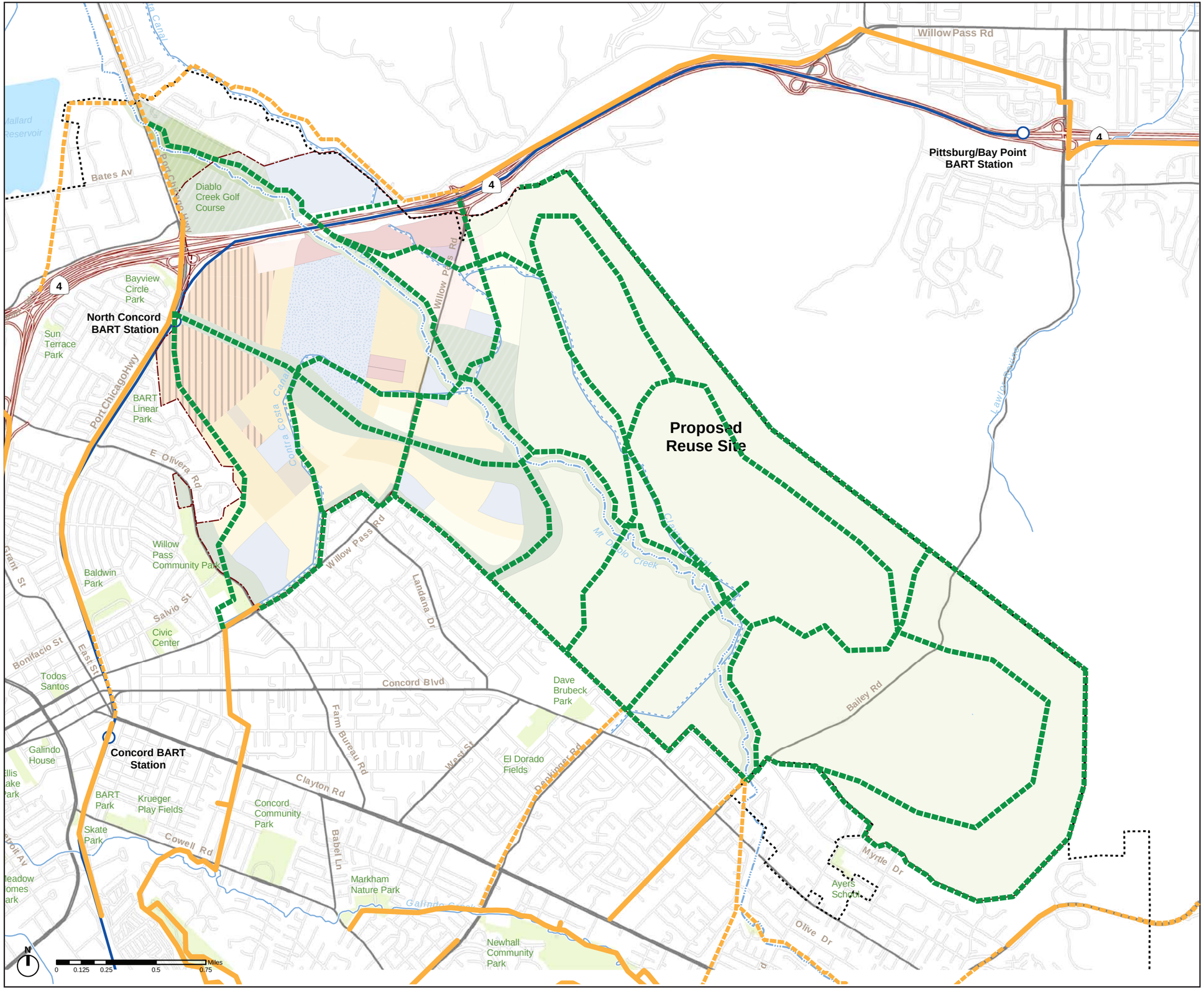
Note: Proposed Class 1 Trails include conceptual trail network from EBRPD PBC request.

Sources: Concord Trails Master Plan, 2003; Contra Costa Countywide Bicycle and Pedestrian Plan, 2003; EBRPD, 2007 & 2008; Arup 2009

Concord Community Reuse Plan

Revised December 24, 2009

Figure 4-12
Preferred Alternative
Proposed Trail Network



Legend

- Existing Class 1 Trails,Outside CNWS
- Proposed Class 1 Trails, Outside CNWS
- Proposed Onsite Class 1 Trails

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
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Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
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Notes & Sources

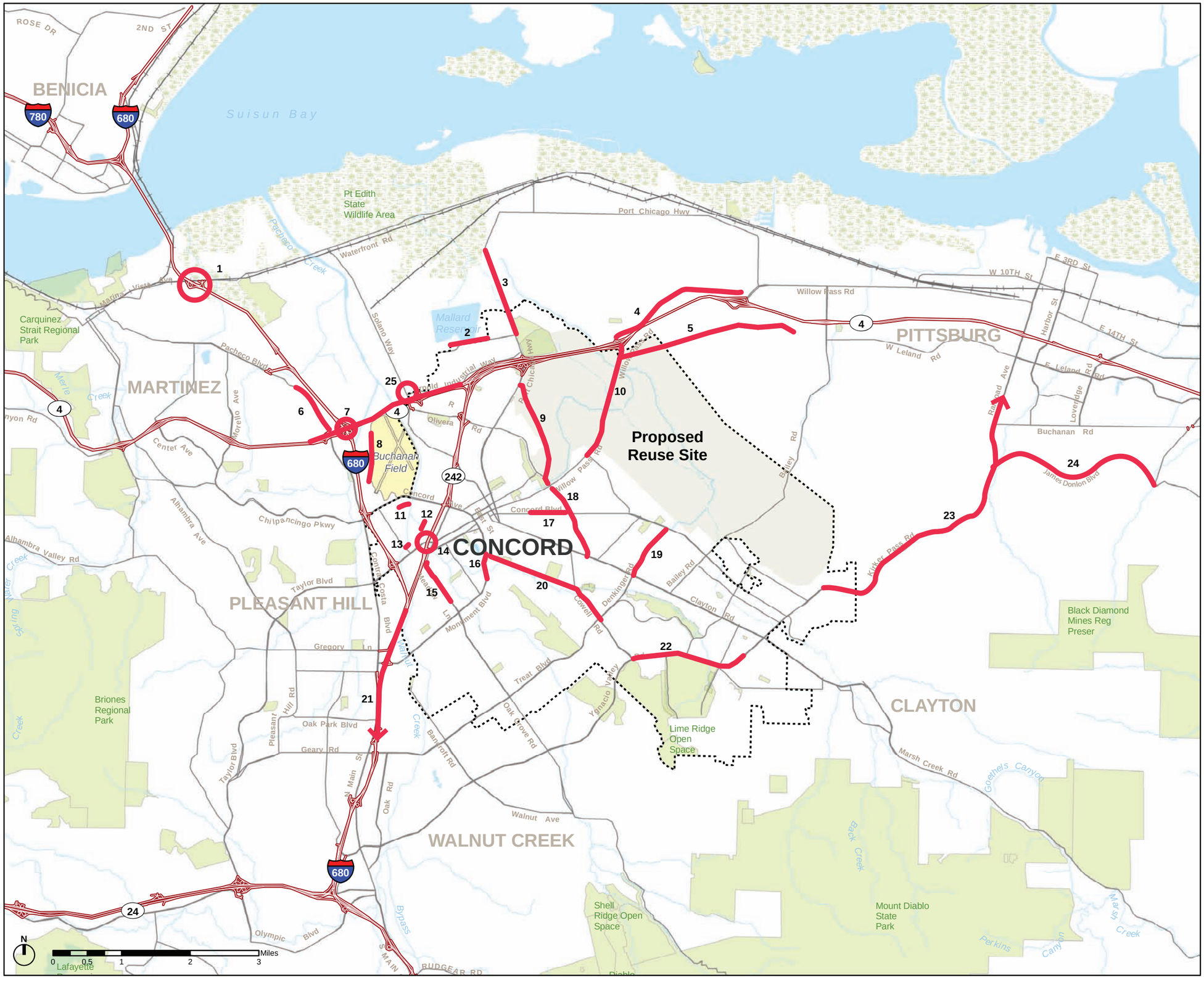
Note: Proposed Class 1 Trails include conceptual trail network from EBRPD PBC request.

Sources: Concord Trails Master Plan, 2003; Contra Costa Countywide Bicycle and Pedestrian Plan, 2003; EBRPD, 2007 & 2008; Arup 2009

Concord Community Reuse Plan

Revised December 24, 2009

Figure 4-13
Concentration and Conservation Alternative Proposed Trail Network



Legend

Selected Roadway Improvements

1. I-680 / Marina Vista Interchange modifications
2. Bates Avenue – widen to four lanes from Arnold Industrial Way to Mason Circle
3. Port Chicago Highway – widen to four lanes from Bates Avenue north to the Union Pacific Railroad (UPRR) crossing
4. Evora Road - widen from Willow Pass to Pomo Street
5. West Leland Road Extension and Avila widening.
6. Pacheco Boulevard – widen to four lanes north of SR 4
7. SR 4 and I-680 connector ramps and HOV connection
8. Marsh Drive – widen to four lanes from Center Avenue to Concord city limit
9. Panoramic Drive – Four lane extension of Panoramic Drive from North Concord BART Station to Willow Pass Road
10. Willow Pass Road – widen to four lanes between Landana Drive and SR 4
11. Galaxy Way Gap Closure – construct a bridge over Walnut Creek to close the gap in Galaxy Way
12. Commerce Avenue Extension – extend existing two lane arterial
13. Waterworld Parkway bridge over Walnut Creek – Construct a two-lane bridge with bicycle lanes over Walnut Creek connecting Waterworld Parkway with Meridian Park Boulevard
14. Clayton Road/SR 242 Interchange – new north bound on-ramp and new southbound off-ramp
15. Meadow Lane – widen to four lanes between Monument Boulevard and Clayton Road
16. Monument Boulevard – widen to six lanes from Systron Drive to Cowell Road
17. Concord Boulevard – widen to four lanes from 6th Street to Farm Bureau Road
18. Farm Bureau Road – widen to four lanes between Willow Pass Road and Clayton Road
19. Denkinger Road – widen to four lanes between Clayton Road and Concord Boulevard
20. Cowell Road – widen to four lanes between Monument Boulevard and Treat Boulevard
21. I-680 northbound high occupancy vehicle (HOV) lane from North Main Street to SR 242 and I-680 southbound HOV lane from North Main Street to Livorna Road
22. Ygnacio Valley Road – widen to six lanes between Cowell Road and Michigan Boulevard
23. Kirker Pass Road – climbing lane from Clear Brook Drive to Pittsburg city limit
24. James Donlon Boulevard – extension to Kirker Pass Road
25. SR 4 – additional lane EB and WB between SR 242 and I-680

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials

Notes & Sources

Sources: Concord General Plan; T2035 Regional Transportation Plan; Measure J Expenditure Plan

Concord Community Reuse Plan

Revised August 21, 2009

Figure 4-14
Future Roadway Improvements

4.3.5 Model Results Summary

Table 4-21 provides a summary of daily vehicle trips, average vehicle trip lengths, and VMT from the CCTA model runs. The daily vehicle trips are trips that are generated on the site and include trips with one or both of the trip's ends on the site. VMT represents the total travel on the roadway network by all vehicle trips with one or both ends on the site including the travel to and from the site that is generated by those trips. This measure does not include regional trips that would pass through the site or the City of Concord but do not have a trip end on the site.

The Preferred Alternative would generate 21 percent more daily vehicle trips and 18 percent more VMT than the Concentration and Conservation Alternative. The Preferred Alternative has 24 percent greater population and 16 percent more employment than the Concentration and Conservation Alternative.

Since the amount of development, the roadway networks, and the transit networks vary between the alternatives, a better measure of the differences between the alternatives is the average trip length. The average trip length is calculated by dividing VMT by the number of vehicle trips. While the Preferred Alternative would generate more vehicle trips and total VMT, the average trip length is slightly lower than the Concentration and Conservation Alternative. The lower trip length for the Preferred Alternative is related to the increased number of destinations available to residents and employees in the vicinity of the site.

Table 4–21: Daily Vehicle Trip Summaries

Scenario	Household Population	Employment	Students (FTE College Students)	Daily Vehicle Trips	Average Trip Length (miles)	Daily VMT
2000 Model Base	4	0	0	16	10.94	175
2030 No Project Alternative	4	0	0	16	10.80	173
2030 Preferred Alternative	29,033	27,354	10,000	172,967	10.2	1,763,148
2030 Concentration and Conservation Alternative	23,371	23,606	10,000	142,885	10.5	1,493,717

VMT = vehicle miles traveled

Source: Dowling, 2009

4.3.5.1 Transit Ridership Forecasts

The alternative reuse concepts would increase transit ridership at the North Concord/Martinez BART station as well as on buses serving central Contra Costa County. Table 4-22 summarizes the transit ridership at the North Concord/Martinez BART Station for the 2000 Model Base, the 2030 No Project Alternative, the 2030 Preferred Alternative, and 2030 Concentration and Conservation Alternative. The Preferred and Concentration and Conservation Alternatives would cause a significant increase in BART demand when compared to the 2030 No Project Alternative. Under the No Project Alternative, ridership at

the North Concord/Martinez BART station would increase at an annual rate of 3.3 percent. Under both of the alternatives, ridership would increase at an annual rate of 6 percent.

The increase in BART ridership can be attributed to the compact development on the site and the close proximity of the TOD to the BART station. Also, both alternative reuse concepts assume a significant increase in feeder bus service to the North Concord/Martinez BART Station. This improves access to the BART station for areas of the site outside the TOD.

Table 4–22: Daily Ridership at the North Concord/Martinez BART Station

	North Concord/Martinez BART Station			
Scenario	**Total Ridership**	**Change in Total Ridership from 2000**	**Total Ridership Growth (2000 to 2030)**	**Total Ridership Annual Growth**
2000 Base Year Model	2,416			
2030 No Project Alternative	6,299	3,883	160%	3.3%
2030 Preferred Alternative	13,389	10,973	454%	5.9%
2030 Concentration and Conservation Alternative	14,155	11,739	486%	6.1%

Table 4-23 presents the transit ridership forecasts for all transit service in Central Contra Costa County. The annual increase in daily ridership for Central County was determined by summing the daily boardings and alightings from the CCTA model.[2] Similar to the results at the North Concord/Martinez BART station, development of the alternative reuse concepts would result in significant increases in overall transit ridership when compared to the 2030 No Project Alternative. Under the No Project Alternative, overall transit ridership in Central Contra Costa County would increase at an annual rate of only 0.9 percent. However, ridership would increase at an annual rate of 2.8 percent under both the Preferred and Concentration and Conservation alternatives. The site's compact development pattern and proximity to existing and proposed bus lines all contribute to the increase in overall transit ridership.

Table 4–23: Daily Transit Ridership in Central Contra Costa County

	Central Contra Costa County			
Scenario	**Total Ridership**	**Change in Total Ridership from 2000**	**Total Ridership Growth (2000 to 2030)**	**Total Ridership Annual Growth**
2000 Base Year Model	66,418			
2030 No Project Alternative	87,956	21,538	32%	0.9%
2030 Preferred Alternative	150,977	84,559	127%	2.8%
2030 Concentration and Conservation Alternative	152,868	86,450	130%	2.8%

[2] The ridership for central Contra Costa was estimated by summing daily boardings and alightings for all transit (bus, rail, BART) services in central Contra Costa County. It should be noted that transfers from bus-to-BART would be considered as two separate boardings and alightings.

Table 4-24 presents the transit ridership forecast for East County. For East County, a cordon at SR 4 east of Willow Pass was used to determine the increase in transit ridership on the SR 4 corridor by 2010 compared to 2000. These results are summarized in Table 4-24 for the 2030 No Project Alternative and the two alternative reuse concepts in the year 2030.

For the SR 4 corridor in East County, the ridership on those services along the SR 4 corridor are forecast to experience an estimated growth of 19 percent by 2010 under the No Project Alternative, which would meet the TSO. With the alternative reuse concepts, that increase in transit ridership is forecast to be even higher. The estimated growth by 2010 for the Preferred Alternative is 37 percent, while that for the Concentration and Conservation Alternative is 41 percent. These increases in transit ridership for the SR 4 corridor would more than meet the TSO.

Table 4–24: Daily Transit Ridership in East Contra Costa County

Scenario	East Contra Costa County			
	Total Daily Ridership	Percent Change from 2000	Annual Growth (2000 to 2030)	Est. Growth by 2010
2000 Base Year Model	7,114			
2030 No Project Alternative	12,044	69%	1.8%	19.2%
2030 Preferred Alternative	18,360	158%	3.2%	37.2%
2030 Concentration and Conservation Alternative	19,820	179%	3.5%	40.7%

4.3.5.2 Roadway Operations Analysis

Overall, traffic congestion will increase on the transportation system in the future with or without development of one of the alternatives. However, development of either alternative would make a substantial contribution to congestion at certain analysis locations.

The results of the operations analysis are summarized in the following tables for:

- Freeway mainline segments: Tables 4-25 and 4-26
- Freeway ramps: Table 4-27
- Roadway segments: Table 4-28
- Intersections: Table 4-29
- TSOs: Table 4-30

Potentially significant impacts, which were determined by applying the Standards of Significance in Section 4.2, are indicated on these tables as shaded cells and are described in detail in the impact discussion in Section 4.3.4. Less than significant impacts, which were determined by applying the Standards of Significance in Section 4.2, are indicated on these tables set forth in bold.

4.3.5.3 Summary of Transportation Impacts

The number of impacted locations associated with each alternative reuse concept is summarized in Table 4-31. The number of impacts was calculated in the following manner:

- Freeway segments: There are 19 analysis freeway locations, each operating in two directions, resulting in 38 separate analysis segments. The maximum number of impacts summarized in Table 4-28 is therefore 38.
- Freeway ramps: There are 42 freeway ramp analysis locations resulting in a maximum number of 42 impacts summarized in Table 4-28.
- Roadway segments: There are 18 roadway segment analysis locations, each operating in two directions, resulting in 36 separate analysis segments. The maximum number of impacts summarized in Table 4-28 is therefore 36.
- Intersections: There are 62 intersection analysis locations resulting in a maximum number of 62 impacts summarized in Table 4-28.
- Traffic service objectives: There are 35 Regional Route segment locations, each operating in two directions, resulting in 70 separate analysis segments. The maximum number of impacts summarized in Table 4-28 is therefore 70. There are up to three separate TSOs for each location, but impacts are not counted separately for each TSO. If a location exceeds the threshold for one, two, or three of the TSOs, the impact is counted only once.

Impacts are not counted separately for the AM and PM peak periods. If a threshold is exceeded in the same segment and same direction in the AM and PM peak hours, it is counted as one impact.

In Table 4-31, only an analysis segment's most severe impact is counted. If there is a significant impact in the AM peak hour and a less than significant impact in the PM peak hour on the same segment and in the same direction, the impact is counted as a significant impact in Table 4-31. The less than significant impacts included in Table 4-31 are locations where there is only a less than significant impact.

A detailed description of the impacts and required mitigation measures follow Table 4-31. All impacts, whether they occur in the AM or PM peak hour at a location with an additional impact at another time of day, are explicitly identified and described.

The analysis indicates that traffic conditions will degrade at many locations in the future, with or without either alternative. Both alternatives would result in potentially significant impacts on the transportation network. These include project-specific significant impacts and contributing significant impacts, as defined above in Section 4.3.1.1.

As shown in Table 4-31, the analysis indicates that, in general, the two alternatives result in a similar number of locations with potentially significant impacts.

Table 4-25: Capacity Analysis of Freeway Mainline Segments (northbound and eastbound)

Mainline Segment		Dir	LOS Threshold	Existing - 2006 AM LOS	Existing - 2006 AM v/c	Existing - 2006 PM LOS	Existing - 2006 PM v/c	Future - 2030 No Project AM LOS	No Project AM v/c	No Project PM LOS	No Project PM v/c	Preferred Alternative AM LOS	Preferred Alternative AM v/c	Preferred Alternative PM LOS	Preferred Alternative PM v/c	Concentration and Conservation Alternative AM LOS	Concentration and Conservation Alternative AM v/c	Concentration and Conservation Alternative PM LOS	Concentration and Conservation Alternative PM v/c
1	I-680 s/o Monument Blvd.	NB	F	B	0.46	F	1.10	**C**	**0.63**	**F**	**1.37**	**C**	**0.66**	**F**	**1.34**	**C**	**0.67**	**F**	**1.35**
2	I-680 n/o Monument Blvd.	NB	F	B	0.37	E	0.90	**B**	**0.51**	**F**	**1.13**	**C**	**0.57**	**F**	**1.12**	**C**	**0.57**	**F**	**1.12**
3	I-680 n/o SR 242	NB	E	D	0.75	F	1.80	**E**	**0.94**	**F**	**2.07**	**E**	**0.91**	**F**	**2.07**	**E**	**0.91**	**F**	**2.08**
4	I-680 n/o Willow Pass Rd	NB	E	B	0.41	E	0.95	**B**	**0.47**	**F**	**1.06**	**B**	**0.45**	**F**	**1.04**	**B**	**0.44**	**F**	**1.05**
5	I-680 n/o Concord Av	NB	E	B	0.34	D	0.82	**B**	**0.42**	**F**	**1.03**	**B**	**0.40**	**F**	**1.03**	**B**	**0.40**	**F**	**1.03**
6	I-680 n/o SR 4	NB	F	A	0.29	C	0.71	**B**	**0.42**	**D**	**0.90**	**B**	**0.40**	**E**	**0.91**	**B**	**0.39**	**E**	**0.91**
7	SR 242 n/o I-680	NB	E	B	0.33	E	0.92	**B**	**0.42**	**F**	**1.12**	**C**	**0.56**	**F**	**1.10**	**C**	**0.55**	**F**	**1.09**
8	SR 242 n/o Clayton Rd	NB	E	A	0.25	C	0.70	**B**	**0.43**	**D**	**0.88**	**C**	**0.55**	**D**	**0.86**	**C**	**0.55**	**D**	**0.87**
9	SR 242 n/o Concord Av	NB	E	A	0.31	D	0.85	**B**	**0.44**	**D**	**0.90**	**B**	**0.52**	**D**	**0.88**	**B**	**0.52**	**D**	**0.88**
10	SR 242 n/o Grant Av	NB	E	A	0.29	D	0.81	**B**	**0.43**	**D**	**0.84**	**C**	**0.55**	**D**	**0.85**	**B**	**0.52**	**D**	**0.84**
11	SR 242 n/o Olivera Rd	NB	E	A	0.22	C	0.60	**B**	**0.37**	**C**	**0.73**	**B**	**0.40**	**C**	**0.74**	**B**	**0.40**	**C**	**0.73**
12	SR 4 e/o I-680	EB	E	D	0.80	E	0.92	C	0.59	D	0.82	C	0.71	D	0.81	C	0.72	D	0.80
13	SR 4 e/o Arnold Ind Wy	EB	E	C	0.66	D	0.75	B	0.53	**D**	**0.78**	C	0.65	D	0.75	C	0.65	D	0.75
14	SR 4 e/o SR 242	EB	F	B	0.45	B	0.52	**C**	**0.57**	**D**	**0.77**	**C**	**0.58**	**C**	**0.73**	**C**	**0.58**	**C**	**0.72**
15	SR 4 e/o Port Chicago Hwy	EB	F	D	0.75	D	0.85	**D**	**0.88**	**F**	**1.19**	**E**	**0.94**	**F**	**1.15**	**E**	**0.93**	**F**	**1.14**
16	SR 4 e/o Willow Pass Rd	EB	F	C	0.59	C	0.68	**C**	**0.72**	**D**	**0.88**	**D**	**0.86**	**F**	**1.00**	**D**	**0.86**	**E**	**0.99**
17	SR 4 e/o San Marco Rd	EB	F	B	0.38	D	0.75	**B**	**0.52**	**E**	**0.97**	**C**	**0.64**	**F**	**1.09**	**C**	**0.63**	**F**	**1.09**
18	SR 4 e/o Bailey Rd	EB	F	B	0.39	C	0.61	**C**	**0.55**	**D**	**0.85**	**C**	**0.63**	**D**	**0.87**	**C**	**0.62**	**E**	**0.91**
19	SR 4 e/o Railroad Av	EB	F	B	0.48	C	0.58	**C**	**0.66**	**F**	**1.00**	**C**	**0.72**	**E**	**0.99**	**C**	**0.71**	**F**	**1.05**

Capacity based on 2100 vphpl for freeway lanes, 1600 vphpl for auxiliary lanes; Dir = direction; LOS = level of service; v/c = volume-to-capacity ratio

Impact categories*

Grey shading indicates a significant impact in the No Project condition.

Yellow highlighting indicates a project-specific significant impact of the Preferred or Concentration and Conservation Alterntaive that is worse than the No Project condition.

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Blue highlighting indicates a contributing significant impact of the Preferred or Concentration and Conservation Alterntaive that improves or does not change the No Project condition.

Bold with no shading or highlighting indicates a less than significant impact.
* Impact categories are described in Section 4.3.

NOTE: See Appendix 4E for freeway volumes.

Source: 2000 Highway Capacity Manual; Dowling, 2009.

Table 4-26: Capacity Analysis of Freeway Mainline Segments (southbound and westbound)

							Future - 2030									
			Existing - 2006				No Project				Preferred Alternative				Concentration and Conservation Alternative			
		LOS	AM		PM		AM		PM		AM		PM		AM		PM	
Mainline Segment	Dir	Threshold	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c
1 I-680 s/o Monument Blvd	SB	F	D	0.81	C	0.60	**F**	**1.03**	**D**	**0.78**	**F**	**1.01**	**D**	**0.82**	**E**	**1.00**	**D**	**0.81**
2 I-680 n/o Monument Blvd	SB	F	D	0.80	C	0.59	**F**	**1.03**	**D**	**0.78**	**F**	**1.01**	**D**	**0.83**	**E**	**1.00**	**D**	**0.83**
3 I-680 n/o SR 242	SB	F	F	1.20	D	0.89	**F**	**1.46**	**F**	**1.07**	**F**	**1.45**	**F**	**1.10**	**F**	**1.46**	**F**	**1.10**
4 I-680 n/o Willow Pass Rd	SB	F	C	0.67	B	0.48	**D**	**0.82**	**C**	**0.56**	**D**	**0.80**	**C**	**0.57**	**D**	**0.81**	**C**	**0.58**
5 I-680 n/o Concord Av	SB	F	C	0.72	C	0.54	**E**	**0.93**	**C**	**0.66**	**E**	**0.91**	**C**	**0.66**	**E**	**0.92**	**C**	**0.66**
6 I-680 n/o SR 4	SB	F	D	0.84	C	0.62	**F**	**1.05**	**D**	**0.83**	**F**	**1.08**	**D**	**0.78**	**F**	**1.08**	**D**	**0.79**
7 SR 242 n/o I-680	SB	F	D	0.83	C	0.57	**E**	**0.98**	**C**	**0.73**	**E**	**0.94**	**D**	**0.81**	**E**	**0.92**	**D**	**0.80**
8 SR 242 n/o Clayton Rd	SB	F	C	0.64	B	0.44	**D**	**0.84**	**C**	**0.70**	**D**	**0.81**	**C**	**0.74**	**D**	**0.80**	**C**	**0.73**
9 SR 242 n/o Concord Av	SB	F	D	0.83	C	0.57	**E**	**0.92**	**C**	**0.63**	**D**	**0.89**	**C**	**0.68**	**D**	**0.88**	**C**	**0.66**
10 SR 242 n/o Grant Av	SB	F	D	0.81	C	0.56	**D**	**0.86**	**C**	**0.63**	**D**	**0.86**	**C**	**0.71**	**D**	**0.85**	**C**	**0.70**
11 SR 242 n/o Olivera Rd	SB	F	D	0.81	C	0.56	**E**	**0.97**	**C**	**0.73**	**E**	**0.94**	**D**	**0.76**	**E**	**0.93**	**D**	**0.76**
12 SR 4 e/o I-680	WB	E	E	1.00	D	0.78	E	0.93	C	0.59	D	0.90	C	0.73	D	0.90	C	0.72
13 SR 4 e/o Arnold Ind Wy	WB	E	D	0.82	C	0.64	**D**	**0.86**	C	0.56	**D**	**0.83**	**C**	**0.67**	**D**	**0.83**	**C**	**0.66**
14 SR 4 e/o SR 242	WB	F	F	1.13	D	0.88	**F**	**1.76**	**F**	**1.16**	**F**	**1.57**	**F**	**1.22**	**F**	**1.56**	**F**	**1.23**
15 SR 4 e/o Port Chicago Hwy	WB	F	E	0.93	C	0.72	**F**	**1.38**	**D**	**0.87**	**F**	**1.19**	**E**	**0.93**	**F**	**1.18**	**E**	**0.92**
16 SR 4 e/o Willow Pass Rd	WB	F	E	0.92	C	0.72	**F**	**1.22**	**E**	**0.92**	**F**	**1.38**	**F**	**1.06**	**F**	**1.33**	**F**	**1.05**
17 SR 4 e/o San Marco Rd	WB	F	D	0.86	B	0.44	**F**	**1.38**	**D**	**0.87**	**F**	**1.19**	**E**	**0.93**	**F**	**1.18**	**E**	**0.92**
18 SR 4 e/o Bailey Rd	WB	F	C	0.61	B	0.39	**C**	**0.74**	**B**	**0.49**	**C**	**0.66**	**B**	**0.51**	**C**	**0.66**	**B**	**0.52**
19 SR 4 e/o Railroad	WB	F	C	0.63	B	0.46	**F**	**1.08**	**C**	**0.70**	**F**	**1.04**	**D**	**0.84**	**F**	**1.04**	**D**	**0.83**

Capacity based on 2100 vphpl for freeway lanes, 1600 vphpl for auxiliary lanes; Dir = direction; LOS = level of service; v/c = volume-to-capacity ratio

Impact categories*

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* Impact categories are described in Section 4.3.

NOTE: See Appendix 4E for freeway volumes.

Source: 2000 Highway Capacity Manual; Dowling, 2009.

Table 4-27: Capacity Analysis of Freeway Ramps

		Existing						LOS	Future - 2030															
									No Project						Preferred Alternative						Concentration and Conservation Alternative					
		AM			PM				AM			PM			AM			PM			AM			PM		
		V/C	Density	LOS	V/C	Density	LOS	Threshold	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS
1	I-680: Willow Pass Rd NB off-ramp	0.67	23.21	C	1.42	51.64	F	E	**na**	**28.70**	**D**	**1.51**	**na**	**F**	**na**	**28.29**	**D**	**1.51**	**na**	**F**	**na**	**28.38**	**D**	**1.52**	**na**	**F**
2	I-680: Willow Pass Rd NB on-ramp	0.32	na	C	0.53	na	C	E	0.32	na	C	**0.57**	**na**	**C**	0.32	na	C	0.53	na	C	0.32	na	C	0.53	na	C
3	I-680: Concord Av NB off-ramp	0.50	na	C	0.41	na	C	E	**0.66**	**na**	**C**	**0.62**	**na**	**C**	**0.67**	**na**	**C**	**0.57**	**na**	**C**	**0.68**	**na**	**C**	**0.59**	**na**	**C**
4	I-680: Concord Av Burnett NB on-ramp	0.28	9.26	A	0.74	25.56	C	E	**na**	**13.35**	**B**	**na**	**29.94**	**D**	**na**	**12.25**	**B**	**na**	**29.68**	**D**	**na**	**12.35**	**B**	**na**	**29.92**	**D**
5	I-680: Concord Av WB to NB on-ramp	0.31	10.07	B	0.79	27.48	C	E	**na**	**13.81**	**B**	**1.02**	**na**	**F**	**na**	**12.68**	**B**	**1.02**	**na**	**F**	**na**	**12.71**	**B**	**1.02**	**na**	**F**
6	I-680: Concord Av SB off-ramp	0.81	28.54	D	0.61	21.11	C	F	**1.01**	**na**	**F**	**na**	**25.76**	**C**	**na**	**35.36**	**E**	**na**	**25.96**	**C**	**na**	**35.74**	**E**	**na**	**26.10**	**C**
7	I-680: Concord Av WB to SB on-ramp	0.65	22.24	C	0.54	18.08	B	F	**na**	**28.46**	**D**	**na**	**21.74**	**C**	**na**	**27.82**	**C**	**na**	**21.42**	**C**	**na**	**27.98**	**C**	**na**	**21.62**	**C**
8	I-680: Concord Av EB to SB on-ramp	0.18	na	C	0.16	na	C	F	**0.21**	**na**	**C**	**0.18**	**na**	**C**	**0.19**	**na**	**C**	**0.32**	**na**	**C**	**0.19**	**na**	**C**	**0.32**	**na**	**C**
9	I-680: Willow Pass Rd SB off-ramp	0.38	14.95	B	0.29	10.74	B	F	**na**	**19.99**	**B**	**na**	**13.53**	**B**	**na**	**19.42**	**B**	**na**	**13.87**	**B**	**na**	**19.60**	**B**	**na**	**14.02**	**B**
10	I-680: Willow Pass Rd WB to SB on-ramp	0.61	20.81	C	0.48	16.26	B	F	**na**	**27.69**	**C**	**na**	**20.73**	**C**	**na**	**28.04**	**D**	**na**	**22.78**	**C**	**na**	**28.11**	**D**	**na**	**22.98**	**C**
11	I-680: Willow Pass Rd EB to SB on-ramp	0.80	26.42	C	0.55	18.75	B	F	**1.12**	**na**	**F**	**na**	**23.14**	**C**	**1.16**	**na**	**F**	**na**	**25.80**	**C**	**1.17**	**na**	**F**	**na**	**26.07**	**C**
12	SR 242: Clayton Rd NB off-ramp	0.44	14.43	B	0.95	33.76	D	E	**na**	**17.95**	**B**	**1.09**	**na**	**F**	**na**	**22.45**	**C**	**1.07**	**na**	**F**	**na**	**22.16**	**C**	**1.06**	**37.94**	**F**
12a	SR 242: Clayton Rd NB on-ramp (proposed)							E	na	8.69	A	na	28.11	D	na	13.05	B	na	27.66	C	na	12.91	B	na	27.68	C
13	SR 242: Concord Av EB to NB on-ramp	0.28	9.20	A	0.80	27.58	C	E	**na**	**21.94**	**C**	**1.01**	**na**	**F**	**na**	**25.02**	**C**	**1.01**	**na**	**F**	**na**	**25.11**	**C**	**1.02**	**na**	**F**
14	SR 242: Concord Av WB to NB on-ramp	0.39	na	C	0.79	na	D	E	**0.42**	**na**	**C**	0.79	na	D	0.39	na	C	0.79	na	D	0.39	na	C	0.79	na	D
15	SR 242: Concord Av SB off-ramp	0.54	17.85	B	0.37	12.29	B	F	**na**	**21.95**	**C**	**na**	**15.07**	**B**	**na**	**21.27**	**C**	**na**	**16.22**	**B**	**na**	**21.22**	**C**	**na**	**15.91**	**B**
15a	SR 242: Clayton Rd SB off-ramp (proposed)							E	na	26.77	C	na	22.42	C	na	25.58	C	na	23.42	C	na	25.52	C	na	23.18	C
16	SR 242: Clayton Rd SB on-ramp	0.81	27.89	C	0.71	24.07	C	F	**1.18**	**na**	**F**	**1.18**	**na**	**F**	**1.13**	**na**	**F**	**1.15**	**na**	**F**	**1.16**	**na**	**F**	**1.15**	**na**	**F**
17	SR 242: Concord Ave SB on-ramp	0.63	21.76	C	0.46	15.65	B	F	**na**	**30.19**	**D**	**na**	**24.99**	**C**	**na**	**28.63**	**D**	**na**	**27.31**	**C**	**na**	**28.71**	**D**	**na**	**26.76**	**C**
18	SR 4: Port Chicago EB off-ramp	0.65	27.05	C	0.80	32.76	D	F	**na**	**34.17**	**D**	**1.17**	**na**	**F**	**0.96**	**na**	**F**	**1.10**	**na**	**F**	**0.95**	**na**	**F**	**1.09**	**na**	**F**
19	SR 4: Port Chicago EB on-ramp	0.62	25.10	C	0.95	36.42	E	F	**na**	**30.41**	**D**	**1.27**	**na**	**F**	**na**	**30.43**	**D**	**1.20**	**na**	**F**	**na**	**30.56**	**D**	**1.20**	**na**	**F**
20	SR 4: Willow Pass Rd EB off-ramp	0.75	30.67	D	0.88	35.57	E	F	**na**	**35.27**	**E**	**1.27**	**na**	**F**	**na**	**37.26**	**E**	**1.15**	**na**	**F**	**na**	**37.14**	**E**	**1.14**	**na**	**F**
21	SR 4: Willow Pass Rd EB on-ramp	0.14	na	C	0.30	na	C	F	**0.23**	**na**	**C**	0.30	na	C	**0.80**	**na**	**D**	**0.63**	**na**	**C**	**0.78**	**na**	**D**	**0.62**	**na**	**C**
22	SR 4: Port Chicago WB on-ramp	1.22	45.82	F	1.01	38.33	F	F	**1.90**	**na**	**F**	**1.39**	**na**	**F**	**1.77**	**na**	**F**	**1.60**	**na**	**F**	**1.77**	**na**	**F**	**1.59**	**na**	**F**
23	SR 4: Port Chicago WB off-ramp	0.86	35.29	E	0.63	26.60	C	F	**1.36**	**na**	**F**	**na**	**30.26**	**D**	**1.10**	**na**	**F**	**na**	**34.50**	**D**	**1.08**	**na**	**F**	**na**	**33.81**	**D**
24	SR 4: Willow Pass Rd WB on-ramp	0.70	25.45	C	0.60	22.20	C	F	**1.33**	**na**	**F**	**na**	**25.89**	**C**	**1.28**	**na**	**F**	**na**	**27.38**	**C**	**1.27**	**na**	**F**	**na**	**27.12**	**C**
25	SR 4: Willow Pass Rd WB off-ramp	0.52	na	C	0.18	na	C	F	0.52	na	C	**0.42**	**na**	**C**	**1.00**	**na**	**F**	**0.79**	**na**	**D**	**0.83**	**na**	**D**	**0.79**	**na**	**D**
26	SR 4: San Marco Rd EB off-ramp	0.24	na	C	0.71	na	D	F	**0.45**	**na**	**C**	**1.30**	**na**	**F**	**0.55**	**na**	**C**	**1.58**	**na**	**F**	**0.53**	**na**	**C**	**1.58**	**na**	**F**
27	SR 4: SB San Marco Rd WB on-ramp	0.96	na	E	0.25	na	C	F	**1.19**	**na**	**F**	**0.40**	**na**	**C**	**1.22**	**na**	**F**	**0.46**	**na**	**C**	**1.27**	**na**	**F**	**0.47**	**na**	**C**
28	SR 4: SB San Marco Rd EB on-ramp	0.25	12.46	B	0.45	19.70	B	F	**na**	**14.55**	**B**	**na**	**22.28**	**C**	**na**	**17.30**	**B**	**na**	**24.12**	**C**	**na**	**17.20**	**B**	**na**	**23.70**	**C**
29	SR 4: NB San Marco Rd WB on-ramp	0.52	21.96	C	0.27	13.09	B	F	**1.11**	**na**	**F**	**na**	**16.61**	**B**	**1.25**	**na**	**F**	**na**	**18.47**	**B**	**1.19**	**na**	**F**	**na**	**18.37**	**B**
30	SR 4: NB San Marco Rd EB on-ramp	0.24	12.06	B	0.46	20.00	C	F	**na**	**15.31**	**B**	**na**	**22.20**	**C**	**na**	**17.54**	**B**	**1.06**	**na**	**F**	**na**	**17.43**	**B**	**1.06**	**na**	**F**
31	SR 4: San Marco Rd WB off-ramp	0.82	33.86	D	0.45	19.98	B	F	**1.26**	**na**	**F**	**na**	**26.45**	**C**	**1.33**	**na**	**F**	**na**	**28.26**	**D**	**1.26**	**na**	**F**	**na**	**27.95**	**C**
32	SR 4: SB Bailey Rd EB off-ramp	0.39	17.74	B	0.72	30.08	D	F	**na**	**21.44**	**C**	**na**	**37.52**	**E**	**na**	**26.27**	**C**	**1.03**	**na**	**F**	**na**	**25.74**	**C**	**1.03**	**na**	**F**
33	SR 4: Bailey Rd WB on-ramp	0.48	20.48	C	0.29	14.21	B	F	**1.13**	**na**	**F**	**na**	**16.44**	**B**	**1.22**	**na**	**F**	**na**	**17.63**	**B**	**1.17**	**na**	**F**	**na**	**17.51**	**B**
34	SR 4: SB Bailey Rd WB off-ramp	0.14	na	C	0.13	na	C	F	**0.24**	**na**	**C**	**0.24**	**na**	**C**	**0.19**	**na**	**C**	**0.14**	**na**	**C**	0.14	na	C	**0.15**	**na**	**C**
35	SR 4: NB Bailey Rd EB off-ramp	0.11	na	C	0.45	na	C	F	0.11	na	C	0.45	na	C	**0.13**	**na**	**C**	**0.78**	**na**	**D**	**0.14**	**na**	**C**	**0.76**	**na**	**D**
36	SR 4: NB Bailey Rd WB off-ramp	0.57	24.60	C	0.43	19.33	B	F	**na**	**34.45**	**D**	**na**	**23.40**	**C**	**na**	**36.35**	**E**	**na**	**24.72**	**C**	**na**	**30.91**	**D**	**na**	**24.61**	**C**
37	SR 4: Bailey Rd EB on-ramp	0.28	13.27	B	0.38	17.04	B	F	**na**	**16.36**	**B**	**na**	**20.40**	**C**	**na**	**17.45**	**B**	**na**	**20.72**	**C**	**na**	**17.34**	**B**	**na**	**20.87**	**C**
38	SR 4: Railroad Ave WB on-ramp	0.45	19.31	B	0.31	14.51	B	F	**na**	**20.75**	**C**	**na**	**16.84**	**B**	**1.04**	**na**	**F**	**na**	**17.38**	**B**	**na**	**20.60**	**C**	**na**	**17.33**	**B**
39	SR 4: Railroad Ave EB off-ramp	0.20	7.88	A	0.54	12.50	B	F	**na**	**11.24**	**B**	**na**	**17.31**	**B**	**na**	**12.81**	**B**	**na**	**17.77**	**B**	**na**	**12.69**	**B**	**na**	**18.56**	**B**
40	SR 4: Railroad Ave EB on-ramp	0.47	20.28	C	0.55	23.08	C	F	**na**	**26.76**	**C**	**na**	**37.99**	**E**	**na**	**27.94**	**C**	**na**	**37.59**	**E**	**na**	**27.82**	**C**	**1.01**	**na**	**F**

Notes:

NB = northbound, SB = southbound, WB = westbound, EB = eastbound; v/c = volume to capacity ratio; LOS = level of service

For the ramp analysis when the demand does not exceed capacity of the ramp or freeway, the LOS is based on density for the merge and diverge areas and v/c is not applicable. For ramps with a dedicated freeway lane or if the freeway demand exceeds the capacity, the v/c is applied and the density is not applicable, as shown by the "na" in the table.

Impact categories*

Grey shading indicates a significant impact in the No Project condition.

Yellow highlighting indicates a project-specific significant impact of the Preferred or Concentration and Conservation Alterntaive that is worse than the No Project condition.

Green highlighting indicates a project-specific significant impact of the Preferred or Concentration and Conservation Alterntaive that improves or does not change the No Project condition.

Orange highlighting indicates a contributing significant impact of the Preferred or Concentration and Conservation Alterntaive that is worse than the No Project condition.

Blue highlighting indicates a contributing significant impact of the Preferred or Concentration and Conservation Alterntaive that improves or does not change the No Project condition.

Bold with no shading or highlighting indicates a less than significant impact.

* Impact categories are described in Section 4.3.

Table 4-28: Capacity Analysis of Roadway Segments

AM Roadway Segment Operations					Existing Condition			Future - 2030								
								No Project			Preferred Alternative			Concentration and Conservation Alternative		
	Street Name	Location	Peak Hour	LOS Threshold	LOS	V/C	AM Volume	LOS	V/C	AM Volume	LOS	V/C	AM Volume	LOS	V/C	AM Volume
1	Clayton Rd	East of Treat Blvd	AM	E	C	0.62	3,026	**C**	**0.66**	**3,264**	**C**	**0.65**	**3,175**	**C**	**0.67**	**3,299**
			PM	E	C	0.62	3,054	**D**	**0.78**	**3,857**	**C**	**0.77**	**3,807**	**D**	**0.79**	**3,877**
2	Kirker Pass Rd	East of Concord Blvd	AM	D	C	0.41	1,998	**C**	**0.59**	**2,887**	**C**	**0.55**	**2,696**	**C**	**0.64**	**3,129**
			PM	D	C	0.49	2,410	**C**	**0.77**	**3,799**	**D**	**0.85**	**4,177**	**D**	**0.87**	**4,281**
3	Kirker Pass Rd	South of Myrtle Dr	AM	D	C	0.41	2,003	**C**	**0.59**	**2,902**	**C**	**0.55**	**2,704**	**C**	**0.64**	**3,134**
			PM	D	C	0.49	2,406	**D**	**0.78**	**3,834**	**D**	**0.86**	**4,217**	**D**	**0.88**	**4,325**
4	Kirker Pass Rd	North of James Donlon Bl	AM	E	C	0.53	1,722	C	0.37	1,221	C	0.39	1,270	C	0.34	1,119
			PM	E	C	0.59	1,937	C	0.53	1,735	C	0.58	1,884	C	0.57	1,877
5	Treat Blvd	East of Oak Grove Rd	AM	E	C	0.66	3,229	**C**	**0.73**	**3,569**	**C**	**0.71**	**3,501**	**C**	**0.69**	**3,402**
			PM	E	D	0.79	3,871	**D**	**0.94**	**4,622**	**E**	**0.98**	**4,820**	**E**	**0.97**	**4,780**
6	Ygnacio Valley Rd	East of Cowell Rd	AM	E	C	0.97	3,299	**F**	**1.01**	**5,121**	**D**	**0.99**	**5,036**	**F**	**1.03**	**5,240**
			PM	E	F	1.13	3,830	F	1.07	5,459	F	1.08	5,500	F	1.11	5,655
7	Bailey Rd	East of Concord Blvd	AM	D	F	1.21	1,947	**F**	**1.36**	**2,183**	**F**	**1.25**	**2,015**	**F**	**1.42**	**2,286**
			PM	D	F	1.08	1,733	**F**	**1.41**	**2,274**	**F**	**1.28**	**2,060**	**F**	**1.52**	**2,440**
8	Clayton Rd	East of Market St	AM	E	D	0.42	1,972	**D**	**0.53**	**2,483**	**D**	**0.53**	**2,497**	**D**	**0.49**	**2,292**
			PM	E	D	0.54	2,556	**D**	**0.61**	**2,873**	**D**	**0.60**	**2,792**	**D**	**0.59**	**2,764**
9	Concord Blvd	West of Denkinger Rd	AM	E	D	0.78	2,425	**F**	**1.00**	**3,100**	**F**	**1.05**	**3,274**	**F**	**1.21**	**3,767**
			PM	E	C	0.62	1,916	**D**	**0.85**	**2,629**	**F**	**1.02**	**3,156**	**F**	**1.13**	**3,522**
10	Denkinger Rd	Between Concord Blvd and Clayton Rd	AM	E	C	0.56	863	C	0.37	1,197	C	0.33	1,094	C	0.28	911
			PM	E	C	0.39	612	C	0.25	817	C	0.28	909	C	0.23	744
11	Monument Blvd	West of Oak Grove Rd	AM	E	C	0.53	2,601	**C**	**0.64**	**3,130**	**C**	**0.66**	**3,254**	**C**	**0.67**	**3,298**
			PM	E	C	0.60	2,960	**C**	**0.69**	**3,402**	**C**	**0.70**	**3,456**	**C**	**0.70**	**3,454**
12	Port Chicaco Hwy	North of Olivera Rd	AM	E	E	0.98	1,664	**F**	**1.23**	**2,080**	**F**	**1.80**	**3,036**	**F**	**1.93**	**3,261**
			PM	E	D	0.92	1,562	**F**	**1.10**	**1,858**	**F**	**1.79**	**3,021**	**F**	**1.84**	**3,118**
13	Willow Pass Rd	North of Landana Dr	AM	D	F	1.20	1,924	F	1.09	3,709	C	0.97	3,283	F	1.05	3,545
			PM	D	F	1.24	1,991	F	1.09	3,711	C	0.90	3,062	F	1.08	3,651
14	Willow Pass Rd	East of Farm Bureau Rd	AM	E	C	0.58	1,895	**D**	**0.95**	**3,106**	**D**	**0.87**	**2,855**	**D**	**0.89**	**2,903**
			PM	E	C	0.60	1,964	**F**	**1.05**	**3,437**	**D**	**0.79**	**2,587**	**D**	**0.86**	**2,826**
15	Willow Pass Rd	East of Galindo St	AM	E	D	0.52	1,574	**D**	**0.64**	**1,914**	**D**	**0.66**	**1,993**	**D**	**0.64**	**1,912**
			PM	E	D	0.64	1,912	**D**	**0.79**	**2,387**	**D**	**0.82**	**2,471**	**D**	**0.78**	**2,362**
16	Willow Pass Rd	Between Diamond Blvd and SR 242	AM	E	D	0.52	2,372	**D**	**0.68**	**3,094**	**D**	**0.72**	**3,234**	**D**	**0.71**	**3,225**
			PM	E	D	0.75	3,410	**D**	**0.90**	**4,060**	**D**	**0.89**	**4,039**	**D**	**0.90**	**4,048**
17	Avila Rd	East of Willow Pass Rd	AM	D	A	0.08	108	**B**	**0.49**	**1,647**	**B**	**0.45**	**1,525**	**B**	**0.37**	**1,263**
			PM	D	A	0.05	62	**B**	**0.40**	**1,352**	**B**	**0.45**	**1,527**	**B**	**0.47**	**1,579**
18	Evora Rd	East of Willow Pass Rd	AM	D	D	0.83	1,069	B	0.69	2,343	B	0.81	2,753	C	0.86	2,922
			PM	D	C	0.51	662	B	0.40	1,359	B	0.79	2,663	B	0.76	2,580

v/c = volume to capacity ratio; LOS = level of service

Impact categories*

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* Impact categories are described in Section 4.3.

Source: 2000 Highway Capacity Manual; Florida DOT; Dowling, 2009.

Table 4-29: Capacity Analysis of Intersections

Intersection	Control	Peak Hour	LOS Threshhold V/C	Existing		Future - 2030					
						No Project		Preferred Alternative		Concentration and Conservation Alternative	
				LOS	V/C or Delay (sec)2	LOS	V/C or Delay (sec)2	LOS	V/C or Delay (sec)2	LOS	V/C or Delay (sec)2
1 Arnold Industrial Way/Port Chicago Hwy	Signal	AM	E	A	0.36	**D**	**0.82**	**B**	**0.65**	**B**	**0.65**
		PM	E	A	0.51	**B**	**0.68**	**C**	**0.74**	**C**	**0.76**
2 Port Chicago Hwy / Panoramic Dr	Signal	AM	E	A	0.43	**B**	**0.60**	**F**	**1.04**	**E**	**0.99**
		PM	E	A	0.42	**B**	**0.64**	**E**	**0.91**	**E**	**0.91**
3 Port Chicago Hwy / Olivera Rd	Signal	AM	E	B	0.69	**D**	**0.84**	**F**	**1.21**	**F**	**1.30**
		PM	E	D	0.82	**E**	**0.99**	**F**	**1.34**	**F**	**1.27**
4 Olivera Rd / Salvio St	1-way Stop/Signal (Future Project Only)	AM	D	A	1.6	**C**	**15.2**	A	0.43	A	0.46
		PM	D	A	2.7	**A**	**5.5**	A	0.57	A	0.58
5 Clayton Wy / Willow Pass Rd	1-way Stop/Signal (Future Project Only)	AM	E	A	1.3	**B**	**14.6**	**B**	**0.67**	**B**	**0.65**
		PM	E	A	1.8	**B**	**14.4**	A	0.54	A	0.58
6 Farm Bureau Rd / Willow Pass Rd	Signal	AM	E	A	0.59	**E**	**0.99**	**B**	**0.64**	**B**	**0.66**
		PM	E	B	0.70	**F**	**1.12**	**F**	**1.04**	**F**	**1.10**
7 Diamond Blvd / Willow Pass Rd	Signal	AM	E	A	0.35	**A**	**0.45**	**A**	**0.44**	**A**	**0.44**
		PM	E	B	0.62	**C**	**0.77**	**C**	**0.80**	**C**	**0.80**
8 Market St / Concord Av[1]	Signal	AM	E	F	1.04	**F**	**1.11**	D	0.82	D	0.81
		PM	E	F	1.46	**F**	**1.60**	E	0.93	E	0.92
9 Oakland Av / Clayton Rd	Signal	AM	E	A	0.52	**B**	**0.64**	**B**	**0.63**	**B**	**0.63**
		PM	E	B	0.67	**C**	**0.71**	**B**	**0.69**	**B**	**0.70**
10 Beechwood Dr / Landana Dr	All-way Stop	AM	E	B	11.8	**C**	**18.2**	**D**	**28.5**	**F**	**59.7**
		PM	E	A	9.7	**B**	**11.9**	**C**	**17.3**	**E**	**38.1**
11 West St / Concord Blvd	Signal	AM	E	A	0.53	**B**	**0.67**	**D**	**0.89**	**C**	**0.77**
		PM	E	A	0.45	**B**	**0.64**	**B**	**0.66**	**B**	**0.70**
12 West St./Clayton Rd	Signal	AM	E	B	0.61	**C**	**0.76**	**B**	**0.64**	**B**	**0.68**
		PM	E	A	0.43	**A**	**0.54**	**A**	**0.55**	**A**	**0.55**
13 Denkinger Rd / Concord Blvd	Signal	AM	E	A	0.58	**B**	**0.67**	**C**	**0.78**	**C**	**0.79**
		PM	E	A	0.54	**B**	**0.66**	**C**	**0.71**	**C**	**0.78**
14 Clayton Rd / Treat Blvd	Signal	AM	E	B	0.64	**D**	**0.85**	**C**	**0.74**	**C**	**0.78**
		PM	E	C	0.71	**E**	**0.90**	**E**	**0.92**	**D**	**0.90**
15 Cowell Rd / Treat Blvd	Signal	AM	E	D	0.86	**E**	**0.98**	**E**	**0.91**	**E**	**0.91**
		PM	E	C	0.75	**E**	**0.92**	**E**	**0.92**	**E**	**0.91**
16 Oak Grove Rd / Treat Blvd	Signal	AM	E	F	1.33	**F**	**1.51**	**F**	**1.53**	**F**	**1.53**
		PM	E	E	0.93	**F**	**1.15**	**F**	**1.14**	**F**	**1.15**
17 Oak Rd / Treat Blvd	Signal	AM	E	C	0.77	**F**	**1.07**	**F**	**1.03**	**F**	**1.07**
		PM	E	E	0.92	**F**	**1.09**	**F**	**1.21**	**F**	**1.19**
18 Bailey Rd /Myrtle Dr	1-way Stop/Signal (Future)	AM	D	A	1.7	A	0.55	A	0.45	A	0.55
		PM	D	A	1.5	A	0.54	A	0.41	A	0.58
19 Bailey Rd / Concord Blvd	Signal	AM	E	A	0.60	**B**	**0.67**	**C**	**0.71**	**C**	**0.78**
		PM	E	A	0.52	**B**	**0.66**	**B**	**0.69**	**C**	**0.73**
20 Bailey/Clayton	Signal	AM	E	B	0.63	B	0.63	B	0.63	**B**	**0.64**
		PM	E	A	0.45	**A**	**0.54**	**A**	**0.53**	**A**	**0.54**
21 Kirker Pass Rd / Clearbrook Dr	Signal	AM	E	A	0.47	**B**	**0.64**	**A**	**0.57**	**B**	**0.64**
		PM	E	A	0.46	**B**	**0.67**	**C**	**0.73**	**B**	**0.68**
22 Kirker Pass Rd / Concord Blvd[1]	Signal	AM	E	B	0.65	**D**	**0.88**	**D**	**0.83**	**D**	**0.85**
		PM	E	B	0.69	**E**	**0.93**	**E**	**0.96**	**E**	**0.97**
23 Clayton Rd / Ygnacio Valley Rd	Signal	AM	E	A	0.57	**C**	**0.71**	**B**	**0.68**	**C**	**0.70**
		PM	E	B	0.63	**D**	**0.84**	**D**	**0.80**	**D**	**0.83**
24 Cowell Rd / Ygnacio Valley Rd	Signal	AM	E	D	0.83	**D**	**0.90**	C	0.80	D	0.83
		PM	E	E	0.95	**F**	**1.01**	E	0.95	**E**	**0.98**
25 Oak Grove Rd / Ygnacio Valley Rd	Signal	AM	F	C	0.78	**F**	**1.04**	**F**	**1.03**	**F**	**1.09**
		PM	F	D	0.89	**F**	**1.32**	**F**	**1.31**	**F**	**1.31**
26 Galindo St / Willow Pass Rd	Signal	AM	E	A	0.55	**C**	**0.75**	**C**	**0.76**	**C**	**0.73**
		PM	E	C	0.75	**E**	**0.95**	**E**	**0.94**	**D**	**0.88**
27 Market St / Willow Pass Rd	Signal	AM	E	A	0.56	**B**	**0.68**	**B**	**0.63**	**B**	**0.66**
		PM	E	B	0.64	**B**	**0.68**	**C**	**0.75**	**C**	**0.74**
28 I-680 NB Ramp / Willow Pass Rd	Signal	AM	E	B	0.66	**C**	**0.74**	**C**	**0.74**	**C**	**0.74**
		PM	E	C	0.78	**D**	**0.87**	**D**	**0.85**	**D**	**0.85**
29 I-680 SB Ramp / Willow Pass Rd	Signal	AM	E	A	0.55	**B**	**0.61**	**A**	**0.59**	**A**	**0.58**
		PM	E	A	0.49	**A**	**0.55**	**A**	**0.54**	**A**	**0.52**
30 Market St / Clayton Rd	Signal	AM	E	B	0.64	**F**	**1.02**	**E**	**0.95**	**E**	**0.95**
		PM	E	B	0.65	**C**	**0.73**	**C**	**0.73**	**C**	**0.73**
31 Commerce Av - SR242 SB/ Concord Av	Signal	AM	E	B	0.63	**F**	**1.05**	**E**	**0.98**	**E**	**1.00**
		PM	E	D	0.83	**F**	**1.20**	**F**	**1.15**	**F**	**1.14**
32 Diamond Blvd / Concord Av	Signal	AM	E	A	0.53	**A**	**0.58**	**A**	**0.59**	**A**	**0.59**
		PM	E	C	0.71	**D**	**0.80**	**D**	**0.82**	**D**	**0.82**
33 Monument Blvd / Oak Grove Rd	Signal	AM	E	A	0.51	**C**	**0.77**	**C**	**0.79**	**C**	**0.80**
		PM	E	A	0.57	**C**	**0.77**	**C**	**0.78**	**C**	**0.77**
34 Walnut Blvd / Ygnacio Valley Rd	Signal	AM	F	C	0.78	**E**	**0.93**	**E**	**0.91**	**E**	**0.92**
		PM	F	F	1.00	**F**	**1.13**	**F**	**1.15**	**F**	**1.14**
35 Bancroft Rd / Ygnacio Valley Rd	Signal	AM	F	D	0.90	**E**	**0.98**	**E**	**0.94**	**E**	**0.98**
		PM	F	C	0.70	**D**	**0.81**	**D**	**0.84**	**D**	**0.84**
36 Alberta Wy / Ygnacio Valley Rd	Signal	AM	E	D	0.82	**E**	**0.96**	**D**	**0.90**	**E**	**0.93**
		PM	E	D	0.82	**D**	**0.87**	**D**	**0.83**	**D**	**0.85**
37 Ayers Rd / Ygnacio Valley Rd	Signal	AM	E	E	0.92	**F**	**1.06**	**E**	**0.97**	**F**	**1.02**
		PM	E	D	0.81	C	0.78	C	0.72	C	0.74
38 North Main St / Geary Rd	Signal	AM	F	C	0.80	**E**	**0.95**	**F**	**1.08**	**F**	**1.03**
		PM	F	E	0.93	**F**	**1.17**	**F**	**1.20**	**F**	**1.16**
39 Bates/Port Chicago Hwy	Signal	AM	E	A	0.52	**C**	**0.72**	**C**	**0.71**	**C**	**0.70**
		PM	E	C	0.74	**C**	**0.80**	**C**	**0.80**	**C**	**0.79**
40 Bancroft Rd / Treat Blvd	Signal	AM	F	D	0.82	**E**	**0.97**	**E**	**0.95**	**E**	**0.99**
		PM	F	D	0.89	**F**	**1.13**	**F**	**1.14**	**F**	**1.15**

Intersection	Control	Peak Hour	LOS Threshhold	V/C	Existing		Future - 2030					
							No Project		Preferred Alternative		Concentration and Conservation Alternative	
					LOS	V/C or Delay (sec)2	LOS	V/C or Delay (sec)2	LOS	V/C or Delay (sec)2	LOS	V/C or Delay (sec)2
41 Kirker Pass Rd/ Myrtle Dr	Signal	AM	E		A	0.37	**A**	**0.49**	**A**	**0.44**	**A**	**0.48**
		PM	E		A	0.56	**C**	**0.78**	**C**	**0.79**	**C**	**0.79**
42 Burskirk Ave-NB I-680 Off Ramp / Treat Blvd	Signal	AM	E		F	1.33	F	1.33	F	1.33	**F**	**1.34**
		PM	E		F	1.57	**F**	**1.62**	**F**	**1.70**	**F**	**1.66**
43 North Main St / Sunnyvale Ave-SB I-680 Ramps	Signal	AM	F		E	0.93	**F**	**1.16**	**F**	**1.20**	**F**	**1.09**
		PM	F		C	0.79	**F**	**1.16**	**F**	**1.12**	**F**	**1.12**
44 NB I-680 Off Ramp / Ygnacio Valley Rd	Signal	AM	E		F	1.27	**F**	**1.32**	**F**	**1.39**	**F**	**1.38**
		PM	E		F	1.26	**F**	**1.49**	**F**	**1.49**	**F**	**1.47**
45 SB I-680 On Ramp / Ygnacio Valley Rd	Signal	AM	E		B	0.62	**C**	**0.72**	**B**	**0.70**	**C**	**0.72**
		PM	E		A	0.53	**A**	**0.57**	**A**	**0.58**	**A**	**0.57**
46 Willow Pass Rd & Evora Rd (East)-SR-4 WB off-ramp [In Pittsburg]	Signal	AM	mid-D	0.85	A	0.40	**F**	**1.02**	**F**	**1.01**	**F**	**1.04**
		PM	mid-D	0.85	A	0.31	**A**	**0.59**	**D**	**0.83**	**D**	**0.83**
47 Willow Pass Rd & Evora Rd (West) [At Project Site]	Signal	AM	mid-D	0.85	A	0.55	**F**	**1.28**	**F**	**1.16**	**F**	**1.31**
		PM	mid-D	0.85	A	0.33	**C**	**0.72**	**F**	**1.27**	**F**	**1.28**
48 Willow Pass Rd & Avila Rd	1-way Stop/Signal (Future Project only)	AM	mid-D	0.85	A	0.2	**F**	**OVFL**	**F**	**1.51**	**F**	**1.53**
		PM	mid-D	0.85	A	0.1	**F**	**OVFL**	**F**	**1.49**	**F**	**1.49**
49 Bailey Rd & Willow Pass Rd	Signal	AM	E		A	0.42	**D**	**0.86**	**D**	**0.88**	**D**	**0.89**
		PM	E		B	0.63	**C**	**0.79**	**E**	**0.96**	**E**	**0.95**
50 San Marco Blvd & W Leland Rd	Signal	AM	mid-D	0.85	A	0.52	**C**	**0.75**	**D**	**0.90**	**E**	**0.97**
		PM	mid-D	0.85	A	0.28	**C**	**0.71**	**C**	**0.78**	**C**	**0.78**
51 Bailey Rd & W Leland Rd	Signal	AM	E		B	0.60	**E**	**0.93**	**D**	**0.89**	**D**	**0.88**
		PM	E		A	0.45	**D**	**0.87**	**E**	**0.92**	**D**	**0.89**
52 Railroad Ave & W Leland Rd	Signal	AM	mid-D	0.85	B	0.63	**E**	**0.94**	**E**	**0.98**	**E**	**0.93**
		PM	mid-D	0.85	E	0.98	**F**	**1.35**	**F**	**1.31**	**F**	**1.33**
53 Railroad Ave & Buchanan Rd	Signal	AM	mid-D	0.85	A	0.54	**B**	**0.65**	**B**	**0.66**	**B**	**0.65**
		PM	mid-D	0.85	C	0.70	**C**	**0.77**	**C**	**0.74**	**C**	**0.74**
54 Kirker Pass Rd & James Donlon Blvd [Future extension of James Donlon Blvd]	Signal	AM	E		A	0.35	**F**	**1.04**	**E**	**0.99**	**F**	**1.04**
		PM	E		A	0.40	**F**	**1.05**	**F**	**1.09**	**F**	**1.10**
55 San Marco Blvd-Willow Pass Rd & SR-4 EB ramps	Signal	AM	mid-D	0.85	A	0.30	**A**	**0.58**	**C**	**0.70**	**B**	**0.68**
		PM	mid-D	0.85	A	0.39	**C**	**0.73**	**E**	**0.99**	**E**	**0.94**
56 Bailey Rd & SR-4 EB ramps-BART access	Signal	AM	E		A	0.44	**B**	**0.65**	**C**	**0.78**	**B**	**0.65**
		PM	E		F	1.12	**F**	**1.49**	**F**	**1.87**	**F**	**1.67**
57 Bailey Rd & SR-4 WB onramp-Canal Rd	Signal	AM	E		A	0.54	**D**	**0.87**	**C**	**0.79**	**C**	**0.74**
		PM	E		B	0.60	**D**	**0.85**	**E**	**0.94**	**E**	**0.94**
58 Railroad Ave & SR-4 WB onramp-California Ave	Signal	AM	mid-D	0.85	A	0.54	**B**	**0.68**	**C**	**0.71**	**B**	**0.68**
		PM	mid-D	0.85	A	0.58	**C**	**0.71**	**B**	**0.64**	**B**	**0.67**
59 Railroad Ave & SR-4 EB ramps	Signal	AM	mid-D	0.85	A	0.53	**C**	**0.74**	**B**	**0.65**	**B**	**0.66**
		PM	mid-D	0.85	B	0.60	**D**	**0.81**	**C**	**0.76**	**D**	**0.82**
60 Willow Pass Rd & SR-4 WB ramps	All-way Stop/Signal (Future Project only)	AM	mid-D	0.85	C	19.9	**F**	**345.0**	**E**	**0.98**	**E**	**0.93**
		PM	mid-D	0.85	B	13	**F**	**105.3**	B	0.70	**C**	**0.71**
61 Willow Pass Rd & SR-4 EB ramps	All-way Stop/Signal (Future Project only)	AM	mid-D	0.85	D	26.1	**F**	**276.2**	**E**	**0.96**	**E**	**0.91**
		PM	mid-D	0.85	B	14.5	**F**	**163.3**	B	0.69	B	0.66
62 Port Chicago Hwy & SR-4 WB ramps	Signal	AM	E		A	0.49	**C**	**0.71**	**B**	**0.69**	**B**	**0.69**
		PM	E		A	0.47	**B**	**0.64**	**E**	**0.90**	**E**	**0.94**

[1] Analysis performed with CCTALOS software program v. 2.35. Otherwise, CCTALOS was applied in the Traffix software program.

[2] V/C denotes Volume-to-Capacity ratio and is used for signalized intersections; average vehicle delay in seconds are used for unsignalized intersections
v/c = volume to capacity ratio; LOS = level of service, OVFL = overflow conditions where the volume exceeds the capacity resulting in unstable overflow conditions.

Impact categories*

Grey shading indicates a significant impact in the No Project condition.

Yellow highlighting indicates a project-specific significant impact of the Preferred or Concentration and Conservation Alterntaive that is worse than the No Project condition.

Green highlighting indicates a project-specific significant impact of the Preferred or Concentration and Conservation Alterntaive that improves or does not change the No Project condition.

Orange highlighting indicates a contributing significant impact of the Preferred or Concentration and Conservation Alterntaive that is worse than the No Project condition.

Blue highlighting indicates a contributing significant impact of the Preferred or Concentration and Conservation Alterntaive that improves or does not change the No Project condition.

Bold with no shading or highlighting indicates a less than significant impact.
* Impact categories are described in Section 4.3.

Source: CCTA; 2000 Highway Capacity Manual; Dowling, 2009.

Table 4-30: Analysis of Traffic Service Objectives

	Roadway	Location	Dir	Peak Hour	Significance Thresholds			Existing Condition			Future - 2030								
											No Project			Preferred Alternative			Concentration and Conservation Alternative		
					Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO
	Central County																		
1	Clayton Rd	East of Treat Blvd	NB	AM	15	2.0	1.2	34	1.0	1.09	34	1.0	1.10	34	1.0	1.10	34	1.0	1.10
			NB	PM	15	2.0	1.2	35	1.0	1.19	35	1.0	1.25	35	1.0	1.25	35	1.0	1.24
			SB	AM	15	2.0	1.2	35	1.0	1.13	35	1.0	1.26	35	1.0	1.24	35	1.0	1.24
			SB	PM	15	2.0	1.2	35	1.0	1.14	35	1.0	1.14	35	1.0	1.14	35	1.0	1.14
2	Kirker Pass Rd	East of Concord Blvd	EB	AM	15	2.0	1.2	40	1.0	1.12	40	1.0	1.13	40	1.0	1.12	40	1.0	1.12
			EB	PM	15	2.0	1.2	40	1.0	1.12	**39**	1.0	**1.04**	**39**	1.0	**1.03**	**39**	1.0	**1.03**
			WB	AM	15	2.0	1.2	39	1.0	1.07	**38**	**1.1**	**1.02**	39	1.0	**1.02**	**38**	1.0	**1.02**
			WB	PM	15	2.0	1.2	40	1.0	1.18	40	1.0	**1.16**	40	1.0	**1.13**	40	1.0	**1.13**
3	Treat Blvd	East of Oak Grove Rd	EB	AM	15	2.0	1.2	30	1.0	1.17	30	1.0	1.17	30	1.0	**1.13**	30	1.0	**1.16**
			EB	PM	15	2.0	1.2	30	1.0	1.12	30	1.0	**1.10**	30	1.0	**1.10**	30	1.0	**1.11**
			WB	AM	15	2.0	1.2	30	1.0	1.08	**29**	1.0	**1.06**	**29**	1.0	**1.07**	**29**	1.0	**1.06**
			WB	PM	15	2.0	1.2	30	1.0	1.22	30	1.0	1.22	30	1.0	**1.20**	30	1.0	**1.19**
4	Ygnacio Valley R	East of Cowell Rd	EB	AM	15	2.0	1.2	35	1.0	1.12	35	1.0	1.12	35	1.0	**1.10**	35	1.0	**1.11**
			EB	PM	15	2.0	1.2	29	1.2	1.11	35	1.0	**1.06**	35	1.0	**1.06**	35	1.0	**1.06**
			WB	AM	15	2.0	1.2	24	1.4	1.07	34	1.0	**1.05**	35	1.0	**1.05**	34	1.0	**1.04**
			WB	PM	15	2.0	1.2	35	1.0	1.19	35	1.0	**1.17**	35	1.0	**1.14**	35	1.0	**1.14**
5	I-680	South of Monument Blvd	NB	AM	30	2.0	1.4	44	1.4	1.15	**41**	**1.5**	**1.02**	**38**	**1.6**	**1.02**	**37**	**1.6**	**1.01**
			NB	PM	30	2.0	1.4	37	1.6	1.15	**28**	**2.1**	**1.02**	**30**	**2.0**	**1.03**	**29**	**2.1**	**1.03**
			SB	AM	30	2.0	1.4	37	1.6	1.13	**27**	**2.2**	**1.04**	**29**	**2.1**	**1.03**	**29**	**2.1**	**1.04**
			SB	PM	30	2.0	1.4	37	1.6	1.18	**32**	**1.9**	**1.06**	**28**	**2.1**	**1.06**	**28**	**2.1**	**1.06**
6	I-680	North of Monument Blvd	NB	AM	30	2.0	1.4	57	1.1	1.17	**49**	**1.2**	**1.03**	**45**	**1.3**	**1.02**	**45**	**1.3**	**1.02**
			NB	PM	30	2.0	1.4	46	1.4	1.15	**29**	**2.0**	**1.03**	**30**	**2.0**	**1.04**	**30**	**2.0**	**1.03**
			SB	AM	30	2.0	1.4	44	1.5	1.13	**25**	**2.4**	**1.02**	**27**	**2.2**	**1.02**	**28**	**2.2**	**1.03**
			SB	PM	30	2.0	1.4	46	1.4	1.18	**30**	**2.0**	**1.04**	**26**	**2.3**	**1.03**	**26**	**2.3**	**1.03**
7	I-680	North of SR 242	NB	AM	30	2.0	1.4	41	1.5	1.18	**39**	**1.6**	**1.01**	41	1.5	**1.01**	**40**	1.5	**1.01**
			NB	PM	30	2.0	1.4	49	1.2	1.14	**43**	**1.4**	**1.01**	**43**	**1.4**	**1.03**	**43**	**1.4**	**1.03**
			SB	AM	30	2.0	1.4	50	1.2	1.12	**35**	**1.7**	**1.04**	**36**	**1.7**	**1.04**	**34**	**1.7**	**1.04**
			SB	PM	30	2.0	1.4	30	2.0	1.17	**24**	**2.5**	**1.07**	**22**	**2.8**	**1.08**	**22**	**2.7**	**1.07**
8	I-680	North of Willow Pass Rd	NB	AM	30	2.0	1.4	56	1.1	1.18	56	1.1	**1.08**	57	1.1	**1.09**	57	1.1	**1.09**
			NB	PM	30	2.0	1.4	55	1.1	1.15	**50**	**1.2**	**1.11**	**52**	1.1	**1.11**	**52**	**1.2**	**1.11**
			SB	AM	30	2.0	1.4	51	1.2	1.14	**43**	**1.4**	**1.05**	**45**	**1.3**	**1.05**	**44**	**1.4**	**1.05**
			SB	PM	30	2.0	1.4	52	1.2	1.17	52	1.2	**1.06**	**51**	1.2	**1.08**	**51**	1.2	**1.08**
9	I-680	North of Concord Av	NB	AM	30	2.0	1.4	44	1.5	1.16	**41**	1.5	**1.06**	**43**	1.4	**1.05**	**43**	1.4	**1.05**
			NB	PM	30	2.0	1.4	41	1.6	1.14	**28**	**2.1**	**1.02**	**29**	**2.1**	**1.03**	**29**	**2.1**	**1.04**
			SB	AM	30	2.0	1.4	31	2.1	1.12	**22**	**2.7**	**1.03**	**24**	**2.5**	**1.03**	**23**	**2.6**	**1.03**
			SB	PM	30	2.0	1.4	43	1.5	1.18	**38**	**1.6**	**1.11**	**39**	1.5	**1.11**	**39**	1.5	**1.11**
10	I-680	North of SR 4	NB	AM	30	2.0	1.4	43	1.4	1.16	**42**	**1.6**	**1.06**	44	**1.5**	**1.06**	44	**1.5**	**1.07**
			NB	PM	30	2.0	1.4	50	1.2	1.13	**42**	**1.6**	**1.03**	**41**	**1.6**	**1.03**	**40**	**1.6**	**1.03**
			SB	AM	30	2.0	1.4	45	1.3	1.12	**41**	**1.6**	**1.01**	**36**	**1.8**	**1.01**	**37**	**1.8**	**1.01**
			SB	PM	30	2.0	1.4	42	1.4	1.16	**38**	**1.7**	**1.02**	42	**1.6**	**1.02**	**41**	**1.6**	**1.02**
11	SR 242	North of I-680	NB	AM	30	2.0	1.4	60	1.0	1.14	**59**	1.0	1.14	**56**	**1.1**	**1.13**	**57**	**1.1**	**1.13**
			NB	PM	30	2.0	1.4	51	1.2	1.16	**36**	**1.7**	**1.12**	**38**	**1.6**	**1.12**	**38**	**1.6**	**1.10**
			SB	AM	30	2.0	1.4	29	2.0	1.14	**16**	**3.7**	**1.09**	**19**	**3.2**	**1.08**	**20**	**3.0**	**1.09**
			SB	PM	30	2.0	1.4	53	1.1	1.19	**36**	**1.6**	**1.15**	**29**	**2.1**	**1.11**	**30**	**2.0**	**1.11**
12	SR 242	North of Willow Pass Rd	NB	AM	30	2.0	1.4	60	1.0	1.16	**58**	1.0	1.18	**54**	**1.1**	**1.15**	**54**	**1.1**	**1.15**
			NB	PM	30	2.0	1.4	52	1.2	1.16	**32**	**1.9**	**1.12**	**34**	**1.8**	**1.11**	**34**	**1.8**	**1.10**
			SB	AM	30	2.0	1.4	49	1.2	1.15	**26**	**2.3**	**1.09**	**29**	**2.0**	**1.08**	**30**	**2.0**	**1.09**
			SB	PM	30	2.0	1.4	59	1.0	1.20	**43**	**1.4**	**1.14**	**40**	**1.5**	**1.10**	**41**	**1.5**	**1.10**
13	SR 242	North of Concord Av	NB	AM	30	2.0	1.4	65	1.0	1.16	**54**	**1.1**	1.19	**47**	**1.3**	1.16	**48**	**1.3**	1.16
			NB	PM	30	2.0	1.4	37	1.7	1.17	**16**	**3.7**	**1.14**	**17**	**3.5**	**1.13**	**17**	**3.5**	**1.12**
			SB	AM	30	2.0	1.4	41	1.6	1.16	**14**	**4.2**	**1.10**	**16**	**3.7**	**1.10**	**17**	**3.6**	**1.10**
			SB	PM	30	2.0	1.4	62	1.0	1.20	**47**	**1.3**	**1.14**	**41**	**1.5**	**1.10**	**43**	**1.4**	**1.10**
14	SR 242	North of Solano Way	NB	AM	30	2.0	1.4	65	1.0	1.15	**59**	1.0	1.19	**56**	**1.1**	1.16	**57**	**1.1**	1.16
			NB	PM	30	2.0	1.4	59	1.1	1.17	**45**	**1.3**	**1.14**	**44**	**1.4**	**1.13**	**45**	**1.3**	**1.12**
			SB	AM	30	2.0	1.4	60	1.1	1.16	**45**	**1.3**	**1.10**	**44**	**1.3**	**1.11**	**46**	**1.3**	**1.11**
			SB	PM	30	2.0	1.4	65	1.0	1.19	**57**	**1.1**	**1.15**	**54**	**1.1**	**1.11**	**54**	**1.1**	**1.11**
15	SR 242	North of Olivera Rd	NB	AM	30	2.0	1.4	65	1.0	1.15	**59**	1.0	1.19	**59**	1.0	1.19	**59**	1.0	1.18
			NB	PM	30	2.0	1.4	62	1.0	1.17	**50**	**1.2**	**1.14**	**49**	**1.2**	**1.13**	**50**	**1.2**	**1.12**
			SB	AM	30	2.0	1.4	54	1.2	1.16	**30**	**2.0**	**1.10**	**33**	**1.8**	**1.11**	**34**	**1.8**	**1.11**
			SB	PM	30	2.0	1.4	64	1.0	1.19	**52**	**1.2**	**1.14**	**49**	**1.2**	**1.12**	**50**	**1.2**	**1.11**
16	SR 4	East of I-680	EB	AM	30	2.0	1.4	63	1.0	1.12	64	1.0	**1.11**	**63**	1.0	**1.10**	**63**	1.0	**1.09**
			EB	PM	30	2.0	1.4	32	2.0	1.18	39	1.7	1.29	41	1.6	1.29	42	1.6	1.30
			WB	AM	30	2.0	1.4	31	2.1	1.19	31	2.1	1.32	34	1.9	1.31	34	1.9	1.31
			WB	PM	30	2.0	1.4	61	1.1	1.18	64	1.0	1.26	**60**	1.1	1.25	61	1.1	1.25
17	SR 4	East of Solano Way	EB	AM	30	2.0	1.4	65	1.0	1.12	65	1.0	**1.10**	65	1.0	**1.08**	**64**	1.0	**1.08**
			EB	PM	30	2.0	1.4	62	1.1	1.19	**47**	**1.4**	1.29	**50**	**1.3**	1.29	**50**	**1.3**	1.30
			WB	AM	30	2.0	1.4	59	1.1	1.19	**37**	**1.7**	1.30	**40**	**1.6**	1.31	**40**	**1.6**	1.30
			WB	PM	30	2.0	1.4	65	1.0	1.18	65	1.0	1.27	**63**	1.0	1.27	**64**	1.0	1.27
18	SR 4	East of SR 242	EB	AM	24	2.5	1.4	65	1.0	1.14	**64**	1.0	1.15	**64**	1.0	1.15	**64**	1.0	1.15
			EB	PM	24	2.5	1.4	55	1.2	1.18	**25**	**2.6**	1.24	**29**	**2.3**	1.24	**29**	**2.2**	1.24
			WB	AM	24	2.5	1.4	59	1.1	1.20	**13**	**5.0**	1.32	**20**	**3.2**	1.37	**19**	**3.4**	1.33
			WB	PM	24	2.5	1.4	65	1.0	1.20	**63**	1.0	1.33	**62**	1.0	1.37	**61**	**1.1**	1.36
19	SR 4	East of Port Chicago Hwy	EB	AM	24	2.5	1.4	64	1.0	1.10	**61**	**1.1**	**1.05**	**58**	**1.1**	**1.03**	**58**	**1.1**	**1.03**
			EB	PM	24	2.5	1.4	26	2.5	1.01	**6**	**10.5**	1.01	**9**	**7.5**	1.01	**9**	**7.3**	1.01
			WB	AM	24	2.5	1.4	19	3.5	1.01	**3**	**24.3**	1.01	**6**	**11.4**	1.01	**6**	**11.6**	**1.00**
			WB	PM	24	2.5	1.4	61	1.1	1.21	**52**	**1.3**	**1.06**	**48**	**1.3**	**1.02**	**48**	**1.3**	**1.03**
20	SR 4	East of Willow Pass Rd	EB	AM	24	2.5	1.4	65	1.0	1.09	**64**	1.0	**1.06**	**60**	**1.1**	**1.04**	**60**	**1.1**	**1.05**
			EB	PM	24	2.5	1.4	49	1.3	1.03	**32**	**2.1**	1.04	**19**	**3.4**	1.03	**20**	**3.2**	**1.02**
			WB	AM	24	2.5	1.4	43	1.5	1.01	**23**	**2.9**	1.03	**13**	**4.9**	1.01	**13**	**4.9**	1.01
			WB	PM	24	2.5	1.4	65	1.0	1.10	**61**	**1.1**	**1.02**	**55**	**1.2**	**1.01**	**55**	**1.2**	**1.01**
	East County (Note that for LOS TSO, the results are shown in the Roadway LOS Table 4-25 and Intersection LOS Table 4-26)																		
21	SR 4	East of San Marco Blvd	EB	AM	n.a.	2.5	1.2	n.a.	1.0	1.06	n.a.	**1.1**	**1.01**	n.a.	**1.2**	**1.00**	n.a.	**1.2**	**1.00**
			EB	PM	n.a.	2.5	1.2	n.a.	1.7	1.01	n.a.	**3.1**	1.01	n.a.	**5.8**	1.01	n.a.	**5.8**	1.01
			WB	AM	n.a.	2.5	1.2	n.a.	1.8	1.00	n.a.	**5.3**	1.01	n.a.	**8.3**	1.01	n.a.	**7.7**	1.01
			WB	PM	n.a.	2.5	1.2	n.a.	1.0	1.07	n.a.	**1.2**	**1.01**	n.a.	**1.4**	**1.00**	n.a.	**1.4**	**1.00**
22	SR 4	East of Bailey Rd	EB	AM	n.a.	2.5	1.2	n.a.	1.0	1.05	n.a.	**1.1**	**1.00**	n.a.	**1.3**	**1.00**	n.a.	**1.3**	**1.00**
			EB	PM	n.a.	2.5	1.2	n.a.	1.3	1.00	n.a.	**2.4**	1.01	n.a.	**2.9**	1.01	n.a.	**2.9**	1.01
			WB	AM	n.a.	2.5	1.2	n.a.	1.4	1.01	n.a.	**4.0**	1.01	n.a.	**5.1**	1.01	n.a.	**5.0**	1.01
			WB	PM	n.a.	2.5	1.2	n.a.	1.1	1.09	n.a.	**1.3**	**1.00**	n.a.	**1.4**	**1.01**	n.a.	**1.4**	**1.01**
23	SR 4	East of Railroad Ave	EB	AM	n.a.	2.5	1.2	n.a.	1.2	1.11	n.a.	1.1	**1.02**	n.a.	1.2	**1.01**	n.a.	1.1	**1.01**
			EB	PM	n.a.	2.5	1.2	n.a.	2.7	1.17	n.a.	1.8	**1.01**	n.a.	2.0	**1.00**	n.a.	2.0	**1.00**
			WB	AM	n.a.	2.5	1.2	n.a.	2.5	1.18	n.a.	2.0	**1.01**	n.a.	2.4	**1.01**	n.a.	2.4	**1.01**
			WB	PM	n.a.	2.5	1.2	n.a.	1.1	1.17	n.a.	1.1	**1.00**	n.a.	1.1	**1.01**	n.a.	1.1	**1.01**
24	Kirker Pass Rd	East of James Donlon	EB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	1.2	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
25	Railroad Ave	North of Buchanan Rd	NB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			NB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			SB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			SB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
26	Bailey Rd (proposed	South of West Leland Rd	EB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**1.4**	n.a.	n.a.	**1.4**	n.a.	n.a.	**1.4**	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	1.1	n.a.	n.a.	**4.0**	n.a.	n.a.	**3.8**	n.a.	n.a.	**3.8**	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**1.1**	n.a.	n.a.	**1.2**	n.a.	n.a.	**1.1**	n.a.
27	Bailey Rd	North of W. Leland Rd	NB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**1.8**	n.a.	n.a.	**1.2**	n.a.	n.a.	**1.4**	n.a.
			NB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			SB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			SB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
28	Buchanan Rd	East of Railroad Ave	EB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	1.2	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
29	Evora Rd	West of Willow Pass Rd (Pittsbur	EB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**1.2**	n.a.	n.a.	**1.1**	n.a.	n.a.	1.0	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.

Table 4-30: Analysis of Traffic Service Objectives

	Roadway	Location	Dir	Peak Hour	Significance Thresholds			Existing Condition			Future - 2030								
											No Project			Preferred Alternative			Concentration and Conservation Alternative		
					Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO
30	James Donlon	East of Kirker Pass Rd	EB	AM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
31	Leland Rd	West of Railroad Ave	EB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**1.1**	n.a.	n.a.	**1.1**	n.a.	n.a.	**1.1**	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**1.3**	n.a.	n.a.	**1.5**	n.a.	n.a.	**1.1**	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
32	Leland Rd	West of Bailey Road	EB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**1.1**	n.a.	n.a.	**1.1**	n.a.	n.a.	**1.1**	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**2.8**	n.a.	n.a.	**2.7**	n.a.	n.a.	**1.8**	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
33	Leland Rd (propose	East of San Marco Blvd	EB	AM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.2	n.a.	n.a.	**2.3**	n.a.	n.a.	**2.1**	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	**3.5**	n.a.	n.a.	**5.8**	n.a.	n.a.	**4.3**	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
34	Avila Rd (proposed)	West of San Marco Blvd	EB	AM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	**1.1**	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	**1.1**	n.a.	n.a.	**12.8**	n.a.	n.a.	**14.2**	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	**2.8**	n.a.	n.a.	**18.6**	n.a.	n.a.	**18.1**	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	-	n.a.	n.a.	1.0	n.a.	n.a.	**2.7**	n.a.	n.a.	**2.5**	n.a.
35	Willow Pass Rd	East of Evora Rd	EB	AM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.
			EB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	**2.0**	n.a.	n.a.	**4.2**	n.a.	n.a.	**4.0**	n.a.
			WB	AM	n.a.	2.0	n.a.	n.a.	1.1	n.a.	n.a.	**5.4**	n.a.	n.a.	**7.6**	n.a.	n.a.	**7.6**	n.a.
			WB	PM	n.a.	2.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.	n.a.	1.0	n.a.

Notes:
Dir = direction, NB = northbound, SB = southbound, EB = eastbound, WB = westbound; Avg = average; AVO = average vehicle occupancy which represents the average number of persons per vehicle; LOS = level of service

Impact categories*

Grey shading indicates a significant impact in the No Project condition.

Yellow highlighting indicates a project-specific significant impact of the Preferred or Concentration and Conservation Alterntaive that is worse than the No Project condition.

Green highlighting indicates a project-specific significant impact of the Preferred or Concentration and Conservation Alterntaive that improves or does not change the No Project condition.

Orange highlighting indicates a contributing significant impact of the Preferred or Concentration and Conservation Alterntaive that is worse than the No Project condition.

Blue highlighting indicates a contributing significant impact of the Preferred or Concentration and Conservation Alterntaive that improves or does not change the No Project condition.

Bold with no shading or highlighting indicates a less than significant impact.
* Impact categories are described in Section 4.3.

The relative similarity of the findings between the two alternatives, despite differences in the development programs, is the result of several factors, including:

- Background traffic congestion, which limits the amount of additional traffic that can be assigned to congested links, causing traffic to reassign to alternate routes.
- The Preferred Alternative with a larger development program than the Concentration and Conservation Alternative tends to cover larger land areas and have more roadway infrastructure, which tends to distribute traffic impacts.
- Changes in regional traffic patterns resulting from new roadway infrastructure and redistribution of trips. That is, new on-site roadways may provide an alternative route to an existing congested route causing traffic to avoid (and thereby improve) the existing congestion by switching to an alternate route.

In addition, the two alternatives were developed with inherent strategies to reduce the impacts associated with additional traffic generated on the site. However, the two alternatives vary in the application of these strategies, as well as in the overall amount and arrangement of land use on the site. Common strategies to limit traffic impacts that have been incorporated into the two alternatives include:

- New roadway infrastructure, including new external connections to the site
- TOD adjacent to the North Concord/Martinez BART Station
- Concentration of development in the northern portion of the site where denser roadway networks are available and more external connections are possible
- Incorporating provisions for major employment-generating land uses that, given the location of the site, generate traffic in off-peak directions for many major roadway and transit facilities
- A relative balance of jobs and employed residents within the site
- Provision of public bus service within the site

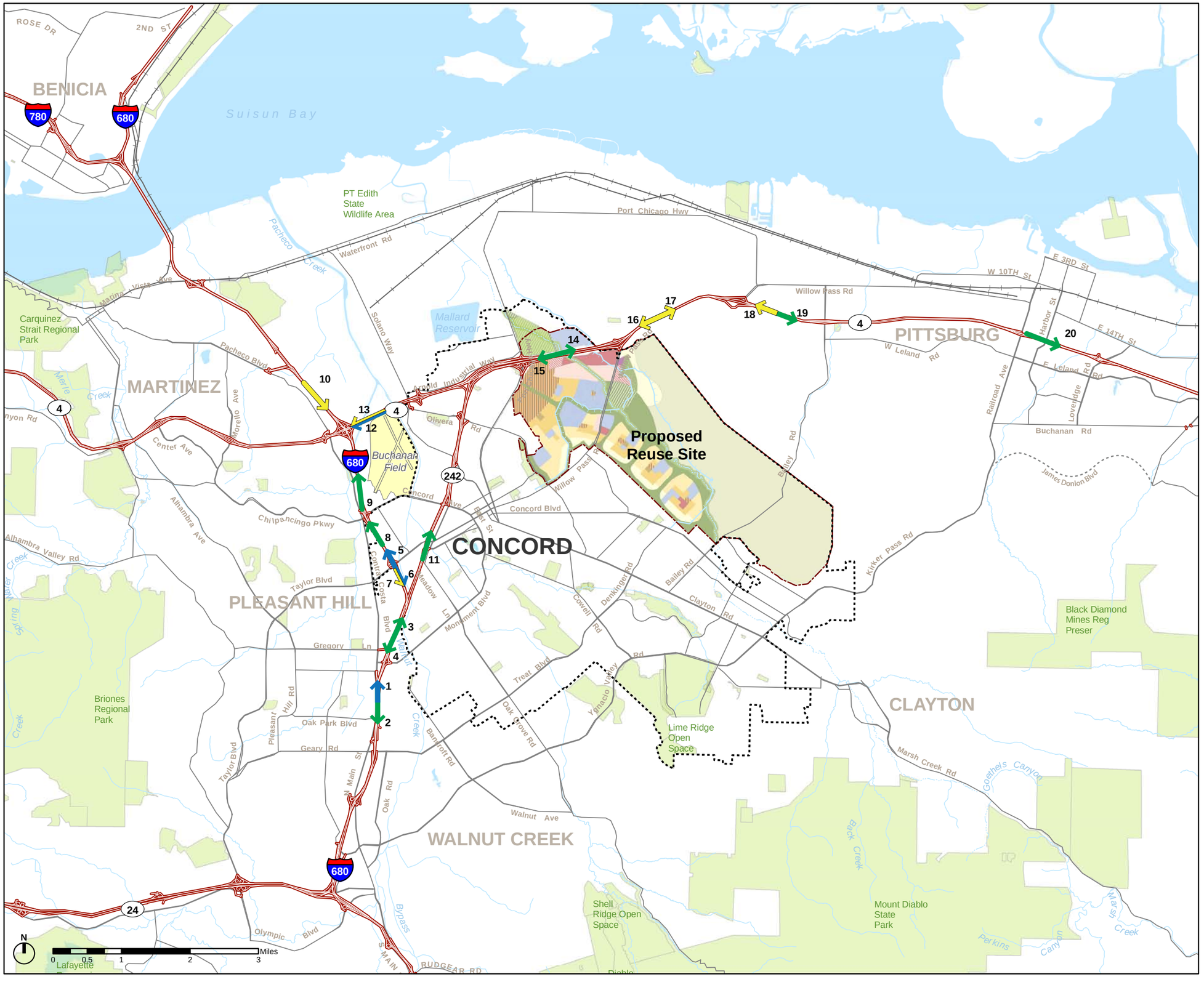
As described previously, the following discussion of transportation impacts includes impacts of the specific alternative (listed as the Preferred Alternative or the Concentration and Conservation Alternative, followed by the specific impact number) and the 2030 No Project Alternative. Locations with significant impacts are shown on Figures 4-15 through 4-22

Table 4–31: Impact Summary

			Number of Impacted Locations		
Facility Type	**Maximum Number of Impacts**		**2030 No Project Alternative**	**Preferred Alternative**	**Concentration and Conservation Alternative**
Freeway segments	38	Significant impact	17	18	16
		Less than significant impact	19	17	19
Freeway ramps	42	Significant impact	18	21	20
		Less than significant impact	21	17	18
Roadway segments	36	Significant impact	5	3	4
		Less than significant impact	9	11	10
Intersections	62	Significant impact	23	23	24
		Less than significant impact	38	35	35
Traffic service objectives*	70	Significant impact	47	49	48
		Less than significant impact	9	9	8
Total significant impacts			110	114	112
Total less than significant impacts			96	89	90

* The significant impacts reported in this table are based on the TSOs; however, the alternatives were also analyzed by applying the MTSOs in the recently adopted and soon-to-be-adopted Action Plans (i.e., those including MTSOs). The results of the MTSO analysis are shown in Appendix 4A. As proposed, the MTSOs generally set forth less stringent thresholds for acceptable operations than those established by the TSOs. Therefore, as shown in Appendix 4A, fewer impacts are identified for the alternatives when analyzed using the MTSOs.

Source: See Tables 4-25 through 4-30 for specific impact locations.



Legend

Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition

7. I-680 North of SR 242 Southbound (PM)
10. I-680 North of SR 4 Southbound (AM)
13. SR 4 East of SR 242 Westbound (PM)
16. SR 4 East of Willow Pass Road Eastbound (PM)
17. SR 4 East of Willow Pass Road Westbound (AM/PM)
18. SR 4 East of San Marco Blvd Eastbound (PM)

Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition

2. I-680 South of Monument Blvd Southbound (AM)
3. I-680 North of Monument Blvd Northbound (PM)
4. I-680 North of Monument Blvd Southbound (AM)
8. I-680 North of Willow Pass Road Northbound (PM)
9. I-680 North of Concord Avenue Northbound (PM)
11. SR 242 North of I-680 Northbound (PM)
14. SR 4 East of Port Chicago Highway Eastbound (PM)
15. SR 4 East of Port Chicago Highway Westbound (AM)
19. SR 4 East of San Marco Blvd Westbound (AM)
20. SR 4 East of Railroad Avenue Westbound (AM)

Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition

None

Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition

1. I-680 South of Monument Blvd Northbound (PM)
5. I-680 North of SR 242 Northbound (PM)
6. I-680 North of SR 242 Southbound (AM)
12. SR 4 East of SR 242 Westbound (AM)

AM or PM, One Direction

AM or PM, Both Directions

AM and PM, One Direction

Base Map

Concord City Limit
Site Area
Parks and Open Space
Mt. Diablo Creek
Other Creek or Stream
Canal
Highways
Arterials

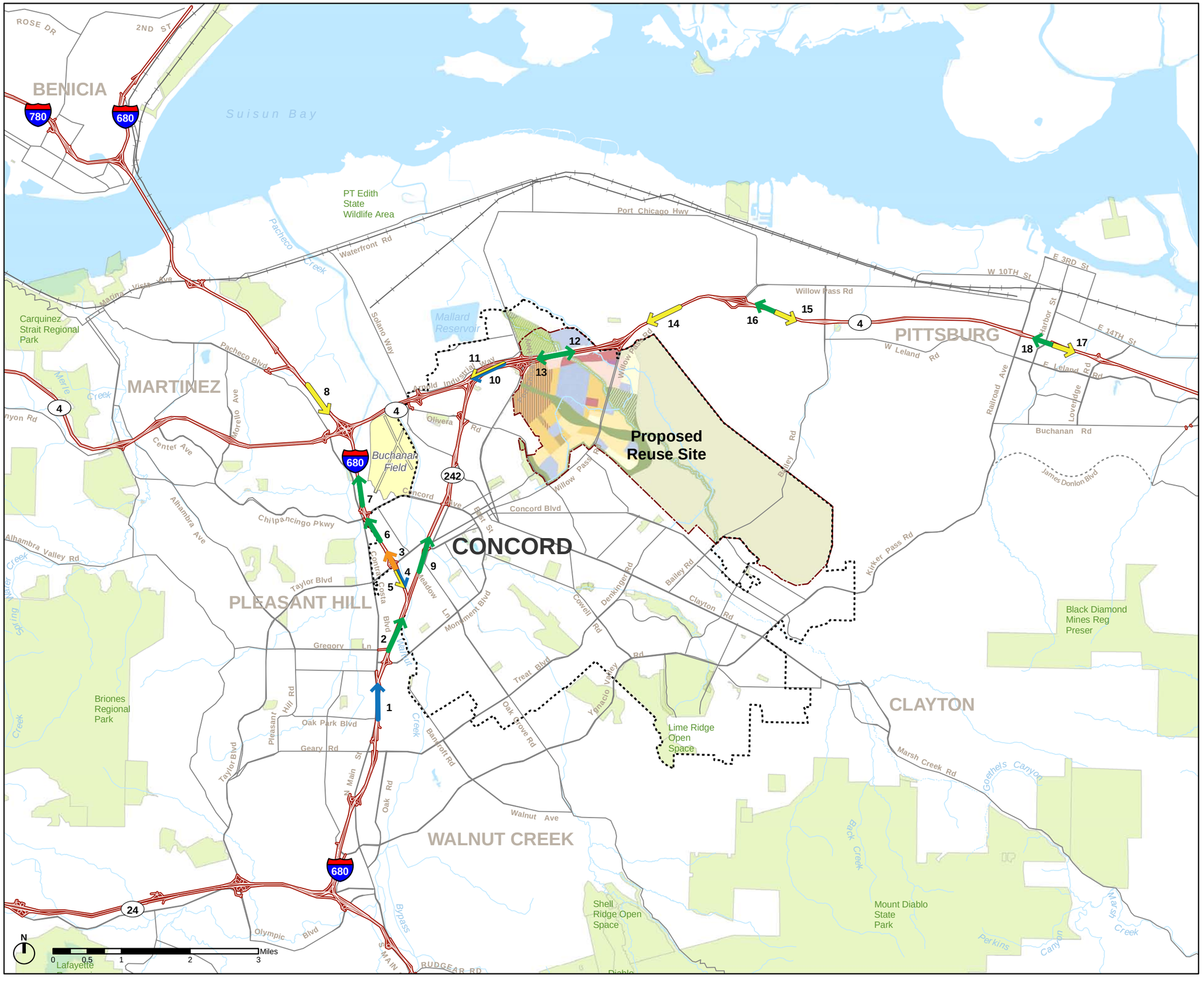
Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 14, 2009

Figure 4-15
Preferred Alternative Freeway Segments with Significant Impacts



Legend

Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition

5. I-680 North of SR 242 Southbound (PM)
8. I-680 North of SR 4 Southbound (AM)
11. SR 4 East of SR 242 Westbound (PM)
14. SR 4 East of Willow Pass Road Westbound (AM/PM)
15. SR 4 East of San Marco Blvd Eastbound (PM)
17. SR 4 East of Railroad Avenue Eastbound (PM)

Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition

2. I-680 North of Monument Blvd Northbound (PM)
6. I-680 North of Willow Pass Road Northbound (PM)
7. I-680 North of Concord Avenue Northbound (PM)
9. SR 242 North of I-680 Northbound (PM)
12. SR 4 East of Port Chicago Highway Eastbound (PM)
13. SR 4 East of Port Chicago Highway Westbound (AM)
16. SR 4 East of San Marco Blvd Westbound (AM)
18. SR 4 East of Railroad Avenue Westbound (AM)

Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition

3. I-680 North of SR 242 Northbound (PM)

Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition

1. I-680 South of Monument Blvd Northbound (PM)
4. I-680 North of SR 242 Southbound (AM)
10. SR 4 East of SR 242 Westbound (AM)

AM or PM, One Direction

AM or PM, Both Directions

AM and PM, One Direction

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials

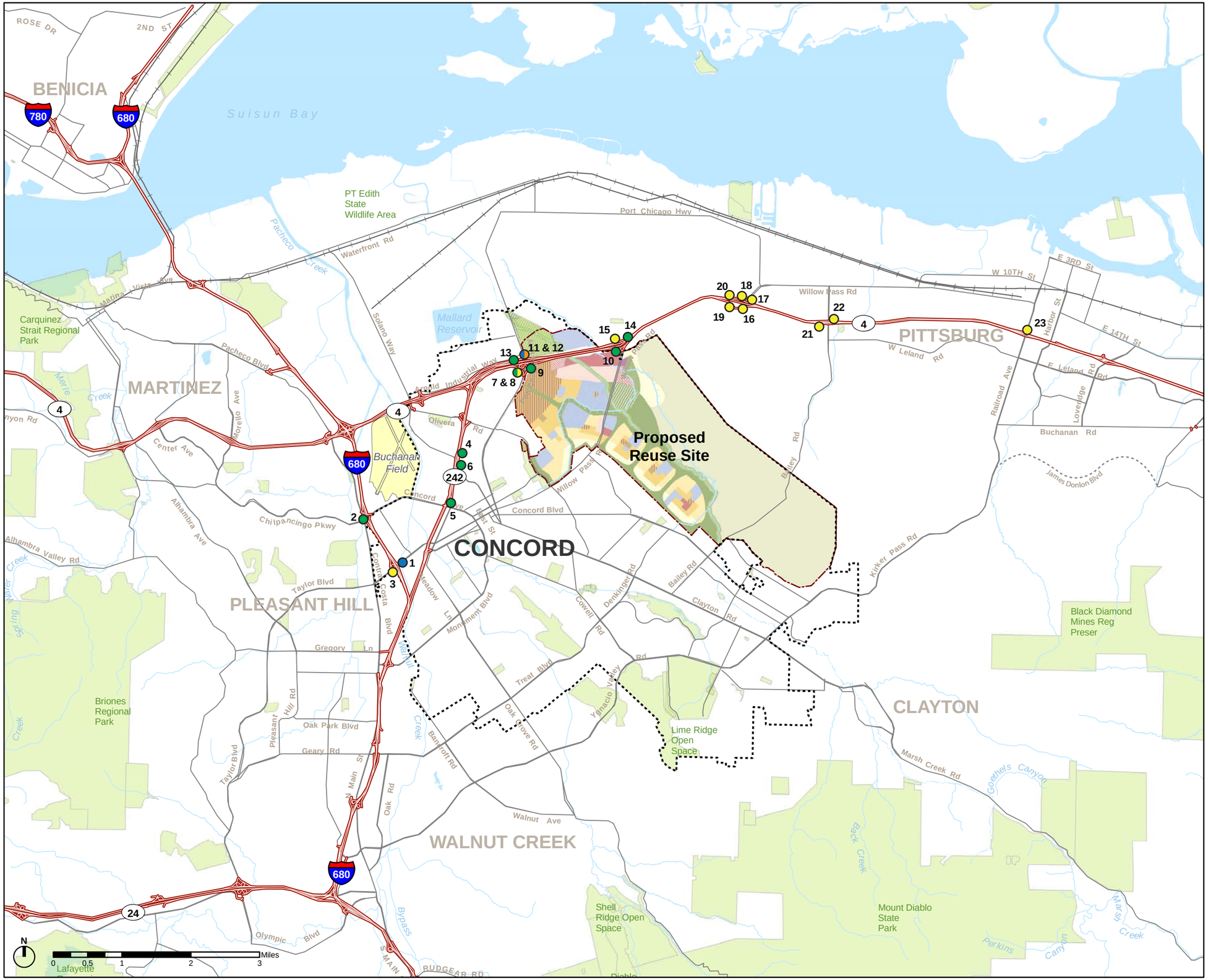
Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 20, 2009

Figure 4-16
Concentration and Conservation Alternative Freeway Segments with Significant Impacts



Legend

- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  - 3. I-680: Willow Pass Road EB to SB Onramp (AM)
  - 7. SR 4: Port Chicago Highway EB Offramp (AM)
  - 15. SR 4: Willow Pass Road WB Offramp (AM)
  - 16. SR 4: San Marco Road EB Offramp (PM)
  - 17. SR 4: SB San Marco Road WB Onramp (AM)
  - 18. SR 4: NB San Marco Road WB Onramp (AM
  - 19. SR 4: NB San Marco Road EB Onramp (PM)
  - 20. SR 4: San Marco Road WB Offramp (AM)
  - 21. SR 4: Bailey Road EB Offramp (PM)
  - 22. SR 4: Bailey Road WB Onramp (AM)
  - 23. SR 4: Railroad Avenue WB Offramp (AM)
- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  - 2. I-680: Concord Avenue WB to NB Offramp (PM)
  - 4. SR 242: Clayton Road NB Offramp (PM)
  - 5. SR 242: Concord Avenue EB to NB Onramp (PM)
  - 6. SR 242: Clayton Road SB Onramp (AM/PM)
  - 8. SR 4: Port Chicago Highway EB Offramp (PM)
  - 9. SR 4: Port Chicago Highway EB Onramp (PM)
  - 10. SR 4: Willow Pass Road EB Offramp (PM)
  - 13. SR 4: Port Chicago Highway WB Offramp (AM)
  - 14. SR 4: Willow Pass Road WB Onramp (AM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  - 12. SR 4: Port Chicago Highway WB Onramp (PM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  - 1. I-680: Willow Pass Road NB Onramp (PM)
  - 11. SR 4: Port Chicago Highway WB Onramp (AM)
- AM ***and*** PM
- AM ***or*** PM

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials

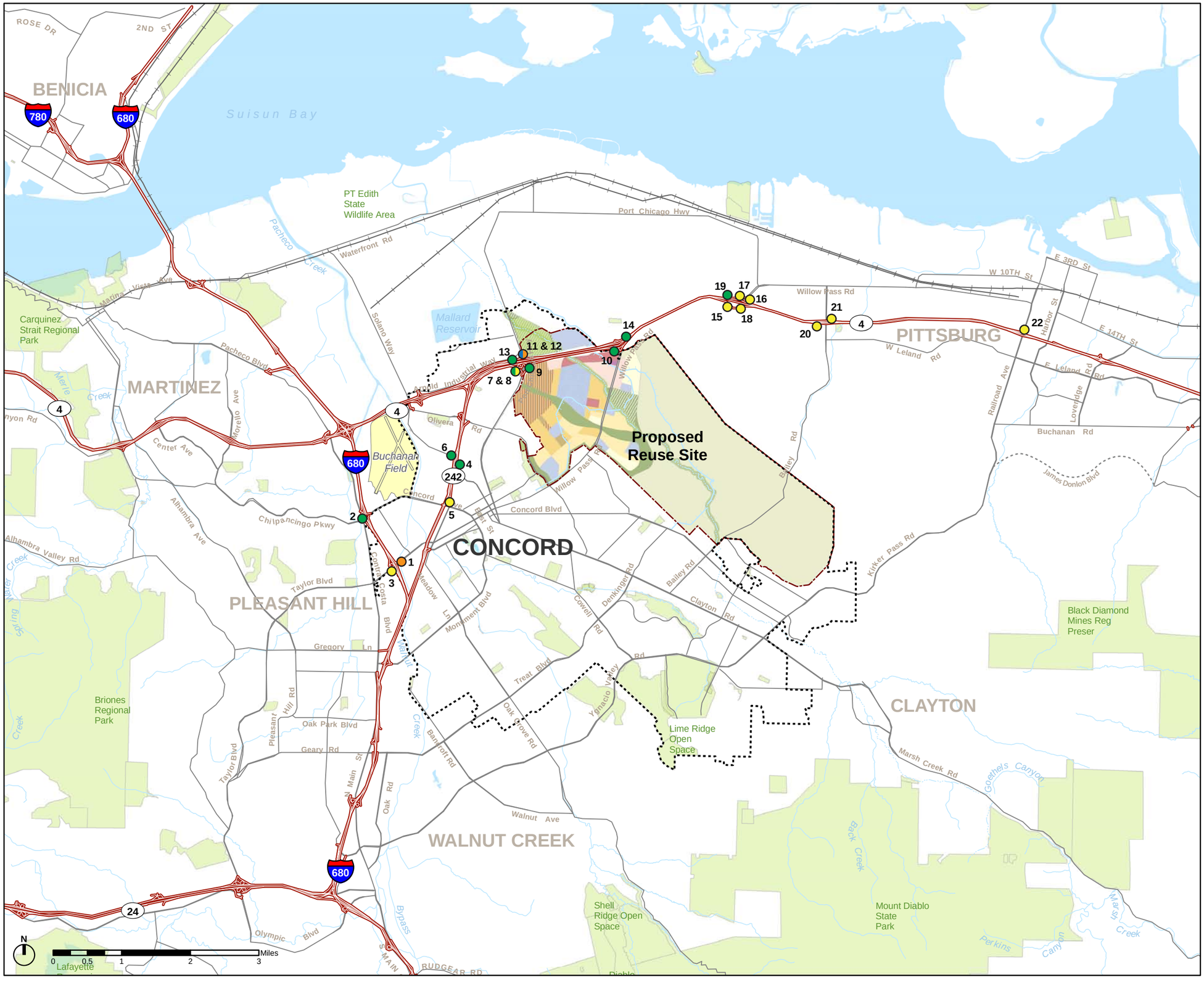
Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 14, 2009

Figure 4-17
Preferred Alternative Ramps with Significant Impacts



Legend

- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  - 3. I-680: Willow Pass Road EB to SB Onramp (AM)
  - 5. SR 242: Concord Avenue EB to SB Onramp (PM)
  - 7. SR 4: Port Chicago Highway EB Offramp (AM)
  - 15. SR 4: San Marco Road EB Offramp (PM)
  - 16. SR 4: SB San Marco Road WB Onramp (AM)
  - 17. SR 4: NB San Marco Road WB Onramp (AM)
  - 18. SR 4: NB San Marco Road EB Onramp (PM)
  - 20. SR 4: SB Bailey Road EB Offramp (PM)
  - 21. SR 4: Bailey Road WB Onramp (AM)
  - 22. SR 4: Railroad Avenue EB Onramp (PM)
- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  - 2. I-680: Concord Avenue WB to NB Onramp (PM)
  - 4. SR 242: Clayton Road NB Offramp (PM)
  - 6. SR 242: Clayton Road SB Onramp (AM/PM)
  - 8. SR 4: Port Chicago Highway EB Offramp (PM)
  - 9. SR 4: Port Chicago Highway EB Onramp (PM)
  - 10. SR 4: Willow Pass Road EB Offramp (PM)
  - 13. SR 4: Port Chicago Highway WB Offramp (AM)
  - 14. SR 4: Willow Pass Road WB Onramp (AM)
  - 19. SR 4: San Marco Road WB Offramp (AM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  - 1. I-680: Willow Pass Road NB Offramp (PM)
  - 12. SR 4: Port Chicago Highway WB Onramp (PM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  - 11. SR 4: Port Chicago Highway WB Onramp (AM)
- AM ***and*** PM
- AM ***or*** PM

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials

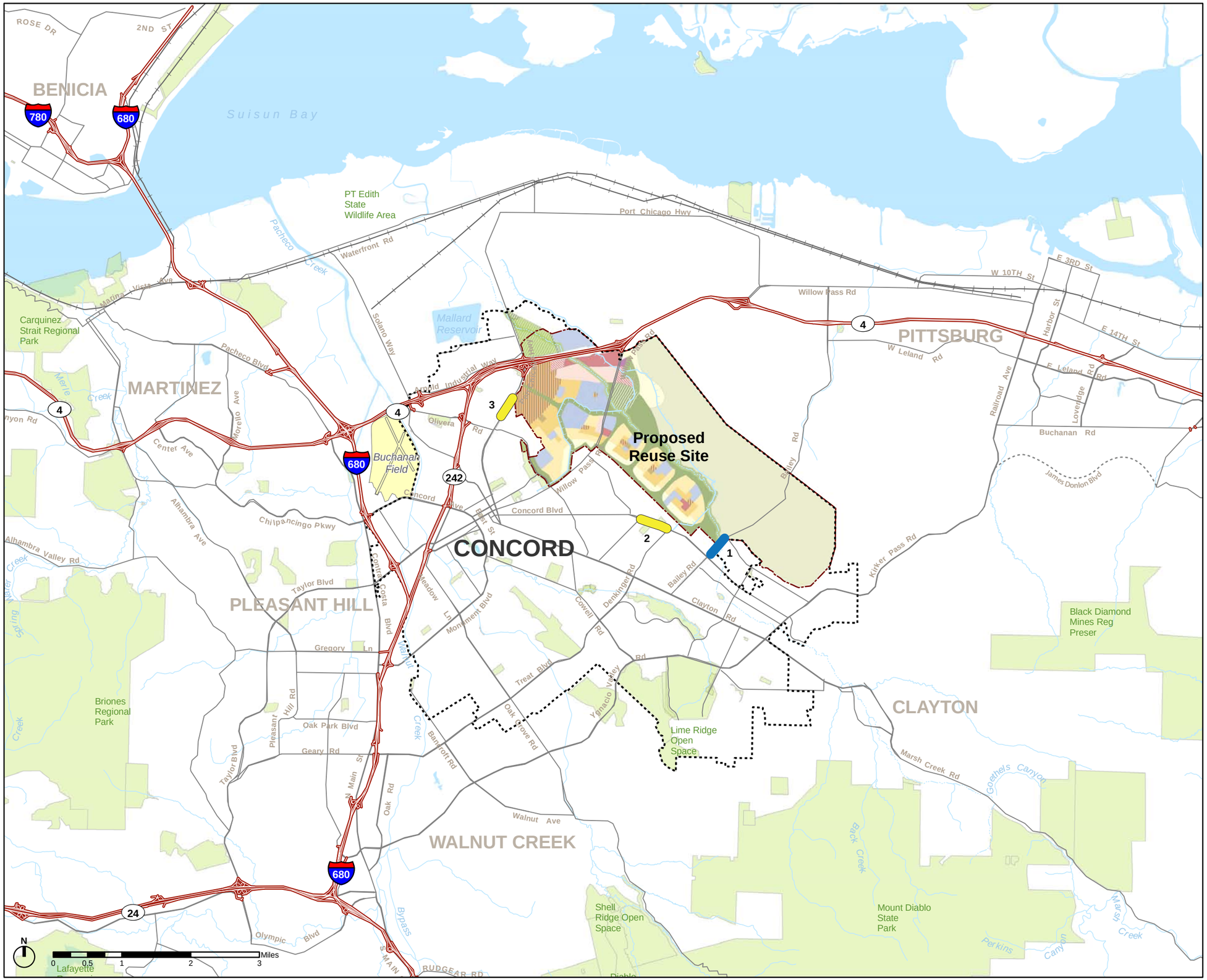
Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 20, 2009

Figure 4-18
Concentration and Conservation Alternative Ramps with Significant Impacts



Legend

- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  2. Concord Blvd West of Denkinger Road (AM/PM)
  3. Port Chicago Highway North of Olivera Road (AM/PM)
- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  None
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  None
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  1. Bailey Road East of Concord Blvd (AM/PM)

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

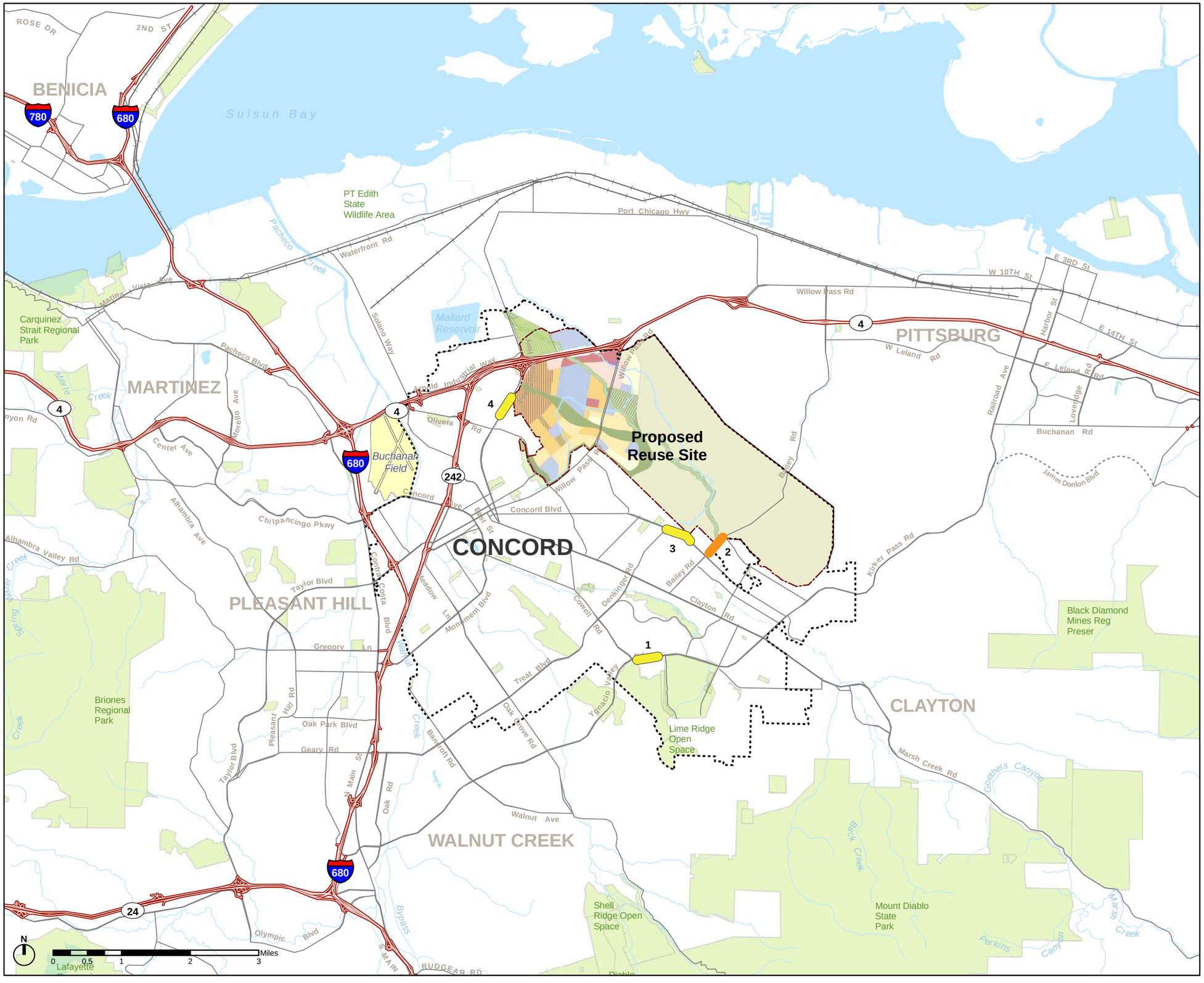
Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 14, 2009

Figure 4-19
Preferred Alternative Roadway Segments with Significant Impacts



Legend

Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition

1. Ygnacio Valley Road East of Cowell Road (AM)
3. Concord Blvd West of Denkinger Road (AM/PM)
4. Port Chicago Highway North of Olivera Road (AM/PM)

Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition

None

Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition

2. Bailey Road East of Comcord Blvd (AM/PM)

Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition

None

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

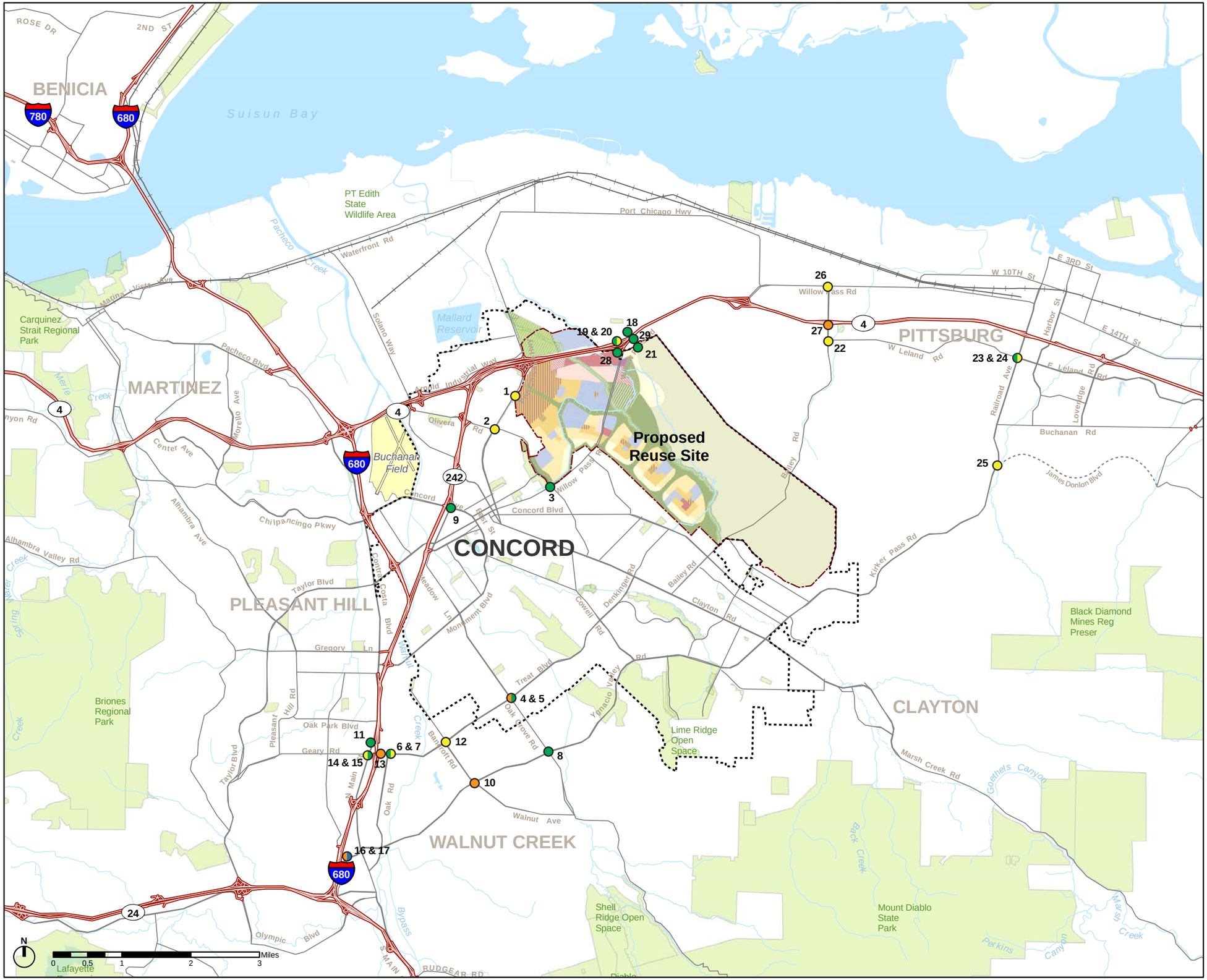
Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 20, 2009

Figure 4-20
Concentration and Conservation Alternative Roadway Segments with Significant Impacts



Legend

- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  1. Port Chicago Highway / Panoramic Drive (AM)
  2. Port Chicago Highway / Olivera Road (AM/PM)
  7. Oak Road / Treat Blvd (PM)
  11. North Main Street / Geary Road (AM/PM)
  12. Bancroft Road / Treat Blvd (PM)
  14. North Main Street / Sunnyvale Avenue - SB I-680 Ramps (AM)
  20. Willow Pass Road / Evora Road (PM)
  22. San Marco Blvd / West Leland Road
  23. Railroad Avenue / West Leland Road (AM)
  25. Kirker Pass Road / James Donlon Blvd
  26. San Marco Blvd / Willow Pass Road - SR 4 EB ramps (PM)
- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  3. Farm Bureau Road / Willow Pass Road (PM)
  5. Oak Grove Road / Treat Blvd (PM)
  6. Oak Road / Treat Blvd (AM)
  8. Oak Grove Road / Ygnacio Valley Road (AM/PM)
  9. Commerce Avenue - SR 242 SB / Concord Avenue (PM)
  15. North Main Street / Sunnyvale Avenue - SB I-680 Ramps (PM)
  18. Willow Pass Road / Evora Road / EB SR 4 WB Offramp (AM)
  19. Willow Pass Road / Evora Road (AM)
  21. Willow Pass Road / Avila Road (AM/PM)
  24. Railroad Avenue / West Leland Road (AM)
  28. Willow Pass Road / SR 4 WB ramps (AM)
  29. Willow Pass Road / SR 4 EB ramps (AM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  4. Oak Grove Road / Treat Blvd (AM)
  10. Walnut Avenue / Ygnacio Valley Road (PM)
  13. Buskirk Avenue - NB I-680 Offramp / Treat Blvd (PM)
  16. NB I-680 Offramp / Ygnacio Valley Road (AM)
  27. Bailey Road / SR 4 EB ramps - BART Access (PM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  17. NB I-680 Offramp / Ygnacio Valley Road (PM)
- AM ***and*** PM
- AM ***or*** PM

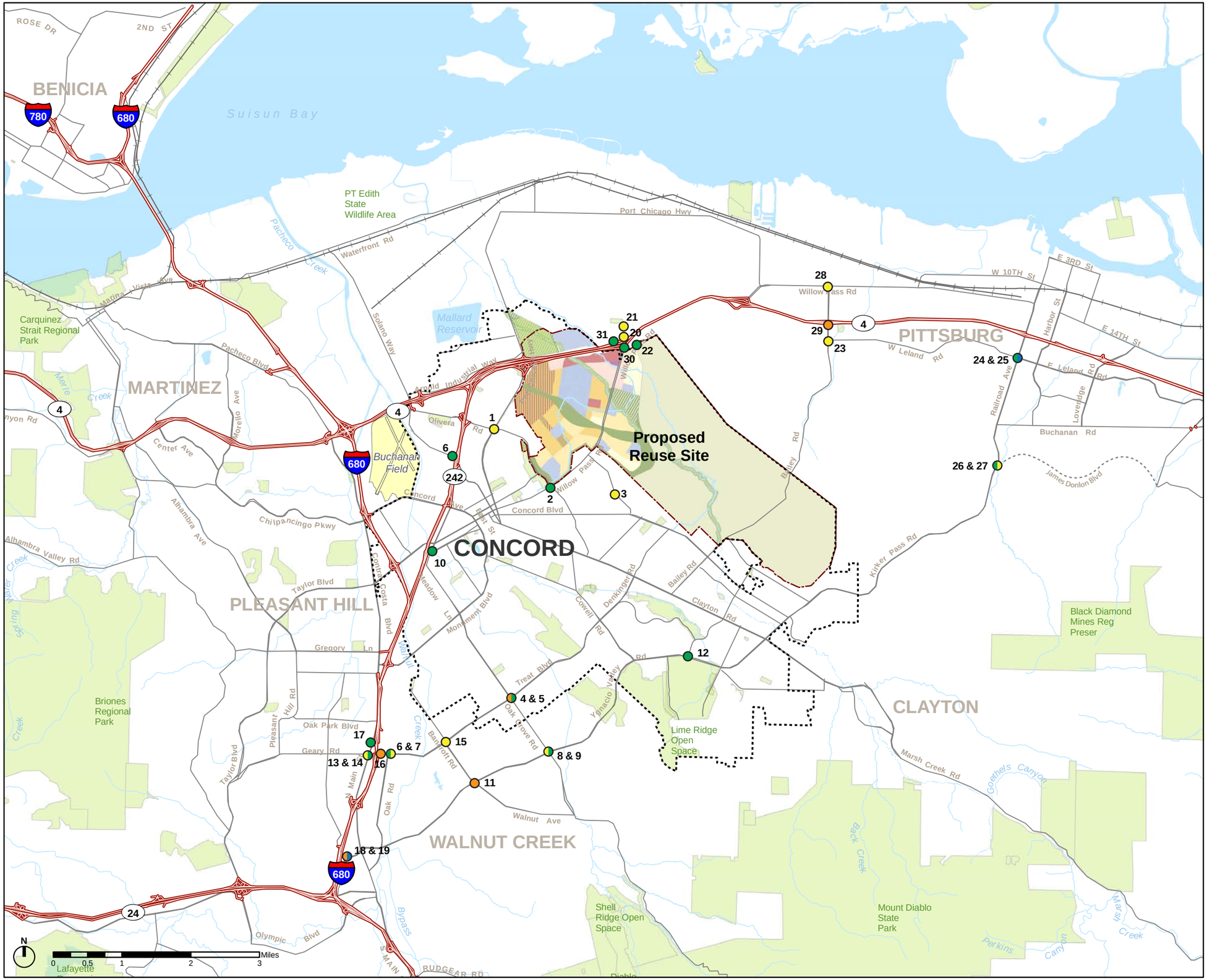
Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 14, 2009

Figure 4-21
Preferred Alternative Intersections with Significant Impacts



Legend

- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  1. Port Chicago Highway / Olivera Road (AM/PM)
  3. Beechwood Drive / Landana Drive (AM)
  7. Oak Road / Treat Blvd (PM)
  8. Oak Grove Road / Ygnacio Valley Road (AM)
  13. North Main Street / Geary Road (AM)
  15. Bancroft Road / Treat Blvd (PM)
  20. Willow Pass Road / Evora Road - EB SR 4 WB Offramp (AM)
  21. Willow Pass Road / Evora Road (AM/PM)
  23. San Marco Blvd / West Leland Road (AM)
  27. Kirker Pass Road / James Donlon Blvd (PM)
  28. San Marco Blvd / Willow Pass Road - SR 4 EB ramp (PM)
- Project Specific Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  2. Farm Bureau Road / Willow Pass Road (PM)
  5. Oak Grove Road / Treat Blvd (PM)
  6. Oak Road / Treat Blvd (AM)
  9. Oak Grove Road / Ygnacio Valley Road (PM)
  10. Commerce Avenue - SR 242 SB / Concord Avenue (PM)
  12. Ayers Road / Ygnacio Valley Road (AM)
  14. North Main Street / Geary Road (PM)
  17. North Main Street / Sunnyvale Avenue - SB I-680 Ramps (AM/PM)
  22. Willow Pass Road / Avila Road (AM/PM)
  24. Railroad Avenue / West Leland Road (AM)
  26. Kirker Pass Road / James Donlon Blvd (AM)
  30. Willow Pass Road / SR 4 WB ramps (AM)
  31. Willow Pass Road / SR 4 EB ramps (AM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that is worse than the No Project condition
  4. Oak Grove Road / Treat Blvd (AM)
  11. Walnut Avenue / Ygnacio Valley Road (PM)
  16. Buskirk Avenue - NB I-680 Offramp / Treat Blvd (AM/PM)
  18. NB I-680 Offramp / Ygnacio Valley Road (AM)
  29. Bailey Road / SR 4 EB ramps BART Access (PM)
- Contributing Significant Impact of the Preferred or Concentration and Conservation Alternative that improves or does not change the No Project condition
  19. NB I-680 Offramp / Ygnacio Valley Road (PM)
  25. Railroad Avenue / West Leland Road (PM)
- AM ***and*** PM
- AM ***or*** PM

Notes & Sources

Sources: Arup 2009; Dowling 2009

Concord Community Reuse Plan

Revised August 20, 2009

Figure 4-22
Concentration and Conservation Alternative Intersections with Significant Impacts

4.3.6 Transportation Impacts of the Preferred Alternative

Potentially significant transportation impacts resulting from the development of the Preferred Alternative that remain significant after mitigation are presented first. These would be followed by potentially significant transportation impacts that are less than significant after mitigation; however, there are no such impacts. Impacts that are less than significant are presented last.

4.3.6.1 Potentially Significant Project-Specific Transportation Impacts of the Preferred Alternative That Worsen the Future Condition and Remain Significant after Mitigation

Impact Transportation 1: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on six freeway segments:

1. **SR 4 east of SR 242 westbound (PM peak hour)**
2. **SR 4 east of Willow Pass Road eastbound (PM peak hour)**
3. **SR 4 east of Willow Pass Road westbound (AM and PM peak hours)**
4. **SR 4 east of San Marco Boulevard eastbound (PM peak hour)**
5. **I-680 north of SR 242 southbound (PM peak hour)**
6. **I-680 north of SR 4 southbound (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, these six freeway segments operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project Alternative condition. This is considered to be a potentially significant project-specific impact.

Mitigation Measure Transportation 1: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for

**Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~ ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~

Peak hour operations on these freeway segments are projected to be deficient with build-out traffic from the Preferred Alternative. Improvements that have been included in the model are listed in Section 4.3.4. Additional improvements beyond those identified in Section 4.3.4 have not been planned or programmed by the agencies responsible for the freeway network at this time. Future private or public development will be required to pay a fair share of the cost of currently identified improvements and improvements agreed to in the future through the regional process described in Section 4.1.2.2. However, because a significant impact would occur even with the currently identified improvements, this impact will remain significant and unavoidable.

Impact Transportation 2: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on 11 freeway ramps:

1. **I-680/Willow Pass Road eastbound-to-southbound on-ramp (AM peak hour)**
2. **SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour)**
3. **SR 4/Willow Pass Road westbound off-ramp (AM peak hour)**
4. **SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour)**
5. **SR 4/Southbound San Marco Boulevard westbound on-ramp (AM peak hour)**
6. **SR 4/Northbound San Marco Boulevard westbound on-ramp (AM peak hour)**

7. **SR 4/Northbound San Marco Boulevard eastbound on-ramp (PM peak hour)**
8. **SR 4/San Marco Boulevard westbound off-ramp (AM peak hour)**
9. **SR 4/Southbound Bailey Road eastbound off-ramp (PM peak hour)**
10. **SR 4/Bailey Road westbound on-ramp (AM peak hour)**
11. **SR 4/Railroad Avenue westbound on-ramp (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-27, these 11 freeway ramps operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold either on the ramp itself or on the downstream freeway mainline with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project Alternative condition. This is considered to be a potentially significant project-specific impact.

The low LOS at the ramp junctions with the freeway mainline at merge and diverge locations that result with the Preferred Alternative would largely be caused by congestion on the freeway mainline.

Mitigation Measure Transportation 2: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and

unavoidable.~~**Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~**

Ramp Impact Location 1: The I-680/Willow Pass Road eastbound-to-southbound on-ramp would operate at LOS F during the AM peak hour due to downstream freeway volumes at the merge area of this one-lane on-ramp. The existing traffic volumes exceed the capacity of the freeway, resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed by the agencies responsible for freeway network operations, there are no feasible mitigation measures to address the capacity of the freeway, and the impact on freeway ramps is therefore considered to be significant and unavoidable.

Ramp Impact Location 2: The SR 4/Port Chicago Highway eastbound off-ramp would operate at LOS F during the AM peak hour due to congestion on SR 4. The volumes on the freeway at the diverge point for this single-lane off-ramp exceed the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because no improvements beyond those identified in the assumption listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 3: Improvements to the SR 4/Willow Pass Road interchange are programmed in the 2035 RTP; however, the CCTA 2030 model does not include this improvement because specific project-level details have not been determined. The interchange improvements will be defined in detail once a Project Study Report (PSR) and Environmental Assessment (EA) are prepared by Caltrans. Because the specific improvement, and therefore the effects of the improvement, cannot be measured at this time, this impact is considered to be significant and unavoidable.

Ramp Impact Location 4: The SR 4 eastbound off-ramp at San Marco Boulevard is a single-lane off-ramp with a dedicated freeway lane where the LOS F is due to the ramp volume exceeding the ramp capacity. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 5: The SR 4 westbound on-ramp from southbound San Marco Boulevard is a single-lane on-ramp with a dedicated freeway lane where the ramp volume exceeds the capacity. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 6: The SR 4 westbound on-ramp from northbound San Marco Boulevard is a single-lane on-ramp. The impact that occurs at this location can be attributed to the over-capacity condition on SR 4 that results in unstable ramp operations. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 7: The SR 4/northbound San Marco Boulevard eastbound on-ramp would operate at LOS F during the PM peak hour due to the high volume of traffic that would use the Avila Road - West Leland Road connection to avoid congestion on SR 4. This single-lane on-ramp merges with SR 4. The volume at the merge exceeds the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 8: The SR 4 westbound off-ramp to San Marco Boulevard is a single-lane off-ramp. The impact that occurs at this location can be attributed to the over-capacity conditions on SR 4 that results in unstable ramp operations. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 9: The SR 4/southbound Bailey Road eastbound off-ramp would operate at LOS F during the PM peak hour due to upstream traffic volumes on the freeway that exceed the capacity where the ramp diverges from the freeway. Traffic from the freeway cannot exit at the ramp due to congestion on this segment of SR 4. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to

address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 10: The SR 4/Bailey Road westbound on-ramp would operate at LOS F during the AM peak hour due to the high volumes of traffic on the freeway combined with high ramp volumes at the merge area. The existing traffic volumes at the merge of this single-lane on-ramp with the freeway exceed the capacity. No improvements have been planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, and therefore no feasible mitigation measures have been identified. This impact is considered to be significant and unavoidable.

Ramp Impact Location 11: The SR 4/Railroad Avenue westbound on-ramp is a single-lane ramp that would operate at LOS F during the AM peak hour. This is due to volumes on the freeway and ramp exceeding the capacity of the freeway at the ramp merge area. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Impact Transportation 3: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on two roadway segments:

1. **Concord Boulevard west of Denkinger Road (AM and PM peak hours)**
2. **Port Chicago Highway north of Olivera Road (AM and PM peak hours)**

This impact is considered to be potentially significant.

As shown in Table 4-28, these two roadway segments would operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project Alternative condition. This is considered to be a potentially significant project-specific impact.

> **Mitigation Measure Transportation 3: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.**

Roadway widening would mitigate the impact of the Preferred Alternative, but widening would potentially require acquisition of property and possible displacement of existing businesses and residents. As discussed in the assumptions in Section 4.3.4, as a policy matter, the City will implement TDM measures rather than roadway widening, as wider roads in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur on Concord Boulevard and Port Chicago Highway. In that case, the City may prepare a request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

Impact Transportation 4: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold at 11 intersections:

1. **Port Chicago Highway and Panoramic Drive (AM peak hour)**
2. **Port Chicago Highway and Olivera Road (AM and PM peak hours)**
3. **Oak Road and Treat Boulevard (PM peak hour)**
4. **North Main Street and Geary Road (AM and PM peak hours)**
5. **North Bancroft Road and Treat Boulevard (PM peak hour)**
6. **Main Street and Sunnyvale Avenue and SB I-680 ramps (AM peak hour)**
7. **Willow Pass Road and Evora Road (west) (PM peak hour)**
8. **San Marco Boulevard and West Leland Road (AM peak hour)**
9. **Railroad Avenue and West Leland Road (AM peak hour)**
10. **Kirker Pass Road and James Donlon Boulevard Extension (PM peak hour)**
11. **San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramp (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-29, these 11 intersections would operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project Alternative condition. This is considered to be a potentially significant project-specific impact.

> **Mitigation Measure Transportation 4, Intersection Impact Location 1: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The**

City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.

At the intersection of Port Chicago Highway and Panoramic Drive, providing a third through lane northbound would reduce the impact to LOS E during AM and PM peak hours, but this would require widening Port Chicago Highway to accommodate an additional through lane. Port Chicago Highway is constrained by the BART tracks to the east. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur at this intersection. In that case, the City may prepare a request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 2: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.

Improvements to the intersection of Port Chicago Highway and Olivera Road would require widening of Port Chicago Highway, which is constrained by the BART tracks to the east, or widening of Olivera Road through an existing residential neighborhood. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur at this intersection. In that case, the City may prepare a

request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 3: **The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.** ~~**The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.**~~

~~At the intersection of Oak Road and Treat Boulevard, widening is not feasible as the intersection is built out and the acquisition of private property for such purpose would be considered cost prohibitive.~~ The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC Subregional Transportation Mitigation Program (STMP) requirements of the Central County Action Plan for Routes of Regional

Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 4: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable~~.

The intersection of North Main Street and Geary Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future

coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 5: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~

The intersection of North Bancroft Road and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future

coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

**Mitigation Measure Transportation 4, Intersection Impact Location 6: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~

The intersection of North Main Street and Sunnyvale Avenue/SB I-680 ramp is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended

for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 7: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~

At the intersection of Willow Pass Road and Evora Road (west), the increased traffic is due to the heavy northbound right turns from Willow Pass Road and the westbound left turns from Evora Road. Widening the northbound and westbound approaches to provide an additional westbound left turn lane and an additional northbound right turn lane would improve the operations at the intersection of Willow Pass Road and Evora Road (west). However, additional improvements would be required to fully mitigate the impacts to the mid-D LOS standard. Any improvements at this intersection will be developed through

discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

> **Mitigation Measure Transportation 4, Intersection Impact Location 8: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~

The intersection of San Marco Boulevard and West Leland Road would operate at LOS D with a v/c ratio of 0.90 due to the use of the West Leland Road connection to Avila Road as a parallel roadway to SR 4. This intersection is located outside of the City of Concord's jurisdiction, in the City of Pittsburg. Widening the northbound approach for a right turn lane

as programmed by the City of Pittsburg would not reduce the v/c ratio during the AM peak hour. However, an additional right turn lane in the westbound direction would mitigate the impact. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 9: **The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's planned improvement at the intersection of Railroad Avenue and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~

The City of Pittsburg had identified improvements at the intersection of Railroad Avenue and West Leland Road, but funding has not been secured. The improvements include widening the southbound approach for two left turn lanes and widening the eastbound approach for a right turn lane. However, additional widening would be required to mitigate the impacts to the mid-D LOS standard. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 10: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected jurisdiction takes place and agreement reached, this impact will remain significant and unavoidable.~~

At Kirker Pass Road and James Donlon Boulevard Extension, additional improvements to widen the intersection would be needed to mitigate the impacts. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Mitigation Measure Transportation 4, Intersection Impact Location 11: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~

The intersection of San Marco Boulevard - Willow Pass Road/SR 4 eastbound ramp is located outside the City of Concord. No specific improvements have been identified. Any

improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Impact Transportation 5: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold on 16 segments of regional routes:

1. **I-680 south of Monument Boulevard - southbound PM peak hour (average speed and delay index)**
2. **I-680 north of Monument Boulevard - southbound PM peak hour (average speed and delay index)**
3. **I-680 north of SR 242 - southbound PM peak hour (average speed and delay index)**
4. **SR 242 north of I-680 - southbound PM peak hour (average speed and delay index)**
5. **SR 4 east of Willow Pass Road - eastbound PM peak hour (average speed and delay index)**
6. **SR 4 east of Willow Pass Road - westbound AM peak hour (average speed and delay index)**
7. **SR 4 east of San Marco Boulevard - eastbound PM peak hour (delay index)**
8. **SR 4 east of San Marco Boulevard - westbound AM peak hour (delay index)**
9. **SR 4 east of Bailey Road - eastbound PM peak hour (delay index)**
10. **SR 4 east of Bailey Road - westbound AM peak hour (delay index)**
11. **Leland Road (proposed) east of San Marco Boulevard - eastbound PM peak hour (delay index)**
12. **Leland Road (proposed) east of San Marco Boulevard - westbound AM peak hour (delay index)**
13. **Avila Road (proposed) west of San Marco Boulevard - eastbound PM peak hour (delay index)**
14. **Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM peak hours (delay index)**
15. **Willow Pass Road east of Evora Road - eastbound PM peak hour (delay index)**
16. **Willow Pass Road east of Evora Road - westbound AM peak hour (delay index)**

This impact is considered to be potentially significant.

As shown in Table 4-30, these 16 segments of Regional Routes would operate at acceptable levels under Existing Conditions, but exceed the established performance threshold with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project Alternative condition. This is considered to be a potentially significant project-specific impact.

Mitigation Measure Transportation 5: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~

The Action Plan for Routes of Regional Significance identifies planned improvements to the regional system. Additional mitigation measures beyond the planned improvements included in the assumptions listed in Section 4.3.4 will require consultation and coordination with other TRANSPAC members, other RTPCs, and the CCTA. Future traffic studies for specific development projects on the site should update the TSO impact analysis to analyze the adopted Central County and East County Action Plans for Routes of Regional Significance. Because no improvements beyond those identified in the assumptions have been planned or programmed by the agencies at this time, this impact is considered to be significant and unavoidable.

4.3.6.2 Potentially Significant Project-Specific Transportation Impacts of the Preferred Alternative That Improve or Do Not Change the Future Condition and Do Not Require Mitigation[3]

Impact Transportation 6: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on 10 freeway segments:

1. **I-680 south of Monument Boulevard southbound (AM peak hour)**
2. **I-680 north of Monument Boulevard southbound (AM peak hour)**
3. **I-680 north of Monument Boulevard northbound (PM peak hour)**
4. **I-680 north of Willow Pass Road northbound (PM peak hour)**
5. **I-680 north of Concord Avenue northbound (PM peak hour)**
6. **SR 242 north of I-680 northbound (PM peak hour)**
7. **SR 4 east of Port Chicago Highway westbound (AM peak hour)**
8. **SR 4 east of Port Chicago Highway eastbound (PM peak hour)**
9. **SR 4 east of San Marco Boulevard westbound (AM peak hour)**
10. **SR 4 east of Railroad Avenue westbound (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, these 10 freeway segments operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Preferred Alternative. However, traffic from the Preferred Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 6: None required.

[3] It should be noted that the impacts described in this section are ones in which the significance threshold is not exceeded under Existing Conditions but is exceeded under future conditions; however, the specific alternative would either improve or not contribute to the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in either the same or an improved condition based on the measure being applied. While these impacts are identified under the project-specific impact heading because the threshold will be exceeded in the future, these impacts are not actually attributable to the project and do not require mitigation.

Impact Transportation 7: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold, but not contribute to future deficient conditions on nine freeway ramps:

1. **I-680 Concord Avenue westbound-to-northbound on-ramp (PM)**
2. **SR 242 Clayton Road northbound off-ramp (PM)**
3. **SR 242 Concord Avenue eastbound-to-northbound on-ramp (PM)**
4. **SR 242 Clayton Road southbound on-ramp (AM and PM)**
5. **SR 4 Port Chicago Highway eastbound off-ramp (PM)**
6. **SR 4 Port Chicago Highway eastbound on-ramp (PM)**
7. **SR 4 Willow Pass Road eastbound off-ramp (PM)**
8. **SR 4 Port Chicago Highway westbound off-ramp (AM)**
9. **SR 4 Willow Pass Road westbound on-ramp (AM)**

This impact is considered to be potentially significant.

As shown in Table 4-27, these nine freeway ramps operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Preferred Alternative. However, traffic from the Preferred Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 7: None required.

Impact Transportation 8: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions at 12 intersections:

1. **Farm Bureau Road and Willow Pass Road (PM)**
2. **Oak Grove Road and Treat Boulevard (PM)**
3. **Oak Road and Treat Boulevard (AM)**
4. **Oak Grove Road and Ygnacio Valley Road (AM and PM)**
5. **Commerce Avenue - SR 242 southbound ramps and Concord Avenue (PM)**
6. **North Main Street and Sunnyvale Avenue/southbound I-680 ramps (PM)**
7. **Willow Pass Road and Evora Road (east) (AM)**
8. **Willow Pass Road and Evora Road (west) (AM)**
9. **Willow Pass Road and Avila Road (AM and PM peak hours)**
10. **Railroad Avenue and West Leland Road (PM)**
11. **Willow Pass Road and SR 4 westbound ramps (AM peak hour)**
12. **Willow Pass Road and SR 4 eastbound ramps (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-29, these 12 intersections operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Preferred Alternative. However, traffic from the Preferred Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 8: None required.

Impact Transportation 9: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold, but not contribute to future deficient conditions on 12 segments of regional routes:

1. **I-680 south of Monument Boulevard - southbound (AM average speed and delay index)**
2. **I-680 north of Monument Boulevard - southbound (AM average speed and delay index)**
3. **I-680 north of Concord Avenue - northbound (PM average speed and delay index)**
4. **I-680 north of Concord Avenue - southbound (AM average speed)**
5. **SR 242 north of I-680 - southbound (AM delay index)**
6. **SR 242 north of Willow Pass Road - southbound (AM average speed)**
7. **SR 242 north of Concord Avenue - northbound (PM average speed and delay index)**
8. **SR 242 north of Concord Avenue - southbound (AM average speed and delay index)**
9. **SR 4 east of SR 242 - westbound (AM average speed and delay index)**
10. **SR 4 east of Port Chicago Highway - eastbound (PM average speed and delay index)**
11. **Bailey Road south of West Leland Road - westbound (AM delay index)**
12. **Leland Road west of Bailey Road - westbound (AM delay index)**

This impact is considered to be potentially significant.

As shown in Table 4-30, these 12 segments of Regional Routes operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Preferred Alternative. However, traffic from the Preferred Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 9: None required.

4.3.6.3 Potentially Significant Contributing Transportation Impacts of the Preferred Alternative That Worsen the Future Condition and Remain Significant after Mitigation

Impact Transportation 10: The development of the Preferred Alternative would increase traffic volumes and contribute to already deficient conditions on one freeway ramp: SR 4/Port Chicago Highway westbound on-ramp (PM peak hour).

This impact is considered to be potentially significant.

As shown in Table 4-27, this freeway ramp exceeds the established performance threshold under Existing Conditions. The development of the Preferred Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Preferred Alternative.

The low LOS at the ramp junctions with the freeway mainline at merge and diverge locations that would result with the Preferred Alternative would largely be caused by congestion on the freeway mainline.

Mitigation Measure Transportation 10: **The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and**

unavoidable.~~**Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.**~~

The SR 4/Port Chicago Highway westbound on-ramp would operate at LOS F during the PM peak hour due to congestion on SR 4. The downstream volumes on the freeway at the merge point exceed the capacity of the freeway. This ramp has two lanes at Port Chicago Highway with one lane splitting off to SR 242 and one lane that merges onto SR 4 westbound. The operations of this ramp can be attributed to the operations on SR 4. Because no improvements beyond those identified in the assumption listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Impact Transportation 11: The development of the Preferred Alternative would increase traffic volumes and contribute to already deficient conditions at five intersections:

1. **Oak Grove Road and Treat Boulevard (AM peak hour)**
2. **Walnut Boulevard and Ygnacio Valley Road (PM peak hour)**
3. **Buskirk Avenue - northbound I-680 off-ramp and Treat Boulevard (PM peak hour)**
4. **Northbound I-680 off-ramp and Ygnacio Valley Road (AM peak hour)**
5. **Bailey Road and SR 4 eastbound ramps - BART access (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-29, these five intersections exceed the established performance threshold under Existing Conditions. The development of the Preferred Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Preferred Alternative.

Mitigation Measure Transportation 11, Intersection Impact Location 1: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically

and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations.
However, this impact is considered significant and unavoidable

At the intersection of Oak Grove Road and Treat Boulevard, widening is not feasible. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur at this intersection. In that case, the City may prepare a request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

Mitigation Measure Transportation 11, Intersection Impact Location 2: **The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is**

reached, this impact is conservatively considered significant and unavoidable.~~**The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.**~~

The intersection of Walnut Boulevard and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 11, Intersection Impact Location 3: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~**tools and**~~**tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and**

unavoidable.~~**The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.**~~

The intersection of Buskirk Avenue - northbound I-680 off-ramp and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 11, Intersection Impact Location 4: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~**tools and**~~**tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.**~~**The City of Concord will coordinate in good faith with the City**~~

~~**of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.**~~

The intersection of the northbound I-680 off-ramp and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 11, Intersection Impact Location 5: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on~~**

~~**appropriate improvements to the intersection of Bailey Road and SR 4 eastbound ramps. Until future coordination with the affected jurisdiction, this impact will remain significant and unavoidable.**~~

The intersection of Bailey Road and SR 4 eastbound ramps - BART access is included as part of the current study for streetscape improvements for Bailey Road. ~~No specific improvements have been identified~~The improvements, however, are intended to improve the pedestrian, bicycle, and aesthetic environment along Bailey Road; no increase vehicle capacity is planned. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Impact Transportation 12: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and contribute to already deficient conditions on 29 segments of regional routes:

1. **Kirker Pass Road east of Concord Boulevard - eastbound PM peak hours (average vehicle occupancy)**
2. **Kirker Pass Road east of Concord Boulevard - westbound PM peak hour (average vehicle occupancy)**
3. **Treat Boulevard east of Oak Grove Road - eastbound AM peak hour (average vehicle occupancy)**
4. **Ygnacio Valley Road east of Cowell Road - eastbound AM peak hour (average vehicle occupancy)**
5. **Ygnacio Valley Road east of Cowell Road - westbound PM peak hour (average vehicle occupancy)**
6. **I-680 south of Monument Boulevard - southbound AM peak hour (average vehicle occupancy)**
7. **I-680 north of Monument Boulevard - northbound AM peak hour (average vehicle occupancy)**
8. **I-680 north of Monument Boulevard - southbound PM peak hour (average vehicle occupancy)**
9. **I-680 north of Concord Avenue - northbound AM peak hour (average vehicle occupancy)**
10. **SR 242 north of I-680 - northbound AM peak hour (average vehicle occupancy)**
11. **SR 242 north of I-680 - southbound AM and PM peak hours (average vehicle occupancy)**
12. **SR 242 north of Willow Pass Road - northbound AM and PM peak hours (average vehicle occupancy)**

13. **SR 242 north of Willow Pass Road - southbound AM and PM peak hours (average vehicle occupancy)**
14. **SR 242 north of Concord Avenue - northbound PM peak hours (average vehicle occupancy)**
15. **SR 242 north of Concord Avenue - southbound PM peak hour (average vehicle occupancy)**
16. **SR 242 north of Solano Way - northbound PM peak hours (average vehicle occupancy)**
17. **SR 242 north of Solano Way - southbound PM peak hour (average vehicle occupancy)**
18. **SR 242 north of Olivera Road - northbound PM peak hour (average vehicle occupancy)**
19. **SR 242 north of Olivera Road - southbound PM peak hour (average vehicle occupancy)**
20. **SR 4 east of I-680 - eastbound AM peak hour (average vehicle occupancy)**
21. **SR 4 east of Solano Way - eastbound AM peak hour (average vehicle occupancy)**
22. **SR 4 east of Port Chicago Highway - eastbound AM peak hour (average vehicle occupancy)**
23. **SR 4 east of Port Chicago Highway - westbound PM peak hour (average vehicle occupancy)**
24. **SR 4 east of Willow Pass Road - eastbound AM peak hour (average vehicle occupancy)**
25. **SR 4 east of Willow Pass Road - westbound PM peak hour (average vehicle occupancy)**
26. **SR 4 east of San Marco Boulevard - eastbound AM peak hour (average vehicle occupancy)**
27. **SR 4 east of San Marco Boulevard - westbound PM peak hour (average vehicle occupancy)**
28. **SR 4 east of Bailey Road - westbound PM peak hour (average vehicle occupancy)**
29. **SR 4 east of Railroad Avenue - eastbound AM and PM peak hours (average vehicle occupancy)**

This impact is considered to be potentially significant.

As shown in Table 4-30, these 29 segments of Regional Routes exceed the established performance threshold under Existing Conditions. The development of the Preferred Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Preferred Alternative.

**Mitigation Measure Transportation 12: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~

The Action Plan for Routes of Regional Significance identifies planned improvements to the regional system. Additional mitigation measures beyond the planned improvements included in the assumptions listed in Section 4.3.4 will require consultation and coordination with other TRANSPAC members, other RTPCs, and the CCTA. Future traffic studies for specific development projects on the site should update the TSO impact analysis to analyze

the adopted Central County and East County Action Plans for Routes of Regional Significance. Because no improvements beyond those identified in the assumptions have been planned or programmed by the agencies at this time, this impact is considered to be significant and unavoidable.

4.3.6.4 Potentially Significant Contributing Transportation Impacts of the Preferred Alternative That Improve or Do Not Change the Future Condition and Do Not Require Mitigation[4]

Impact Transportation 13: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on four freeway segments:

1. **I-680 south of Monument Boulevard northbound (PM peak hour)**
2. **SR 4 east of SR 242 westbound (AM peak hour)**
3. **I-680 north of SR 242 southbound (AM peak hour)**
4. **I-680 north of SR 242 northbound (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, these four freeway segments exceed the established performance threshold under Existing Conditions. The development of the Preferred Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 13: None required.

Impact Transportation 14: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on two freeway ramps:

1. **I-680/Willow Pass Road northbound off-ramp (PM peak hour)**
2. **SR 4/Port Chicago Highway westbound on-ramp (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-27, these two freeway ramps exceed the established performance threshold under Existing Conditions. The development of the Preferred Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by

[4] It should be noted that the impacts described in this section are ones in which the significance threshold is exceeded under Existing Conditions and under future conditions; however, the specific alternative would either improve or not contribute to the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in either the same or an improved condition based on the measure being applied. While these impacts are identified under the project-specific impact heading because the threshold will be exceeded in the future, these impacts are not actually attributable to the project and do not require mitigation.

comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 14: None required.

Impact Transportation 15: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on one roadway segment: Bailey Road east of Concord Boulevard (AM and PM peak hours). This impact is considered to be potentially significant.

As shown in Table 4-28, this roadway segment exceeds the established performance threshold under Existing Conditions. The development of the Preferred Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 15: None required.

Impact Transportation 16: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold at one intersection:

1. **Northbound I-680 off-ramp/Ygnacio Valley Road (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-29, this intersection exceeds the established performance threshold under Existing Conditions. The development of the Preferred Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 16: None required.

Impact Transportation 17: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold but not contribute to future deficient conditions on 25 segments of regional routes:

1. **Kirker Pass Road east of Concord Boulevard - westbound (AM average vehicle occupancy)**
2. **Treat Boulevard east of Oak Grove Road - eastbound (PM average vehicle occupancy)**
3. **Treat Boulevard east of Oak Grove Road - westbound (AM average vehicle occupancy)**
4. **Ygnacio Valley Road east of Cowell Road - eastbound (PM average vehicle occupancy)**

5. **Ygnacio Valley Road east of Cowell Road - westbound (AM average vehicle occupancy)**
6. **I-680 south of Monument Boulevard - northbound (AM and PM average vehicle occupancy)**
7. **I-680 south of Monument Boulevard - southbound (PM average vehicle occupancy)**
8. **I-680 north of Monument Boulevard - northbound (PM average vehicle occupancy)**
9. **I-680 north of Monument Boulevard - southbound (AM average vehicle occupancy)**
10. **I-680 north of SR 242 - northbound (AM and PM average vehicle occupancy)**
11. **I-680 north of SR 242 - southbound (AM and PM average vehicle occupancy)**
12. **I-680 north of Willow Pass Road - northbound (AM and PM average vehicle occupancy)**
13. **I-680 north of Willow Pass Road - southbound (AM and PM average vehicle occupancy)**
14. **I-680 north of Concord Avenue - northbound (PM average vehicle occupancy)**
15. **I-680 north of Concord Avenue - southbound (AM delay index and average vehicle occupancy) and PM (average vehicle occupancy)**
16. **I-680 north of SR 4 - northbound (AM and PM average vehicle occupancy)**
17. **I-680 north of SR 4 - southbound (AM and PM average vehicle occupancy)**
18. **SR 242 north of I-680 - northbound (PM average vehicle occupancy)**
19. **SR 242 north of I-680 - southbound (AM average speed)**
20. **SR 242 north of Concord Avenue - southbound (AM average vehicle occupancy)**
21. **SR 242 north of Solano Way - southbound (AM average vehicle occupancy)**
22. **SR 242 north of Olivera Road - southbound (AM average vehicle occupancy)**
23. **SR 4 east of Port Chicago Highway - westbound (AM average speed and delay index)**
24. **SR 4 east of Bailey Road - eastbound (AM average vehicle occupancy)**
25. **SR 4 east of Railroad Avenue - westbound (AM and PM average vehicle occupancy)**

This impact is considered to be potentially significant.

As shown in Table 4-30, these 25 segments of regional routes exceed the established performance threshold under Existing Conditions. The development of the Preferred Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Preferred Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 17: None required.

4.3.6.5 Transportation Impacts of the Preferred Alternative That Are Less Than Significant

Impact Transportation 18: The development the Preferred Alternative would increase traffic volumes on 17 freeway segments compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Tables 4-25 and 4-26 for specific locations and impacts.

Mitigation Measure Transportation 18: None required.

Impact Transportation 19: The development of the Preferred Alternative would increase traffic volumes on 17 freeway ramps compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-27 for specific locations and impacts.

Mitigation Measure Transportation 19: None required.

Impact Transportation 20: The development of the Preferred Alternative would increase traffic volumes on 11 roadway segments compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-28 for specific locations and impacts.

Mitigation Measure Transportation 20: None required.

Impact Transportation 21: The development of the Preferred Alternative would increase traffic volumes at 35 intersections compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-29 for specific locations and impacts.

Mitigation Measure Transportation 21: None required.

Impact Transportation 22: The development of the Preferred Alternative would result in lower average speeds, increased delays, and/or lower average vehicle occupancies on nine segments of regional routes compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-30 for specific locations and impacts.

Mitigation Measure Transportation 22: None required.

Impact Transportation 23: The development of the Preferred Alternative would result in increased transit ridership and increased transit service. This impact is considered to be less than significant.

The development of the Preferred Alternative would increase ridership on BART and bus lines. The increase in ridership at the North Concord/Martinez BART Station is about 6 percent per year. The ridership increases system wide in Central Contra Costa County are about 2.8 percent per year by 2030. Along the SR 4 corridor in East County, the ridership would increase 37 percent by 2010 compared to 2000.

Transit service would increase by extending existing bus lines to serve the site as well as providing new bus service to support the new development by serving the North Concord/Martinez BART Station. The concentrated development at the North Concord/Martinez BART Station supports transit as an alternative mode of transportation. Increased transit use reduces use of automobiles, thus lessening traffic. The Preferred Alternative proposes new bus shelters with electricity and benches, and standard buses to provide the additional service. In addition, the Preferred Alternative proposes the cost of constructing an exclusive lane for the high-capacity bus service with its own streetlight and traffic control system, landscaping elements at bus stops and crosswalks, and bus shelters along the route with passenger amenities. The Preferred Alternative also proposes the cost of enhanced bus vehicles to provide this service.

The City of Concord will pursue expected new funding opportunities collaboratively with local transit operators. The City of Concord shall also select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations.

Mitigation Measure Transportation 23: None required.

Impact Transportation 24: The development of the Preferred Alternative would provide new bicycle facilities. This impact is considered to be less than significant.

The development of the Preferred Alternative would provide new bicycle facilities and support the system proposed in the Concord Trails Master Plan and the Countywide Bicycle Master Plan. The Preferred Alternative proposes costs for an extensive network of 10-foot-wide Class I trails, and for 5-foot-wide bicycle lanes on all arterial roadways in both directions. Because adequate bicycle facilities would be provided on the site consistent with City standards, this impact is considered to be less than significant.

Mitigation Measure Transportation 24: None required.

Impact Transportation 25: The development of the Preferred Alternative would increase pedestrian activity and provide new pedestrian facilities. This impact is considered to be less than significant.

The development of the Preferred Alternative would increase pedestrian activity, particularly in the TOD area around the North Concord/Martinez BART Station. The villages in the Preferred Alternative would provide mixed-use development with density and design to encourage walking, and create a pedestrian activity node within the site. A trail along the

creek in support of the Concord Trails Master Plan could provide a new facility. With the increase in transit trips, attractive and well-maintained facilities will be needed to provide pedestrian access to transit stops and the BART station. The Preferred Alternative proposes 8-foot-wide sidewalks on both sides of all roadways. Because adequate pedestrian facilities would be provided consistent with City standards, this impact is considered to be less than significant.

Mitigation Measure Transportation 25: None required.

4.3.7 Transportation Impacts of the Concentration and Conservation Alternative

Potentially significant transportation impacts resulting from the development of the Concentration and Conservation Alternative that remain significant after mitigation are presented first. These impacts would be followed by potentially significant transportation impacts that are less than significant after mitigation; however, there are no such impacts. Impacts that are less than significant are presented last.

4.3.7.1 Potentially Significant Project-Specific Transportation Impacts of the Concentration and Conservation Alternative That Remain Significant after Mitigation

Impact Transportation 26: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on six freeway segments:

1. **SR 4 east of SR 242 westbound (PM peak hour)**
2. **SR 4 east of Willow Pass Road westbound (AM and PM peak hours)**
3. **SR 4 east of San Marco Boulevard eastbound (PM peak hour)**
4. **SR 4 east of Railroad Avenue eastbound (PM peak hour)**
5. **I-680 north of SR 242 southbound (PM peak hour)**
6. **I-680 north of SR 4 southbound (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, these six freeway segments operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. Because the 2030 No Project Alternative does not exceed the threshold, this is considered to be a potentially significant project-specific impact.

Mitigation Measure Transportation 26: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures

**may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~

Peak hour operations on these freeway segments are projected to be deficient with build-out traffic from the Concentration and Conservation Alternative. Improvements that have been included in the model are listed in Section 4.3.4. Additional improvements beyond those identified in Section 4.3.4 have not been planned or programmed by the agencies responsible for the freeway network at this time. Future private or public development will be required to pay a fair share of the cost of currently identified improvements and improvements agreed to in the future through the regional process described in Section 4.1.2.2. However, because a significant impact would occur even with the currently identified improvements, this impact will remain significant and unavoidable.

Impact Transportation 27: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on 10 freeway ramps:

1. **I-680/Willow Pass Road eastbound-to-southbound on-ramp (AM peak hour)**
2. **SR 242/Concord Avenue eastbound-to-northbound on-ramp (PM peak hour)**
3. **SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour)**
4. **SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour)**
5. **SR 4/southbound San Marco Boulevard westbound on-ramp (AM peak hour)**
6. **SR 4/northbound San Marco Boulevard westbound on-ramp (AM peak hour)**
7. **SR 4/northbound San Marco Boulevard eastbound on-ramp (PM peak hour)**
8. **SR 4/southbound Bailey Road eastbound off-ramp (PM peak hour)**
9. **SR 4/Bailey Road westbound on-ramp (AM peak hour)**
10. **SR 4/Railroad Avenue eastbound on-ramp (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-27, these 10 freeway ramps operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold either on the ramp itself or on the downstream freeway mainline with the traffic from the Concentration and Conservation Alternative. Because the 2030 No Project Alternative does not exceed the threshold, this is considered to be a potentially significant project-specific impact.

The low LOS at the ramp junctions with the freeway mainline at merge and diverge locations that would result with the Concentration and Conservation alternative would largely be caused by congestion on the freeway mainline.

Mitigation Measure Transportation 27: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned

improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~**Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.**~~

Ramp Impact Location 1: The I-680/Willow Pass Road eastbound-to-southbound on-ramp would operate at LOS F during the AM peak hour due to downstream freeway volumes at the merge area of this one-lane on-ramp. The volumes exceed the capacity of the freeway resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed by the agencies responsible for freeway network operations, there are no feasible mitigation measures to address the capacity of the freeway, and the impact on freeway ramps is therefore considered to be significant and unavoidable.

Ramp Impact Location 2: The SR 242/Concord Avenue eastbound-to-northbound on-ramp would operate at LOS F during the PM peak hour due to downstream freeway volumes at the merge area of this single-lane on-ramp. The volumes would exceed the capacity of the freeway resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed by the agencies responsible for freeway network operations, there are no feasible mitigation measures to address the capacity of the freeway, and the impact on freeway ramps is therefore considered to be significant and unavoidable.

Ramp Impact Location 3: The SR 4/Port Chicago Highway eastbound off-ramp would operate at LOS F during the AM peak hour due to congestion on SR 4. The volumes on the freeway at the diverge point for this single-lane off-ramp exceed the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because no improvements beyond those identified in the assumption listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 4: The SR 4 eastbound off-ramp at San Marco Boulevard is a single-lane off-ramp with a dedicated freeway lane where the LOS F is due to the ramp volume exceeding the ramp capacity. The SR 4 ramps at San Marco Boulevard would operate at

LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 5: The SR 4 westbound on-ramp from southbound San Marco Boulevard is a single-lane on-ramp with a dedicated freeway lane where the ramp volume exceeds the capacity. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 6: The SR 4 westbound on-ramp from northbound San Marco Boulevard is a single-lane on-ramp. The impact that occurs at this location can be attributed to the over-capacity condition on SR 4 that results in unstable ramp operations. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 7: The SR 4/northbound San Marco Boulevard eastbound on-ramp would operate at LOS F during the PM peak hour due to the high volume of traffic that would use the Avila Road - West Leland Road connection to avoid congestion on SR 4. This single-lane on-ramp merges with SR 4. The volume at the merge exceeds the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 8: The SR 4/southbound Bailey Road eastbound off-ramp would operate at LOS F during the PM peak hour due to upstream traffic volumes on the freeway that exceed the capacity where the ramp diverges from the freeway. Traffic from the freeway cannot exit at the ramp due to congestion on this segment of SR 4. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 9: The SR 4/Bailey Road westbound on-ramp would operate at LOS F during the AM peak hour due to the high volumes of traffic on the freeway combined with high ramp volumes at the merge area. The volume at the merge of this single-lane on-ramp

with the freeway exceeds the capacity. No improvements have been planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, and therefore no feasible mitigation measures have been identified. This impact is considered to be significant and unavoidable.

Ramp Impact Location 10: The SR 4/Railroad Avenue eastbound on-ramp is a single-lane on-ramp that operates at LOS F during the PM peak hour. The impact of the Concentration and Conservation Alternative at this location can be attributed to shifts between the freeway and the parallel arterial roadways due to over-capacity conditions on SR 4. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. No improvements have been planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, and therefore no feasible mitigation measures have been identified. This impact is considered to be significant and unavoidable.

Impact Transportation 28: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on three roadway segments:

1. **Ygnacio Valley Road east of Cowell Road (AM peak hour)**
2. **Concord Boulevard west of Denkinger Road (AM and PM peak hours)**
3. **Port Chicago Highway north of Olivera Road (AM and PM peak hours)**

This impact is considered to be potentially significant.

As shown in Table 4-28, these three roadway segments would operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. Because the 2030 No Project Alternative does not exceed the threshold, this is considered to be a potentially significant project-specific impact.

> **Mitigation Measure Transportation 28: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.**

Roadway widening would mitigate the impact of the Concentration and Conservation Alternative, but widening would potentially require acquisition of property and possible displacement of existing businesses and residents. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway

widening, as wider roads in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur on Ygnacio Valley Road, Concord Boulevard, and Port Chicago Highway. In that case, the City may prepare a request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

Impact Transportation 29: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold at 11 intersections:

1. **Port Chicago Highway and Olivera Road (AM and PM peak hours)**
2. **Beechwood Drive and Landana Drive (AM peak hour)**
3. **Oak Road and Treat Boulevard (PM peak hour)**
4. **Oak Grove Road/~~Ygancio~~Ygnacio Valley Road (AM peak hour)**
5. **North Main Street and Geary Road (AM peak hour)**
6. **North Bancroft Road and Treat Boulevard (PM peak hour)**
7. **Willow Pass Road/Evora Road (East) - SR 4 westbound off-ramp (AM peak hour)**
8. **Willow Pass Road and Evora Road (west) (AM and PM peak hours)**
9. **San Marco Boulevard and West Leland Road (AM peak hour)**
10. **Kirker Pass Road and James Donlon Boulevard Extension (PM peak hour)**
11. **San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramps (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-29, these 11 intersections would operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. Because the 2030 No Project Alternative does not exceed the threshold, this is considered to be a potentially significant project-specific impact.

> **Mitigation Measure Transportation 29, Intersection Impact Location 1: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the**

future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.

Improvements to the intersection of Port Chicago Highway and Olivera Road would require widening of Port Chicago Highway, which is constrained by the BART tracks to the east, or widening of Olivera Road through an existing residential neighborhood. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan, as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur at this intersection. In that case, the City may prepare a request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 2: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.

The intersection of Beechwood Drive and Landana Drive is an all-way stop controlled intersection. With the addition of the Concentration and Conservation Alternative, traffic volumes on Landana Drive will increase, since the Concentration and Conservation Alternative does not provide a parallel roadway within the project site. Providing a signal at this intersection would improve the operations to LOS A, which would fully mitigate the impacts. However, a signal may not be feasible given the nature of the surrounding residential neighborhood. TDM programs will be adopted as a part of the General Plan Amendment for the CNWS, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur at this intersection. Therefore, In that case, the City may prepare a

request for special circumstances. this impact is considered to be significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 3: **The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~**

At the intersection of Oak Road and Treat Boulevard, widening is not feasible. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with

the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 4: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~

The intersection of Oak Grove Road and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until

future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 5: **The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.** ~~**The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable**~~**.**

The intersection of North Main Street and Geary Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future

coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 6: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~

The intersection of North Bancroft Road and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future

coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 7: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Willow Pass Road and Evora Road (east) - SR 4 westbound ramp. Until future coordination with the affected jurisdiction takes place and agreement reached, this impact will remain significant and unavoidable.~~

The intersection of Willow Pass Road and Evora Road (east) - SR 4 westbound ramp is located outside the City of Concord. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

**Mitigation Measure Transportation 29, Intersection Impact Location 8: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~

At the intersection of Willow Pass Road and Evora Road (west), the increased traffic is due to the heavy northbound right turns from Willow Pass Road and the westbound left turns from Evora Road. Widening the northbound and westbound approaches to provide an additional westbound left turn lane and an additional northbound right turn lane would improve the operations at the intersection of Willow Pass Road and Evora Road (west). However, additional improvements would be required to fully mitigate the impacts to the mid-D LOS standard. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been

agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 9: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~

The intersection of San Marco Boulevard and West Leland Road would operate at LOS D with a v/c ratio of 0.90 due to the use of the West Leland Road connection to Avila Road as a parallel roadway to SR 4. This intersection is located outside of the City of Concord's jurisdiction, in the City of Pittsburg. Widening the northbound approach for a right turn lane as programmed by the City of Pittsburg would not reduce the v/c ratio during the AM peak hour. However, an additional right turn lane in the westbound direction would mitigate the impact. Any improvements at this intersection will be developed through discussions and

coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 10: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable. ~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~

At Kirker Pass Road and James Donlon Boulevard Extension, additional improvements to widen the intersection would be needed to mitigate the impacts. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been

agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Mitigation Measure Transportation 29, Intersection Impact Location 11: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~

The intersection of San Marco Boulevard - Willow Pass Road/SR 4 eastbound ramp is located outside the City of Concord. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Impact Transportation 30: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold on 16 segments of regional routes:

1. **Treat Boulevard east of Oak Grove - westbound PM peak hour (average vehicle occupancy)**
2. **I-680 south of Monument Boulevard - southbound PM peak hour (average speed and delay index)**
3. **I-680 north of Monument Boulevard - southbound PM peak hour (average speed and delay index)**
4. **I-680 north of SR 242 - southbound PM peak hour (average speed and delay index)**
5. **SR 4 east of Willow Pass Road - eastbound PM peak hour (average speed and delay index)**
6. **SR 4 east of Willow Pass Road - westbound AM peak hour (average speed and delay index)**
7. **SR 4 east of San Marco Boulevard - eastbound PM peak hour (delay index)**
8. **SR 4 east of San Marco Boulevard - westbound AM peak hour (delay index)**
9. **SR 4 east of Bailey Road - eastbound PM peak hour (delay index)**
10. **SR 4 east of Bailey Road - westbound AM peak hour (delay index)**
11. **Leland Road (proposed) east of San Marco Boulevard - eastbound PM peak hour (delay index)**
12. **Leland Road (proposed) east of San Marco Boulevard - westbound AM peak hour (delay index)**
13. **Avila Road (proposed) west of San Marco Boulevard - eastbound PM peak hour (delay index)**
14. **Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM peak hours (delay index)**
15. **Willow Pass Road east of Evora Road - eastbound PM peak hour (delay index)**
16. **Willow Pass Road east of Evora Road - westbound AM peak hour (delay index)**

This impact is considered to be potentially significant.

As shown in Table 4-30, these 16 segments of Regional Routes would operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. Because the 2030 No Project Alternative does not exceed the threshold, this is considered to be a potentially significant project-specific impact.

Mitigation Measure Transportation 30: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~

The Action Plan for Routes of Regional Significance identifies planned improvements to the regional system. Additional mitigation measures beyond the planned improvements included in the assumptions listed in Section 4.3.2 will require consultation and coordination with other TRANSPAC members, other RTPCs, and the CCTA. Future traffic studies for specific development projects on the site should update the TSO impact analysis to analyze the adopted Central County and East County Action Plans for Routes of Regional Significance. This impact is considered to be significant and unavoidable.

4.3.7.2 Potentially Significant Project-Specific Transportation Impacts of the Concentration and Conservation Alternative That Improve or Do Not Change the Future Condition and Do Not Require Mitigation[5]

Impact Transportation 31: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on eight freeway segments:

1. **I-680 north of Monument Boulevard northbound (PM peak hour)**
2. **I-680 north of Willow Pass Road northbound (PM peak hour)**
3. **I-680 north of Concord Avenue northbound (PM peak hour)**
4. **SR 242 north of I-680 northbound (PM peak hour)**
5. **SR 4 east of Port Chicago Highway westbound (AM peak hour)**
6. **SR 4 east of Port Chicago Highway eastbound (PM peak hour)**
7. **SR 4 east of San Marco Boulevard westbound (AM peak hour)**
8. **SR 4 east of Railroad Avenue westbound (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, these eight freeway segments operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. However, traffic from the Concentration and Conservation Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 31: None required.

Impact Transportation 32: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on nine freeway ramps:

1. **I-680 Concord Avenue westbound-to-northbound on-ramp (PM)**
2. **SR 242 Clayton Road northbound off-ramp (PM)**
3. **SR 242 Clayton Road southbound on-ramp (AM and PM)**
4. **SR 4 Port Chicago Highway eastbound off-ramp (PM)**
5. **SR 4 Port Chicago Highway eastbound on-ramp (PM)**

[5] It should be noted that the impacts described in this section are ones in which the significance threshold is not exceeded under Existing Conditions but is exceeded under future conditions; however, the specific alternative would either improve or not contribute to the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in either the same or an improved condition based on the measure being applied. While these impacts are identified under the project-specific impact heading because the threshold will be exceeded in the future, these impacts are not actually attributable to the project and do not require mitigation.

6. **SR 4 Willow Pass Road eastbound off-ramp (PM)**
7. **SR 4 Port Chicago Highway westbound off-ramp (AM)**
8. **SR 4 Willow Pass Road westbound on-ramp (AM)**
9. **SR 4 San Marco Boulevard westbound off-ramp (AM)**

This impact is considered to be potentially significant.

As shown in Table 4-27, these nine freeway ramps operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. However, traffic from the Concentration and Conservation Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 32: None required.

Impact Transportation 33: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions at 13 intersections:

1. **Farm Bureau Road and Willow Pass Road (PM)**
2. **Oak Grove Road and Treat Boulevard (PM)**
3. **Oak Road and Treat Boulevard (AM)**
4. **Oak Grove Road and Ygnacio Valley Road (PM)**
5. **Commerce Avenue - SR 242 southbound ramps and Concord Avenue (PM)**
6. **Ayers Road and Ygnacio Valley Road (AM)**
7. **North Main Street and Geary Road (PM)**
8. **North Main Street and Sunnyvale Avenue/southbound I-680 ramps (AM and PM)**
9. **Willow Pass Road and Avila Road (AM and PM peak hours)**
10. **Railroad Avenue and West Leland Road (AM)**
11. **Kirker Pass Road and James Donlon Boulevard Extension [future extension of James Donlon Boulevard] (AM)**
12. **Willow Pass Road and SR 4 westbound ramps (AM peak hour)**
13. **Willow Pass Road and SR 4 eastbound ramps (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-29, these 13 intersections operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. However, traffic from the Concentration and Conservation Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No

Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 33: None required.

Impact Transportation 34: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold but not contribute to future deficient conditions on 11 segments of regional routes:

1. **I-680 south of Monument Boulevard - northbound PM (average speed and delay index)**
2. **I-680 south of Monument Boulevard - southbound AM (average speed and delay index)**
3. **I-680 north of Monument Boulevard - southbound AM (average speed and delay index)**
4. **I-680 north of Concord Avenue - northbound PM (average speed and delay index)**
5. **I-680 north of Concord Avenue - southbound AM (average speed)**
6. **SR 242 north of I-680 - southbound AM (average speed and delay index)**
7. **SR 242 north of Concord Avenue - northbound PM (average speed and delay index)**
8. **SR 242 north of Concord Avenue - southbound AM (average speed and delay index)**
9. **SR 4 east of SR 242 - westbound AM (average speed and delay index)**
10. **SR 4 east of Port Chicago Highway - eastbound PM (average speed and delay index)**
11. **Bailey Road south of West Leland Road - westbound AM (delay index)**

This impact is considered to be potentially significant.

As shown in Table 4-30, these 11 segments of Regional Routes operate at acceptable levels under Existing Conditions, but would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. However, traffic from the Concentration and Conservation Alternative would either improve or not contribute to the future condition, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant impact that does not require mitigation.

Mitigation Measure Transportation 34: None required.

4.3.7.3 Potentially Significant Contributing Transportation Impacts of the Concentration and Conservation Alternative That Worsen the Future Condition and Remain Significant after Mitigation

Impact Transportation 35: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on one freeway segment: I-680 north of SR 242 northbound during the PM peak hour.

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, this freeway segment exceeds the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Concentration and Conservation Alternative.

**Mitigation Measure Transportation 35: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the~~

~~**cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.**~~

Peak hour operations on this freeway segment are projected to be deficient in 2030 with or without traffic from the Concentration and Conservation Alternative. The Concentration and Conservation Alternative will contribute to the already deficient conditions projected to occur on the freeway segments. Improvements that have been included in the model are listed in Section 4.3.4. Additional improvements beyond those identified in Section 4.3.4 have not been planned or programmed by the agencies responsible for the freeway network at this time. Future private or public development will be required to pay a fair share of the cost of currently identified improvements and improvements agreed to in the future through the regional process described in Section 4.1.2.2. However, because a significant impact would occur even with the currently identified improvements, this impact will remain significant and unavoidable.

Impact Transportation 36: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on two freeway ramps:

1. **I-680/Willow Pass Road northbound off-ramp (PM peak hour)**
2. **SR 4/Port Chicago Highway westbound on-ramp (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 27, these two freeway ramps would exceed the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Concentration and Conservation Alternative.

The low LOS at the ramp junctions with the freeway mainline at merge and diverge locations that would result with the Concentration and Conservation Alternative would largely be caused by congestion on the freeway mainline.

Mitigation Measure Transportation 36: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify

**specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~

Ramp Impact Location 1: The I-680/Willow Pass Road northbound off-ramp would operate at LOS F during the PM peak hour due to the upstream freeway volumes at the diverge area of this single-lane off-ramp. The volumes exceed the capacity of the freeway, resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumption listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this impact is considered to be significant and unavoidable.

Ramp Impact Location 2: The SR 4/Port Chicago Highway westbound on-ramp would operate at LOS F during the PM peak hour due to congestion on SR 4. The downstream volumes on the freeway at the merge point exceed the capacity of the freeway. This ramp has two lanes at Port Chicago Highway, with one lane splitting off to SR 242 and one lane that merges onto SR 4 westbound. The operations of this ramp can be attributed to the

operations on SR 4. Because no improvements beyond those identified in the assumption listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures, and this impact is considered to be significant and unavoidable.

Impact Transportation 37: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on one roadway segment:

1. **Bailey Road east of Concord Boulevard (AM and PM peak hours)**

This impact is considered to be potentially significant.

As shown in Table 4-28, this roadway segment would exceed the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Concentration and Conservation Alternative.

> **Mitigation Measure Transportation 37: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.**

Roadway widening would mitigate the impact of the Concentration and Conservation Alternative, but widening would potentially require acquisition of property and possible displacement of existing businesses and residents. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening, as wider roads in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan, as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur on Bailey Road. In that case, the City may prepare a request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

Impact Transportation 38: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions at five intersections:

1. **Oak Grove Road and Treat Boulevard (AM peak hour)**
2. **Walnut Boulevard and Ygnacio Valley Road (PM peak hour)**
3. **Buskirk Avenue - Northbound I-680 off-ramp/Treat Boulevard (AM and PM peak hours)**
4. **Northbound I-680 off-ramp/Ygnacio Valley Road (AM peak hour)**
5. **Bailey Road/SR 4 eastbound ramps - BART access (PM peak hour)**

This impact is considered to be a potentially significant impact.

As shown in Table 4-29, these five intersections would exceed the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Concentration and Conservation Alternative.

> **Mitigation Measure Transportation 38, Intersection Impact Location 1: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.**

At the intersection of Oak Grove Road and Treat Boulevard, widening is not feasible. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan, as described in Section 4.1.2.3. However, implementation of TDM measures ~~will~~ may not necessarily alleviate impacts that will occur at this intersection. In that case, the City may prepare a request for special circumstances. Therefore, this impact is considered to be significant and unavoidable.

> **Mitigation Measure Transportation 38, Intersection Impact Location 2: The City of Concord will coordinate in good faith with affected jurisdictions,**

including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~

The intersection of Walnut Boulevard and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 38, Intersection Impact Location 3: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to

the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~

The intersection of Buskirk Avenue - northbound I-680 off-ramp and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 38, Intersection Impact Location 4: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement

**on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~

The intersection of the northbound I-680 off-ramp/Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.

Mitigation Measure Transportation 38, Intersection Impact Location 5: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective

agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements to the intersection of Bailey Road and SR 4 eastbound ramps. Until future coordination with the affected jurisdiction, this impact will remain significant and unavoidable.~~

The intersection of Bailey Road and SR 4 eastbound ramps - BART access is included as part of the current study for streetscape improvements for Bailey Road. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Impact Transportation 39: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and contribute to already deficient conditions on 28 segments of regional routes:

1. **Kirker Pass Road east of Concord Boulevard - eastbound PM peak hour (average vehicle occupancy)**

2. **Kirker Pass Road east of Concord Boulevard - westbound PM peak hour (average vehicle occupancy)**
3. **Treat Boulevard east of Oak Grove Road - eastbound AM peak hour (average vehicle occupancy)**
4. **Ygnacio Valley Road east of Cowell Road - eastbound AM peak hour (average vehicle occupancy)**
5. **Ygnacio Valley Road east of Cowell Road - westbound AM and PM peak hours (average vehicle occupancy)**
6. **I-680 south of Monument Boulevard - northbound AM peak hour (average vehicle occupancy)**
7. **I-680 north of Monument Boulevard - northbound AM peak hour (average vehicle occupancy)**
8. **I-680 north of Monument Boulevard - southbound PM peak hour (average vehicle occupancy)**
9. **I-680 north of Concord Avenue - northbound AM peak hour (average vehicle occupancy)**
10. **SR 242 north of I-680 - northbound AM and PM peak hours (average vehicle occupancy)**
11. **SR 242 north of I-680 - southbound PM peak hour (average vehicle occupancy)**
12. **SR 242 north of Willow Pass Road - northbound AM and PM peak hours (average vehicle occupancy)**
13. **SR 242 north of Willow Pass Road - southbound PM peak hour (average vehicle occupancy)**
14. **SR 242 north of Concord Avenue - northbound PM peak hour (average vehicle occupancy)**
15. **SR 242 north of Concord Avenue - southbound PM peak hour (average vehicle occupancy)**
16. **SR 242 north of Solano Way - northbound PM peak hour (average vehicle occupancy)**
17. **SR 242 north of Solano Way - southbound PM peak hour (average vehicle occupancy)**
18. **SR 242 north of Olivera Road - northbound PM peak hour (average vehicle occupancy)**
19. **SR 242 north of Olivera Road - southbound PM peak hour (average vehicle occupancy)**

20. **SR 4 east of I-680 - eastbound AM peak hour (average vehicle occupancy)**
21. **SR 4 east of Solano Way - eastbound AM peak hour (average vehicle occupancy)**
22. **SR 4 east of Port Chicago Highway - eastbound AM peak hour (average vehicle occupancy)**
23. **SR 4 east of Port Chicago Highway - westbound PM peak hour (average vehicle occupancy)**
24. **SR 4 east of Willow Pass Road - eastbound AM and PM peak hours (average vehicle occupancy)**
25. **SR 4 east of Willow Pass Road - westbound PM peak hours (average vehicle occupancy)**
26. **SR 4 east of San Marco Boulevard - eastbound AM peak hour (average vehicle occupancy)**
27. **SR 4 east of San Marco Boulevard - westbound PM peak hour (average vehicle occupancy)**
28. **SR 4 east of Railroad Avenue - eastbound AM and PM peak hours (average vehicle occupancy)**

This impact is considered to be potentially significant.

As shown in Table 4-27, these 28 segments of Regional Routes would exceed the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative contributes traffic to the deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact of the Concentration and Conservation Alternative.

Mitigation Measure Transportation 39: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management ~~tools and~~tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing

**applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~

The Action Plan for Routes of Regional Significance identifies planned improvements to the regional system. Additional mitigation measures beyond the planned improvements included in the assumptions listed in Section 4.3.4 will require consultation and coordination with other TRANSPAC members, other RTPCs, and the CCTA. Future traffic studies for specific development projects on the site should update the TSO impact analysis to analyze the adopted Central County and East County Action Plans for Routes of Regional Significance. Because no improvements beyond those identified in the assumptions have been planned or programmed by the agencies at this time, this impact is considered to be significant and unavoidable.

4.3.7.4 Potentially Significant Contributing Transportation Impacts of the Concentration and Conservation Alternative That Improve or Do Not Change the Future Condition and Do Not Require Mitigation[6]

Impact Transportation 40: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance

[6] It should be noted that the impacts described in this section are ones in which the significance threshold is exceeded under Existing Conditions and under future conditions; however, the specific alternative would either improve or not contribute to the future deficient condition. This is demonstrated when a comparison of the specific alternative to the 2030 No Project Alternative resulted in either the same or an improved condition based on the measure being applied. While these impacts are identified under the project-specific impact heading because the threshold will be exceeded in the future, these impacts are not actually attributable to the project and do not require mitigation.

threshold but not contribute to future deficient conditions on three freeway segments:

1. **I-680 south of Monument Boulevard northbound (PM peak hour)**
2. **SR 4 east of SR 242 westbound (AM peak hour)**
3. **I-680 north of SR 242 southbound (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, these three freeway segments exceed the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 40: None required.

Impact Transportation 41: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold but not contribute to future deficient conditions on one freeway ramp:

1. **SR 4/Port Chicago Highway westbound on-ramp (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-27, this freeway ramp exceeds the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 41: None required.

Impact Transportation 42: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold at two intersections:

1. **Northbound I-680 off-ramp/Ygnacio Valley Road (PM peak hour)**
2. **Railroad Avenue/West Leland Road (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-29, these intersections exceed the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 42: None required.

Impact Transportation 43: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold but not contribute to future deficient conditions on 25 segments of regional routes:

1. **Kirker Pass Road east of Concord Boulevard - westbound (AM average vehicle occupancy)**
2. **Treat Boulevard east of Oak Grove Road - eastbound (PM average vehicle occupancy)**
3. **Treat Boulevard east of Oak Grove Road - westbound (AM average vehicle occupancy)**
4. **Ygnacio Valley Road east of Cowell Road - eastbound (PM average vehicle occupancy)**
5. **I-680 south of Monument Boulevard - northbound (PM average vehicle occupancy)**
6. **I-680 south of Monument Boulevard - southbound (AM and PM average vehicle occupancy)**
7. **I-680 north of Monument Boulevard - northbound (PM average vehicle occupancy)**
8. **I-680 north of Monument Boulevard - southbound (AM average vehicle occupancy)**
9. **I-680 north of SR 242 - northbound (AM and PM average vehicle occupancy)**
10. **I-680 north of SR 242 - southbound (AM and PM average vehicle occupancy)**
11. **I-680 north of Willow Pass Road - northbound (AM and PM average vehicle occupancy)**
12. **I-680 north of Willow Pass Road - southbound (AM and PM average vehicle occupancy)**
13. **I-680 north of Concord Avenue - northbound (PM average vehicle occupancy)**
14. **I-680 north of Concord Avenue - southbound (AM delay index and average vehicle occupancy and PM average vehicle occupancy)**
15. **I-680 north of SR 4 - northbound (AM and PM (average vehicle occupancy)**
16. **I-680 north of SR 4 - southbound (AM and PM average vehicle occupancy)**
17. **SR 242 north of I-680 - southbound (AM average vehicle occupancy)**
18. **SR 242 north of Willow Pass Road - southbound (AM average vehicle occupancy)**
19. **SR 242 north of Concord Avenue - southbound (AM average vehicle occupancy)**
20. **SR 242 north of Solano Way - southbound (AM average vehicle occupancy)**
21. **SR 242 north of Olivera Road - southbound (AM average vehicle occupancy)**

22. **SR 4 east of Port Chicago Highway - westbound (AM average speed, delay index, and average vehicle occupancy)**
23. **SR 4 east of Bailey Road - eastbound (AM average vehicle occupancy)**
24. **SR 4 east of Bailey Road - westbound (PM average vehicle occupancy)**
25. **SR 4 east of Railroad Avenue - westbound (AM and PM average vehicle occupancy)**

This impact is considered to be potentially significant.

As shown in Table 4-30, these 25 segments of regional routes exceed the established performance threshold under Existing Conditions. The development of the Concentration and Conservation Alternative either improves or does not contribute to the future deficient conditions, as demonstrated by comparing the Concentration and Conservation Alternative to the 2030 No Project Alternative. Therefore, this is considered to be a potentially significant contributing impact that does not require mitigation.

Mitigation Measure Transportation 43: None required.

4.3.7.5 Transportation Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Transportation 44: The development of the Concentration and Conservation Alternative would increase traffic volumes on 19 freeway segments compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Tables 4-25 and 4-26 for specific locations and impacts.

Mitigation Measure Transportation 44: None required.

Impact Transportation 45: The development of the Concentration and Conservation Alternative would increase traffic volumes on 18 freeway ramps compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-27 for specific locations and impacts.

Mitigation Measure Transportation 45: None required.

Impact Transportation 46: The development of the Concentration and Conservation Alternative would increase traffic volumes on 10 roadway segments compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-28 for specific locations and impacts.

Mitigation Measure Transportation 46: None required.

Impact Transportation 47: The development of the Concentration and Conservation Alternative increase traffic volumes at 35 intersections compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-29 for specific locations and impacts.

Mitigation Measure Transportation 47: None required.

Impact Transportation 48: The development of the Concentration and Conservation Alternative would result in lower average speeds, increased delays, and/or lower average vehicle occupancies on eight segments of regional routes compared to the 2030 No Project Alternative. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-30 for specific locations and impacts.

Mitigation Measure Transportation 48: None required.

Impact Transportation 49: The development of the Concentration and Conservation Alternative would result in increased transit ridership and increased transit service. This impact is considered to be less than significant.

The development of the Concentration and Conservation Alternative would increase ridership on BART and County Connection bus lines. The increase in ridership at the North Concord/Martinez BART Station is about 6 percent per year. The system-wide ridership increases in Central Contra Costa County are about 2.8 percent per year by 2030. Along the SR 4 corridor in East County, the ridership would increase 41 percent by 2010 compared to 2000.

Transit service would increase by extending existing bus lines to serve the site, as well as providing new bus service to support the new development by serving the North Concord/Martinez BART Station. The concentrated development at the North Concord/Martinez BART Station supports transit as an alternative mode of transportation. Increased transit use reduces use of automobiles, thus lessening traffic. The Concentration and Conservation Alternative proposes new bus shelters with electricity and benches and standard buses to provide the additional service. Therefore, the impact is considered to be less than significant.

The City of Concord will pursue expected new funding opportunities collaboratively with local transit operators. The City of Concord shall also select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations.

Mitigation Measure Transportation 49: None required.

Impact Transportation 50: The development of the Concentration and Conservation Alternative would provide new bicycle facilities. This impact is considered to be less than significant.

The development of the Concentration and Conservation Alternative would provide new bicycle facilities and support the system proposed in the Concord Trails Master Plan and the Countywide Bicycle Master Plan. The Concentration and Conservation Alternative proposes costs for an extensive network of 10-foot-wide Class I trails, and for 5-foot-wide bicycle lanes on all arterial roadways in both directions. Because adequate bicycle facilities would be provided on the site consistent with City standards, this impact is considered to be less than significant.

Mitigation Measure Transportation 50: None required.

Impact Transportation 51: The development of the Concentration and Conservation Alternative would increase pedestrian activity and provide new pedestrian facilities. This impact is considered to be less than significant.

The development of the Concentration and Conservation Alternative would increase pedestrian activity, particularly in the TOD area around the North Concord/Martinez BART Station. A trail along the creek in support of the Concord Trails Master Plan could provide a new facility. With the increase in transit trips, attractive and well-maintained facilities will be needed to provide pedestrian access to transit stops and the BART station. The Concentration and Conservation Alternative proposes 8-foot-wide sidewalks on both sides of all roadways. Because adequate pedestrian facilities would be provided consistent with City standards, this impact is considered to be less than significant.

Mitigation Measure Transportation 51: None required.

4.3.8 Transportation Impacts of the 2030 No Project Alternative

4.3.8.1 Potentially Significant Transportation Impacts of the 2030 No Project Alternative

Impact Transportation 52: The 2030 No Project Alternative would result in increased traffic volumes and exceed the established performance threshold on 17 freeway segments:

1. **I-680 north of SR 242 - southbound AM**
2. **I-680 north of SR 242 - northbound PM**
3. **I-680 north of Monument Boulevard - northbound PM**
4. **I-680 north of Monument Boulevard - southbound AM**
5. **I-680 south of Monument Boulevard - northbound PM**
6. **I-680 south of Monument Boulevard - southbound AM**
7. **I-680 north of Willow Pass Road - northbound PM**
8. **I-680 north of Concord Avenue - northbound PM**
9. **I-680 north of SR 4 - southbound AM**

10. **SR 242 north of I-680 - northbound PM**
11. **SR 4 east of Port Chicago Highway - eastbound PM**
12. **SR 4 east of Port Chicago Highway - westbound AM**
13. **SR 4 east of Willow Pass Road - westbound AM**
14. **SR 4 east of SR 242 - westbound AM and PM**
15. **SR 4 east of San Marco - westbound AM**
16. **SR 4 east of Railroad - westbound AM**
17. **SR 4 east of Railroad - eastbound PM**

This impact is considered to be potentially significant.

As shown in Tables 4-25 and 4-26, these 17 freeway segments would exceed the established performance threshold with the traffic from the 2030 No Project Alternative or contribute to already deficient existing conditions. Therefore, this is considered to be a potentially significant project-specific impact.

Under the 2030 No Project Alternative conditions, the growth in future traffic volumes on the freeways is due in part to regional growth to the east of Concord.

Mitigation Measure Transportation 52: None available.

No mitigation measures beyond the planned improvements have been identified that would reduce the freeway impacts to a level that is less than significant. Therefore, this impact is considered to be significant and unavoidable.

Impact Transportation 53: The 2030 No Project Alternative would result in increased traffic volumes and exceed the established performance threshold on 18 freeway ramps:

1. **I-680 Willow Pass Road northbound off-ramp (PM)**
2. **I-680 Concord Avenue westbound-to-northbound on-ramp (PM)**
3. **I-680 Concord Avenue southbound off-ramp (AM)**
4. **I-680 Willow Pass Road eastbound-to-southbound on-ramp (AM)**
5. **SR 242 Clayton Road northbound off-ramp (PM)**
6. **SR 242 Concord Avenue eastbound-to-northbound on-ramp (PM)**
7. **SR 242 Clayton Road southbound on-ramp (AM and PM)**
8. **SR 4 Port Chicago Highway eastbound off-ramp (PM)**
9. **SR 4 Port Chicago Highway eastbound on-ramp (PM)**
10. **SR 4 Willow Pass Road eastbound off-ramp (PM)**
11. **SR 4 Port Chicago Highway westbound on-ramp (AM and PM)**
12. **SR 4 Port Chicago Highway westbound off-ramp (AM)**
13. **SR 4 Willow Pass Road westbound on-ramp (AM)**
14. **SR 4 San Marco Boulevard eastbound off-ramp (PM)**

15. **SR 4 southbound San Marco Boulevard westbound on-ramp (AM)**
16. **SR 4 northbound San Marco Boulevard westbound on-ramp (AM)**
17. **SR 4 San Marco Boulevard westbound off-ramp (AM)**
18. **SR 4 Bailey Road westbound on-ramp (AM)**

This impact is considered to be potentially significant.

As shown in Table 4-27, these 18 freeway ramps would exceed the established performance threshold with the traffic from the 2030 No Project Alternative or contribute to already deficient existing conditions. Therefore, this is considered to be a potentially significant project-specific impact.

Two of these ramps—I-680 Willow Pass Road northbound off-ramp (PM) and SR 4 Port Chicago Highway westbound on-ramp (AM and PM)—already operate at LOS F under existing conditions.

Mitigation Measure Transportation 53: None available.

No mitigation measures beyond the planned improvements have been identified that would reduce the freeway ramp impacts to a level that is less than significant. Therefore, this impact is considered to be significant and unavoidable.

Impact Transportation 54: The 2030 No Project Alternative would result in increased traffic volumes and exceed the established performance threshold on five roadway segments:

19. **Ygnacio Valley Road east of Cowell Road (AM peak hour)**
20. **Bailey Road east of Concord Boulevard (AM and PM peak hours)**
21. **Concord Boulevard west of Denkinger Road (AM peak hour)**
22. **Port Chicago Highway north of Olivera Road (AM and PM peak hours)**
23. **Willow Pass Road east of Farm Bureau Road (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 4-28, these five roadway segments would exceed the established performance threshold with the traffic from the 2030 No Project Alternative or contribute to already deficient existing conditions. Therefore, this is considered to be a potentially significant project-specific impact.

Mitigation Measure Transportation 54: None available.

No mitigation measures beyond the planned improvements have been identified that would reduce the roadway impacts to a level that is less than significant. Therefore, this impact is considered to be significant and unavoidable.

Impact Transportation 55: The 2030 No Project Alternative would result in increased traffic volumes and exceed the established performance threshold at 23 intersections:

1. **Farm Bureau Road/Willow Pass Road (PM)**
2. **Market Street and Concord Avenue (AM and PM)**
3. **Oak Grove Road and Treat Boulevard (AM and PM)**
4. **Oak Road and Treat Boulevard (AM and PM)**
5. **Cowell Road and Ygnacio Valley Road (PM)**
6. **Oak Grove Road/Ygnacio Valley Road (AM and PM)**
7. **Market Street and Clayton Road (AM)**
8. **Commerce Av - SR 242 southbound/Concord Avenue (AM and PM)**
9. **Walnut Boulevard and Ygnacio Valley Road (PM)**
10. **Ayers Road and Ygnacio Valley Road (AM)**
11. **North Main Street and Geary Road (PM)**
12. **Bancroft Road and Treat Boulevard (PM)**
13. **~~Burskirk~~Buskirk Avenue - NB I-680 off-ramp and Treat Boulevard (PM)**
14. **North Main St/Sunnyvale Avenue - southbound I-680 ramps (AM and PM)**
15. **Northbound I-680 off-ramp and Ygnacio Valley Road (AM and PM)**
16. **Willow Pass Road and Evora Road (east) - SR 4 westbound off-ramp [in Pittsburg] (AM)**
17. **Willow Pass Road and Evora Road (west) [at project site] (PM)**
18. **Willow Pass Road and Avila Road (AM and PM)**
19. **Railroad Ave and West Leland Road (AM and PM)**
20. **Kirker Pass Road and James Donlon Boulevard Extension (AM and PM)**
21. **Bailey Road and SR 4 eastbound ramps - BART access (PM)**
22. **Willow Pass Road and SR 4 westbound ramps (AM and PM)**
23. **Willow Pass Road and SR 4 eastbound ramps (AM and PM)**

This impact is considered to be potentially significant.

As shown in Table 4-29, these 23 intersections would exceed the established performance threshold with the traffic from the 2030 No Project Alternative or contribute to already deficient existing conditions. Therefore, this is considered to be a potentially significant project-specific impact.

Mitigation Measure Transportation 55: None available.

No mitigation measures beyond the planned improvements have been identified that would reduce the intersection impacts to a level that is less than significant. Therefore, this impact is considered to be significant and unavoidable.

Impact Transportation 56: The development of the 2030 No Project Alternative would result in reduced average vehicle occupancies, increased delay index, and/or reduced average speeds, and exceeds the established performance threshold on 47 segments of regional routes:

1. **Kirker Pass Road east of Concord Boulevard - eastbound**
2. **Kirker Pass Road east of Concord Boulevard - westbound**
3. **Treat Boulevard east of Oak Grove Road - eastbound**
4. **Treat Boulevard east of Oak Grove Road - westbound**
5. **Ygnacio Valley Road east of Cowell Road - eastbound**
6. **Ygnacio Valley Road east of Cowell Road - westbound**
7. **I-680 south of Monument Boulevard - northbound**
8. **I-680 south of Monument Boulevard - southbound**
9. **I-680 north of Monument Boulevard- northbound**
10. **I-680 north of Monument Boulevard- southbound**
11. **I-680 north of SR 242- northbound**
12. **I-680 north of SR 242- southbound**
13. **I-680 north of Willow Pass Road- northbound**
14. **I-680 north of Willow Pass Road- southbound**
15. **I-680 north of Concord Avenue- northbound**
16. **I-680 north of Concord Avenue- southbound**
17. **I-680 north of SR 4- northbound**
18. **I-680 north of SR 4- southbound**
19. **SR 242 north of I-680 - northbound**
20. **SR 242 north of I-680 - southbound**
21. **SR 242 north of Willow Pass Road - northbound**
22. **SR 242 north of Willow Pass Road - southbound**
23. **SR 242 north of Concord Avenue- northbound**
24. **SR 242 north of Concord Avenue- southbound**
25. **SR 242 north of Solano Way - northbound**
26. **SR 242 north of Solano Way - southbound**
27. **SR 242 north of Olivera Road - northbound**
28. **SR 242 north of Olivera Road - southbound**
29. **SR 4 east of I-680 - eastbound**
30. **SR 4 east of Solano Way - eastbound**
31. **SR 4 east of SR 242 - eastbound**
32. **SR 4 east of SR 242 - westbound**
33. **SR 4 east of Port Chicago Highway - westbound**
34. **SR 4 east of Port Chicago Highway - eastbound**
35. **SR 4 east of Willow Pass Road - westbound**
36. **SR 4 east of Willow Pass Road - eastbound**
37. **SR 4 east of San Marco Boulevard - westbound**

38. **SR 4 east of San Marco Boulevard - eastbound**
39. **SR 4 east of Bailey Road - westbound**
40. **SR 4 east of Bailey Road - eastbound**
41. **SR 4 east of Railroad Avenue - westbound**
42. **SR 4 east of Railroad Avenue - eastbound**
43. **Bailey Road south of West Leland Road - westbound**
44. **Leland Road west of Bailey Road - westbound**
45. **Leland Road east of San Marco Boulevard - westbound**
46. **Avila Road west of San Marco Boulevard - westbound**
47. **Willow Pass Road east of Evora Road - westbound**

This impact is considered to be potentially significant.

See Table 4-30 for the specific affected target(s).

The 2030 No Project Alternative would affect speeds, delays, and average vehicle occupancies on the regional routes by contributing to traffic on congested corridors. In 2030, the peak hour speeds, delay index, and/or average vehicle occupancies on the above freeway segments would be below the TSO.

Mitigation Measure Transportation 56: None available.

As shown in Table 4-30, these 47 segments of regional routes would exceed the established performance threshold with the traffic from the 2030 No Project Alternative or contribute to already deficient existing conditions. Therefore, this is considered to be a potentially significant project-specific impact.

4.3.8.2 Transportation Impacts of the 2030 No Project Alternative That Are Less Than Significant

Impact Transportation 57: The development of the 2030 No Project Alternative would result in increased traffic volumes on 19 freeway segments compared to Existing Conditions. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Tables 4-25 and 4-26 for specific locations and impacts.

Mitigation Measure Transportation 57: None required.

Impact Transportation 58: The development of the 2030 No Project Alternative would result in increased traffic volumes on 21 freeway ramps compared to the existing condition. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-27 for specific locations and impacts.

Mitigation Measure Transportation 58: None required.

Impact Transportation 59: The development of the 2030 No Project Alternative would result in increased traffic volumes on nine roadway segments compared to the

existing condition. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-28 for specific locations and impacts.

Mitigation Measure Transportation 59: None required.

Impact Transportation 60: The development of the 2030 No Project Alternative would result in increased traffic volumes on 38 intersections compared to the existing condition. This increase does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-29 for specific locations and impacts.

Mitigation Measure Transportation 60: None required.

Impact Transportation 61: The development of the 2030 No Project Alternative would result in reduced average vehicle occupancies, increased delay index, and/or reduced average speeds, and contribute to already deficient conditions on nine segments of regional routes compared to the existing condition. This effect does not exceed the established performance threshold; therefore, this impact is considered to be less than significant.

See Table 4-30 for specific locations and impacts.

Mitigation Measure Transportation 61: None required.

4.4 References

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5.
Visual Resources

5 Visual Resources

This chapter describes the existing visual setting and summarizes the effects on visual resources that would result from implementation of either of the alternatives. This chapter also includes proposed mitigation measures that will reduce the identified impacts to the extent feasible.

The visual impacts of the alternatives are analyzed in relation to existing site conditions. It is understood that the positive or negative value attached to changes in visual character can be largely subjective. Therefore, the analysis focuses on the factual, physical manner in which development could change the existing visual elements or features that exist on the site rather than analyzing value issues.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR)~~-~~, the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on visual resources. This has resulted in the visual resources impacts of both alternatives being substantially less than they would have been had visual resources impacts not been taken into account during all stages of the planning and environmental analysis process.

5.1 Existing Conditions

5.1.1 Project Setting

The visual environment of the site and its surroundings are defined by the proximity to Mt. Diablo to the southeast, the Los Medanos Hills to the east, Suisun Bay to the north, the urban development in the City of Concord and adjacent communities to the west, and Mt. Diablo Creek, which bisects the site from the southeast to the northwest, as shown on Figure 5-1. As described in Chapter 1, Introduction, State Route (SR) 4, Willow Pass Road, and Bailey Road traverse the site, and Kirker Pass Road runs just to the south of the site. The Bay Area Rapid Transit (BART) District system tracks parallel SR 4.

To the southeast, Mt. Diablo is an isolated 3,849-foot peak that is visible from the site and from much of the San Francisco Bay Area and northern California. The Los Medanos Hills form the eastern edge of the site and are the northern continuation of the ridges of Mt. Diablo. Elevations within the reuse site range from approximately 28 feet at the northwest corner of the site to 1,~~132~~438 feet at the southeast corner of the site.

Suisun Bay is located north of SR 4, and is a shallow tidal estuary that lies at the confluence of the Sacramento and San Joaquin Rivers, thus forming the entrance to the Sacramento–San Joaquin River Delta. Suisun Marsh is the tidal marsh adjacent to Suisun Bay; it is the largest contiguous brackish water marsh remaining on the west coast of North America (California Department of Water Resources Interagency Ecological Program, 2008). Elevated views from within the site provide views across the Bay, with two major refineries visible along the shore at Avon and near Martinez.

5.1.2 Landform

The site's natural topography is defined by the Los Medanos Hills, which rise sharply to the east of Mt. Diablo Creek, and a set of lower hills west of the creek adjacent to the North Concord/Martinez BART Station, separating the site from downtown Concord. Both the hills south of the North Concord/Martinez BART Station and the Los Medanos Hills provide views of Mt. Diablo, the City of Concord, and Suisun Bay.

5.1.3 Project Viewshed

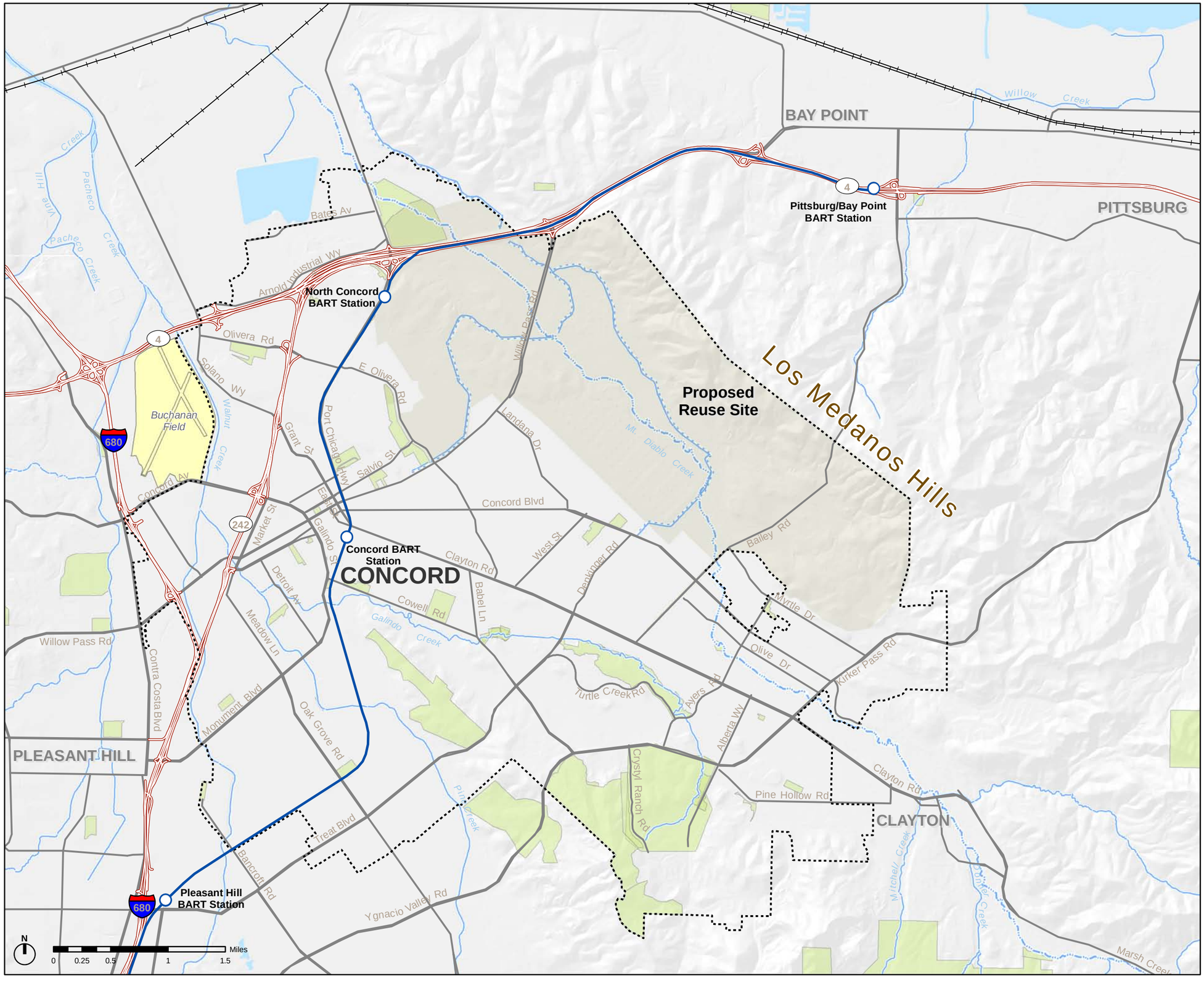
Depending on the viewing location, both upland and lowland areas of the site are visible from off-site locations, as shown in the pictorial views analysis on Figure 5-2 and in Appendix 5A. However, the highest points of the Los Medanos Hills that are highly visible throughout the region are not within the site boundary, and are close to Mt. Diablo.

The portion of the Los Medanos Hills directly abutting the site that is not within the City of Concord is largely located in an unincorporated area in Contra Costa County. However, this area is also adjacent to incorporated areas in the City of Pittsburg. In 2005, City of Pittsburg voters approved Measure P, amending that city's General Plan by creating a new urban limit line (ULL) around the entire City of Pittsburg, including the unincorporated area of the Los Medanos Hills to the east of the site and north of Kirker Pass Road.

Portions of the Los Medanos Hills that are located within the site are characterized by rolling hills covered by annual grasslands, small clusters of oak woodlands, patches of experimental forest, and two water storage tanks, as shown on Photographs 5-1 and 5-2.



Photograph 5-1: Upland areas of the site viewed from Elkwood Drive



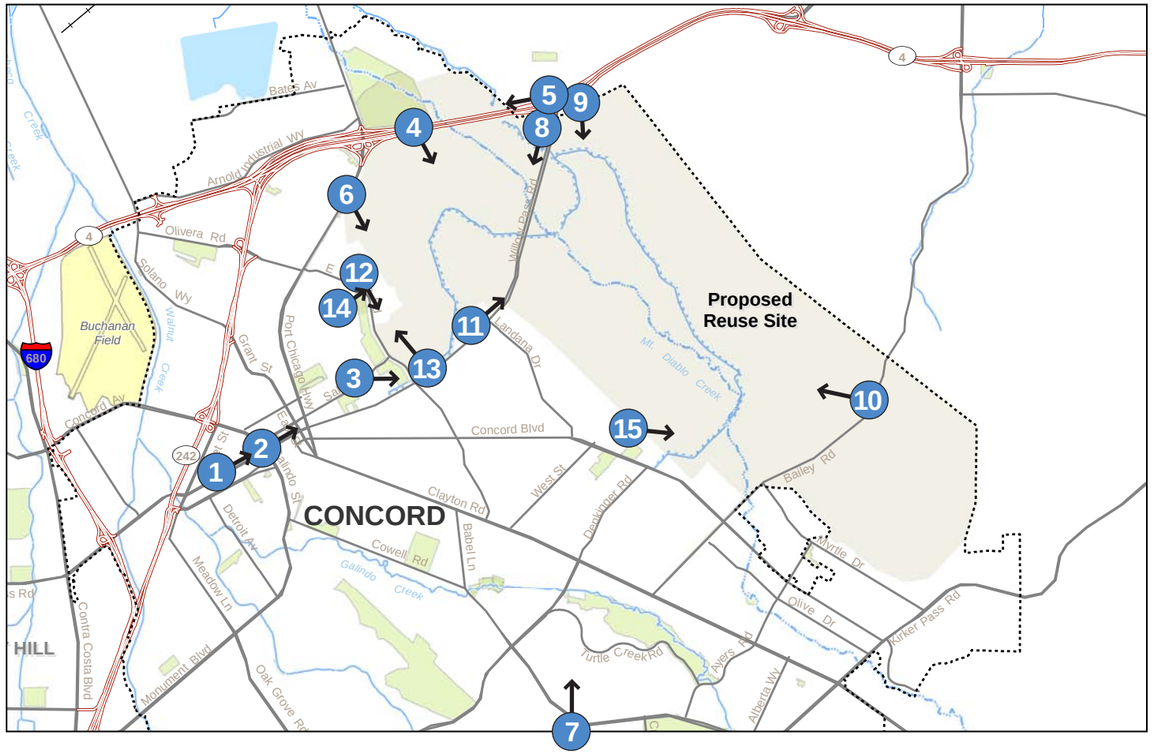
Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Canal
- Mt. Diablo Creek
- Other Creek or Stream
- Swamp or Marsh
- Highway
- Arterial Street
- Railroad
- Bay Area Rapid Transit Line
- BART Station

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Community Reuse Plan

Revised August 17, 2009

Figure 5-1
Project Setting




1


2

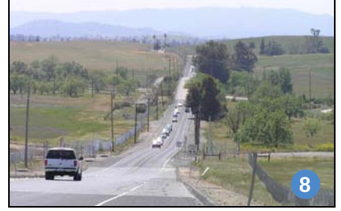

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Legend

Pictorial Views

1. From Downtown Concord on Salvio Street toward the site
2. From Willow Pass Road at Port Chicago Highway toward site
3. From Encima Drive near intersection with Salvio Street toward the central part of the site
4. From SR 4 toward Mt. Diablo
5. From Avila Road, above SR 4 toward Diablo Creek Golf Course and the Tesoro Golden Eagle Refinery
6. From North Concord BART Station toward Mt. Diablo
7. From Lime Ridge Open Space toward the site
8. From Willow Pass Road looking south
9. From SR 4 toward Mt. Diablo
10. From Bailey Road in the Los Medanos Hills looking across site
11. From San Vicente Drive toward the site
12. From Haleakala Street, in the Coast Guard Housing complex, toward Mt. Diablo
13. From Willow Pass Road looking toward the site
14. From Willow Pass Community Park toward the site
15. From Concord High School across the site

Base Map

- Concord City Limit
- Proposed Reuse Site
- Park or Open Space
- Railroad
- Mt. Diablo Creek
- Canal
- Other Creek or Stream

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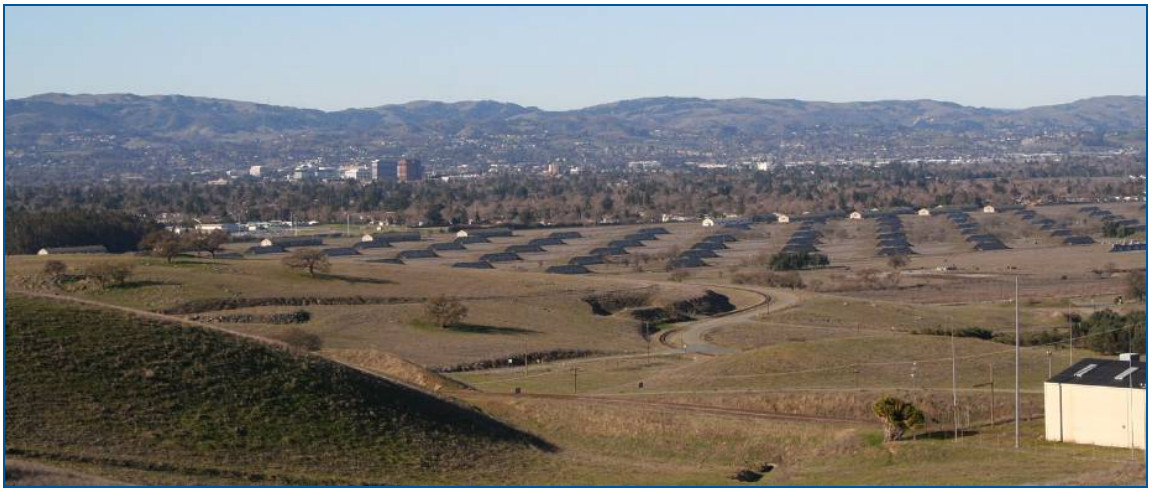
Figure 5-2
Pictorial Views



Photograph 5-2: Views of the Los Medanos Hills, including portions located within the site boundary viewed from Lime Ridge Open Space

Note: Photograph 5-2 shows areas of the Los Medanos Hills that are outside the site boundary; these are the areas of higher elevation located within unincorporated Contra Costa County.

Lowland portions of the site contain the former military bunkers and rail sidings, Mt. Diablo Creek and its associated vegetation, the Contra Costa Canal system, patches of experimental forest, and remnant vegetation from historic ranches, as shown on Photographs 5-3 and 5-4. Also visible within the lowland portions are the numerous naval operations buildings, primarily to the south of SR 4.



Photograph 5-3: Lowland areas of the site viewed from Bailey Road showing military bunkers

Since the site is inaccessible to the public, views from within it are restricted to the transportation corridors that traverse the site. The Los Medanos Hills can be seen when traveling east on SR 4 and northbound on Willow Pass Road and Bailey Road. In addition, all of these roads cross Mt. Diablo Creek within the site boundary, allowing views of the creek and associated riparian vegetation.

Key View Points

A number of key view points have been selected that most clearly display these visual changes. These key view points are shown on Figure 5-3 and are located at:

- Neighborhoods adjacent to the western side of the site
- Transportation corridors (providing views of the site and also representative of views from within the site)
- Downtown Concord
- City parks and open spaces
- Mt. Diablo

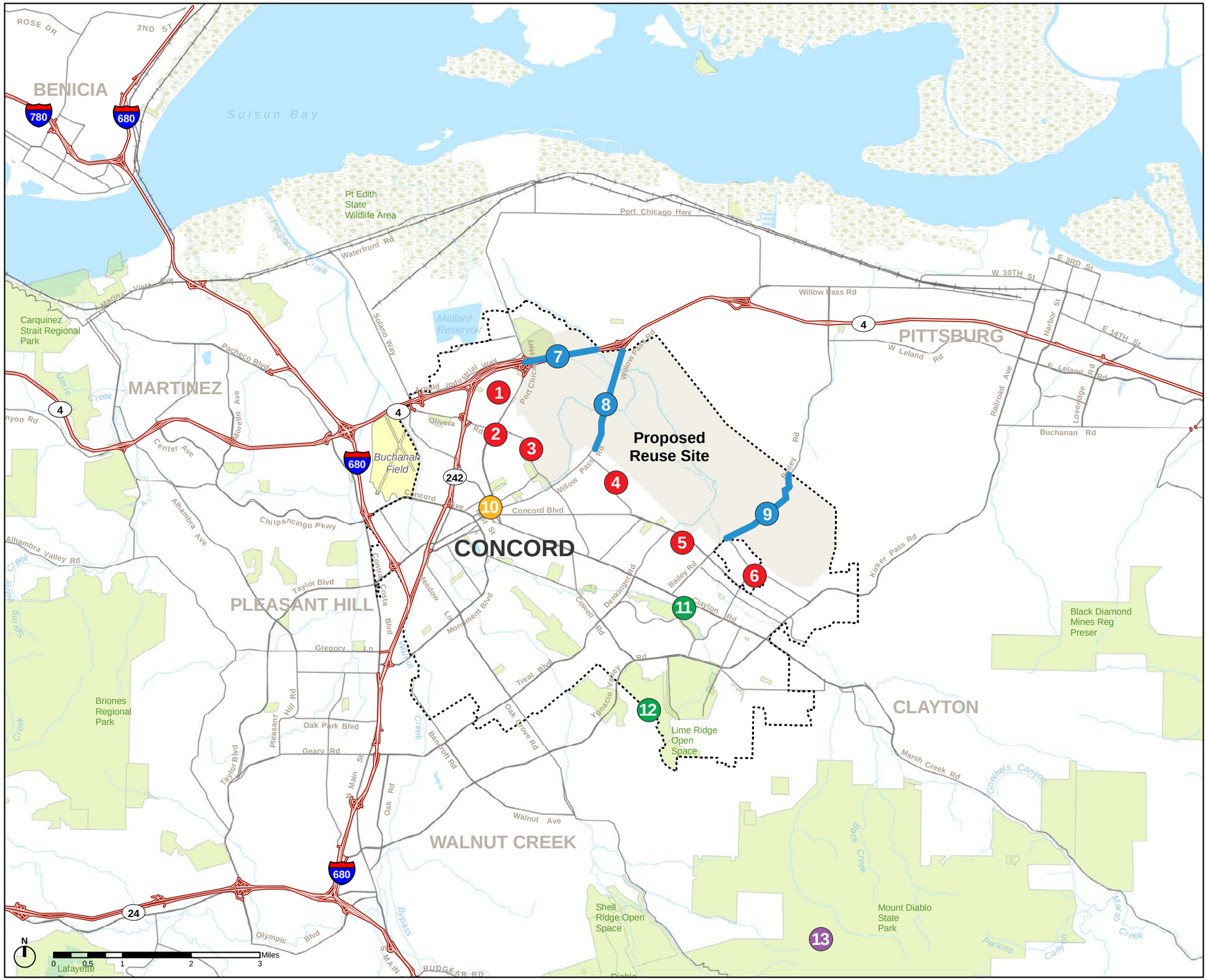


Photograph 5-4: View of lowland portion of the site from Avila Road adjacent to the SR 4 / Willow Pass Road interchange looking southeast toward Mt. Diablo

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Photograph 5-4



Legend

Neighborhoods Adjacent to the Site

- 1 Sun Terrace Neighborhood
- 2 Holbrook Neighborhood
- 3 Coast Guard Housing Complex
- 4 Dana Estates Neighborhood
- 5 Bishop Estates Neighborhood
- 6 Myrtle Drive Neighborhood

Transportation Corridors

- 7 SR 4
- 8 Willow Pass Road
- 9 Bailey Road

City Parks and Open Space

- 10 Downtown Concord
- 11 Newhall Community Park
- 12 Lime Ridge Open Sapce
- 13 Mt. Diablo

Base Map

- Concord City Limit
- Proposed Reuse Area
- Park or Open Space
- Swamp or Marsh
- Railroad
- Mt. Diablo Creek
- Canal
- Other Creek or Stream

Concord Community Reuse Plan

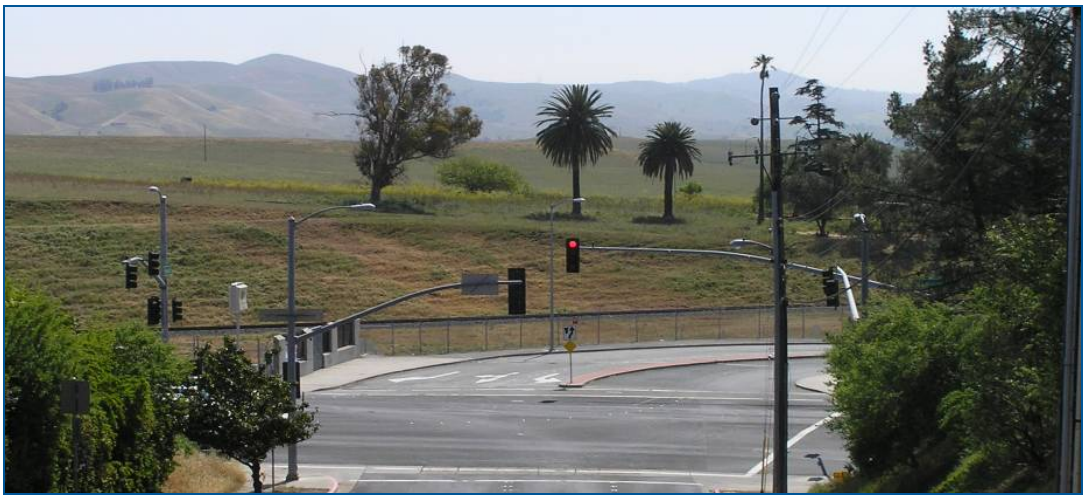
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Figure 5-3
Key View Points

5.1.3.1 Views from Adjacent Neighborhoods

View Location	• Sun Terrace Neighborhood located north of the North Concord/Martinez BART Station and Port Chicago Highway, including properties on Bayview Circle, Bayview Court, Sunview Way, and Sunview Court. • Holbrook Neighborhood, located southeast of the intersection of Port Chicago Highway and East Olivera Road. • Olivera Road, including Willow Pass Community Park. • Monte Gardens Village Neighborhood north of Willow Pass Road. • The Coast Guard Housing complex located south of the North Concord/Martinez BART Station parking lot, including properties on Hamilton Avenue and Mount Hood Circle. • Neighborhoods adjacent to the site between Willow Pass Road and Bailey Road. This includes Concord High School as well as the Dana Estates and Bishop Estates Neighborhoods, including properties located on Elkwood Drive, Lynwood Drive, Denkinger Road, Crestwood Drive, Jefferson Street, and Lincoln Drive. • Neighborhoods adjacent to the site between Bailey Road and Kirker Pass Road. This includes the Myrtle Drive Neighborhood, including properties located on Myrtle Drive, Holly Drive, Springridge Court, and Bluerock Circle. These neighborhoods are all low-density, single-family residential areas. Examples of views of the site from these neighborhoods are shown on Photographs 5-5 to 5-11.
Existing Visual Quality/Character	The Los Medanos Hills can be viewed from all of the above neighborhoods. Uninterrupted views of lowland areas of the site can be seen from portions of the Sun Terrace Neighborhood and the Coast Guard Housing complex. Views of the site from the Holbrook Neighborhood are restricted to the upland portions. Lowland views of the site are difficult to see due to the lower elevation of this neighborhood with respect to the site, and screening from adjacent residential properties and vegetation. Views of the site from the Monte Gardens Village Neighborhood north of Willow Pass Road include some upland views to the northeast, and limited lowland views similar to those from the Holbrook Neighborhood. In neighborhoods adjacent to the site between Willow Pass Road and Bailey Road, uninterrupted views of lowland areas can be seen from houses that are adjacent to the site, which are not screened by fencing or landscaping, and the second story of these residences. For properties located within these neighborhoods not adjacent to the site, interrupted lowland views can be seen from the second story of some residences. Lowland views cannot be seen from the ground floor of these properties since views are screened by other dwellings, fences, or trees and other vegetation. In neighborhoods adjacent to the site between Bailey Road and Kirker Pass Road, views of the site vary due to elevation changes on the periphery of the site, which can obscure lowland views (e.g., at Springridge Court). In some areas, views of lowland portions of the site can be seen (e.g., parts of Holly Drive), and it is these locations for which visual changes have been analyzed, since this represents the worst-case visual impact from this neighborhood. Existing upland views of the site from all neighborhoods are dominated by the Los Medanos Hills, which are characterized by rolling hills covered by annual

	grasslands, small clusters of oak woodlands, patches of experimental forest, and two water storage tanks. Existing views of lowland portions of the site, where available, consist of open space, abandoned storage bunkers, unused warehouses and other military related buildings, the system of rail lines, paved and unpaved roads, and patches of experimental forest. Portions of the abandoned airfield runway can also be seen from the Coast Guard Housing complex and Olivera Road.
Viewer Groups and Viewer Exposure	Viewer groups are primarily residents. Viewer exposure and sensitivity is mixed due to proximity, topography, and the presence of obstructions.



Photograph 5-5: View of the site from Panoramic Drive in the Sun Terrace Neighborhood



Photograph 5-6: View of the site from the Coast Guard Housing complex, Haleakala Street off Mount Hood Circle (showing the abandoned runway)



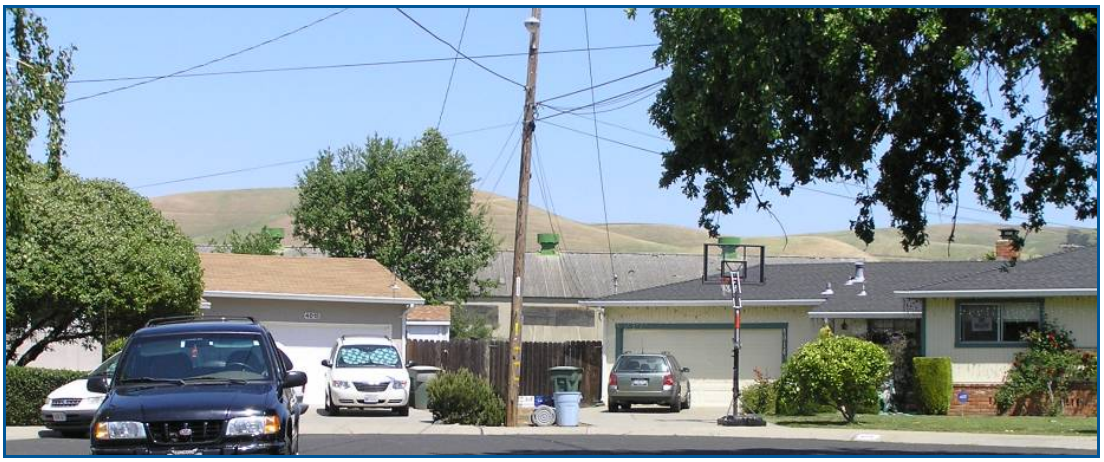
Photograph 5-7: View of the site from the Coast Guard Housing complex, Haleakala Street off Mount Hood Circle



Photograph 5-8: View of the site from the Coast Guard Housing complex, Hamilton Avenue



Photograph 5-9: View of the site from Elkwood Drive in the Dana Estates (exposed view from edge of neighborhood)



Photograph 5-10: View of the site adjacent to Lynwood Drive in the Dana Estates Neighborhood



Photograph 5-11: View of the site from Concord High School (view is elevated taken from the bleachers)

5.1.3.2 Views from Transportation Corridors

View Location	The following transportation corridors provide views from within the site and have been taken as representative of views from within the site for the purposes of this visual analysis: SR 4, BART route (which is similar to views from SR 4), Willow Pass Road, and Bailey Road.
Existing Visual Quality/Character	Both upland and lowland areas of the site can be seen from the transportation corridors, and are shown on Photographs 5-12 to 5-17. Portions of the Los Medanos Hills, bunkers and rail sidings, areas of oak woodland, water storage tanks, and existing buildings are all visible.
Viewer Groups and Viewer Exposure	Viewer groups include residents, commuters, and visitors using these roads. Transportation corridors provide expansive views of the site; however, exposure is reduced because of the driving speeds on the roadways. Viewer sensitivity to view changes varies depending on the viewer group.



Photograph 5-12: View from SR 4 of lowland areas of the site
(Google Maps, 2008)



Photograph 5-13: View from SR 4 of Diablo Creek Golf Course
(Google Maps, 2008)



Photograph 5-14: View of the site from Bailey Road



Photograph 5-15: View of the site from Bailey Road



Photograph 5-16: View of upland portion of the site from Willow Pass Road looking southwest



Photograph 5-17: View of upland portion of the site from Willow Pass Road looking east

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Photographs 5-16 and 5-17

5.1.3.3 Views from Downtown Concord

View Location	In downtown Concord, roadways provide views of upland portions of the site, as shown on Photographs 5-18 and 5-19.
Existing Visual Quality/Character	Upland portions of the site are characterized by rolling hills covered by annual grasslands.
Viewer Groups and Viewer Exposure	Viewer groups include residents, employees who work in downtown Concord, and people visiting the downtown area. Viewer exposure is limited due to distance from the site, existing urban development, vegetation, and topography of upland areas of the site. Viewer sensitivity varies for area residents who are accustomed to a familiar view and workers (and some residents) who are less familiar with the local landscape.



Photograph 5-18: View from Downtown Concord



Photograph 5-19: View from Downtown Concord

5.1.3.4 Views from City Parks and Open Space

View Location	Newhall Community Park and Lime Ridge Open Space have been selected as representative of views from Concord's parks and open space.
Existing Visual Quality/Character	From these two locations, views can be seen of the upland portions of site from within the Concord City limit~~s~~ (see Photographs 5-20 and 5-21). Upland portions of the site are characterized by rolling hills covered by annual grasslands.
Viewer Groups and Viewer Exposure	Viewer groups include residents, visitors, and recreational groups. Viewer exposure is high due to the elevation of the view points, which provide sweeping views of the site. Viewer sensitivity is also potentially high because of the interest in preserving these scenic views by recreational groups. Viewer sensitivity is higher in Newhall Community Park than Lime Ridge Open Space since it is closer to the site.



Photograph 5-20: View of the site from Newhall Community Park



Photograph 5-21: View of the site from Lime Ridge Open Space

5.1.3.5 Views from Mt. Diablo

View Location	At the summit of Mt. Diablo, there is a visitor center with an observation deck that provides a comprehensive public view of the site. Photograph 5-22 shows the view from the top of Mt. Diablo.
Existing Visual Quality/Character	All areas of the site are visible.
Viewer Groups and Viewer Exposure	Viewers are primarily recreation and visitor groups. Viewer exposure is high because of the expansive view. Sensitivity is high since the views from the top of Mt. Diablo are some of the main attractions for these viewer groups.



Photograph 5-22: View of the site and surrounding area from the top of Mt. Diablo

5.1.4 Local Plans and Regulatory Context

Relevant local plans and policies associated with visual resources of the site include the City of Concord's 2030 Urban Area General Plan (General Plan) (City of Concord, 2007), the City of Concord's Hillside Development Ordinance as detailed in the City's Municipal Code (City of Concord, 2002a), the City of Pittsburg General Plan and Pittsburg's Hillside Development Regulations, and the Contra Costa County General Plan. These relevant plans and policies are discussed below.

5.1.4.1 City of Concord

The General Plan includes policies that are intended to protect ridgelines, visible hillsides, and other significant natural resource areas from development that would have adverse environmental or visual impacts. Table 5-1 contains the General Plan policies applicable to visual resources.

Table 5-1: City of Concord General Plan Principles and Policies for Visual Resources

	Description
Principle LU-1.1	Preserve and enhance neighborhood character.
Policy LU-1.1.9	Preserve visible hillsides and open space areas through techniques such as cluster development or density transfers.
Principle LU-10.1	Protect ridgelines and visible hillsides.
Policy LU-10.1.1	Encourage the County and adjacent cities to prohibit new development on ridgelines and in protected viewsheds, but allow appropriate beneficial and reasonable open space uses in these areas, subject to standards for viewshed and environmental protection to preserve the open space character of areas visible from Concord's neighborhoods and commercial districts.
Policy LU-10.1.3	Work with the County and adjacent jurisdictions to ensure that zoning and subdivision regulations applicable to all development visible from or environmentally impacting within the City's Planning Area reflect General Plan Policy direction.
Policy LU-10.1.4	Minimize cut-and-fill of natural hillsides.
Policy LU-10.1.5	Ensure that developers of projects in the City work with landowners in adjacent jurisdictions to incorporate natural creekways as open space amenities into the design of projects as a condition of approval.
Policy LU-10.1.6	Work with the County landowners and developers to set back buildings between Evora Road and SR 4 from the edge of SR 4 to mitigate visual and noise impacts.
Policy LU-10.1.8	Encourage the provision of wildlife corridors to ensure the integrity of habitat linkages and preserve the character of visible hillsides and open space.
Principle POS-2.2	Preserve natural resources within designated open space.
Policy POS-2.2.1	Design structures and facilities located within parks and open space areas to complement the natural setting and values of each site and adjacent lands.
Policy POS-2.2.3	Use open space where feasible to delineate an urban edge.
Principle POS-2.3	Expand open space systems as opportunities are identified
Policy POS-2.3.1	Increase the regional trail, ridgeline, and hillside open space system in the City's Planning Area through joint efforts with East Bay Regional Park District, Contra Costa County, the U.S. government, and nonprofit trustee agencies.
Policy POS-2.3.2	Establish priorities for open space preservation in the City's Planning Area based on an evaluation of natural resources, viewsheds, wildlife habitats, and recreational opportunities.

The Zoning Ordinance includes standards and review criteria to implement these policies.

In addition, the City's existing Hillside Development Ordinance (Chapter 122, Division 17, Article VI, Sections 122-811 through 819) within the Municipal Code (City of Concord, 2002) provides regulations for managing the development of hillside areas, applying to all parcels of land that have an average slope of 15 percent or more. The overarching aims of the Hillside Development Ordinance are to:

- Minimize the risk of personal injury, impact to water quality, and damage to property from landslides, erosion, earth creep, stormwater runoff, and other hazards in and near hillside areas of the city.
- Minimize the need for grading and ensure that, when grading is necessary, it appears to be as natural and unobtrusive as possible. The ordinance states that all areas with a slope greater than 40 percent shall be left undisturbed.
- Facilitate protection of existing views from both private development and public open space and rights-of-way from encroachment by new development.
- Implement the policies of the General Plan relating to development in hillside areas.

5.1.4.2 City of Pittsburg

The City of Pittsburg is located to the east of the site and includes much of the eastern portions of the Los Medanos Hills and some of the western portions of the hills, including part of the ridgeline that can be seen from the site and the City of Concord.

There are a number of policies contained within the City of Pittsburg General Plan (City of Pittsburg, 2004) relevant to hillside development and development on major and minor ridgelines. Hillside development policies apply to land above 500-foot elevation, which includes the southeast portion of the Los Medanos Hills adjacent to the site boundary. The main intent of these policies is to allow development, but they're also intended to ensure the preservation of the prominent scenic and environmental features that the foothills hold by applying uniform development standards to all land above the 500-foot elevation (City of Pittsburg, 2008).

Major and minor ridgelines, as defined in the City of Pittsburg General Plan, do not include the Los Medanos Hills ridgeline visible from the site and surrounding area. However, the City of Pittsburg General Plan (2007) includes greenbelt provisions in this area. The policy states that a greenbelt buffer will be established to include "all land between the City of Concord border and the first set of ridges including the tops of these same ridges which generally run parallel to the common border" (City of Pittsburg, 2007, Resolution Number 07-10700). The aerial extent of this greenbelt is still being determined.

The Pittsburg voter-approved Measure P extended Pittsburg's ULL to include the foothills of the Los Medanos Hills currently located within unincorporated Contra Costa County. Following the establishment of this new ULL, the City has been drafting hillside development regulations, amending existing Hillside Planned Development District regulations, adopting new Hillside Development Design Guidelines, and amending Chapters 2 (Land Use Elements) and 4 (Urban Design Elements) of the General Plan in order to modify certain

hillside policies related to density bonuses and neighborhood commercial uses in hillside areas (City of Pittsburg, 2008).

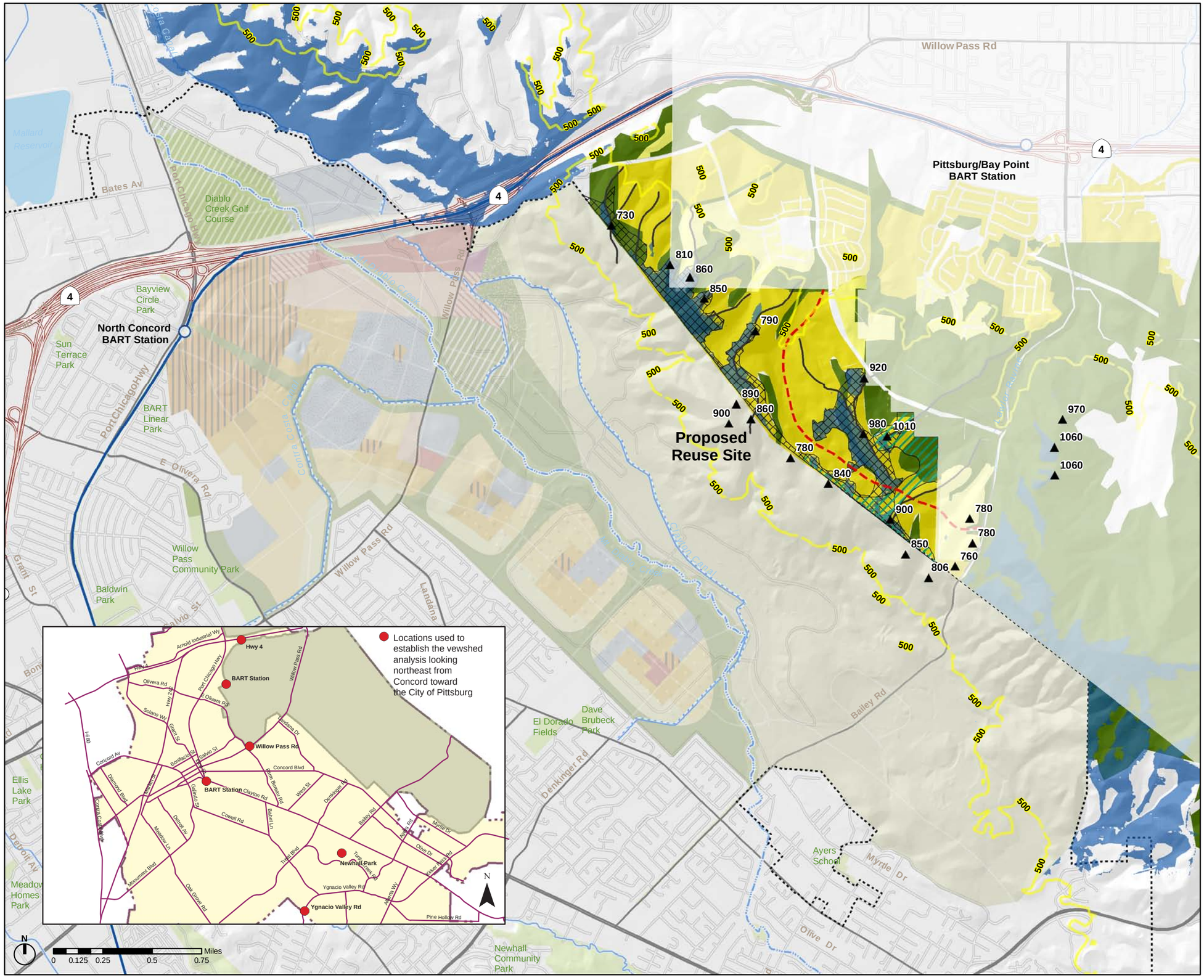
Amendments to Pittsburg's Hillside development regulations were commented on by both the Los Medanos Working Group and the City of Concord. The Los Medanos Working Group includes council representatives with support from planning and engineering staff from both the City of Concord and the City of Pittsburg. The group was formed in early 2007 to discuss issues of mutual concern as they pertain to both the Los Medanos Hills and the Concord Naval Weapons Station (CNWS) areas (Concord, 2008). The City of Concord developed a composite map based on a viewshed analysis from several vantage points throughout Concord, as shown on Figure 5-4. This was presented to the Los Medanos Hills Working Group and the Pittsburg Planning Commission. The map shows the potential viewshed of the Los Medanos Hills, as well as Concord's suggested "open space" green buffer, which would afford protection to visually sensitive areas while recognizing Pittsburg's development potential for this area (Concord, 2008).

A draft ordinance governing hillside development, including areas that could be visible from the City of Concord, was prepared and reviewed by the Pittsburg City Council, but it did not go forward with the ordinance. On July 8, 2009, the Contra Costa County Local Agency Formation Commission (LAFCo) approved expansion of the City of Pittsburg's Sphere of Influence (SOI) and the associated expansion of municipal services by the Delta Diablo Sanitation District and Contra Costa Water District to unincorporated areas where development might occur. LAFCo also adopted a negative declaration stating that the expansion did not have any significant environmental impacts.

5.1.4.3 Contra Costa County

As described in Chapter 3, Land Use, some of the areas surrounding the site are part of the unincorporated areas of Contra Costa County, including the unincorporated communities of Clyde and Bay Point. Contra Costa County's General Plan (Contra Costa County, 2005) does not specifically address visual resources, although it emphasizes preservation of open space, agricultural, grazing, watershed, and delta recreation resources.

Goals associated with scenic resources in the County General Plan include preservation of areas of high scenic value; protection of major scenic ridges "from structures, roadways, or other activities that would harm their scenic qualities"; and protection of the scenic Bay Delta estuary and the Sacramento–San Joaquin River Delta shoreline (Contra Costa County, 2005).



Legend

- Peaks
- Ridges
- 500' Contour
- Pittsburg Proposed Four Lane Road
- HCP Buffer Area
- Open Space Green Buffer requested by the City of Concord - approximately 195 acres
- Viewshed exluding downtown parking garage, including Newhall Park

Pittsburg General Plan Land Use

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

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Concord Community Reuse Plan

Revised August 25, 2009

Figure 5-4
Viewshed Analysis

5.2 Standards of Significance

Criteria for determining the significance of impacts on visual resources have been developed based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines and any relevant agency thresholds. For purposes of this Environmental Impact Report (EIR), an alternative may be considered to have a significant environmental effect if it will:

- Conflict with plans, policies, or regulations governing scenic resources
- Adversely affect a scenic vista
- Damage scenic resources
- Degrade existing visual character
- Create a new source of light or glare

5.3 Potential Visual Resources Impacts

This section begins with a description of assumptions that have been incorporated in the analysis of potential visual resources impacts. Impacts of both the Preferred Alternative and the Concentration and Conservation Alternative are identified separately. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented.

The section concludes with a description of the potential impacts of the No Project Alternative.

5.3.1 Assumptions about Potential Visual Resources Impacts

A number of assumptions are presented below that have been applied in the analysis of potential visual resource impacts of the two alternatives. The assumptions are based on information gathered during the planning process to develop both alternatives. This information has been incorporated into both alternatives as ways to avoid or minimize environmental consequences.

- As set out in Chapter 2, Project Description, the site will change from its current visual condition to include a variety of urban uses and park and recreational facilities, as well as maintaining existing open spaces.
- Both alternatives leave the Los Medanos Hills above 30 percent slope, as well as a minimum corridor of 150 feet on either side of Mt. Diablo Creek, free from urban development.
- Both alternatives provide a transitional green buffer of varying distances around the majority of the site.
- Both alternatives provide a network of green corridors in strategic locations (ridgelines, between districts/villages) that offer opportunities for view corridors from existing

neighborhoods and view points around Concord toward Mt. Diablo and the Los Medanos Hills.

- Both alternatives maintain open space areas that help minimize view obstruction and maintain the existing visual character of parts of the site, particularly east of Mt. Diablo Creek and south of Bailey Road.
- All development will include measures to incorporate visual screening, landscaping, and streetscaping—including street tree and shrub planting—that will appear similar to existing tree cover in Concord and will conform to the Zoning Ordinance, as amended.
- Native and introduced trees on the site will be protected according to the City's heritage tree requirements.
- Allowable use of areas designated as open space has not yet been decided, but could include hiking and biking trails and passive recreation facilities.
- Residential development within the City of Pittsburg adjacent to the eastern boundary of the site has the potential to impact the scenic quality of the Los Medanos Hills. Pittsburg's planned development along the ridgeline could impinge on views of the Los Medanos Hills from the site and selected view points.
- Views of the site traveling on BART are assumed to be the same as those from SR 4 since these are largely from locations where the BART track is integrated within the median of SR 4.
- The General Plan policies listed in Table 5-1 will apply to development on the site. Some of these policies serve to minimize the visual impact of development on the site through techniques such as clustering development or transferring density from one part of the site to another, minimizing cut-and-fill of natural hillsides, incorporating natural creekways within developments, promoting wildlife corridors as a means of maintaining the character of visible hillsides and open space, designing buildings and facilities in parks and open space areas in a context-sensitive manner to complement natural settings, and using open space as a way to delineate the edge of urban development.
- It is assumed that the Reuse Plan will include a set of best management practices (BMPs) to minimize the visual impact of new development on the site, maintain scenic vistas of the Los Medanos Hills, develop compatible visual character in open space areas, and minimize nighttime light pollution. Techniques that may be considered include grading to construct natural visual barriers; using targeted light placement and directional lighting; reducing lighting levels; using materials with a low solar reflectivity index; shielding light sources; specifying scale, massing, height, and setbacks; screening rooftop equipment; establishing view corridors (either architecturally or by street network design); stepping structures on hillsides; and establishing park or open space transition buffers.
- The General Plan will be amended after the Reuse Plan is adopted to incorporate more detailed policy development and planning that has been conducted for the site. The Zoning Ordinance will then be amended to maintain consistency with the revised General Plan.

5.3.2 Visual Resources Impacts of the Preferred Alternative

5.3.2.1 Potentially Significant Visual Resources Impacts of the Preferred Alternative

Impact Visual Resources 1: The Preferred Alternative has the potential to degrade the visual character of the near horizon views of the site from the Sun Terrace Neighborhood and the Coast Guard Housing complex. This impact is considered to be potentially significant.

Concord's residential neighborhoods selected for analysis from a visual impacts perspective include the Sun Terrace Neighborhood and Coast Guard Housing complex residential areas.

The Sun Terrace Neighborhood is an existing single-family residential area, located to the north of the North Concord/Martinez BART Station. Panoramic Drive connects this neighborhood with Port Chicago Highway and climbs in elevation to provide views of both upland and lowland portions of the site from the roadway. These views are accessible from residential properties located on the periphery of this neighborhood, such as those on Bayview Circle, Bayview Court, Sunview Way, and Sunview Court.

The Coast Guard Housing complex located on Hamilton Avenue and Mount Hood Circle has views of the site. The close proximity of these properties to the site and lack of any visual barrier allows uninterrupted views of both lowland and upland areas of the site.

From the vantage points of both the Sun Terrace Neighborhood and the Coast Guard Housing complex, the near horizon view is comprised of the lowland areas of the site. The Preferred Alternative proposes a substantial change to the visual character of the lowland areas of the site primarily between SR 4 and Willow Pass Road, and south of Willow Pass Road west of Mt. Diablo Creek. The existing visual character is comprised of views of open space, remnants of military activity, and grazing lands. Implementation of the Preferred Alternative would substantially change these views with the introduction of high-density, transit-oriented development (TOD) in the area adjacent to the North Concord/Martinez BART Station. Land uses further south and adjacent to the Coast Guard Housing complex include residential, community facility, and parks and recreation designation. The Preferred Alternative does not designate a green transition buffer zone in this part of the site, and urban development would be located in close proximity to these existing residential areas.

With the substantial change in the character of the site resulting from implementation of the Preferred Alternative, and the visibility of the change from the Sun Terrace Neighborhood and the Coast Guard Housing complex, this impact is considered to be potentially significant.

> **<u>Mitigation Measure Visual Resources 1</u>: Prior to approving any specific public or private development on the site, the City of Concord shall require incorporation of best management practices in any site development plans, with the purpose of minimizing the impacts of urban development as seen from the Sun Terrace Neighborhood and the Coast Guard Housing complex. However, even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.**

The City will apply its existing land use and design policies prior to approving any future development on the site, as well as those generated through the Reuse Plan process and subsequent incorporation of those policies into an amended General Plan and Zoning Ordinance. Compliance with these adopted plans and policies would ensure that future development in most areas would be substantially consistent with existing development and the direction of future development within the City. However, because of the proximity of proposed development and resulting permanent visual change compared to the existing condition as seen by some residents of the Sun Terrace Neighborhood and the Coast Guard Housing complex, this impact is considered significant and unavoidable.

Impact Visual Resources 2: The Preferred Alternative has the potential to degrade the visual character of the near horizon views of the site from SR 4 and Willow Pass Road. This impact is considered to be potentially significant.

SR 4 westbound currently provides views north of the roadway, including the Diablo Creek Golf Course. With the Preferred Alternative, the golf course would remain in the current location, and a new combined County sheriff/fire training and emergency command center would be located in the northeast corner of the site. These uses offer the same or similar visual character as existing uses on the site.

SR 4 eastbound currently has views of lowland portions of the site, including military bunkers, grazing lands, and Mt. Diablo Creek. With the Preferred Alternative, the views of these lowland areas would change, to be replaced by various forms of urban development impacting both foreground and background views from SR 4.

Willow Pass Road currently provides expansive views of lowland portions of the site in both directions. Existing views include the military bunkers, grazing lands, and Mt. Diablo Creek in both directions. These views will change with the implementation of the Preferred Alternative. A range of urban uses including residential and commercial areas, a tournament sports facility, and a higher-education campus is proposed on either side of Willow Pass Road, and urban development will be prominent in the near horizon as seen from Willow Pass Road.

> **Mitigation Measure Visual Resources 2: Prior to approving any specific public or private development at the site, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to minimize the impacts on views of urban development from SR 4 and Willow Pass Road. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City will apply its existing land use and design policies prior to approving any future development on the site. Compliance with these adopted plans and policies would ensure that future development would be substantially consistent with existing development and the direction of future development within the City, reducing the significance of this impact to a level that is less than significant.

Impact Visual Resources 3: The Preferred Alternative has the potential to change views of lowland portions of the site from adjacent neighborhoods along Willow Pass Road between it and Bailey Road. This impact is considered to be significant.

Upland views of the Los Medanos Hills can be seen from the neighborhoods adjacent to the site along Willow Pass Road between it and Bailey Road. Uninterrupted views of lowland areas can be seen from houses adjacent to the site that are not screened by fencing or landscaping, especially the second story of these residences. For the properties that are located within these neighborhoods but not adjacent to the site, interrupted lowland views may be seen from the second story of residences. Lowland views cannot be seen from the ground floor of these properties since views are screened by other dwellings or vegetation. Existing lowland views of the site include views of open space and remnants of military infrastructure.

Existing views of the Los Medanos Hills would be maintained by implementation of the Preferred Alternative since development is focused in the lowland portions of the site and is restricted on steeper, more visible hillsides. Higher-density nodes associated with each of the villages in the Preferred Alternative would be located approximately 1/4 mile from the edge of these adjacent neighborhoods, with density of development decreasing toward the edge of the site, and the green corridor along the edge of the site as part of proposed park and recreational space. Due to this spacing and distancing, it is anticipated that hillside views will not be impacted by implementation of the Preferred Alternative. Buffer areas and the gradation of density of new development were developed during the planning process in part to ensure preservation of hillside views and a visual transition between existing neighborhoods and new development. It is understood that appropriate spacing, landscaping, building heights, and other considerations will be analyzed further as part of future site-specific planning and environmental review, and prior to approving any specific development that may impact these views.

Lowland views of the site, where available, would be changed as a result of the implementation of the Preferred Alternative. Low-density residential development associated with this alternative would be located adjacent to the existing neighborhoods along the site perimeter. The green corridor buffer zone would separate new development from existing neighborhoods. However, due to the existing views of the lowland areas and the close proximity of development to these neighborhoods, this impact is considered to be potentially significant.

> **Mitigation Measure Visual Resources 3: Prior to approving any specific public or private development at the site, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to minimize the impacts on views of urban development from neighborhoods adjacent to Willow Pass Road between it and Bailey Road. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City will apply its existing land use and design policies prior to approving any future development on the site. Compliance with these adopted plans and policies would ensure that future development would be substantially consistent with existing development and the

direction of future development within the City, reducing the significance of this impact to a level that is less than significant.

Impact Visual Resources 4: The Preferred Alternative has the potential for increased lighting from active recreation facilities. This impact is considered to be potentially significant.

Significant light from a general purpose recreation facility or tournament-quality sports complex could occur on the site, contributing to nighttime light and glare. This could impact adjacent nighttime views and be visible from prominent view points such as Mt. Diablo. The proposed sports complex would be framed within the context of highly lit refineries to the north and the areas that surround the site, including downtown Concord and Clayton. While the impact may not be regionally significant, there could be a potentially significant impact on a local scale.

> **Mitigation Measure Visual Resources 4: Prior to approving any specific public or private development of active recreation facilities that include nighttime lighting, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to control the amount of light emitted from recreational facilities, thereby reducing the impact of these facilities. The best management practices that shall be incorporated include targeted light placement and the use of directional lighting. Other specific light-reducing best management practices that shall be used include addition of green space, use of materials with a low solar reflectivity index, reduced lighting levels, and shielding to preserve both daytime and nighttime views. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The implementation of mitigation measures would reduce potential light impacts from recreational facilities, making them negligible within the local context. Based on these considerations, it has been determined that while implementation of the Preferred Alternative may create a new source of light or glare, this impact can be reduced to a level that is less than significant with mitigation.

5.3.2.2 Visual Resources Impacts of the Preferred Alternative That Are Less Than Significant

Impact Visual Resources 5: The Preferred Alternative has the potential to change views of lowland parts of the site from Bailey Road. This impact is considered to be less than significant.

Existing views of lowland portions of the site from Bailey Road include open space, military bunkers, and grazing lands. These views will be largely unaffected by the implementation of the Preferred Alternative, which includes development north of Bailey Road that would result in low- and medium-density residential uses, community facilities, and retail and mixed-use development. Development is concentrated along the central part of the route through the site, bordered on either side by parks, recreation, and open space. Views of

park space on the southern part of Bailey Road within the site would be visible in the foreground, and some residential development would be present in the background on the north side of the road. These views would be screened by the green buffer zone as well as the existing stand of trees near the southern edge of the site, which will be preserved. Therefore, impacts to views of lowland areas of the site from Bailey Road are considered to be less than significant.

Mitigation Measure Visual Resources 5: None required.

Impact Visual Resources 6: The Preferred Alternative could result in changes to views of lowland portions of the site from the Holbrook Neighborhood. This impact is considered to be less than significant.

The Holbrook Neighborhood is an existing single-family residential area, located to the southeast of the intersection of Port Chicago Highway and East Olivera Road. Views of the site from this neighborhood are restricted to the upland portions. Lowland views are restricted due to the low elevation of this neighborhood with respect to the site and screening from adjacent housing and vegetation.

Existing upland views consist of the Los Medanos Hills, and these would remain largely unaffected with implementation of the Preferred Alternative since development is focused in the lowland portions of the site and is restricted on steeper, more visible hillsides above 300 feet in elevation. Therefore, this potential impact is considered to be less than significant.

Mitigation Measure Visual Resources 6: None required.

Impact Visual Resources 7: The Preferred Alternative could change views of Mt. Diablo Creek from transportation corridors. This impact is considered to be less than significant.

SR 4, Willow Pass Road, and Bailey Road cross Mt. Diablo Creek within the site boundary, allowing views of the creek and associated riparian vegetation. Views would be maintained with the implementation of the Preferred Alternative, as a development buffer zone of a minimum 150 feet would be allocated on both sides of the creek. Therefore, this potential impact is considered to be less than significant.

Mitigation Measure Visual Resources 7: None required.

Impact Visual Resources 8: The Preferred Alternative could change views of the Los Medanos Hills from transportation corridors. This impact is considered to be less than significant.

The Los Medanos Hills are visible when traveling eastbound on SR 4 and northbound on Willow Pass Road and Bailey Road. These views will remain unchanged by implementation of the Preferred Alternative since development is focused in the lowland portions of the site and is restricted on steeper, more visible hillsides above 300 feet in elevation. There is the potential that trails and other recreation facilities could be located in the hills visible from these three roads, however, the location and layout of these potential uses, currently undefined, would be a significant distance from the roadways. Therefore, this potential impact is considered to be less than significant.

Mitigation Measure Visual Resources 8: None required.

Impact Visual Resources 9: The Preferred Alternative could result in changes to views from downtown Concord. This impact is considered to be less than significant.

Development at the site could result in changes to views from downtown Concord. Views from this location are restricted to upland areas of the site, and the Preferred Alternative restricts development in these areas. Based on these considerations, it has been determined that implementation of the Preferred Alternative will not damage scenic resources or existing visual character of these views from downtown, and the potential impact is considered to be less than significant.

Mitigation Measure Visual Resources 9: None required.

Impact Visual Resources 10: The Preferred Alternative could result in changes to views from City parks, EBRPD lands, and open spaces. This impact is considered to be less than significant.

Development at the site could result in changes to views from City parks, EBRPD lands, and open spaces. Views from these locations are largely restricted to upland areas of the site, and the Preferred Alternative restricts development in these areas. Views of lowland areas are either constrained due to the distance from the site or by existing urban development or vegetation allowing only filtered views, except for the view from Willow Pass Park, which will be changed to allow a view of an expanded section of park across East Olivera Road. Based on these considerations, it has been determined that implementation of the Preferred Alternative will not damage scenic resources or existing visual character of these views from City parks and open space, and the impact is considered to be less than significant.

Mitigation Measure Visual Resources 10: None required.

Impact Visual Resources 11: The Preferred Alternative could result in changes to views of the site from Mt. Diablo. This impact is considered to be less than significant.

The Preferred Alternative proposes urban development on 34.6 percent of the land area of the site ranging from the North Concord/Martinez BART Station area south almost to Bailey Road, primarily west of Mt. Diablo Creek. The proposed urban development would change the scenic vista from the top of Mt. Diablo because areas that currently appear barren from that vantage point would in future appear to be developed with more closely spaced buildings and vegetation. However, design restrictions that assist in preserving existing visual character of the site have been incorporated into the Preferred Alternative. For example, the Preferred Alternative largely preserves a longitudinal visual corridor of open space along Mt. Diablo Creek down the center of the site to maintain the site's visual identity, unifying high and low lands and the hillside with the valley leading to Suisun Bay. In addition, the Preferred Alternative restricts development on steeper, more visible hillsides of the Los Medanos Hills, which would remain largely undeveloped. In addition, urban development associated with the Preferred Alternative is considered urban in-fill within the context of surrounding existing development. All development would be landscaped, and views from Mt. Diablo would ultimately appear to be similar to the adjacent existing

development. Based on these considerations, it has been determined that implementation of the Preferred Alternative will not adversely affect a scenic vista, and this impact is considered to be less than significant.

Mitigation Measure Visual Resources 11: None required.

Impact Visual Resources 12: The Preferred Alternative has the potential to change views of lowland portions of the site from adjacent neighborhoods between Bailey Road and Kirker Pass Road. This impact is considered to be less than significant.

Neighborhoods adjacent to the site between Bailey Road and Kirker Pass Road have views of the lowland portion of the site from properties along parts of Holly Drive. Views of lowland portions of the site from other properties, such as those on Springridge Court, are obscured by the local topography. Properties within this neighborhood that have views of lowland areas of the site are considered within this visual analysis, since this represents the worst-case visual impact from these neighborhoods.

Existing upland views consist of the Los Medanos Hills, and these would remain largely unaffected with implementation of the Preferred Alternative since development is focused in the lowland portions of the site and is restricted on steeper, more visible hillsides.

Existing views of lowland portions of the site include views of open space, areas of oak woodland, and paved and unpaved roads. Implementation of the Preferred Alternative would change these views. Parks and active recreation space would be located adjacent to these neighborhoods and would be visible in the foreground. A restricted area of low-density single-family residential units would be located beyond the park and recreation space ranging from between approximately 300 to 600 feet from existing neighborhoods; this could be visible in the background. Views of residential units would be constrained by the small development area, distance from the existing neighborhoods, and screening from trees. This impact is therefore considered to be less than significant.

Mitigation Measure Visual Resources 12: None required.

5.3.3 Visual Resources Impacts of the Concentration and Conservation Alternative

5.3.3.1 Potentially Significant Visual Resources Impacts of the Concentration and Conservation Alternative

Impact Visual Resources 13: The Concentration and Conservation Alternative has the potential to degrade the visual character of the near horizon views of the site from the Sun Terrace Neighborhood and the Coast Guard Housing complex. This impact is considered to be potentially significant.

Please see the discussion of Impact Visual Resources 1, which applies to this impact.

Mitigation Measure Visual Resources 13: Prior to approving any specific public or private development on the site, the City of Concord shall require incorporation of best management practices in any site development plans with the purpose of minimizing the impacts of urban development as seen from the Sun Terrace Neighborhood and the Coast Guard Housing complex.

However, even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.

The City will apply its existing land use and design policies prior to approving any future development on the site, as well as those generated through the Reuse Plan process and subsequent incorporation of those policies into an amended General Plan and Zoning Ordinance. Compliance with these adopted plans and policies would ensure that future development in most areas would be substantially consistent with existing development and the direction of future development within the City. However, because of the proximity of proposed development and resulting permanent visual change compared to the existing condition as seen by some residents of the Sun Terrace neighborhood and the Coast Guard Housing complex, this impact is considered significant and unavoidable.

Impact Visual Resources 14: The Concentration and Conservation Alternative could result in changes to views of lowland portions of the site from SR 4 and Willow Pass Road. These impacts are considered to be potentially significant.

Please see the discussion of Impact Visual Resources 2, which applies to this impact.

Views traveling northbound on Willow Pass Road are discussed below in Impact Visual Resources 23.

Mitigation Measure Visual Resources 14: Prior to approving any specific public or private development at the site, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to minimize the impacts on views of urban development from SR 4 and Willow Pass Road. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

The City will apply its existing land use and design policies prior to approving any future development on the site. Compliance with these adopted plans and policies would ensure that future development would be substantially consistent with existing development and the direction of future development within the City, reducing the significance of this impact to a level that is less than significant.

Impact Visual Resources 15: The Concentration and Conservation Alternative has the potential for increased lighting from active recreation facilities. This impact is considered to be potentially significant.

Significant light from a general purpose recreation facility or tournament-quality sports complex could occur on the site, contributing to nighttime light and glare. This could impact adjacent nighttime views and be visible from prominent view points such as Mt. Diablo. The proposed sports complex would be framed within the context of highly lit refineries to the north and the areas that surround the site, including downtown Concord and Clayton. While the impact may not be regionally significant, there could be a potentially significant impact on a local scale.

Mitigation Measure Visual Resources 15: Prior to approving any specific public or private development of active recreation facilities that include

nighttime lighting, the City of Concord shall require incorporation of best management practices as specified in the City's land use planning and design policies in any site development plans to control the amount of light emitted from recreational facilities, thereby reducing the impact of these facilities. The best management practices that shall be incorporated include targeted light placement and the use of directional lighting. Other specific light-reducing best management practices that shall be used include addition of green space, use of materials with a low solar reflectivity index, reduced lighting levels, and shielding to preserve both daytime and nighttime views. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

The implementation of mitigation measures would reduce potential light impacts from recreational facilities, making them negligible within the local context. Based on these considerations, it has been determined that while implementation of the Concentration and Conservation Alternative may create a new source of light or glare, this impact can be reduced to a level that is less than significant with mitigation.

5.3.3.2 Visual Resources Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Visual Resources 16: The Concentration and Conservation Alternative could result in changes to views of lowland portions of the site from the Holbrook Neighborhood. This impact is considered to be less than significant.

The Holbrook Neighborhood is an existing single-family residential area, located to the southeast of the intersection of Port Chicago Highway and East Olivera Road. Views of the site from this neighborhood are restricted to the upland portions. Lowland views are restricted due to the low elevation of this neighborhood with respect to the site and screening from adjacent housing and vegetation.

Existing upland views consist of the Los Medanos Hills, and these would remain largely unaffected with implementation of the Concentration and Conservation Alternative since development is focused in the lowland portions of the site and is restricted on steeper, more visible hillsides above 300 feet in elevation. This potential impact is considered to be less than significant.

Mitigation Measure Visual Resources 16: None required.

Impact Visual Resources 17: The Concentration and Conservation Alternative could change views of Mt. Diablo Creek from transportation corridors. This impact is considered to be less than significant.

SR 4, Willow Pass Road, and Bailey Road cross Mt. Diablo Creek within the site boundary, allowing views of the creek and associated riparian vegetation. Views would be maintained with the implementation of the Concentration and Conservation Alternative, as a development buffer zone of a minimum 150 feet would be allocated either side of the creek. Therefore, this potential impact is considered to be less than significant.

Mitigation Measure Visual Resources 17: None required.

Impact Visual Resources 18: The Concentration and Conservation Alternative could change views of the Los Medanos Hills from transportation corridors. This impact is considered to be less than significant.

The Los Medanos Hills are visible when traveling eastbound on SR 4 and northbound on Willow Pass Road and Bailey Road. These views will remain unchanged by implementation of the Concentration and Conservation Alternative since development is focused in the lowland portions of the site and is restricted on steeper, more visible hillsides above 300 feet in elevation. There is the potential that trails and other recreation facilities could be located in the hills visible from these three roads; however, the location and layout of these potential uses, currently undefined, would be a significant distance from the roadways. Therefore, this impact is considered to be less than significant.

Mitigation Measure Visual Resources 18: None required.

Impact Visual Resources 19: The Concentration and Conservation Alternative could result in changes to views from downtown Concord. This impact is considered to be less than significant.

Development at the site could result in changes to views from downtown Concord. Views from this location are restricted to upland areas of the site, and the Concentration and Conservation Alternative restricts development in these areas. Based on these considerations, it has been determined that implementation of the Concentration and Conservation Alternative will not damage scenic resources or existing visual character of these views from downtown, and the potential impact is considered to be less than significant.

Mitigation Measure Visual Resources 19: None required.

Impact Visual Resources 20: The Concentration and Conservation Alternative could result in changes to views from City parks, EBRPD lands, and open spaces. This impact is considered to be less than significant.

Development at the site could result in changes to views from City parks, EBRPD lands, and open spaces. Views from these locations are largely restricted to upland areas of the site, and the Concentration and Conservation Alternative restricts development in these areas. Views of lowland areas are either constrained due to the distance from the site or by existing urban development or vegetation allowing only filtered views, except for the view from Willow Pass Park, which will be changed to allow a view of an expanded section of park across East Olivera Road. Based on these considerations, it has been determined that implementation of the Concentration and Conservation Alternative will not damage scenic resources or existing visual character of these views from City parks and open space, and the impact is considered to be less than significant.

Mitigation Measure Visual Resources 20: None required.

Impact Visual Resources 21: The Concentration and Conservation Alternative could result in changes to views of the site from Mt. Diablo. This impact is considered to be less than significant.

The Concentration and Conservation Alternative proposes urban development on 26.6 percent of the land area of the site, primarily north of Willow Pass Road. This scale of urban development could potentially change the scenic vista from the top of Mt. Diablo. However, design restrictions that assist in preserving existing visual character of the site have been incorporated into the Concentration and Conservation Alternative. For example, the Concentration and Conservation Alternative largely preserves a longitudinal visual corridor of open space along Mt. Diablo Creek through the center of the site to maintain the site's visual identity, unifying high and low lands and the hillside with the valley leading to Suisun Bay. In addition, the Concentration and Conservation Alternative restricts development on steeper, more visible hillsides; this preserves areas of the Los Medanos Hills, which would remain largely undeveloped. In addition, urban development associated with the Concentration and Conservation Alternative is considered urban in-fill within the context of surrounding existing urban development. All development would be landscaped, and views from Mt. Diablo would ultimately appear to be similar to the adjacent existing development. Based on these considerations, it has been determined that implementation of the Concentration and Conservation Alternative would not adversely affect a scenic vista, and this impact is considered to be less than significant.

Mitigation Measure Visual Resources 21: None required.

Impact Visual Resources 22: The Concentration and Conservation Alternative has the potential to change views of lowland portions of the site from adjacent neighborhoods between Bailey Road and Kirker Pass Road. This impact is considered to be less than significant.

Neighborhoods adjacent to the site between Bailey Road and Kirker Pass Road have views of the lowland portion of the site from properties along parts of Holly Drive. Views of lowland portions of the site from other properties, such as those on Springridge Court, are obscured by the local topography. Those properties that have views of lowland areas of the site are considered within this visual analysis, since this represents the worst-case visual impact from this neighborhood.

Existing upland views consist of the Los Medanos Hills, and these would remain largely unaffected with implementation of the Concentration and Conservation Alternative since development is focused in the lowland portions of the site and is restricted on steeper, more visible hillsides.

Existing views of lowland portions of the site include views of open space, areas of oak woodland, and paved and unpaved roads. Implementation of the Concentration and Conservation Alternative would change these views. Open space and parks would be located adjacent to these neighborhoods and would be visible from these neighborhoods. This impact is considered to be less than significant.

Mitigation Measure Visual Resources 22: None required.

Impact Visual Resources 23: The Concentration and Conservation Alternative maintains views of lowland parts of the site from the northbound direction on Willow Pass Road. This impact is considered to be less than significant.

Traveling north on Willow Pass Road provides expansive views of lowland portions of the site, including remnants of military activity (such as military bunkers, rail sidings, and unused warehouses) and grazing lands. The Concentration and Conservation Alternative limits urban development east of Willow Pass Road and allocates a total of 81 percent of the site to parks, recreation, and open space, thus resulting in a limited visual impact. Views traveling north from Willow Pass Road would consist largely of the riparian corridor and associated vegetation, allowing extended views of the recreation areas, parks, and open spaces. This impact is, therefore, considered to be less than significant.

Mitigation Measure Visual Resources 23: None required.

Impact Visual Resources 24: The Concentration and Conservation Alternative maintains views of lowland parts of the site from Bailey Road. This impact is considered to be less than significant.

Existing views of lowland portions of the site from Bailey Road include open space, military bunkers, and grazing lands. Implementation of the Concentration and Conservation Alternative would limit development east of Willow Pass Road, and so views would not change significantly. No urban development associated with the Concentration and Conservation Alternative would be visible when traveling in either direction along Bailey Road, and views would consist of open space and the restored riparian corridor. This impact is therefore considered to be less than significant.

Mitigation Measure Visual Resources 24: None required.

5.3.4 Impacts of the No Project Alternative

5.3.4.1 Potentially Significant Visual Resources Impacts of the No Project Alternative

None identified.

5.3.4.2 Visual Resources Impacts of the No Project Alternative That Are Less Than Significant

Impact Visual Resources 25: The No Project Alternative would maintain existing views of the lowland and upland portions of the site. This impact is considered to be less than significant.

With the No Project Alternative, existing views would be maintained, and no development, preservation, or restoration efforts would be undertaken on the site. There is the possibility that while views of the site would remain unchanged, views of the scenic Los Medanos Hills may be impacted by residential development on the ridgeline allowed by the City of Pittsburg. This impact is considered to be less than significant.

Mitigation Measure Visual Resources 25: None required.

5.4 References

California Department of Water Resources Interagency Ecological Program, 2008. http://www.iep.ca.gov/suisun/facts/index.html (accessed April).

City of Concord, 2007. Concord 2030 Urban Area General Plan.

City of Concord, 2008. Letter dated March 28, 2008, from the City of Concord (William Shinn, Mayor) to Mayor Casey and members of the City Council regarding Concord's comments on Pittsburg's Hillside Development Regulations, related General Plan and zoning amendments, and its Accompanying Subsequent Mitigated Negative Declaration.

City of Concord Municipal Code, 2002a. Hillside Development Ordinance, Chapter 114, Division 17, Article VI: Hillside Development Plan, Section 122-819, Hillside Development.

City of Concord Municipal Code, 2002b. Heritage Trees, Chapter 114, Division 2, Sections 114-61 to 114-69.

City of Pittsburg, 2007. Resolution Number 07-10700.

City of Pittsburg, 2008. Memorandum dated April 7, 2008, re: City-initiated hillside regulations and related General Plan and zoning amendments, to Mayor and Council members from Marc S. Grisham, City Manager.

City of Pittsburg General Plan, 2004. Pittsburg 2020: A Vision for the 21st Century.

Contra Costa County, 2005. Contra Costa County General Plan 2005–2020.

Contra Costa County Local Agency Formation Commission, 2009. Consideration of an Initial Study/Negative Declaration Relating to the Proposed Sphere of Influence Expansions – City of Pittsburg, Contra Costa Water District and Delta Diablo Sanitation District.

Google Maps, 2008. Images from SR 4 were obtained from Google Maps http://maps.google.com/ (accessed April).



6.
Earth Resources

6 Earth Resources

6.1 Existing Conditions

6.1.1 Topography and Landforms

As previously introduced, the site is located in the San Francisco Bay region and is within the central portion of the Coast Range Geomorphic Province of California. 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 southwestern portion of the site is located in the Clayton Valley, which consists of gently sloping lowlands and hilly terrain ranging in elevation from sea level to 400 feet. The floor of the 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 in the lower hills to greater than 1,400 feet. The Los Medanos Hills have significant topographic relief including steep hill slopes of over 50 percent (USGS, 1997). Figure 6-1 presents the slope gradients in the area.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on earth resources. This has resulted in the earth resources impacts of both alternatives being substantially less than they would have been had earth resources impacts not been taken into account during all stages of the planning and environmental analysis process.

6.1.2 Geologic Structure

Native soil deposits within the Clayton Valley include Holocene and Pleistocene age alluvial fan and fluvial deposits, Holocene floodplain deposits, Holocene stream channel deposits, and undifferentiated Pliocene/Pleistocene continental gravels. The upland areas along the Los Medanos Hills are generally composed of Tertiary and Cretaceous age sandstone, shale, and mudstone bedrock units. Figure 6-2 is a geology map of the area (Helley and Graymer, 1997). Soil deposits in the area are as follows:

- Alluvial fan and fluvial deposits (Holocene): Alluvial fan deposits are brown or tan, medium-dense to dense, gravely sand or sandy gravel that generally grades upward to sandy or silty clay. Near the distal fan edges, the fluvial deposits are typically brown, medium-dense sand that fines upward to sandy or silty clay (Qhaf on Figure 6-2).
- Floodplain deposits (Holocene): Floodplain deposits are medium to dark gray, dense, sandy to silty clay. Lenses of coarser material (silt, sand, and pebbles) may be locally present (Qhfp on Figure 6-2).
- Stream channel deposits (Holocene): Stream channel deposits are poorly to well-sorted sand, silt, silty sand, or sandy gravel with minor cobbles. Cobbles are more common in the valleys (Qhsc on Figure 6-2).

- Alluvial fans and fluvial deposits (Pleistocene): Alluvial fans and fluvial deposits are brown, dense gravely and clayey sand, or clayey gravel that fines upward to sandy clay. These deposits display various sorting and are located along most stream channels in Contra Costa County. All of these deposits can be related to modern stream courses. They are distinguished from younger alluvial fans and fluvial deposits by higher topographic position, a greater degree of dissection, and stronger soil profile development. They are less permeable than Holocene deposits, and are overlain by Holocene deposits on lower parts of the alluvial plain (Qpaf on Figure 6-2).
- Undifferentiated continental gravels (Plio-Pleistocene): Undifferentiated continental gravels are semi-consolidated to unconsolidated poorly sorted gravel, sand, silt, and clay. These deposits are unrelated to modern drainages (Qtu on Figure 6-2).

6.1.3 Soils

Soils are the byproduct of physical and chemical weathering of rock and sediments. They consist of mineral and organic matter and are created through physical, chemical, and biological processes. The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), formerly known as the Soil Conservation Service (SCS), prepares and maintains soil surveys that classify soil characteristics and their suitability for agriculture and development.

Published soil descriptions of the site are limited to a depth of five feet, and may not be representative of deeper conditions. In the area, earth-filling, highway and street construction, and other development-related activities associated with previous agriculture and military uses at the site may have caused substantial changes to natural soil profiles. As a result, soil conditions on the site may be highly variable. For these reasons, soils are generally classified specific to the site, and distinctions are provided as information is available.

Figure 6-3 identifies the soil types found at the site. Twenty-one individual soil units, including combinations of one or more distinct soil types and slope conditions, are shown. One of the soil units (Garretson) has a low shrink/swell potential. This unit has a low potential for volume change upon drying or wetting, and a low corrosion potential. This unit covers a limited area of the site boundary. There are three soil units (two units for Antioch, and one unit for San Ysidro) where the upper 15 to 17 inches have a low shrink/swell potential, but the soil profiles below 15 to 17 inches have a moderate to high shrink/swell potential. These units will have a moderate to high potential for volume change upon drying or wetting. Soil with a moderate to high potential for volume change (i.e., shrink/swell potential) is classified as an expansive soil. The other 17 units identified within the site boundary have a moderate to high potential for volume change upon drying or wetting.

6.1.4 Mineral Resources

The site has not been evaluated for potential mineral resources by the California Department of Conservation, Geological Survey (CGS), although mineral exploration and development at the site included the development of a natural gas production well by Chevron in 1980. A portion of the Los Medanos natural gas field is located beneath the site north of State Route (SR) 4. In addition, several plugged, abandoned gas wells are located

on the site. Existing mineral resources within the Concord Area include alluvial sand and gravel deposits.

There has been natural gas extraction from the Los Medanos field north of SR 4 and east of the site. There is also speculation that there could be other sources in the field south of SR 4.

6.1.5 Seismicity

The site is located in the seismically active San Francisco Bay region, which has experienced repeated moderate to large earthquakes. Notable historic seismic events affecting the area are presented in Table 6-1. A 2003 estimate made by the Working Group on California Earthquake Probabilities (WGCEP, 2003) gave a 62 percent probability for one or more magnitude 6.7 or greater earthquakes to occur within the Bay Area in the 30-year period between 2002 and 2031.

Table 6-1: Active Faults Near the Site

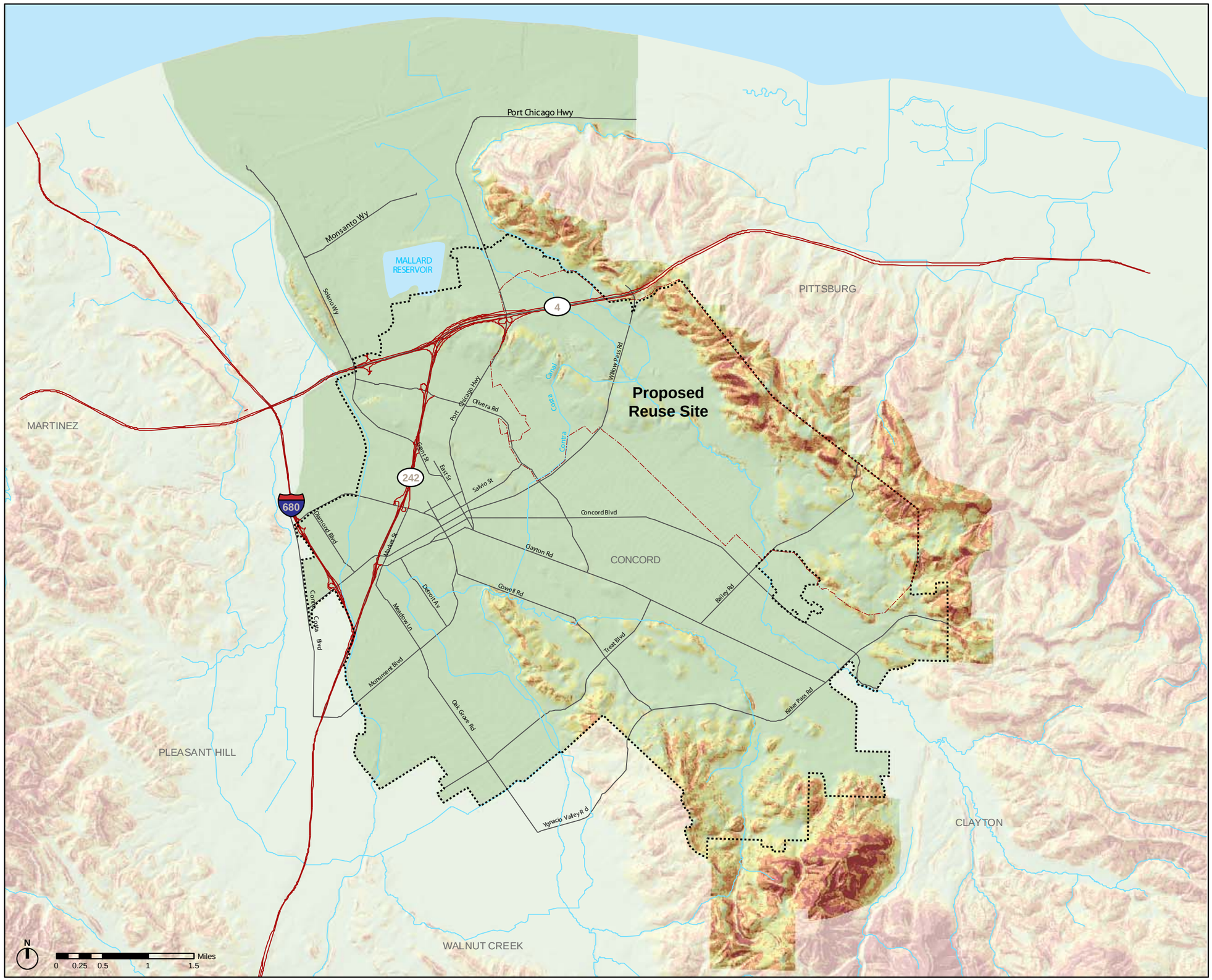
Active Fault	Distance/Direction from Site	Recent Movement	Historical Seismicity (M)[1]	Mw[2]
Greenville: Clayton section	Bisects	Holocene (Late Quaternary)	Slip rate 0.004 to 0.0008 in/yr	6.25
Greenville: Marsh Creek–Greenville section	11.3 miles southeast 1980 rupture 25 miles southeast	Historic (1980 rupture)	M5.6, 1980	6.9
Concord-Green Valley	1 mile southwest	Historic (1955) Holocene	M5.4, 1955 Historic active creep	6.9
San Andreas	34 miles west	Historic (1906, 1989 ruptures)	M7.1, 1989 M7.9, 1906 M7.0, 1838 Many <M4.5	7.9
Hayward	15 miles west	Historic (1836, 1868 ruptures)	M6.8, 1868 Many <M4.5	7.1
West Napa	14 miles northwest	Historic	M5.2, 2000	6.5
Calaveras	17 miles south	Historic (1861 rupture) Holocene	M5.6–M6.4, 1861 M4–M4.5, swarms 1970, 1990	6.8
Rodgers Creek	24 miles northwest	Historic	M6.7, 1898 M5.6, 5.7, 1969	7.0
Diablo	10 miles south	Historic	Slip rate 0.12 in/yr	6.6

[1] Richter magnitude and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.

[2] Moment magnitude is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event. The maximum moment magnitude earthquake is derived from the "Probabilistic Seismic Hazard Assessment for the State of California" (CGS/USGS, 2003).

M = Richter magnitude; in = inches; Mw = moment magnitude.

Source: Jennings, 1994



Legend

Slope

- 0 - 15%
- >15 - 30%
- >30 - 50%
- + 50%

Base Map

- Concord City Limit
- Site Boundary
- Mt. Diablo Creek
- Canal
- Other Creek or Stream

Notes & Sources

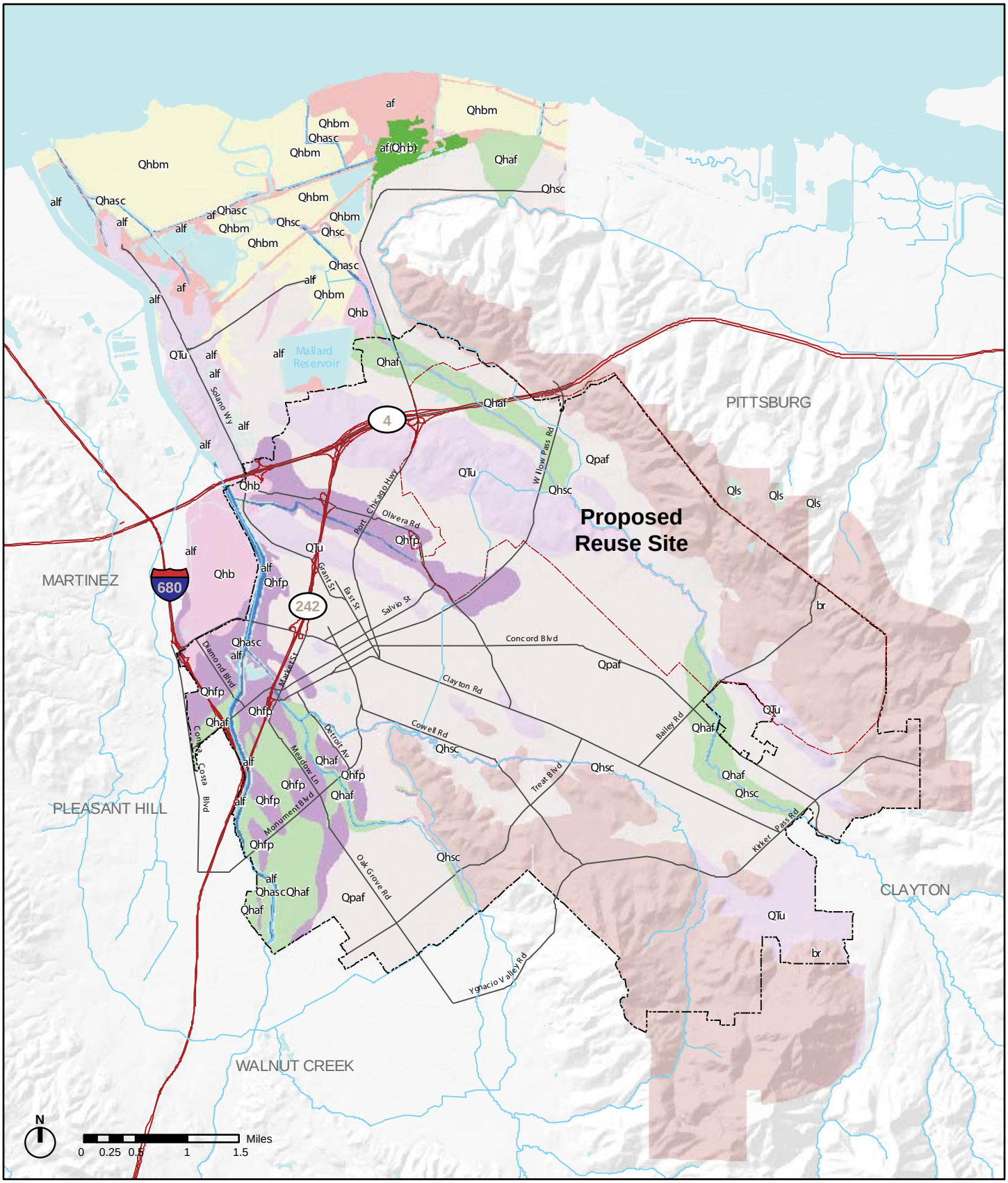
Percent slope derived from United States Geological Survey (USGS) 10-meter digital elevation models, 1997.

City of Concord General Plan, 2006.

Concord Community Reuse Plan

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Figure 6-1
Slope Gradients on the Reuse Site



Legend

- Waterbodies
- QTu
- Qhaf
- Qhasc
- Qhb
- Qhbm
- Qhfp
- Qhsc
- Qls
- Qpaf
- af
- af(Qhb)
- alf
- br
- Site Boundary

Notes & Sources

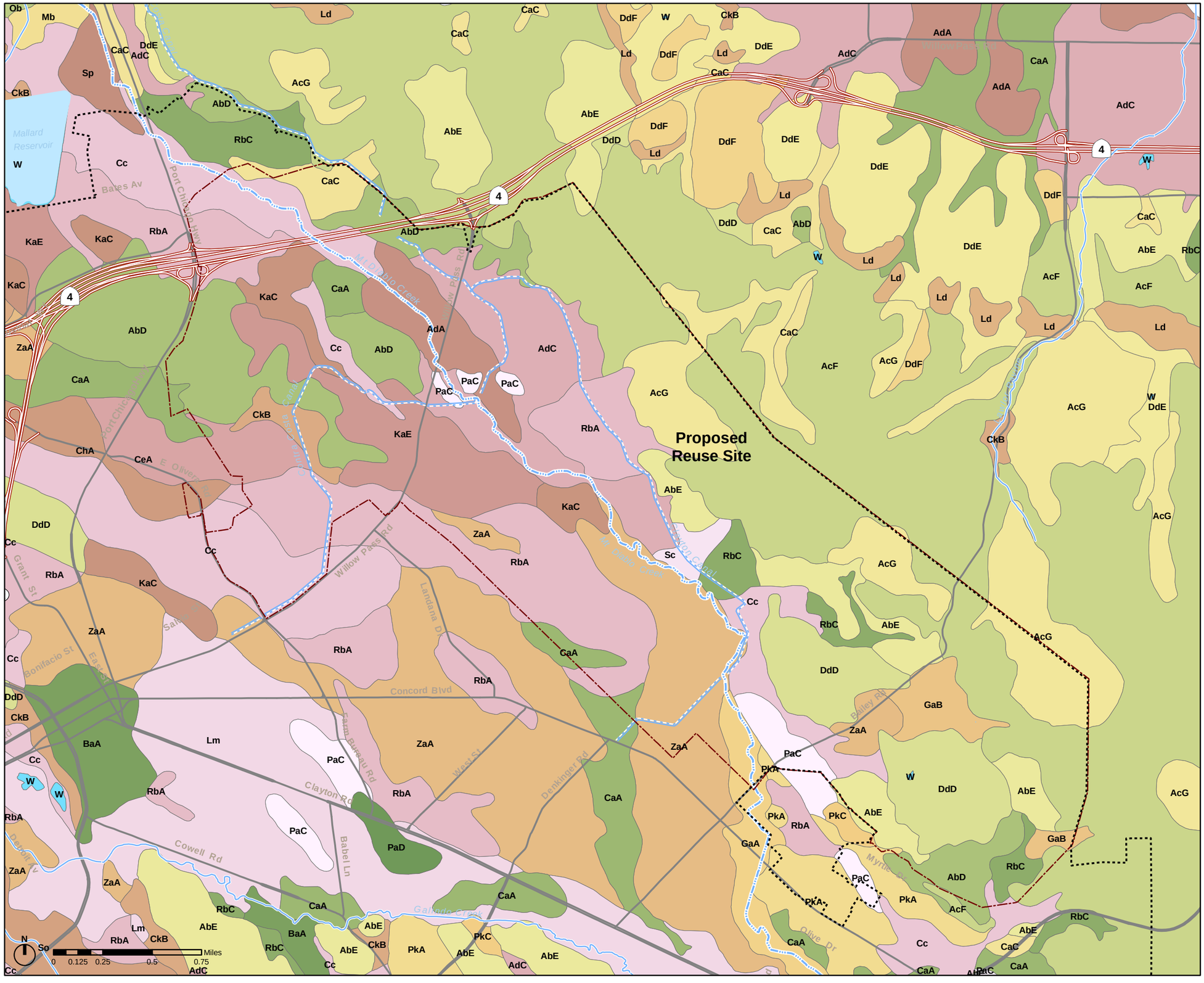
Helley, E.J. and R.W. Graymer. "Quaternary Geology of Contra Costa County." USGS Open File Report 97-98: 1997.

City of Concord, 2006.

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Community Reuse Plan

Revised June 10, 2009

Figure 6-2
Quaternary Geologic Materials



Legend

- AbD Altamont clay
- AbE Altamont clay; 9%-75% slope
- AcF Fontana
- AcG Fontana; 9%-30% slope
- AdA Antioch loam over clay
- AdC Antioch loam over clay
- BaA Botella clay loam over silty clay loam
- CaA Capay clay
- CaC Capay clay
- Cc Clear Lake clay
- CeA Conejo clay loam; 0%-5% slope
- ChA Conejo clay loam
- CkB Cropley clay
- DdD Diablo clay
- DdE Diablo clay; 9-50% slope
- DdF Diablo clay
- GaA Garretson
- GaB Garretson
- KaC Kimball gravelly clay loam over clay
- KaE Kimball gravelly clay loam over clay; 2%-30% slope
- Ld Landslide deposit
- Lm Los Robles clay loam
- Mb Marcuse clay
- Ob Omni clay loam, clay, and silty clay
- PaC Perkins gravelly loam and gravelly clay loam
- PaD Perkins gravelly loam and gravelly clay loam
- PkA Positas loam over clay
- PkC Positas loam over clay
- RbA Rincon clay loam over clay
- RbC Rincon clay loam over clay
- Sc San Ysidro loam over clay and silty clay
- So Sycamore silty clay loam
- Sp Sycamore silty clay loam over clay
- W Water
- ZaA Zamora silty clay loam

Base Map

- Concord City Limit
- Proposed Reuse Site
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

Concord
Community Reuse Plan

Revised June 9, 2009

Figure 6-3
Soil Types at the Reuse Site

6.1.5.1 Fault and Zoning Classifications

Faults are classified by age as Historic, Holocene, Late Quaternary, Quaternary, and Pre-Quaternary (Jennings, 1994), according to the following criteria:

- Historic fault displacement has occurred within the past 200 years.
- Holocene shows evidence of fault displacement within the past 11,000 years, but without historic record.
- Late Quaternary shows evidence of fault displacement within the past 700,000 years, but may be younger because of a lack of overlying deposits that enable more accurate age estimates.
- Quaternary shows evidence of displacement sometime during the past 1.6 million years.
- Pre-Quaternary does not show displacement during the past 1.6 million years.

There are several active[1] or potentially active[2] major faults in the vicinity of the site. Table 6-1 presents information on active faults within approximately 30 miles of the site. Figure 6-4 presents active or potentially active fault locations in Contra Costa County. The two active faults closest to the site are the Greenville Fault and the Concord Fault. The Clayton section, which traverses the site near the southwest base of the Los Medanos Hills, is considered the northern section of the Greenville Fault Zone. There is no record of historic earthquakes on the Clayton Fault section, and the geomorphic expression of this section is suggestive of a fault with a low Late Quaternary slip rate.

The March Creek–Greenville section of the Greenville Fault Zone occurs about 11.3 miles southeast of the site. The 1980 rupture, which occurred along this segment of the Greenville Fault, is located about 25 miles southeast of the site south of the Contra Costa/Alameda Counties line, as shown in Figure 6-4. The Marsh Creek–Greenville section of the Greenville Fault is delineated as a Fault-Rupture Hazard Zone under the Alquist-Priolo Earthquake Fault Zoning Act, but the Clayton section is not classified as an Alquist-Priolo Earthquake Zone.

The Concord Fault is a major northwest-trending right-lateral fault of the San Andreas Fault system. This fault, which is located just over a mile southwest of the site, has been mapped as an Alquist-Priolo Earthquake Zone. The Concord Fault[3] has an estimated slip rate of 0.04 to 0.2 inches per year.

[1] "Active" describes Historic and Holocene faults that have had surface displacement within about the last 11,000 years.

[2] "Potentially active" describes faults showing evidence of surface displacement during Quaternary time (the past 1.6 million years).

[3] The Concord Fault is considered to be a southern extension of the Green Valley Fault.

6.1.5.2 Alquist-Priolo Earthquake Fault Zones

The Alquist-Priolo Special Studies Zones Act, passed in 1972, requires the establishment of "earthquake fault zones" (formerly known as "special studies zones") along known active faults in California that meet a specific set of criteria (CDMG, 1993). Strict regulations on development within these zones are enforced to reduce the potential for damage because of fault displacement. In order to qualify for "earthquake fault zone" status, faults must be "sufficiently active" and "well-defined." As a result, only faults or portions of faults with a relatively high potential for ground rupture are zoned, while other faults, which may meet only one of the "sufficiently active" and "well-defined" criteria, are not zoned. The potential for fault rupture, therefore, is not limited solely to faults or portions of faults delineated as "earthquake fault zones." No portion of the site is located within an Alquist-Priolo Earthquake Fault Zone; however, as mentioned above, the Concord Fault, which is classified as an Alquist-Priolo Earthquake Fault Zone, is located just over a mile southwest of the site. Also, the Greenville Fault, March Creek-Greenville section (Alquist-Priolo Earthquake Fault Zone), is located about 11.3 miles southeast of the site.

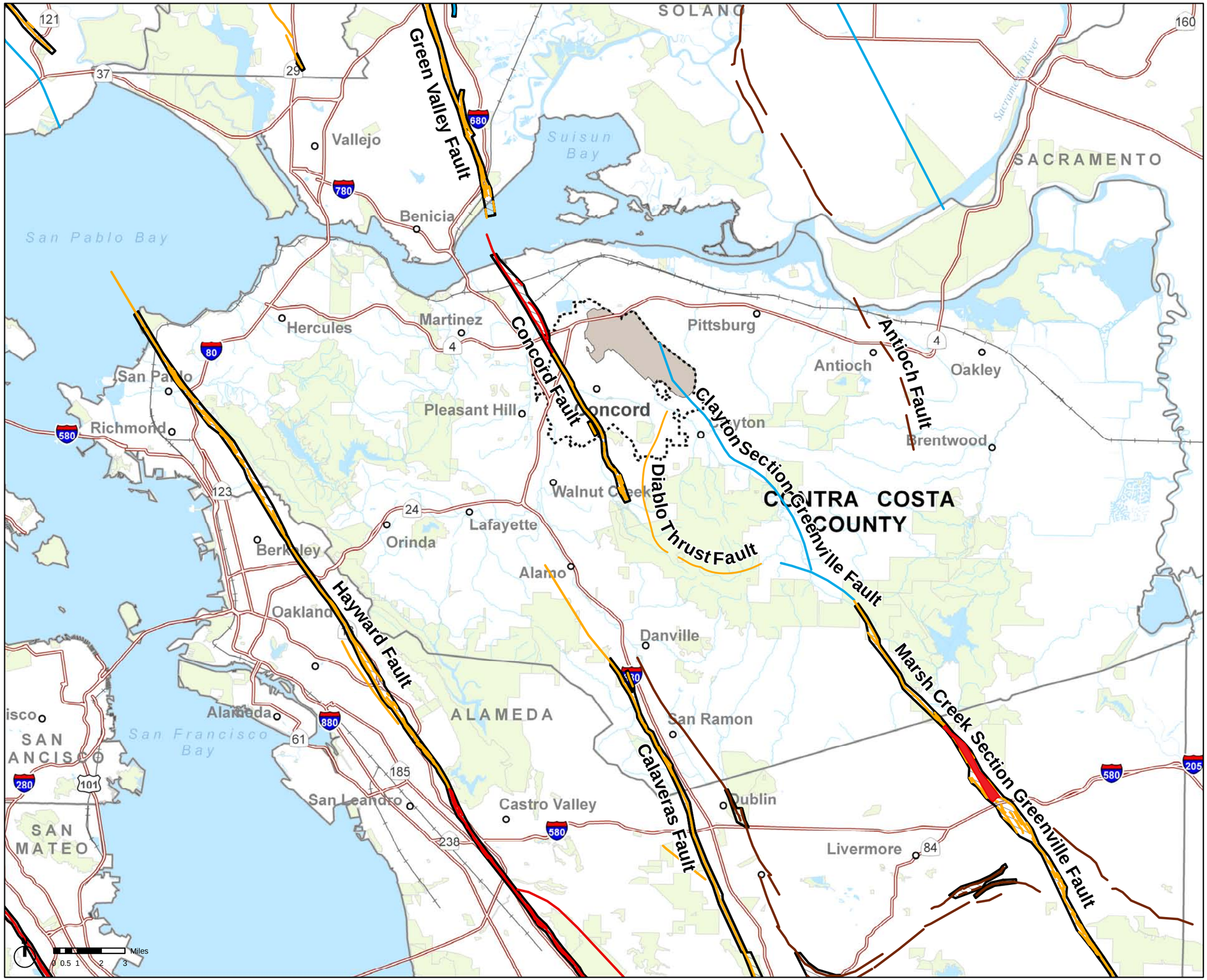
6.1.6 Seismic Hazards

6.1.6.1 Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to seismic waves generated during an earthquake. The magnitude and nature of the fault rupture varies between faults, and can even vary between different segments of the same fault. Fault rupture is most likely to occur along active faults.

6.1.6.2 Ground Shaking

According to the CGS probabilistic seismic hazard maps (CGS/USGS, 2003), peak ground accelerations within the area could reach 0.6 g. An acceleration of 1.0 g is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds. The ground motion presented in the probabilistic seismic hazard map represents the peak ground acceleration that has only a 10 percent chance of being exceeded in 50 years. Table 6-2 presents a generalized relationship between the intensity of an earthquake and the peak ground accelerations (Bolt, 1988).



Legend

Alquist-Priolo Fault Zone

Active Faults

- Active Fault within Quaternary Period (last 1,600,000 years)
- Active Fault within Quaternary Period (last 130,000 years)
- Active Fault within Holocene (last 15,000 years)
- Active Fault with Historic (last 150 years) Displacement
- Unclassified Fault

Base Map

- County Boundaries
- Concord City Limit
- Proposed Reuse Site
- Park or Open Space
- Cities
- Major Roads
- Railroad
- Swamp or Marsh

Notes & Sources

Alquist-Priolo fault zones based on data from California Department of Conservation, DMG CD 2001-04.
Fault information based on data from U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database for the United States; and California Geological Survey, Fault Activity Map of California and Adjacent Areas, Data Map No. 6, 1:750,000, 1994.

Concord Community Reuse Plan

Revised June 10, 2009

Figure 6-4
Regional Faults

Table 6-2: Modified Mercalli Intensity Scale

Intensity Value	Intensity Description	Average Peak Acceleration[1]
I	Not felt except by a very few persons under especially favorable circumstances.	--
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	--
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly; vibration similar to a passing truck. Duration estimated.	--
IV	During the day felt indoors by many, outdoors by few. At night, some people are awakened. Dishes, windows, and doors are disturbed; walls make a cracking sound. Sensations like a heavy truck striking a building are felt. Standing motor cars rock noticeably.	0.015–0.02 g
V	Felt by nearly everyone, many awakened. Some dishes and windows are broken; a few instances of cracked plaster may occur; unstable objects are overturned. Trees are disturbed; movement of poles may be noticed. Pendulum clocks may stop.	0.03–0.04 g
VI	Felt by all; many frightened and run outdoors. Some heavy furniture may move; plaster may fall and chimneys may be damaged. Overall damage is slight.	0.06–0.07 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction, slight to moderate in well-built ordinary structures, and considerable in poorly built or badly designed structures. Some chimneys broken. Noticed by persons driving motor cars.	0.10–0.15 g
VIII	Damage slight in specially designed structures, considerable in ordinary substantial buildings (with partial collapse), and great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	0.25–0.30 g
IX	Damage is considerable in specially designed structures; well-designed frame structures are thrown out of plumb; damage is great in substantial buildings, with partial collapse. Buildings are shifted off foundations. Ground is cracked conspicuously. Underground pipes are broken.	0.50–0.55 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 0.6 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	--
XII	Damage total. Nearly all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	--

[1] 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

> = greater than; < = less than

Source: Bolt, 1988

6.1.6.3 Liquefaction and Lateral Spreading

Liquefaction is a process whereby strong ground shaking causes loose, saturated, unconsolidated sediments to lose strength and behave as a fluid. This subsurface process can cause ground deformation at the surface, including lateral spreading and differential compaction or settlement and sand boils. Loss of bearing strength and ground movements associated with liquefaction may result in damage to roads, pipelines, underground cables, buildings, and other structures.

Soils on the site most susceptible to liquefaction are Holocene stream channel deposits, which have been mapped as having a very high liquefaction potential. Holocene and Pleistocene alluvial fan and fluvial deposits, located adjacent to Mt. Diablo Creek and extended from approximately a mile south of Willow Pass Road to Kirker Pass Road, are shown to have a high liquefaction potential. In addition, alluvial deposits near East Olivera Road between SR 4 and Willow Pass Road and along Mt. Diablo Creek are shown as having a moderate liquefaction potential. Figure 6-5 shows areas of moderate, high, and very high liquefaction potential.

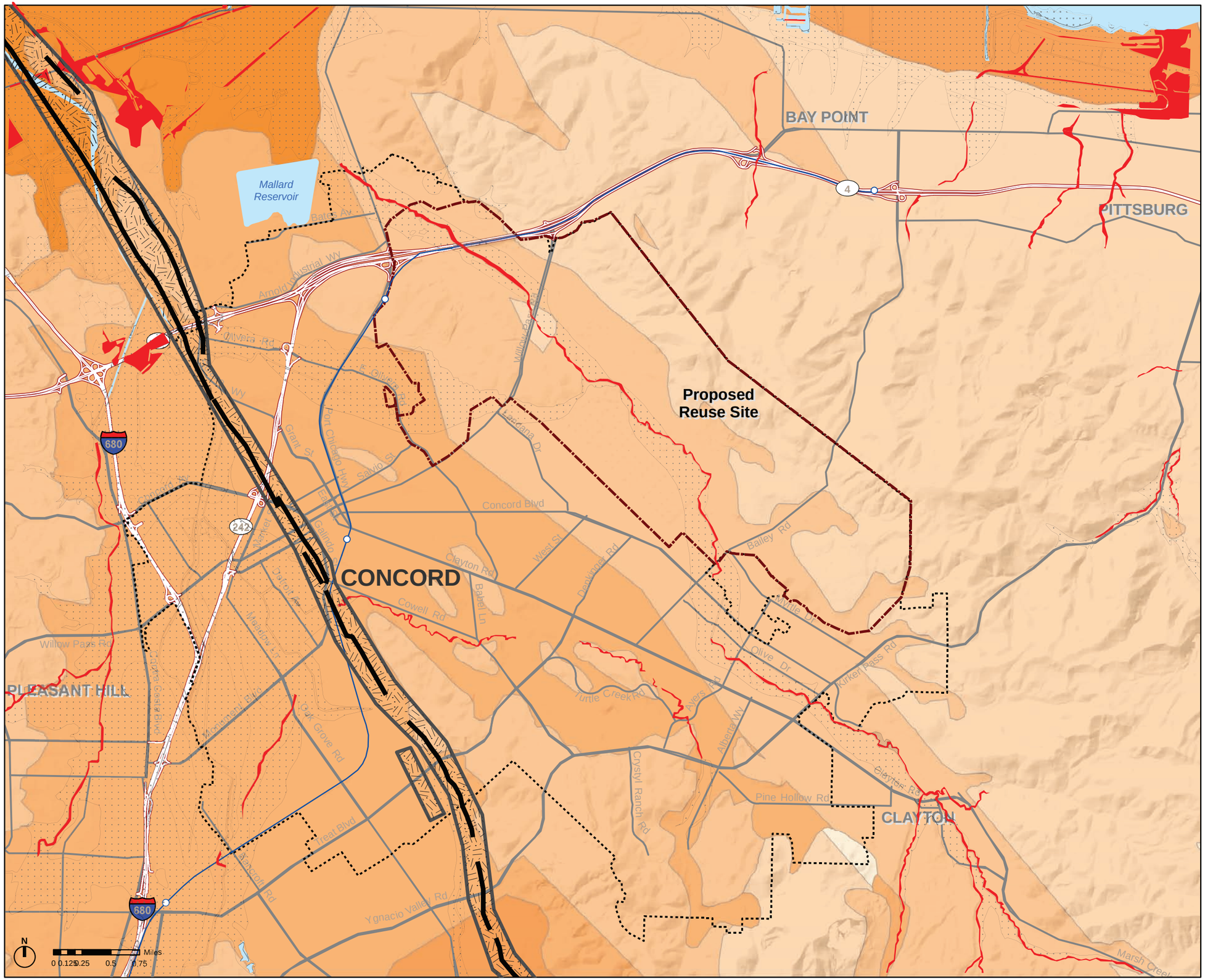
6.1.6.4 Ground Cracking

Ground cracking, such as that observed during the 1989 Loma Prieta earthquake in the Santa Cruz Mountains, is a secondary effect of seismic ground shaking. It appears as open fissures or cracks in the ground, particularly along the crests of ridges that open in response to strong shaking. The exact mechanism that causes earthquake-induced ground cracks is not clear; however, ground cracking is typically a problem only on narrow-crested, steep-sided ridges—conditions that may be present at selected locations in the Los Medanos Hills portion of the site.

6.1.6.5 Landslides and Seismic Slope Instability

Landslides, earthflows, and debris flows are relatively common features along the ridges and hillsides of the Los Medanos Hills within the site boundaries. A landslide is a mass of rock, soil, and/or debris that has been displaced down slope by sliding, flowing, or falling. Earthflows are relatively shallow deposits of soil that have crept down slope, typically at a rate too slow to observe, except over a long duration. Debris flows are generally short-lived phenomena resulting from rapid failure of surficial slope materials. Typically, debris flows leave a trail of mud and debris in a scoured channel following run-out of the flow.

Landslide potential is influenced by a number of factors, with some of the most substantial being the degree of slope, the presence (i.e., rainfall) or movement of water, and zones of weakness within the slopes. In general, degree of slope is the most important factor contributing to landslide hazard, with steep slopes being more susceptible to failure than shallow ones. The presence of water within a slope, often the most variable factor contributing to landslide potential, both increases slope stresses and reduces slope strength. Although landslide activity can occur at any time, with no apparent triggering mechanism, landslide activity is generally greatest during wet winter seasons.



Legend

Earthquake Shaking Potential

These regions are near major, active faults and will on average experience stronger earthquakeshaking more frequently. This intense shaking can damage even strong, modern buildings.

Increasing Intensity

Alquist-Priolo Fault Zone

Concord Fault

Liquefaction Potential

Very High

High

Moderate

Base Map

Concord City Limit

Proposed Reuse Site

Highway

Arterial Street

Bay Area Rapid Transit Line

BART Station

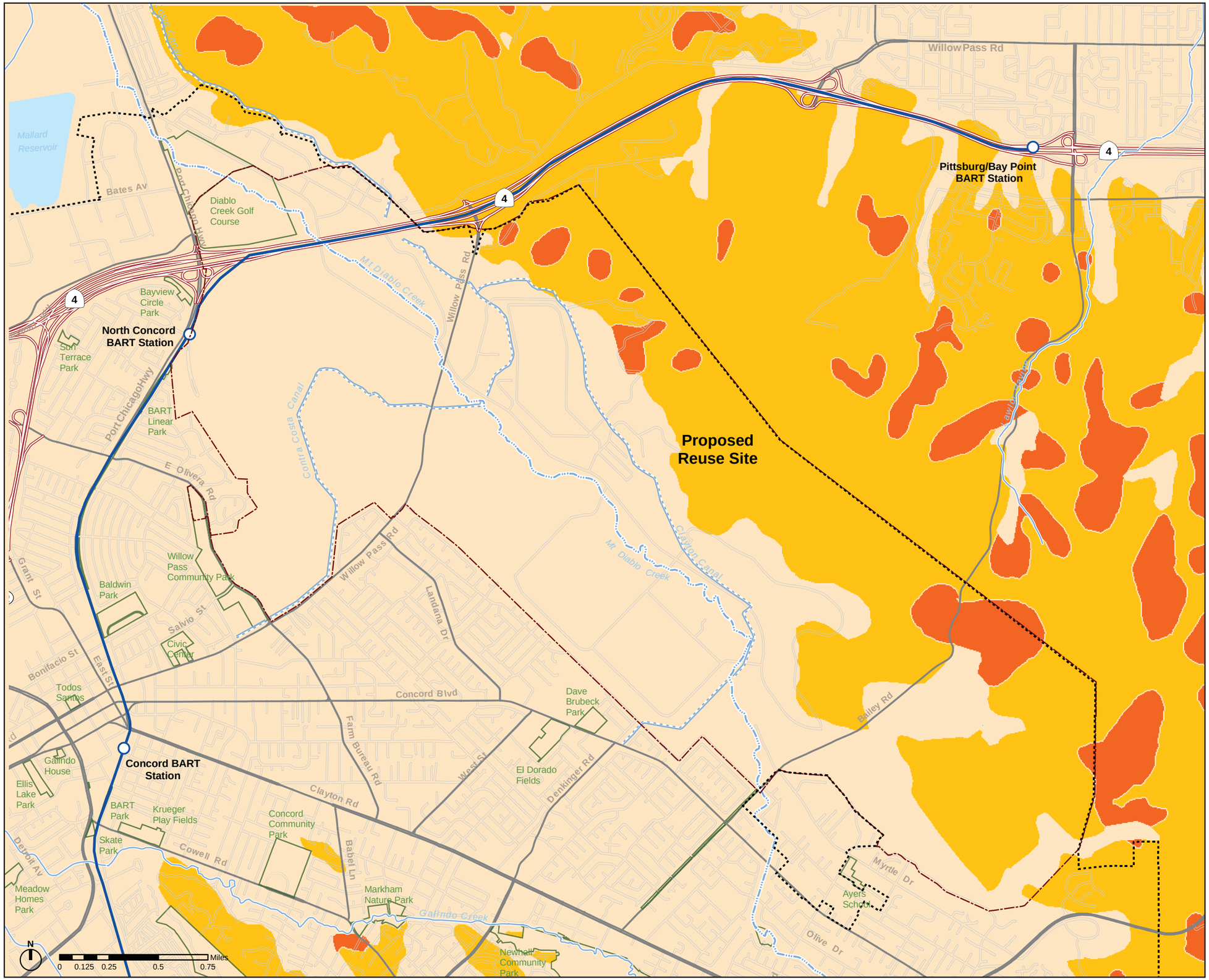
Notes & Sources

Earthquake shaking potential based on data from California Department of Conservation, 2002.
Liquefaction potential based on data from Liquefaction Susceptibility Map, California Department of Conservation, 2006.
Alguisto-Priolo fault zones based on data from California Department of Conservation, DMG CD 2001-04.

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Community Reuse Plan

Revised August 21, 2009

Figure 6-5
Local Geologic and Seismic Hazards



Legend

- More Frequent Landslides
- Few Landslides
- Surficial Deposits

Base Map

- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street

Notes & Sources

USGS Open-File Report 97-945C, Summary Distribution of Slides and Earthquakes in the San Francisco Bay Region, California, updated February 17, 1998.

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Revised July 28, 2009

Figure 6-6
Landslide Potential at the Reuse Site

Strong earthquakes often cause landslides, particularly in areas already susceptible to landslides because of other factors, including the presence of existing landslide deposits. Landsides are typically a major effect of ground shaking during earthquakes with magnitudes of 5.0 and greater, especially where the soil is saturated. Many earthquake-induced landslides result from liquefaction phenomena, such as along stream banks, but others simply represent failure of slopes that were marginally stable under static conditions.

The U.S. Geological Survey (USGS) has mapped landslide deposits and evaluated general landslide hazards in the area (Wentworth et al., 1997). The mapping included categorizing areas as "mostly landslide," "many landslides," "few landslides," and flatlands. Figure 6-6 identifies landslide potential at the site. The portion of the site within the Los Medanos Hills is generally mapped as "few landslides," although some areas of "mostly landslide" are present. The "few landslides" designation generally means that the area contains few, if any, large mapped landslides, but locally contains scattered small landslides and may contain questionably identified larger landslides. Areas with the "mostly landslide" designation correspond to areas with steep slopes.

6.1.7 Related General Plan Policies

The City of Concord has adopted several policies in the General Plan intended to reduce adverse effects of seismic hazards. Table 6-3 contains the General Plan policies applicable to earth resources.

Table 6-3: City of Concord General Plan Principles and Policies for Earth Resources

	Description
Principle S-3.1	Reduce damage due to seismic hazards.
Policy S-3.1.1	Require as part of the development review process a thorough evaluation of geologic-seismic and soil conditions and risks.
Policy S-3.1.2	Require all new development to design structures and building pursuant to applicable state and local codes. (These codes include seismic design criteria.)
Policy S-3.1.3	Require geologic studies to be conducted for all structures, including those not for human occupancy, located aboveground and belowground whenever a project is located within an Earthquake Fault Zone as identified by the California Geologic Survey.
Policy S-3.1.4	Ensure that the design of roads, pipelines, and other public facilities and utilities that cross the Concord Fault accommodate the effects of tectonic creep.
Policy S-3.1.5	Cooperate with appropriate government agencies and public and private organizations to address seismic hazards.
Principle S-3.2	Minimize the effects of landslides and ground failure.
Policy S-3-2.2	Restrict development on hillsides with slopes over 30 percent.

	Description
Policy S-3.2.3	Require soils and geologic hazards analysis and mitigation as part of development project review.
Policy S-3-2.4	Regulate all development, including remodeling or structural rehabilitation, to assure adequate mitigation of safety hazards on sites having a history or threat of slope instability, erosion, subsidence, ground failure, ground rupture, and/or liquefaction.
Policy S-3.2.5	Control erosion of graded areas with revegetation or other acceptable methods.

6.2 Standards of Significance

Criteria for determining the significant impacts associated with earth resources have been developed based on Appendix G of the California Environmental Quality Act (CEQA, 1970) Guidelines and any relevant agency thresholds. For purposes of this Environmental Impact Report (EIR), an alternative may have significant impacts on earth resources if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction and lateral spreading; and seismically induced landslides and ground cracking.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the alternatives, and potentially result in on- or off-site landslide, settlement, or collapse.
- Be located on expansive soil creating substantial risks to property.
- Result in substantial soil erosion or loss of topsoil.
- Result in loss of a known valuable mineral resource or in the loss of availability of a locally important mineral resource identified in an approved land use plan.
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

6.3 Potential Earth Resources Impacts

This section begins with a description of assumptions that have been incorporated in the analysis of potential earth resources impacts, including seismic hazards, geology and soil impacts, and mineral resource impacts for the alternatives currently being considered. The impacts for each of the two alternatives are presented in the following sections. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact would continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented. The section concludes with a description of the potential impacts of the No Project Alternative.

6.3.1 Assumptions about Potential Earth Resources Impacts

Following are the assumptions that have been applied in the analysis of potential earth resources impacts of the alternatives. The assumptions are based on information gathered during the planning process to develop the alternatives. This information has been incorporated into the planning process that resulted in the two alternatives as ways to avoid or minimize their environmental consequences.

- Development at the site will be performed in accordance with the policies included in the City of Concord 2030 Urban Area General Plan (General Plan) (City of Concord, 2007), including adherence to all State and local regulations.
- There would be no use of septic tanks, as all development will be connected to sewers. However, use of septic tanks and leach fields would be considered in open park areas where a close sewer line does not exist.

6.3.2 Earth Resources Impacts of the Preferred Alternative

6.3.2.1 Potentially Significant Earth Resources Impacts

None identified.

6.3.2.2 Earth Resources Impacts That Are Less Than Significant

Impact Earth Resources 1: The Preferred Alternative could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction and lateral spreading; and seismically induced landslides and ground cracking. This potential impact is considered to be less than significant.

No portion of the site is located within an Alquist-Priolo Earthquake Fault Zone; however, the Greenville Fault, Clayton section, traverses the site near the southwest base of the Los Medanos Hills. There is no record of historic earthquakes on this fault, and the geomorphic expression of this fault section is suggestive of a fault with a low Late Quaternary slip rate.

The site is subject to strong ground shaking from any of several major, active faults in the region. According to the CGS probabilistic seismic hazard maps (CGS/USGS, 2003), peak ground accelerations within the site could reach 0.6 g. Damage that can be expected as a result of ground accelerations of this magnitude includes slight damage in “specially designed structures” and considerable damage in “ordinary substantial buildings,” with the potential for partial collapse (Bolt, 1988).

Seismically induced ground failure, including liquefaction, lateral spreading, and seismic slope instability, has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy structures. Portions of the site, including the lowland areas of the Clayton Valley and along Olivera Road, are underlain by deposits that have been mapped as having “high” or “very high” potential for liquefaction. Lateral spreading associated with liquefaction could occur along existing stream channels running through the site.

Seismic slope instability can occur anywhere, but is generally concentrated in areas with steep slopes that are only moderately stable under static conditions. The upland areas along the eastern and northeastern boundaries of the site include steep terrain with slopes greater than 30 percent, but these areas have not been designated for future development as part of the Preferred Alternative.

The General Plan policies identified in Table 6-3 address how the City will mitigate seismic risks. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks, incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 1: None required.

Impact Earth Resources 2: The Preferred Alternative may include development and/or site work on expansive soil creating risks to property. This potential impact is considered to be less than significant.

Expansive soils within approximately 5 feet of the ground surface can result in differential and cyclical movements of the soil that can damage foundations, slabs, roadways, and other paved surfaces. Expansion and contraction of expansive soil is a function of moisture content, and is generally a function of surface water infiltration. Soil units mapped on the site that have been rated for shrink/swell potential are generally described as having a moderate to high shrink/swell potential.

The General Plan policies identified in Table 6-3 address how the City will mitigate risks due to soil expansion. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks, incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, individual projects where expansive soils are identified will adequately control volume changes and potential damage to foundations, slabs, and paved roadways. Therefore, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 2: None required.

Impact Earth Resources 3: The Preferred Alternative could include development and/or site work on a geologic unit or soil that is unstable, or that would become unstable as a result of the potential development, and potentially result in on- or off-site landslide, settlement, or collapse. This potential impact is considered to be less than significant.

Landslides are documented in the upland portions of the site within the Los Medanos Hills. Within the site boundaries, the upland area is generally mapped as “few landslides,” although some areas of “mostly landslide” are present. Landslide potential increases where grading and other construction activities alter the topography or drainage patterns in a

manner that reduces slope stability. Over-steepened slopes and slope saturation both contribute to slope instability. The removal of vegetation can also lead to slope instability. Slope instability—including landslides, earthflows, and debris flows—has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy structures. Landslides can also cause down slope deposition of soil, which can damage or bury structures.

Settlement can occur when native soils are subjected to increased loads. Settlement can also occur in poorly constructed earth fills. Increased loads can be the result of both foundation loading and earth fill loads. Differential settlement can damage structures and underground facilities, and can lead to maintenance issues with roadways and other paved areas.

The General Plan policies identified in Table 6-3 address how the City will mitigate risks related to development and/or site work on unstable or steep ground that would produce landslides, settlement, or collapse. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks, incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 3: None required.

Impact Earth Resources 4: The Preferred Alternative could result in soil erosion or loss of topsoil. This potential impact is considered to be less than significant.

Erosion can occur during construction, in areas of cut and fill, and in sloped areas undergoing development. The potential for erosion increases as slopes become steeper and less vegetated. Areas most susceptible to erosion include hilly areas and other locations where extensive grading would be required.

The General Plan policies identified in Table 6-3 address how the City will mitigate risks related to soil erosion. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks, incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 4: None required.

Impact Earth Resources 5: The Preferred Alternative could result in loss of a known or unknown mineral resource or in the loss of availability of a locally important mineral resource identified in an approved land use plan. This potential impact is considered to be less than significant.

Existing mineral resources within the Concord Area include alluvial sand and gravel deposits. However, the site has not been evaluated for potential mineral resources.

Because the site has not been evaluated for potential mineral resources, and mining for sands and gravels in an urban setting would have environmental impacts, such as dust and noise issues, it is concluded that the site has low potential for aggregate recovery.

Mitigation Measure Earth Resources 5: None required.

6.3.3 Earth Resources Impacts of the Concentration and Conservation Alternative

6.3.3.1 Potentially Significant Earth Resources Impacts

None identified.

6.3.3.2 Earth Resources Impacts That Are Less Than Significant

Impact Earth Resources 6: The Concentration and Conservation Alternative could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction and lateral spreading; and seismically induced landslides and ground cracking. This potential impact is considered to be less than significant.

No portion of the site is located within an Alquist-Priolo Earthquake Fault Zone; however, the Greenville Fault, Clayton section, traverses the site near the southwest base of the Los Medanos Hills. There is no record of historic earthquakes on this fault, and the geomorphic expression of this fault section is suggestive of a fault with a low Late Quaternary slip rate.

The site is subject to strong ground shaking from any of several major, active faults in the region. According to the CGS probabilistic seismic hazard maps (CGS/USGS, 2003), peak ground accelerations within the site could reach 0.6 g. Damage that can be expected as a result of ground accelerations of this magnitude includes slight damage in “specially designed structures” and considerable damage in “ordinary substantial buildings,” with the potential for partial collapse (Bolt, 1988).

Seismically induced ground failure, including liquefaction, lateral spreading, and seismic slope instability, has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy structures. Portions of the site, including the lowland areas of the Clayton Valley and along Olivera Road, are underlain by deposits that have been mapped as having “high” or “very high” potential for liquefaction. Lateral spreading associated with liquefaction could occur along existing stream channels running through the site.

Seismic slope instability can occur anywhere, but is generally concentrated in areas with steep slopes that are only moderately stable under static conditions. The upland areas along the eastern and northeastern boundaries of the site include steep terrain with slopes greater than 30 percent.

The General Plan policies identified in Table 6-3 address how the City will mitigate seismic risks. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks,

incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 6: None required.

Impact Earth Resources 7: The Concentration and Conservation Alternative may include development and/or site work on expansive soil, creating substantial risks to property. This potential impact is considered to be less than significant.

Expansive soil within approximately 5 feet of the ground surface can result in differential and cyclical movements of the soil that can damage foundations, slabs, roadways, and other paved surfaces. Expansion and contraction of expansive soil is a function of moisture content, and is generally a function of surface water infiltration. Soil units mapped on the site that have been rated for shrink/swell potential are generally described as having a moderate to high shrink/swell potential.

The General Plan policies identified in Table 6-3 address how the City will mitigate risks due to soil expansion. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks, incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, individual projects where expansive soils are identified will adequately control volume changes and potential damage to foundations, slabs, and paved roadways. Therefore, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 7: None required.

Impact Earth Resources 8: The Concentration and Conservation Alternative could include development and/or site work on a geologic unit or soil that is unstable, or that would become unstable as a result of the alternatives, and potentially result in on- or off-site landslide, settlement, or collapse. This potential impact is considered to be less than significant.

Landslides are documented in the upland portions of the site within the Los Medanos Hills. Within the site boundaries, the upland area is generally mapped as “few landslides,” although some areas of “mostly landslide” are present. Landslide potential increases where grading and other construction activities alter the topography or drainage patterns in a manner that reduces slope stability. Over-steepened slopes and slope saturation both contribute to slope instability. The removal of vegetation can also lead to slope instability. Slope instability—including landslides, earthflows, and debris flows—has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy structures. Landslides can also cause down slope deposition of soil, which can damage or bury structures.

Settlement can occur when native soils are subjected to increased loads. Settlement can also occur in poorly constructed earth fills. Increased loads can be the result of both foundation loading and earth fill loads. Differential settlement can damage structures and

underground facilities, and can lead to maintenance issues with roadways and other paved areas.

The General Plan policies identified in Table 6-3 address how the City will mitigate risks related to development and/or site work on unstable or steep ground that would produce landslides, settlement, or collapse. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks, incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 8: None required.

Impact Earth Resources 9: The Concentration and Conservation Alternative could result in substantial soil erosion or loss of topsoil. This potential impact is considered to be less than significant.

Erosion can occur during construction, in areas of cut and fill, and in sloped areas undergoing development. The potential for erosion significantly increases as slopes become steeper and less vegetated. Areas most susceptible to erosion include hilly areas and other locations where extensive grading would be required.

The General Plan policies identified in Table 6-3 address how the City will mitigate risks related to soil erosion. It is assumed in Section 6.3.1 that all development on the site will comply with the applicable General Plan policies (which are listed in Table 6-3). Because the City controls the development approval process, the City will have the ability to enforce implementation of these policies, which include adequately analyzing site-specific conditions and risks, incorporating design features to mitigate those risks, and otherwise complying with established State and local codes. With this process in place, this impact is considered to be less than significant.

Mitigation Measure Earth Resources 9: None required.

Impact Earth Resources 10: The Concentration and Conservation Alternative could result in loss of a known valuable mineral resource or in the loss of availability of a locally important mineral resource identified in an approved land use plan. This potential impact is considered to be less than significant.

Existing mineral resources within the Concord Area include alluvial sand and gravel deposits. However, the site has not been evaluated for potential mineral resources by the California Department of Conservation, Geological Survey.

Mitigation Measure Earth Resources 10: None required.

6.3.4 Earth Resources Impacts of the No Project Alternative

6.3.4.1 Potentially Significant Earth Resources Impacts of the No Project Alternative

None identified.

6.3.4.2 Earth Resources Impacts of the No Project Alternative That Are Less Than Significant

None identified.

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Concord
Community Reuse Plan

7.
Hydrology and Water Quality

7 Hydrology and Water Quality

Introduction

This chapter describes existing conditions and potential impacts related to hydrology and water quality. Potential impacts of the Preferred Alternative and Concentration and Conservation Alternative are assessed relative to eight Standards of Significance that were developed from Appendix G of the California Environmental Quality Act Guidelines (CEQA) (~~CEQA, 1970~~Public~~.~~ Resources Code, § 21000, et seq.) and relevant agency thresholds.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on hydrology and water quality. This has resulted in the hydrology and water quality impacts of both alternatives being substantially less than they would have been had hydrology and water quality impacts not been taken into account during all stages of the planning and environmental analysis process.

7.1 Existing Conditions

7.1.1 Site Overview

Mt. Diablo Creek is the primary hydrologic feature of the project site, entering the site at Bailey Road and flowing toward the northwest and under State Route (SR) 4, as shown on Figure 7-1. More than 75 percent of the project site drains toward the creek, including lowland areas along the channel and the Los Medanos Hills to the east. A portion of the site along the western border drains westward toward the Holbrook Channel and Walnut Creek.

Site topography consists primarily of gently sloping lowlands with the steeper Los Medanos Hills along the eastern boundary. Elevations range from 100 to about 1,000 feet above sea level. The Clayton section of the Greenville Fault Zone (see Chapter 6, Earth Resources) lies between the foot of the Los Medanos Hills and the Mt. Diablo Creek channel through much of the site.

7.1.2 Watershed Setting

The Mt. Diablo Creek watershed upstream of the site has an area of about 23,800 acres (about 37 square miles). It originates on the north slope of Mt. Diablo and includes unincorporated areas of Contra Costa County, the City of Clayton, and portions of the City of Concord. Mt. Diablo Creek is the primary drainage for this watershed, with Back Creek, Donner Creek, and Mitchell Creek, all upstream of the City of Clayton, as the major tributaries. The dominant land use in the watershed is open space/grazing with urbanized land uses accounting for about 20 percent of the watershed area. Figure 7-1 shows the watershed boundary for Mt. Diablo Creek.

land uses accounting for about 20 percent of the watershed area. Figure 7-1 shows the watershed boundary for Mt. Diablo Creek.

The site experiences a Mediterranean climate, characterized by warm dry summers and mild wet winters. Approximately 86 percent of the rainfall occurs between November and April (NHI, 2006). Average annual precipitation in the Mt. Diablo Creek watershed varies from 23.5 inches at the summit of Mt. Diablo to 15.5 inches near Suisun Bay (CCRCD, 2006). Average annual rainfall at the project site is about 17 inches (CCCFC&WCD, 1977).

7.1.3 Information Sources

During the development of this chapter, information was collected on existing hydrology and water quality conditions during a series of field investigations conducted during 2008 and 2009, in combination with a review of existing published studies. Primary published sources of information regarding the Mt. Diablo Creek channel and watershed included the Mount Diablo Creek Watershed Assessment (CCRCD, 2006) and Mt. Diablo Creek Watershed Inventory, Final Report (NHI, 2006). A complete list of references is provided in Section 7.4. ~~The~~ A series of 2008 technical memoranda that document field investigations conducted previously for the City of Concord for the Concord Community Reuse Project (CH2MHill, 2008) were also reviewed.

7.1.4 Stream Channels

7.1.4.1 Mt. Diablo Creek

Mt. Diablo Creek enters the project site at Bailey Road and flows northwesterly under Willow Pass Road and SR 4, through the Diablo Creek Golf Course, and ultimately discharges to Suisun Bay. Like most East Bay creeks, Mt. Diablo Creek is an ephemeral stream that flows only during the rainy season shortly after storms. Although seeps and springs are common in the Mt. Diablo Creek watershed, there is no evidence of these sources of water contributing significantly to stream flow at the project site. The creek bed is composed of sand and fine gravels that do not appear to be armored. Some small localized segments of the creek contain complex aquatic habitats of alternating riffle/shallow pool sequences, and there are some areas of mature riparian canopy. However, in other locations on the site, the creek channel is incised by as much as 30 feet and is experiencing active bank erosion.

Mt. Diablo Creek is an ephemeral creek, meaning that it does not flow during the dry season. Long-term flow data is not available for Mt. Diablo Creek; however, observations of the creek over 2 years (2007–2009) suggest that it is a “flashy” system that flows only shortly after rain events. During the January 24, 2008 storm, the project site received about 2 inches of rain in about 24 hours. During this time, Mt. Diablo Creek overflowed its banks near the downstream portion of the project site. The creek was contained within its banks over the remainder of the project site. The creek stage peaked at about 8 feet during this storm, but quickly dissipated afterward. Following a 10-day period of no rain, the creek was observed to not be flowing. Mt. Diablo Creek was also observed to have no flow during site visits on January 12, 2009, February 15, 2009, and May 5, 2009.

The Mt. Diablo Creek channel has been significantly altered as a consequence of land use changes on the project site, starting in the late 19th century. Historical maps show that the primary Mt. Diablo Creek channel was rerouted between 1885 and 1898. Pre-1885 maps show the creek flowing west to Pacheco Slough along the west side of the hills south of the current location of the North Concord/Martinez Bay Area Rapid Transit (BART) District Station. Seal Creek, an adjacent, smaller channel, is shown draining a small area to the east of these hills (NHI, 2006). It appears that Mt. Diablo Creek was rerouted toward the east to occupy the former Seal Creek channel prior to 1898 so that it now discharges to a wetland area just west of the community of Clyde. In subsequent years, development of the project site has introduced culverted road crossings, channelization, bank revetments, and other direct alterations to the creek channel.

Several short, steep tributaries drain the northeast portion of the project site, from the Los Medanos Hills to the Mt. Diablo Creek valley, as shown on Figure 7-1. The tributaries are ephemeral and flow only during and shortly after storms. The largest and only named tributary on the site is Rattlesnake Creek, which drains the southeastern portion of the site. It has a drainage area of about 2 square miles. Mass wasting of the Los Medanos Hills provides a high sediment supply to the tributaries, likely caused by a combination of uplift from the Clayton section of the Greenville Fault and the influences of cattle grazing. This high sediment supply contributes to alluvial fan deposits at the base of the Los Medanos Hills and along Mt. Diablo Creek.

The combination of alluvial fan deposits, natural levees along Mt. Diablo Creek, and possibly the influence of the Clayton section of the Greenville Fault, prevents on-site tributaries from connecting directly to the main Mt. Diablo Creek channel. In most areas, runoff from the tributaries meets the Mt. Diablo Creek valley and spreads laterally, infiltrating into coarse alluvial deposits. At times of high-intensity rainfall, runoff may reach Mt. Diablo Creek through sheet flow that eventually concentrates at low points in the valley, but surface water connection is limited to the large storm events. The network of roads, rail lines, and drainage ditches developed by the U.S. Navy at the site has altered local drainage patterns within the Mt. Diablo Creek valley, further limiting the direct connection between local site runoff and the creek channel.

7.1.4.2 Holbrook Channel Drainages

About 22 percent of the project site drains west toward the Holbrook Channel and associated Concord urban drainages. The Holbrook Channel is a constructed channel, tributary to the Walnut Creek watershed. Its drainage is comprised primarily of urbanized areas within the City of Concord. The channel begins near the western edge of the project site near San Vicente and Natoma Drives, and flows along Willow Pass Road. It then flows north through residential neighborhoods of Concord until it joins Walnut Creek near Marsh Drive.

A perennial groundwater seep is located at the former runway site at the western portion of the project site. Here, groundwater rises to the surface and ponds before flowing to the Holbrook Channel though a series of open channels and culverts. These were likely installed during construction of the runway to drain the runway area.

7.1.4.3 Willow Creek Sub-Watershed

About 1 percent of the project site drains to the Willow Creek watershed toward the City of Pittsburg. Areas draining to Willow Creek are limited to the northeastern face of the Los Medanos Hills near the eastern project boundary. There are no on-site stream channels in the Willow Creek watershed, and contributing drainage is limited to sheet flow only during high-intensity storms.

7.1.4.4 Canals

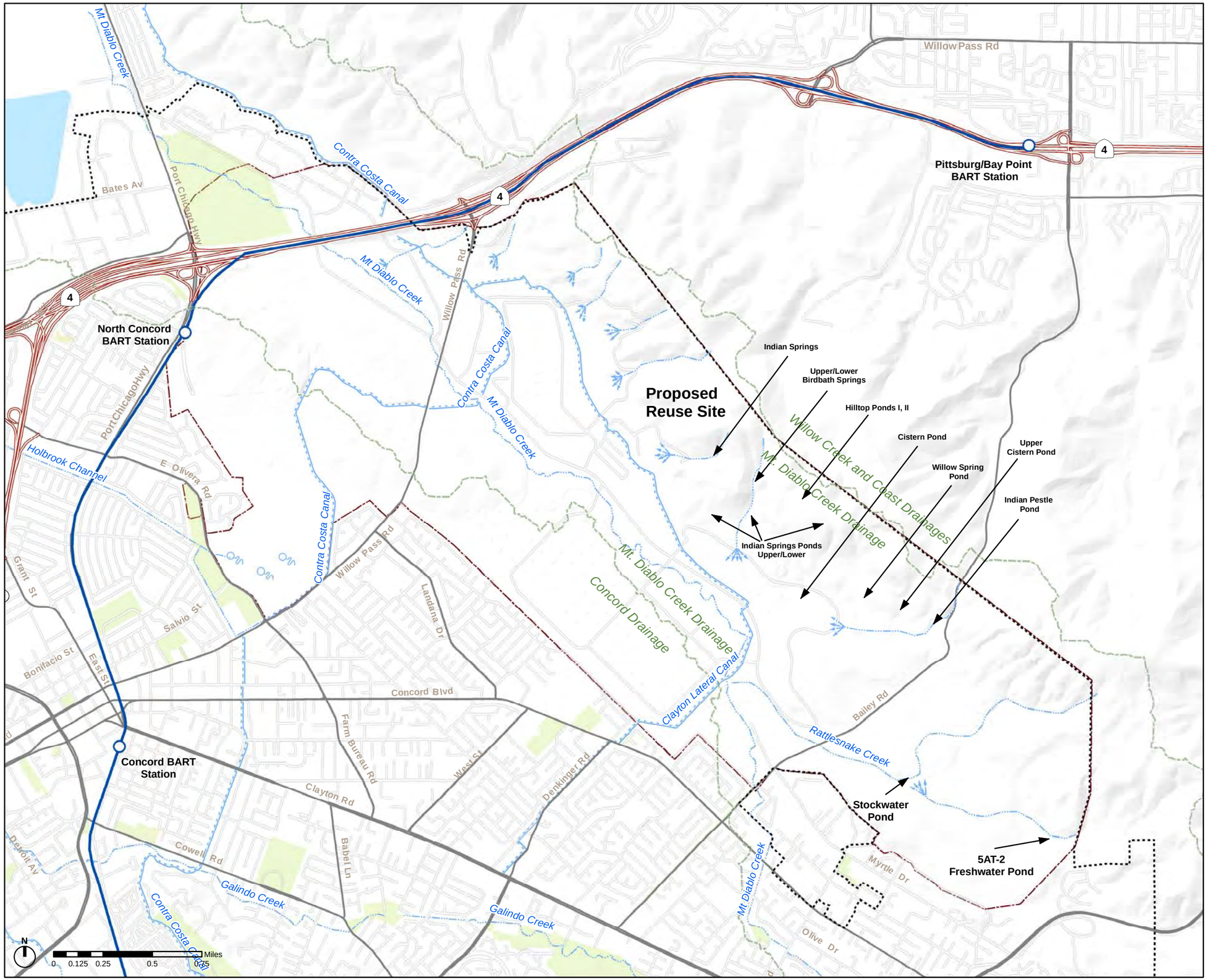
Two canals cross the site, as shown on Figure 7-1. Both are located within rights-of-way owned by the U.S. Bureau of Reclamation (Bureau of Reclamation). The Contra Costa Canal was completed in 1948 as part of the federal Central Valley Project (CVP), and the right-of-way is currently leased, maintained, and monitored by the Contra Costa Water District (CCWD). The canal originates in Rock Slough near Oakley where it diverts water from the Delta. The canal terminates 48 miles downstream at the Martinez Reservoir (CCWD, 2006). The Contra Costa Canal is out of service during the winter.

Approximately 3.5 miles of the 4.85-mile Clayton Canal also cross the site. The Clayton Canal was built in 1949 and occupies about 38.33 acres, which includes the canal footprint and right-of-way for maintenance. The Clayton Canal has not been used to convey water for more than 20 years. Neither of the canals receives significant runoff from the project site. Additional discussion of the canals is provided in Chapter 9, Cultural Resources, and Chapter 16, Utilities.

7.1.5 Flood Hazards

7.1.5.1 Project Site

During large flood events, most natural streams overtop the banks of the low-flow channel and inundate adjacent low-lying areas. This overflow area is referred to as the floodplain of the stream. Historical accounts indicate that Mt. Diablo Creek overtops the channel annually, inundating some portion of the adjacent floodplain (Navy, 2006). Field observations of floatable debris traces and channel geometry suggest that flooding may occur most frequently on the downstream reaches of Mt. Diablo Creek between the Contra Costa Canal and SR 4. In these locations, Mt. Diablo Creek likely overtops its banks at least once every few years and possibly more frequently. Although the floodplain has not been delineated in detail, a portion of the Mt. Diablo Creek valley area is very likely to fall within the 100-year floodplain based on field observations, site topography, and downstream floodplain mapping. (The 100-year floodplain refers to the area inundated by a flood event that occurs, on average, once in every 100 years).



Legend

- Watershed Divide
- Creek
- Canal
- Unconnected Tributaries
- Alluvial Fan
- Groundwater Seepage

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

PWA, 2009.

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Revised June 11, 2009

Figure 7-1
Watershed Features Within Site

The Federal Emergency Management Agency (FEMA) maps flood-prone areas to establish flood risk zones as part of the National Flood Insurance Program. FEMA's flood hazard maps typically delineate the 100-year floodplain, and are also used by states and communities for emergency management and for land use and water resource planning. However, FEMA does not typically map flood hazards within federal facilities. As shown on Figure 7-2, the effective Flood Insurance Rate Maps for the area, the majority of the site (98 percent) is shown as "US Naval Reservation AREA NOT INCLUDED." The City of Concord is currently working with FEMA to plan for floodplain mapping of the project area.

The 2 percent of the site that was mapped includes two small areas delineated by the FEMA as Zone A, which are areas where the 1 percent annual flood was mapped, but base flood elevations and flood hazard factors have not been determined. The Zone A delineations identified in Table 7-1 are limited to the area downstream of SR 4 near the Diablo Creek Golf Course at Port Chicago Highway, and a small area of Willow Pass Road where it crosses Mt. Diablo Creek. There is one area just downstream of Bailey Road that has been delineated as Zone A4, an area of the 1 percent annual flood where base flood elevations and flood hazard factors have been determined. Presumably these areas were mapped because they were outside Navy jurisdiction at the time of mapping.

Table 7–1: Federal Emergency Management Agency Flood Zones at the Site

100-Year FEMA Floodplain Zone*	Approximate Area (acres)
Zone A	73
Zone A4	12
Zone B (0.2% annual chance)	36
Unmapped areas	4,907
Total	5,028

* FEMA zones correspond to Figure 7-2.
Source: FEMA, 2000

Although FEMA has not mapped floodplain zones on the majority of the site, the agency has developed estimates of peak discharge in Mt. Diablo Creek for other flood studies. In addition, the Contra Costa County Flood Control and Water Conservation District (CCCFC&WCD) has calculated design discharges for Mt. Diablo Creek using the unit hydrograph method (Boucher, 2007). FEMA and CCCFC&WCD use different methods to estimate peak discharges, resulting in different discharge estimates. These values are shown in Table 7-2.

Table 7–2: Peak Discharge Data for Mt. Diablo Creek

Location	Area (square miles)	Peak Discharge					
		10-Year (cfs)		50-Year (cfs)		100-Year (cfs)	
		FEMA	CCCFC& WCD	FEMA	CCCFC& WCD	FEMA	CCCFC &WCD
Below Mitchell Canyon	15.8	1,440	3,920	3,000	5,880	3,700	6,560
At Bailey Road	22.1	--	4,210	--	6,420	--	7,170
At Port Chicago Highway*	30.0	2,100	4,240	4,700	6,660	5,900	7,470

* FEMA flow data is given at Port Chicago Highway, data is given at the North Sacramento Railway. (watershed area 30.1 square miles).

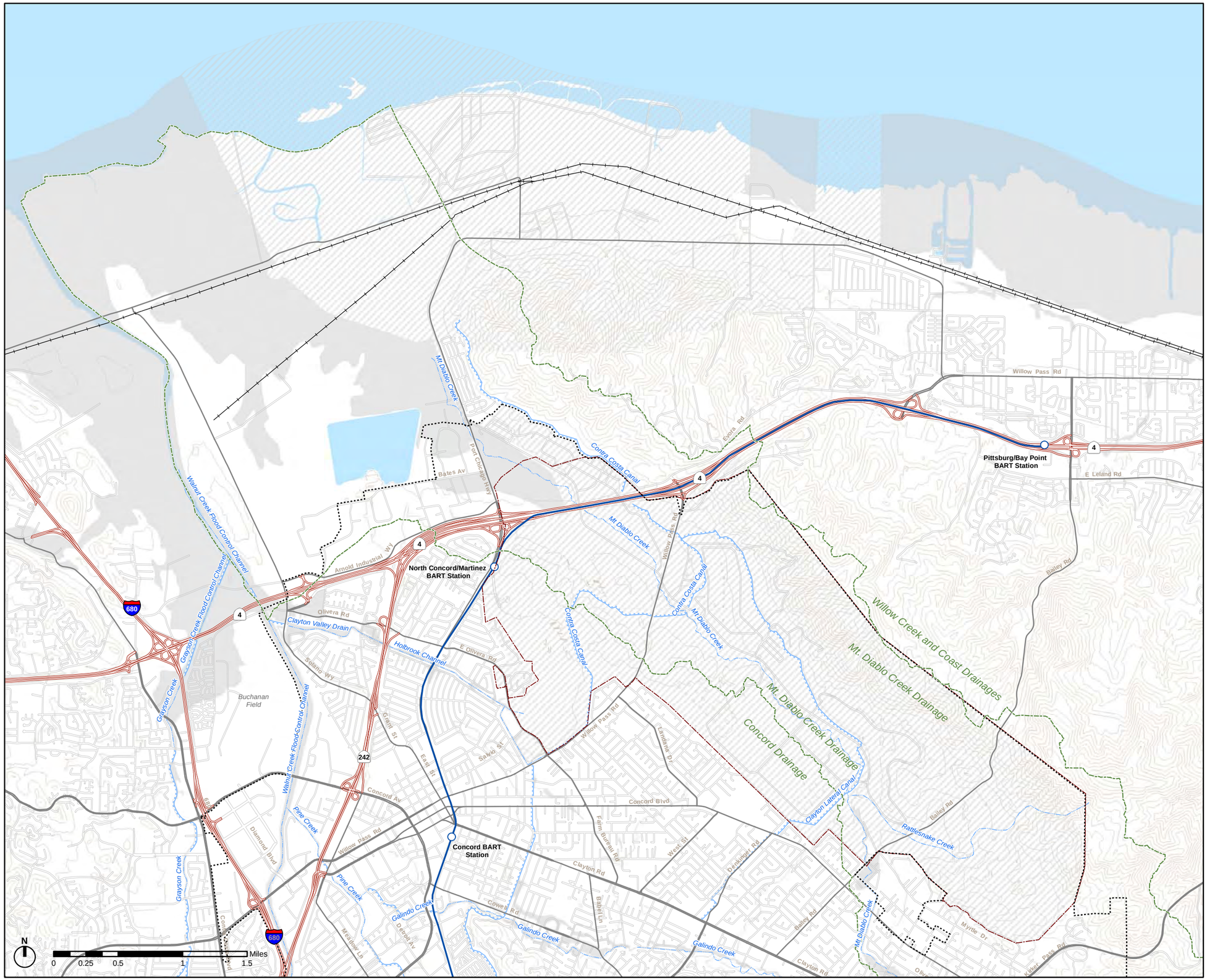
Source: Boucher, 2007; Contra Costa County Flood Control and Water Conservation District, 1981

7.1.5.2 Downstream Areas

Mt. Diablo Creek

Downstream of the project site, FEMA has mapped the area through the Diablo Creek Golf Course and west of Port Chicago Highway as inside the 100-year floodplain (Zone A). This area is shown on Figure 7-2. The mapped floodplain includes the Administration Area entrance gate, the majority of the Diablo Creek Golf Course, and Port Chicago Highway. The area encompassing the Inland Support Complex has not been mapped by FEMA.

Just downstream from the community of Clyde, there is a straightened portion of Mt. Diablo Creek referred to as the “EBMUD wasteway.” Historically, this section of channel flowed northward to the Hastings Slough/Seal Creek channel and from there to Suisun Bay. However, the wasteway is now completely blocked by an earthen berm associated with oil refinery pipelines that cross the channel in the vicinity of the gate house for the Tidal Area of the Concord Naval Weapons Station (CNWS). When the creek is flowing, the berm diverts water eastward to a ponding area adjacent to Port Chicago Highway (CCRCD, 2006).



Legend

- Watershed Divide
- Creek
- Canal

Floodplain

- Zone A
- Area Not Mapped By FEMA

Base Map

- Concord City Limit
- Proposed Reuse Site
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station
- Contour Line (50-foot interval)

Notes & Sources

Federal Emergency Management Agency Q3 data, 1996.

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Figure 7-2
100-Year Floodplain

Holbrook Channel

Residential neighborhoods downstream of the project site along the Holbrook Channel and in the vicinity of the Farm Bureau Road Drain are within the FEMA-designated 100-year floodplain, as shown on Figure 7-1. Recently, the City of Concord completed a number of projects that have improved drainage along the Farm Bureau Road Drain, although these improvements have not been reflected in published FEMA maps.

Flood hazard zones adjacent to the Holbrook Channel/Farm Bureau Road Drain have not been mapped on the project site. There is anecdotal evidence that low-lying areas on the project site in the vicinity of the former runway site and Coast Guard Housing complex do flood regularly and are likely located within the designated 100-year floodplain.

7.1.6 Surface Water Quality

7.1.6.1 Beneficial Uses

As part of the Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin, the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) is charged with identifying and protecting beneficial uses of the Bay Area's surface waters. The Basin Plan is the guiding document for the Water Board to identify water quality objectives and develop enforcement actions to protect water quality and to carry out the objectives of the Federal Clean Water Act. Accordingly, the Water Board has identified the following existing beneficial uses for Mt. Diablo Creek in the Basin Plan: Cold Freshwater Habitat, Fish Migration, Fish Spawning, Warm Freshwater Habitat, Wildlife Habitat, Water Contact Recreation, and Non-contact Water Recreation. As discussed in Chapter 8, Biological Resources, on-site studies related to biological resources do not necessarily support some of these designations.

There are no listed beneficial uses for the Holbrook Channel; however, the Water Board directs planners to identify beneficial uses for the next downstream body of water. In this case, the Holbrook Channel discharges into Walnut Creek, for which the following existing beneficial uses have been identified: Cold Freshwater Habitat, Fish Migration, Fish Spawning, Warm Freshwater Habitat, and Wildlife Habitat. The Water Board has also identified the following potential beneficial uses for Walnut Creek: Water Contact Recreation and Non-contact Water Recreation.

7.1.6.2 Surface Water Ambient Monitoring Program

A Surface Water Ambient Monitoring Program was implemented at three locations in 2003 in the Mt. Diablo Creek watershed by the Water Board (CCCCDD, 2006). Water quality parameters for temperature, pH, and dissolved oxygen (DO) were found to be in the acceptable range for steelhead trout and other coldwater species during the winter and early spring in the upper watershed areas upstream of the site. Dry season parameters were unacceptable for coldwater species in the middle watershed (from the upstream city limits of the City of Clayton downstream to SR 4). In the lower watershed (from SR 4 downstream to Suisun Bay), DO was far below minimum standards for coldwater fish (CCCCDD, 2006).

7.1.6.3 Impaired Water Bodies

Section 303(d) of the Clean Water Act directs the Water Board to identify water bodies that do not meet State or federal standards for pollutants. Water bodies that exceed Water Board criteria for water quality are considered impaired, and are added to the State's impaired water body list, also referred to as the 303(d) list. The Water Board prioritizes water bodies on this list based upon potential impacts to beneficial uses. For these prioritized water bodies, the Water Board then establishes Total Maximum Daily Loads (TMDLs) for certain pollutants. Mt. Diablo Creek has been listed as an impaired water body, and is one of over 30 San Francisco Bay Area urban creeks for which Diazinon and Toxicity TMDLs have been established (USEPA, 2007).

~~The Water Board has identified Diazinon as a pollutant of concern in Mt. Diablo Creek, and has added it to the list of impaired water bodies.~~ Diazinon is a synthetic orthophosphate used for pest control before it was outlawed for residential use in the U.S. in 2004. It is still approved for agricultural uses.

~~In 2008, the Water Board recommended that Mt. Diablo Creek be added to the 303(d) list for toxicity.~~ Toxicity sampling was conducted in 2003 at two off-site locations: the mouth of Mt. Diablo Creek at Suisun Bay (approximately 3 miles downstream of the site), and Mitchell Canyon in Clayton (approximately 4 miles upstream of the site). Two out of four samples collected as part of Water Board sampling exhibited toxicity (CA SWRCB, 2008)~~.~~

7.1.7 Groundwater

Mt. Diablo Creek forms the eastern boundary of the Clayton Valley Groundwater Basin, which underlies much of the site. The Clayton Valley Groundwater Basin is comprised of thick alluvial deposits, and the water-bearing units of the basin are found in recent alluvium and older alluvium fill deposits. Aquifers in the Clayton Valley Groundwater Basin are hydrologically connected to Suisun Bay (DWR, 2004). The eastern portion of the site is located in an unmapped groundwater basin comprised predominately of shale and sandstone (Jennings, 1977).

Groundwater at the site was characterized in 2002 (Navy, 2006). Groundwater is typically found in unconsolidated alluvial deposits consisting of coarser sand and gravel. At the site, groundwater was encountered at depths of 30 feet to 50 feet under semi-confined to confined conditions. Confined aquifers generally consist of a water-bearing formation, such as sand and gravel, underlying a confining layer, typically clay. Artesian seeps and springs are typically found in the vicinity of confined and semi-confined aquifers. Two springs at the site are used as a water supply for wildlife and cattle, and one spring at a former ranch house at the site is capped (Tetra Tech 2002). Additionally, a perennial groundwater seep is located at the former runway site, as introduced previously.

Currently, the groundwater at the site supplies wells used to water livestock and to irrigate the Diablo Creek Golf Course. Groundwater quality was determined to be fair by the Navy (2006), although total dissolved solids (TDS), hardness, chlorides, and iron concentrations were observed to be relatively high. The Navy report concluded that high extraction rates

from deep wells would produce satisfactory yields of groundwater, but that extraction could also result in saltwater intrusion.

7.2 Standards of Significance

Criteria for determining potentially significant impacts related to hydrology and water quality have been developed based on Appendix G of the CEQA Guidelines (CEQA, 1970) and relevant agency thresholds. For the purposes of this Environmental Impact Report (EIR), either of the two alternatives may have a significant impact on hydrology and water quality if it will:

- Place housing or structures that would impede or redirect flood flows within the 100-year flood hazard area
- Expose people or structures to significant risk of loss, injury, or death involving flooding
- Substantially alter the existing drainage pattern of the site or area, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation, or flooding on or off the site
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or that would provide substantial additional sources of polluted runoff
- Substantially degrade water quality
- Violate water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table
- Contribute to inundation by seiche, tsunami, or mudflow

7.3 Potential Hydrology and Water Quality Impacts

The following section describes the assumptions used to evaluate each of the eight standards of significance listed above. Impacts and mitigation measures associated with the Preferred Alternative and the Concentration and Conservation Alternative are identified in subsequent sections.

7.3.1 Assumptions about Potential Hydrology and Water Quality Impacts

The following assumptions are based on information gathered during the planning process and have been incorporated into the development of the two alternatives.

- Future development at the site would only be permitted by the City of Concord in compliance with local regulations, including complying with policies set forth in the 2030 Urban Area General Plan (General Plan) (City of Concord, 2007) related to protection from flooding and protection of water quality, as shown in Table 7-3. In addition, future

development will be required to comply with the requirements of the Basin Plan regulated by the Water Board.

- Future planning and development would be performed in accordance with federal (FEMA), regional, and local flood management requirements, including those of the City of Concord, again as shown in Table 7-3.
- All future development would comply with the Contra Costa Clean Water Program's Joint Municipal National Pollution Discharge Elimination System (NPDES) permits and the City municipal code, Chapter 86 Stormwater Management and Grading and Erosion Control requirements. These requirements are also addressed in Chapter 16, Utilities.
- Future development would not alter the existing watershed boundaries.
- Both alternatives ~~would~~ include a minimum 300-foot-wide corridor, measured from edge to edge of the corridor, ~~(150 feet from the centerline of the channel on each side of the creek)~~ ~~that~~ which would be retained along Mt. Diablo Creek in part to manage flood flows~~.~~. The 300-foot minimum corridor width was determined based on a program-level evaluation of project needs and numerous environmental considerations, including erosion control, habitat values, recreational and open space values, and aesthetic values; the corridor width may be expanded in some areas as the project-level plan is developed.

Table 7–3: City of Concord General Plan Principles and Policies for Hydrology and Water Quality

	Description
Policy LU-8.2.3.1	Apply site planning techniques that minimize the amount of impervious paving, promote pedestrian safety, and reduce urban runoff in commercial centers.
Policy LU-10.1.5	Ensure that developers of projects in the City work with landowners in adjacent jurisdictions to incorporate natural creekways as open space amenities into the design of projects as a condition of approval.
Policy S-3.2.5	Control erosion of graded areas with revegetation or other acceptable methods.
Policy S-4.1.1	Manage development to ensure compliance with the City's Flood Management Ordinance and the City's Stormwater Management and Discharge Control Ordinance.
Policy S-4.1.2	Establish engineering design standards for constructing a storm drainage system to protect against loss of life and property and minimize risks of flooding.
Policy S-4.1.3	Coordinate storm drainage management with appropriate agencies, including the County Flood Control and Water Conservation District, Regional Water Quality Control Board, Army Corps of Engineers, and California Department of Fish and Game (CDFG), and with the Contra Costa Water District in the vicinity of the Contra Costa Canal.
Policy S-4.1.4	Design storm drainage facilities to meet the Contra Costa Flood Control and Water Conservation District standards and ensure adequate and safe flow to minimize flooding.
Principle PF-1.3	Protect the community from adverse impacts of water runoff.

	Description
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.
Principle POS-3.1	Preserve and protect water quality.
Policy POS-3.1.1	Enhance and maintain the natural values of creeks and major drainage ways.
Policy POS-3.1.2	Preserve native riparian vegetation and wildlife, and establish riparian corridors along all creeks.
Policy POS-3.1.3:	Require adequate building setbacks for development adjacent to creek banks and major drainage ways to protect neighboring properties from erosion and flooding.
Policy POS-3.1.4	Support improvements along creeks in consultation and cooperation with creek restoration and design professionals.
Policy POS-3.1.5	Provide access easements for creek maintenance purposes and public access to creekside amenities.
Policy POS-3.1.6	To the extent practical, preserve creeks in a natural condition while providing for the need to convey storm water.
Policy POS-3.1.7	Improve the quality of underground and surface waters through coordination with outside agencies.

7.3.2 Potential Hydrology and Water Quality Impacts of the Preferred Alternative

This section identifies potential impacts associated with the Preferred Alternative. The potential impacts are presented according to the eight standards of significance identified above. The analysis recognizes that, prior to approving any development at the site, the proposed development will have to comply with the City of Concord requirements listed in Table 7-3, as well as other applicable local, State, and federal requirements related to development in floodplains, protection of water quality, etc.

7.3.2.1 Potentially Significant Hydrology and Water Quality Impacts of the Preferred Alternative

None identified.

7.3.2.2 Hydrology and Water Quality Impacts of the Preferred Alternative That Are Less Than Significant

Impact Hydrology and Water Quality 1: Without implementation of existing requirements, the Preferred Alternative could result in placing housing or structures

in locations that could impede or redirect flood flows within the 100-year floodplain. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Preferred Alternative will not result in placing housing or structures in locations that could impede or redirect flood flows within the 100-year floodplain. This impact is considered to be less than significant.

Flood hazard areas have not been mapped by FEMA for the majority of the project site. However, as discussed in Section 7.1, a corridor along the Mt. Diablo Creek Channel between the Contra Costa Canal and SR 4 is likely to fall within the 1 percent annual chance floodplain. Therefore, any development alternative that includes housing or structures within the Mt. Diablo Creek valley floor has the potential to impede or redirect 100-year flood flows unless the development is adequately regulated.

~~It is recognized that p~~However, prior to approving any development alternative at the site, the City of Concord shall require ~~that~~ the proposed project to comply with applicable requirements set forth in Table 7-3 ~~are complied with~~, and also require an approved Conditional Letter of Map Revision from FEMA ~~is written~~ to demonstrate that housing or structures will not be placed in the 100-year floodplain as a result of implementing the alternative. ~~No development may occur until the City receives a Conditional Letter of Map Revision from FEMA.~~ These requirements reduce the potential impact to a level that is less than significant.

The actions that may be taken to ~~manage flood flows~~comply with flood management requirements include (1) improvements to the Mt. Diablo Creek channel to improve flood conveyance, (2) on-site detention to reduce peak flood flows to a level that can be contained within the creek channel, and/or (3) placement of fill to raise building floor elevations above the base flood elevation.

Improvements to Mt. Diablo Creek could increase the conveyance capacity of the creek channel while addressing other project priorities such as aesthetics and habitat protection or enhancement. Within the minimum 300-foot creek corridor provided with the Preferred Alternative, a two-stage channel could be created that includes a floodplain terrace designed to convey 100-year flood flows.

In addition, areas on the north side of the channel within the project site but outside the development footprint could provide detention storage that could be used to reduce peak flood flows while meeting other project goals. A flood detention basin could be designed to divert peak flood flows, reducing creek flows to a level that can be contained within the channel. Site grading could also be designed such that building floor elevations lie at an appropriate elevation above the FEMA base flood elevation.

These actions appear to be feasible. The requirement for FEMA approval of Conditional Letter of Map Revision ensures that FEMA will determine the boundaries of the 100-year floodplain following implementation of these actions. That, in turn, will ensure that no housing or structures are placed within the 100-year floodplain. An approved Conditional Letter of Map Revision from FEMA would be required to demonstrate that the 100-year

design flow is contained within Mt. Diablo Creek as a result of the selected flood management actions.

Mitigation Measure Hydrology and Water Quality 1: None required.

Impact Hydrology and Water Quality 2: Without implementation of existing requirements, the Preferred Alternative has the potential to expose people or structures to risk of loss, injury, or death involving flooding. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Preferred Alternative will not expose people or structures to risk of loss, injury, or death involving flooding. This impact is considered to be less than significant.

Flood hazard areas have not been mapped by FEMA for the majority of the project site. However, as discussed in Section 7.1, a corridor along the Mt. Diablo Creek Channel between the Contra Costa Canal and SR 4 is likely to fall within the 1 percent annual chance floodplain. Therefore, any development alternative that includes housing or structures within the Mt. Diablo Creek valley floor has the potential to expose people and/or structures to flood-related risks.

It is recognized that prior to approving development at the site, the City of Concord shall require an approved Conditional Letter of Map Revision from FEMA to demonstrate that the 100-year design flow is contained within Mt. Diablo Creek. No development may occur until the City receives a Conditional Letter of Map Revision from FEMA

Development of the Preferred Alternative could expose people or structures to flood risks if actions are not taken to manage flood flows in Mt. Diablo Creek. These actions may include (1) improvements to the Mt. Diablo Creek channel to improve flood conveyance, (2) on-site detention to reduce peak flood flows to a level that can be contained within the creek channel, and/or (3) placement of fill to raise building floor elevations above the base flood elevation.

Improvements to Mt. Diablo Creek could increase the conveyance capacity of the creek channel while addressing other project priorities such as aesthetics and habitat protection or enhancement. Within the minimum 300-foot creek corridor provided with the Preferred Alternative, a two-stage channel could be created that includes a floodplain terrace designed to convey 100-year flood flows.

In addition, areas on the north side of the channel within the project site but outside the development footprint could provide detention storage that could be used to reduce peak flood flows while meeting other project goals. A flood detention basin could be designed to divert peak flood flows, reducing creek flows to a level that can be contained within the channel. Site grading could also be designed such that building floor elevations lie at an appropriate elevation above the FEMA base flood elevation.

These actions appear to be feasible. The requirement for FEMA approval of a Conditional Letter of Map Revision ensures that FEMA will determine the boundaries of the 100-year floodplain following implementation of these actions. That, in turn, will ensure that no

housing or structures are placed within the 100-year floodplain. Under the mitigation measure identified above, an approved Conditional Letter of Map Revision from FEMA would be required to demonstrate that the 100-year design flow is contained within Mt. Diablo Creek as a result of the selected flood management actions.

Mitigation Measure Hydrology and Water Quality 2: None required.

Impact Hydrology and Water Quality 3: Without implementation of existing requirements, the Preferred Alternative has the potential to alter the existing drainage pattern of the site, or increase the rate or amount of surface runoff in a manner that would result in erosion, siltation, or flooding on or off site. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Preferred Alternative will not alter the existing drainage pattern of the site or increase the rate or amount of surface runoff in a manner that would result in erosion, siltation, or flooding on or off the site. This impact is considered to be less than significant.

Development of the project site would involve substantial ground disturbance, grading, and construction in both the Mt. Diablo Creek and Concord drainage areas. These activities have the potential to alter drainage patterns of the site. In the Mt. Diablo Creek drainage area, the two northernmost tributaries draining the Los Medanos Hills would be directly impacted by development resulting from the Preferred Alternative. Although these tributaries do not directly connect to Mt. Diablo Creek, disturbance of the tributary channels would alter the drainage pattern of the site. The combination of sheet flow, drainage ditches, and culverts that drain the valley areas also have the potential to be altered within the development footprint as a result of implementation of the Preferred Alternative. Existing site drainage in the Concord drainage area occurs primarily via sheet flow, which also has the potential to be altered within the development footprint.

It is recognized that prior to approving development at the site, the City of Concord shall require any development application to include storm drainage systems to safely convey runoff from developed areas to Mt. Diablo Creek. To the extent surface runoff is increased as a result of development, such increases will have to be offset by on-site detention so that peak flood flows leaving the site are not increased.

Development that would result from implementation of the Preferred Alternative could also alter the existing drainage pattern of the site area by creating an engineered storm drainage system to convey runoff from developed areas of the site. The City will require that the storm drainage system be designed to safely convey runoff from developed areas according to General Plan policy S-4.1.2. All storm drain outfalls will be designed with energy dissipation features to prevent creek bed and bank erosion. To the extent possible, storm drain outfalls to Mt. Diablo Creek will be designed to coincide with road crossings and other engineered structures to further protect against erosion impacts to the channel.

Development the Preferred Alternative could also alter the existing drainage pattern of the site area by modifying or eliminating the northernmost tributary draining the Los Medanos Hills area toward the Mt. Diablo Creek Channel. Storm drainage systems will have to be

provided to safely transport runoff from both on-site and off-site sources conveyed by this tributary under existing conditions.

Mitigation Measure Hydrology and Water Quality 3: None required.

Impact Hydrology and Water Quality 4: Without implementation of existing requirements, the Preferred Alternative has the potential to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or that would provide additional sources of polluted runoff. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Preferred Alternative would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or that would provide additional sources of polluted runoff. This impact is considered to be less than significant.

The valley areas of the project site currently drain to Mt. Diablo creek through a combination of sheet flow, drainage ditches, and culverts. Development of the site would increase the amount of impervious area, which has the potential to increase surface runoff rates and volumes. Increased runoff may exceed the capacity of existing stormwater drainage systems.

Prior to approving development at the site, the City of Concord shall require any development application to include storm drainage systems to safely convey runoff from developed areas to Mt. Diablo Creek. The City shall require that the storm drainage system be designed to safely convey runoff from developed areas in accordance with General Plan policy S-4.1.2. All storm drain outfalls will be designed with energy dissipation features to prevent creek bed and bank erosion. To the extent possible, storm drain outfalls to Mt. Diablo Creek will be designed to coincide with road crossings and other engineered structures to further protect against erosion impacts to the channel.

Mitigation Measure Hydrology and Water Quality 4: None required.

Impact Hydrology and Water Quality 5: Without implementation of existing requirements, the Preferred Alternative has the potential to degrade water quality. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Preferred Alternative can be implemented without degrading water quality. This impact is considered to be less than significant.

Surface runoff from developed areas has the potential to provide additional sources of non–point source pollution to receiving waters. However, any proposed development at the site will be required to comply with the Contra Costa Clean Water Program's Joint Municipal NPDES permit, which requires treatment and source control measures to address non–point source pollution from stormwater runoff both during and after project construction. Compliance with permit requirements will reduce this potential impact to a level that is less than significant.

Guidelines for NPDES compliance are provided in the Contra Costa Clean Water Program's Stormwater C.3 Guidebook. As part of the development review process, the City of Concord

will require an approved Stormwater Control Plan that demonstrates how the project complies with Provision C.3 of the NPDES permit, which addresses non–point source pollution in stormwater runoff. Non–point source pollutants typically associated with development include fertilizers and pesticides, litter, heavy metals, oil and gas residues, domestic animal waste, tire fragments, and debris from vehicular traffic. The Stormwater Control Plan requires a detailed description of measures to address non–point source pollution, including:

- Measures to minimize directly connected impervious area
- Identification of pollutant sources and associated source control measures
- Tabulation of impervious areas and associated treatment measures
- Maintenance requirements and mechanism for treatment measures

In addition, construction activities can increase the erosion of fine sediment and contribute sediment-laden runoff to receiving waters, and can also be the source of oil and grease from construction vehicles and their maintenance. Prior to approving construction activities on the project site, t~~T~~he City will also require a Stormwater Pollution Prevention Plan (SWPPP)~~, in accordance with NPDES regulations,~~ to control erosion and non–point source pollutants during construction in accordance with NPDES regulations. The SWPPP will establish requirements that could include the following:

- Develop the site in phases to leave existing vegetated areas undisturbed until that portion of the site is ready for development.
- Revegetate, hydroseed, mulch, and/or install jute netting to protect areas from erosion after completion of grading and construction.
- Direct runoff from areas disturbed by construction while providing continuity of the existing drainage pathways.
- Collect runoff into vegetated swales or stable drainage channels to prevent erosion from stormwater runoff.
- Construct/install sediment ponds or siltation basins to collect suspended sediment before runoff is discharged into the existing drainage system on the site.
- Limit major excavation and earth-moving to avoid the rainy season.
- Develop and implement a program for the handling, storage, use, and disposal of hazardous materials and fuels. This program should include a plan for accidental hazardous material spills.

The SWPPP would also identify source control and pre-discharge treatment best management practices (BMPs), following guidelines provided by the Contra Costa Clean Water Program.

Mitigation Measure Hydrology and Water Quality 5: None required.

Impact Hydrology and Water Quality 6: Without the implementation of existing requirements, the Preferred Alternative has the potential to violate water quality standards or waste discharge requirements. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place so that the Preferred Alternative can be implemented without violating waste discharge requirements. This impact is considered to be less than significant.

As discussed above for Impact Hydrology and Water Quality 5, any proposed development at the site will be required to comply with the Contra Costa Clean Water Program's Joint Municipal NPDES permit, which requires treatment and source control measures to address non–point source pollution from stormwater runoff both during and after project construction. Compliance with permit requirements will reduce this potential impact to a level that is less than significant.

Mitigation Measure Hydrology and Water Quality 6: None required.

Impact Hydrology and Water Quality 7: The Preferred Alternative would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. This impact is considered to be less than significant.

Addition of impervious surfaces has the potential to reduce groundwater recharge from surface infiltration. However, because groundwater at the site is 30 to 50 feet below the ground surface and under confined to semiconfined conditions, local reductions in surface permeability are not likely to affect groundwater recharge. Groundwater pumping, other than existing pumping from two wells at the golf course, is not proposed.

Mitigation Measure Hydrology and Water Quality 7: None required.

Impact Hydrology and Water Quality 8: The Preferred Alternative does not have the potential to contribute to inundation by seiche, tsunami, or mudflow. This impact is considered to be less than significant.

Because the project site location is over 3 miles from the shoreline and 100 to 1,000 feet above sea level, it has minimal potential for inundation from a seiche or tsunami within Suisun Bay. In addition, as shown on Figure 7-3, the project location and elevations are well outside the area likely to be affected by increased flood risk due to sea level rise associated with climate change. Figure 7-3 depicts areas estimated by the San Francisco Bay Conservation and Development Commission to be vulnerable to sea level rise by the end of the century.

Mitigation Measure Hydrology and Water Quality 8: None required.

7.3.3 Potential Hydrology and Water Quality Impacts of the Concentration and Conservation Alternative

7.3.3.1 Potentially Significant Hydrology and Water Quality Impacts of the Concentration and Conservation Alternative

None identified.

7.3.3.2 Hydrology and Water Quality Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Hydrology and Water Quality 9: Without implementation of existing requirements, the Concentration and Conservation Alternative could place housing or structures in locations that could impede or redirect flood flows within the 100-year floodplain. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Concentration and Conservation Alternative will not result in placing housing or structures in locations that could impede or redirect flood flows within the 100-year floodplain. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 9 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 1 for the Preferred Alternative.

Mitigation Measure Hydrology and Water Quality 9: None required.

Impact Hydrology and Water Quality 10: Without implementation of existing requirements, the Concentration and Conservation Alternative has the potential to expose people or structures to risk of loss, injury, or death involving flooding. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Concentration and Conservation Alternative will not expose people or structures to risk of loss, injury, or death involving flooding. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 10 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 2 for the Preferred Alternative.

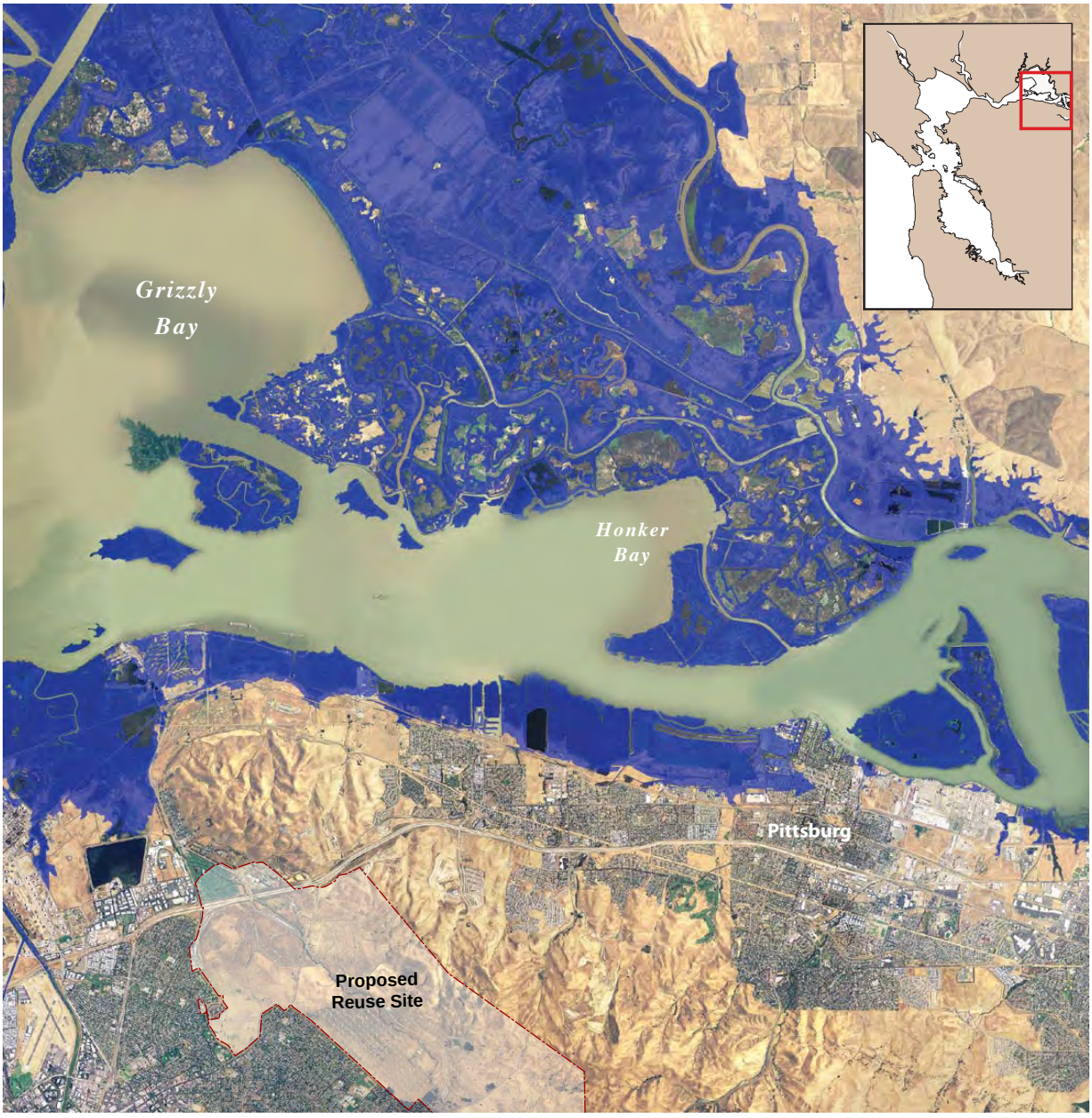
San Francisco Bay
Conservation and Development Commission

55-Inch Sea Level Rise By End Of Century Honker Bay

Vulnerable areas

0 1.5 3 MILES

NORTH



SOURCE: Inundation data from Knowles, 2008. Additional salt pond elevation data by Siegel and Bachand, 2002. Aerial imagery is NAIP 2005 data.

DISCLAIMER: Inundation data does not account for existing shoreline protection or wave activity. These maps are for informational purposes only. Users, by their use, agree to hold harmless and blameless the State of California and its representatives and its agents for any liability associated with its use in any form. The maps and data shall not be used to assess actual coastal hazards, insurance requirements, or property values or be used in lieu of Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA).

Notes & Sources

Proposed Reuse Site boundary is shown superimposed on original BCDC diagram.

Source: San Francisco Bay Conservation and Development Commission, 2009.

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Figure 7-3
BCDC Sea Level Rise Diagram

Mitigation Measure Hydrology and Water Quality 10: None required.

Impact Hydrology and Water Quality 11: Without implementation of existing requirements, the Concentration and Conservation Alternative has the potential to alter the existing drainage pattern of the site, or increase the rate or amount of surface runoff in a manner that would result in erosion, siltation, or flooding on or off the site. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure the Concentration and Conservation Alternative will not alter the existing drainage pattern of the site, or increase the rate or amount of surface runoff in a manner that would result in erosion, siltation, or flooding on or off the site. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 11 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 3 for the Preferred Alternative.

Mitigation Measure Hydrology and Water Quality 11: None required.

Impact Hydrology and Water Quality 12: Without implementation of existing requirements, the Concentration and Conservation Alternative has the potential to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or that would provide additional sources of polluted runoff. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Concentration and Conservation Alternative would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or that would provide additional sources of polluted runoff. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 12 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 4 for the Preferred Alternative.

Mitigation Measure Hydrology and Water Quality 12: None required.

Impact Hydrology and Water Quality 13: Without implementation of existing requirements, the Concentration and Conservation Alternative has the potential to degrade water quality. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place to ensure that the Concentration and Conservation Alternative can be implemented without degrading water quality. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 13 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 5 for the Preferred Alternative.

Mitigation Measure Hydrology and Water Quality 13: None required.

Impact Hydrology and Water Quality 14: Without the implementation of existing requirements, the Concentration and Conservation Alternative has the potential to violate water quality standards or waste discharge requirements. However, adequate requirements, in the form of the existing applicable General Plan policies, are in place so that the Concentration and Conservation Alternative can be implemented without violating water quality standards or waste discharge requirements. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 14 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 6 for the Preferred Alternative.

Mitigation Measure Hydrology and Water Quality 14: None required.

Impact Hydrology and Water Quality 15: The Concentration and Conservation Alternative would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 15 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 7 for the Preferred Alternative.

Mitigation Measure Hydrology and Water Quality 15: None required.

Impact Hydrology and Water Quality 16: The Concentration and Conservation Alternative does not have the potential to contribute to inundation by seiche, tsunami, or mudflow. This impact is considered to be less than significant.

The discussion of Impact Hydrology and Water Quality 16 for the Concentration and Conservation Alternative is the same as the discussion of Impact Hydrology and Water Quality 8 for the Preferred Alternative.

Mitigation Measure Hydrology and Water Quality 16: None required.

7.3.4 Potential Hydrology and Water Quality Impacts of the No Project Alternative

7.3.4.1 7.3.4.1 Potentially Significant Hydrology and Water Quality Impacts of the No Project Alternative

None identified.

7.3.4.2 Hydrology and Water Quality Impacts of the No Project Alternative That Are Less Than Significant

None identified.

7.4 References

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Natural Heritage Institute, 2006. Mt. Diablo Creek Watershed Inventory, Final Report. June 30. San Francisco Bay Regional Water Quality Control Board. 2007. San Francisco Bay Basin (Region 2) Water Quality Control Plan.

San Francisco Bay Conservation and Development Commission, 2009. Sea level rise maps showing areas vulnerable to 16 inches of sea level rise at mid-century and 55 inches at the end of the century. Available at: http://www.bcdc.ca.gov/planning/climate_change/climate_change.shtml

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8.
Biological Resources

8 Biological Resources

This chapter describes the existing biological resources at the site and the potential impacts to those resources as a result of implementing either of the two alternatives. This chapter also includes proposed mitigation measures that will reduce the identified impacts to the extent feasible.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and the August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design the two alternatives so as to avoid or minimize the potential effects of the two alternatives on biological resources. This has resulted in the biological resources impacts of both alternatives being substantially less than they would have been had biological resources impacts not been taken into account during all stages of the planning and environmental analysis process.

8.1 Existing Biological Conditions

8.1.1 Introduction

This section describes the affected environment for the following biological resources at the site:

- Vegetation and habitats
- Wildlife habitats and common wildlife species
- Special-status species
- Sensitive and regulated habitats, including jurisdictional wetlands and waters

In addition, a summary of information regarding the potential for occurrence of special-status plant and animal species on the site is included in Appendix 8A.

8.1.1.1 Background

The 5,028-acre site has been extensively altered as a result of historical agricultural and military uses, including farming, livestock grazing, munitions storage, and other associated activities (see Chapter 1, Introduction; Chapter 3, Land Use; Chapter 7, Hydrology and Water Quality; and Chapter 10, Hazardous Materials). These historical uses have resulted in disturbance of more than 20 percent of the site and have influenced the existing biological conditions at the site.

As discussed in Chapter 1, Introduction, the Inland Area of the Concord Naval Weapons Station (CNWS) (most of which comprises the site analyzed in this EIR) was previously used for agricultural purposes. Most of the natural vegetation of the lower hills and flatland of the site was altered by farming practices between the late 1800s and the 1940s. Data on early grazing practices are limited and are summarized in the 1982 Natural Resources Survey (Jones and Stokes Associates, Inc. [JSA], 1982), based on the potential for changes to habitat value. Hay production may have altered or removed much of the native grasslands and natural plant communities in the lowlands. Wildlife populations dependent

on natural conditions may have been adversely affected, and species adapted to rangeland and pasturage may have benefited.

In the period between 1944, when the U.S. Navy (Navy) purchased the site, and 1975, the Navy allowed uncontrolled year-round grazing under existing leases. Since 1975, as leases became eligible for renewal, new 5-year leases specified the maximum number of animal unit months (AUM) for each allotment.

Since the Navy's purchase of the area in 1944, the predominant military uses consisted of high-explosive and gun magazines or storage bunkers, military barracks, and a weapons laboratory. The Navy also constructed a rail system and two air runways on the site. Of the 5,028 site acres, approximately 1,200 acres are potentially contaminated due to former military activities (see Chapter 10, Hazardous Materials). Networks of roads, railroads, and utilities link the buildings across the site. The site is served by three major highways: Interstate Highway (I-) 680, State Route (SR) 242, and SR 4. The Bay Area Rapid Transit (BART) rail system serves the area and crosses the site, and the North Concord/Martinez BART station is located adjacent to the site.

Not all areas of the site are equally developed. Most of the Navy's former administration buildings are north of SR 4. The remainder of the developed portion of the site is primarily populated with storage bunkers, railroad tracks, and roads, many of which are widely spaced and interspersed with grazed, non-native grassland and other, more natural habitats. Portions of the site removed from the munitions storage/transport areas have been exposed to relatively little direct human activity in recent decades. Extensive fencing exists along the perimeter of the site, the site is regularly patrolled to maintain security, and it is not accessible to the public.

Mt. Diablo Creek crosses the site from south to north. Historical maps show that the location of the creek was altered between 1885 and 1898. The pre-1885 maps show the creek flowing west to Pacheco Slough along the west side of the hills near where the North Concord/Martinez BART Station is currently located. In contrast, today the creek extends across the middle portion of the property from Bailey Road in the south to the Diablo Creek Golf Course in the north. In addition, the network of roads, rail lines, and munitions bunkers developed by the Navy has substantially altered runoff, drainage, and vegetation patterns in the watershed (see Chapter 7, Hydrology and Water Quality).

8.1.1.2 Biological Resources Data

This section presents an overview of the existing literature on the biological resources at the site and of the site surveys, including those previously conducted and those that are underway. The biological resources information for the site was compiled from reviews of the available literature, site surveys, personal communication with State and federal resource agencies, and other appropriate information sources.

Surveys

An extensive body of information exists documenting the biological resources at the site. The Navy, educational institutions (such as the University of California at Davis and University of Arizona), the California Department of Fish and Game (CDFG), the Contra Costa County Vector Control District, the Contra Costa County Public Works Department,

and consultants to the City of Concord have conducted surveys and contributed information to the body of knowledge on natural resources at the site.

- Navy (1981–1982): The Navy conducted a resources survey of the Tidal and Inland Areas of the CNWS in 1981 to 1982 (JSA, 1982). This study inventoried the wildlife on the Inland Area to identify the presence and distribution of bird, mammal, amphibian, and reptile species by habitat type and season, to determine the occurrence of special-status species, and to identify important wildlife habitats.
- Navy (1998–1999): Over four seasons in 1998 to 1999, the Navy sponsored studies conducted by the University of Arizona Advanced Resources Technology Group. These surveys are the most extensive and intensive general natural resource surveys to date for the site. In these studies, the University of Arizona team conducted surveys and sitewide inventories of wildlife (including birds, mammals, amphibians, and reptiles) and plants in all seasons, including both the Tidal and Inland Areas. Biological surveys included assessments at the same survey points used in the 1981–1982 surveys to allow for comparative analysis. The University of Arizona's multiseason surveys resulted in a substantial and relevant historical database for the biological resources analysis required for this EIR, describing most habitats and species present on the base. As described below, more recent surveys have verified that site conditions have changed relatively little since the 1998–1999 surveys were conducted, and their results are thus directly relevant to this impact assessment.
- Navy (2002): Biological survey data collected as of 2002 were compiled and summarized by the Navy in its Integrated Natural Resources Management Plan and Environmental Assessment (Tetra Tech, Inc., 2002).
- Navy (2005–2006): The Navy's 2005–2006 amphibian surveys were conducted by Smallwood and Morrison (2007). These surveys included sampling points (ponds, swales, and wetlands) that were surveyed in the previous studies, allowing for detection of possible trends in populations and distribution of California red-legged frog (*Rana draytonii*) and California tiger salamander (*Ambystoma californiense*) habitat and use.
- Navy (2008–2009): The Navy conducted additional surveys or habitat assessments to supplement previously compiled information on biological resources of the site. A study of California tiger salamander upland habitat considered previously identified breeding locations, the distribution of small mammal burrows, potential impediments to dispersal, and information concerning this species' dispersal capabilities to evaluate various areas on the site according to their upland habitat value (EDAW, 2008a). This study ranked the relative value of various sections of the site as upland habitat for California tiger salamanders based on proximity to known breeding ponds, abundance of upland refugia, and location relative to impediments such as Mt. Diablo Creek and Willow Pass Road. A habitat assessment was conducted for the Alameda whipsnake (*Masticophis lateralis euryxanthus*) (Ecology & Environment and Swaim Biological, 2008) and least Bell's vireo (*Vireo bellii pusillus*) (Ecology & Environment, 2008) to determine the potential for these species to occur on the site. Surveys for federally listed vernal pool branchiopods such as the vernal pool fairy shrimp (*Brachinecta lynchi*) (EDAW, 2008b) were conducted according to the U.S. Fish and Wildlife Service (USFWS) protocol;

these surveys were informed by the assessment of potential habitat areas identified during vernal/seasonal pool surveys conducted May through September of 2007.

The Navy also conducted an investigation of potential jurisdictional wetlands and other waters of the U.S./State in 2007 (Tierra Data, Inc., 2008). This study assessed potentially jurisdictional features on the site and described observations of plant and wildlife species.

The Navy conducted a protocol-level survey for the least Bell's vireo in spring and summer 2009, with USFWS authorization.

- City of Concord site surveys (2007–2009): Field surveys were conducted for the City of Concord in February 2007 and February 2008 to assess existing vegetative cover and wildlife habitat, potential for occurrence of special-status species, and general presence of any sensitive biological resources, such as wetlands, sensitive natural communities, or mature native trees (CH2M HILL, 2008a). Another survey was conducted in June 2007 by the City of Concord to assess potential for vernal pools and associated special-status plant species. A technical memorandum describing the results of these surveys (CH2M HILL, 2008a), another describing wildlife movement issues in the context of the project (CH2M HILL, 2008f), and the biological resources chapter of the May 2008 Draft EIR for the project provided much of the information used to prepare this chapter.

  After reviewing information previously compiled regarding the biological resources of the site, a diverse team of H.T. Harvey & Associates biologists conducted verification surveys in 2008 and 2009 to further refine assessments regarding the distribution of habitats and special-status species, as well as general wildlife use, on the site. These biologists included ornithologists, herpetologists, mammalogists, botanists, and wetlands ecologists who visited the site on a number of dates between November 2008 and June 2009. Collectively, these surveys documented that conditions have not changed appreciably since the multiseason 1998–1999 surveys conducted by the Navy, and that the results of the comprehensive surveys performed in 1998–1999 are thus still applicable.

- City of Concord stream assessments (2007 and 2008): The City of Concord conducted additional investigations to characterize further the condition of Mt. Diablo Creek, which provides (or could provide) habitat for a variety of wildlife species (CH2M HILL, 2008b–e). To evaluate the potential value of this stream to wildlife, the City of Concord assessed existing conditions and identified future opportunities that will guide decisions for possible management of the creek's riparian corridor. The ongoing efforts include analysis of the flood corridor conveyance, stream flow, sediment transport, and water temperature. These studies also included a fish passage assessment to evaluate the existing potential for fish to move through culverts within the reach of Mt. Diablo Creek in the project area (CH2M HILL, 2008e).

- Special-status plant surveys (2008): The City of Concord conducted additional focused plant surveys of the site in 2008 (Vollmar Consulting, 2008). Three rounds of surveys were conducted to correspond to early, peak, and late special-status plant occurrence seasons. The surveys assessed the general plant communities on the site and described sensitive habitats and the occurrence of special-status plants and noxious weeds.

- City of Concord wetland monitoring, mapping, and delineation (2008 and 2009, and ongoing): Surveys were conducted in spring and summer 2008 to determine the location and extent of potential wetlands and other waters of the U.S./State on the site (Vollmar Consulting, 2008). Then, beginning in November 2008, H.T. Harvey & Associates began intensive, detailed monitoring of hydrology and vegetation in areas preliminarily identified in previous studies as potential wetlands and other waters of the U.S./State. The purpose of this effort was to refine the prior studies in order to definitely determine the location and precise boundaries of regulated wetland and other aquatic features on the project site. After more than four months of monitoring and preliminary mapping of jurisdictional boundaries, the City arranged a site visit by a representative from the U.S. Army Corps of Engineers (Corps of Engineers) to inform the precise delineation of jurisdictional wetland and other aquatic features. Hydrology and vegetation monitoring were then continued through the spring of 2009, resulting in precise mapping of jurisdictional wetlands and aquatic features, which ultimately will be submitted to the Corps of Engineers for verification. Verification of boundaries of waters of the State by the Regional Water Quality Control Board (RWQCB) will occur during the State wetlands permitting process.

Literature

The site-specific survey work reviewed and referenced during the preparation of this analysis is documented in numerous publications. The following documents and databases provided the primary sources of information for this EIR (a complete list of references is presented in section 8.3):

- CH2M HILL, 2008. Technical Memorandum: Field Reconnaissance Surveys, Concord Community Reuse Project, Contra Costa County, California. March.
- CH2M HILL, 2008. Technical Memorandum: Flow Gage Installation and Hydrology Evaluation at the Concord Naval Weapons Station, Inland Area. September.
- CH2M HILL, 2008. Technical Memorandum: Sediment Transport Assessment at the Concord Naval Weapons Station, Inland Area. September.
- CH2M HILL, 2008. Technical Memorandum: Water Temperature Monitoring at the Concord Naval Weapons Station, Inland Area. September.
- CH2M HILL, 2008. Technical Memorandum: Fish Passage Assessment of Existing Stream Crossing Structures at the Concord Naval Weapons Station, Inland Area. September.
- CH2M HILL, 2008. Technical Memorandum: Wildlife Movement, Concord Community Reuse Plan. March.
- Contra Costa Resource Conservation District, 2006. Mount Diablo Creek Watershed Assessment. Mount Diablo Creek Watershed Coordinated Resource Management Planning Program. January 30.
- Contra Costa County, 2006. East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (ECCC HCP/NCCP) EIR (2006). The site addressed in this EIR is located just outside the ECCC HCP/NCCP boundary, and thus neither the potential reuse alternatives nor the underlying development activities of the

reuse alternatives are covered activities under that plan and the plan's associated State and federal incidental take permits. The ECCC HCP/NCCP does, however, discuss habitats and species occurrences in the immediate vicinity of the site that are comparable to habitats on the site. This EIR references the ECCC HCP/NCCP, where applicable, to provide additional information on relevant habitats and potential occurrence of special-status species at the site.

- Department of the Navy, 2006. Environmental Condition of Property Report for the Naval Weapons Station Seal Beach Detachment Concord, Concord, California. April.
- Downard, G. T., P. Guertin, and M. Morrison, 1999. Characterization of wildlife and plant communities for Naval Weapons Station Seal Beach, Detachment Concord, July 1998 to September 1999 Results. University of Arizona, Advanced Resources Technology Group.
- Ecology & Environment, Inc., 2008. Least Bell's Vireo Habitat Assessment in Support of the Environmental Impact Statement for Disposal and Redevelopment of the Naval Weapons Station Seal Beach Detachment, Concord, California. July.
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- Jones and Stokes Associates, Inc., 1982. A Natural Resource Survey: Naval Weapons Station, Concord, CA. Report prepared for the Natural Resources Management Branch, Western Division, Naval Facilities Engineering Command, U.S. Navy, San Bruno, California.
- Mt. Diablo Audubon Society. Central Contra Costa County Christmas Bird Count Results. Unpublished data provided by count compiler Jimm Edgar.
- Natural Heritage Institute, 2006. Mt. Diablo Creek Watershed Inventory, Final Report.
- Smallwood, K.S. and M.L. Morrison, 2007. A Monitoring Effort to Detect the Presence of the Federally Listed Species California Tiger Salamander and California Red-Legged Frog at the Naval Weapons Station, Seal Beach, Detachment Concord, California. Report prepared for the Navy.
- Tetra Tech, Inc., 2002. Integrated Natural Resources Management Plan and Environmental Assessment. Naval Weapons Station Seal Beach, Detachment Concord, California.
- Tierra Data, Inc., 2008. A Wetland Delineation and Aquatic Habitat Inventory for the Inland Area, Naval Weapons Station Seal Beach Detachment Concord, Concord,

California. Report prepared for Naval Base Realignment and Closure Office, San Diego. California. January.

- Vollmar Consulting, 2008. 2008 Sensitive Botanical Resources Survey Report. Concord Naval Weapons Station, Inland Area. September.

- Comments provided by ~~s~~State and federal resource agencies (e.g., CDFG, USFWS, RWQCB, Corps of Engineers) during site visits and in written communications in 2007, 2008, and 2009.

8.1.2 Vegetation and Common Plant Species

This section describes the major plant communities occurring within the project boundaries. In subdividing vegetation into major categories, the overriding consideration was given to floristic composition, such that the broad expanses of annual grasses and forbs such as those dominating most of the Los Medanos Hills were placed into the category of grasslands. Similarly, the multistoried canopy of tree and shrub species that have developed along the banks of Mt. Diablo Creek and Willow Pass Creek were readily identified as being riparian woodland.

Despite these relatively straightforward examples, not all areas fit neatly into a broad category. This is partly because of the inherent variability in vegetation cover and plant density within many areas, in direct response to changes in slope, aspect, and soil type, among other factors (including disturbance). In most instances the differences in plant composition are not great enough, or the surface area of land covered by these species is not large enough, to justify mapping and describing them as separate, unique plant communities. While there are quantitative vegetation sampling techniques that could be employed to separate out such areas based on percent cover or some other measurable variable, it is beyond the scope of this environmental document to pursue such an approach in designating plant communities. The plant community descriptions below have noted where such variability in composition was observed during the field surveys.

Nevertheless, there is broad general agreement on identifying plant communities on the site, when considering the various reports that have been prepared for the property. These studies include those previously prepared for the Navy (JSA, 1982; Downard et al., 1999; Tierra Data, Inc., 2008) and for the City (CH2M HILL, 2007; Vollmar Consulting, 2008). Several lists of plant species observed on the site have been developed (Downard et al., 1999; CH2M HILL, 2007; Vollmar Consulting, 2008).

The general locations of these habitat types are shown on Figure 8-1, and the acreages associated with each vegetation community (based on the habitat mapping and site boundary depicted in Figure 8-1) are shown in Table 8-1. In this document, the terms “plant community,” “vegetation type,” and “habitat” are used interchangeably within this section; all refer to assemblages of vegetation that are similar in species composition, growth form, and other habitat variables such as soil type or hydrologic conditions.

The major plant communities discussed in this section include California annual grassland; coyote brush scrub/coastal sage scrub; developed areas; golf course and other predominantly recreational areas; oak woodland/savannah; orchards and plantations; seasonal and perennial wetlands; creeks, drainages, canals, and ponds; and riparian woodland. As can be seen by the acreage numbers presented in Table 8-1, the vast

majority of the site is characterized as California annual grassland. All other sensitive plant communities combined, including riparian, oak woodland/savannah and wetland habitats total less than 5 percent of the acreage of the grasslands. Although of relatively high ecological value, the wetland and riparian habitats on the site occur as narrow bands or discrete features among an immense landscape of grassland species.

Table 8–1: Approximate Acreages of Plant Communities on the Site

Vegetation Community Acreages	Area (acres)	Percentage of Site
California Annual Grassland	4,206~~61~~	8~~1~~0.7
Coyote Brush Scrub/Coastal Sage Scrub	5	< 0.1
Developed	537~~48~~2	10.2~~9.2~~
Golf Course/Recreation	114	2.2
Oak Woodland/Savannah	109	2.1
Orchards and Plantations	162	3.1
Riparian Woodland	32	0.6
Seasonal and Perennial Wetlands/Aquatic Habitats	--	--
Freshwater Marsh	6	0.1
Seeps and Springs	1	< 0.1
Seasonal Wetlands	17	0.3
Creeks, Drainages, Canals, and Ponds	24	0.5
Total	5,213*	100.0

* The acreage of the Concord Community Reuse Project (CCRP) site is 5,028 acres. The biological study area extended somewhat beyond the site boundaries, and the acreages in this table and elsewhere in this chapter are based on the habitat mapping and site boundary depicted on Figure 8-1.

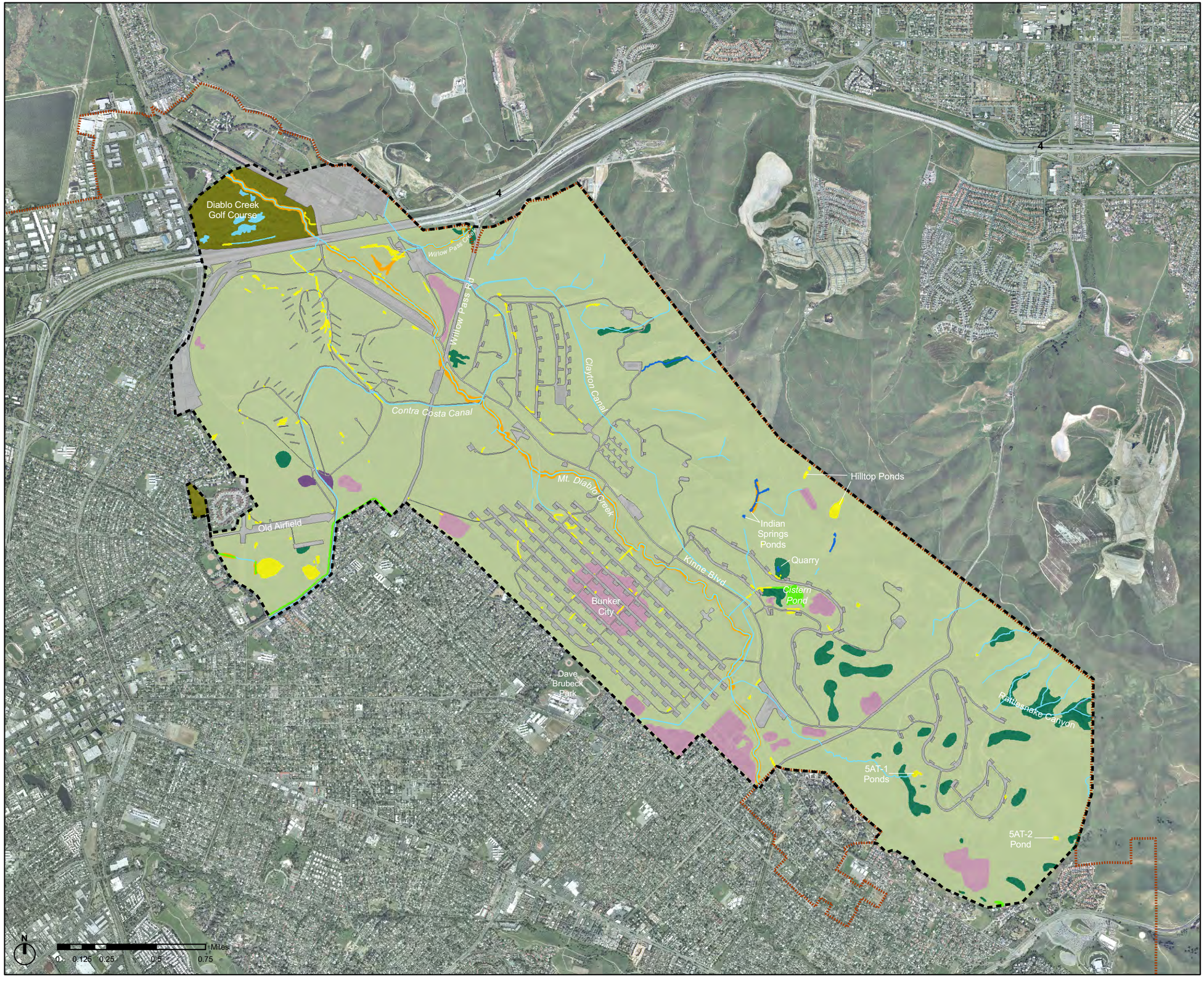
Source: H.T. Harvey & Associates

8.1.2.1 California Annual Grassland

The predominant plant community on the project site, occupying more than 8~~1~~0 percent of the site, is California annual grassland. This community is found virtually throughout the site. This designation is consistent with adjacent undeveloped areas based on the findings presented in the ECCC HCP/NCCP (2006). Similarly, grassland occupies a continuous band along the foothills of the Coast Ranges and is the dominant land cover in the valleys at lower elevations.

California annual grasslands on the site are dominated by non-native annuals, including wild oats (*Avena fatua*), ripgut grass (*Bromus diandrus*), Italian rye grass (*Lolium multiflorum*), and yellow star-thistle (*Centaurea solstitialis*). Yellow star-thistle is an extremely invasive species, and approximately two-thirds of the site exhibits cover levels of at least 25 percent (Downard et al., 1999).

This plant community has been referred to using various terms in the reports prepared for the site, including “valley and foothill grasslands” in the Biological Resources chapter of the May 2008 Draft EIR, and “non-native annual grasslands” by Vollmar Consulting (2008). Additionally, prior authors writing about this plant community have chosen to subdivide the grasslands to call attention to areas exhibiting a slightly different floristic composition such as “native wildflower field” or “native grassland” (Vollmar Consulting, 2008).



Legend

Terrestrial Habitats

- California Annual Grassland
- Coyote Brush / Coastal Sage Scrub
- Developed
- Golf Course / Recreation
- Oak Woodland / Savannah
- Orchards and Plantations
- Riparian Woodland

Aquatic Habitats

- Freshwater Marsh
- Seeps and Springs
- Seasonal Wetlands
- Creeks, Drainages, Canals, and Ponds

Base Map

- Site Boundary
- Concord City Limit

Notes & Sources

Data Sources: H.T. Harvey & Associates, 2009; TierraData, 2008; Department of the Navy, 2006; Smallwood and Morrison, 2007

Concord
Community Reuse Plan

Revised December 18, 2009

Figure 8-1
Vegetation Communities within the Site

This Draft EIR includes all of the grasslands on the site under the single descriptor of "California annual grasslands." All of these different descriptors refer to areas dominated by non-native annual grasses and forbs. The term "California annual grassland" is used here as a more inclusive term acknowledging that the grasslands are not entirely dominated by annual grasses and forbs, but also include perennial grasses and bulbiferous species. While the floristic composition of this plant community appears to be relatively uniform, localized assemblages of certain species within the grassland such as native grasses or wildflowers do occur on the site, as one might expect on such a large site with multiple soil types, aspects, and slopes. Although many different plant species occur within the grassland, including native grasses, they do not routinely form discrete pure stands, but are inevitably scattered throughout the broader annual grasslands at varying densities. As noted by Vollmar Consulting (2008), these plant assemblages include significant percentages of plant taxa other than grasses. Occurrences of many of these native species such as wildflowers depends greatly upon the distribution and amount of annual rainfall, and many such plants may not be seen for many years. All of the populations of these native grasses and wildflowers have been observed on the relatively steep slopes of the Los Medanos Hills where the grazing intensity tends to be less, and many north-facing slopes provide more mesic environmental conditions that are more favorable to these species. Observations by Vollmar Consulting (2008) also indicate that populations of noxious weeds are expanding within the annual grassland community.

Small, remnant stands of native, perennial grasslands were located on the site in 2008 (Vollmar Consulting, 2008) and in verification field surveys conducted by H.T Harvey & Associates during the preparation of this chapter. These native grasses occur in scattered stands of varying sizes within the broader annual grasslands, and are primarily dominated by purple needlegrass (*Nasella pulchra*). Associate grass species include Sandberg bluegrass (*Poa secunda*), California fescue (*Festuca californica*), and California melic (*Melica californica*).

Although native grassland was once extensive in the greater San Francisco Bay area and Central Valley, invasion by exotic annual grasses, drought, and improper livestock grazing (e.g., overstocking during drought conditions) has led to its decline. As a result, grasslands in California typically contain an abundance of non-native annual grasses and forbs mixed with native grasses and forbs (Sawyer and Keeler-Wolf, 1995). Native bunchgrass grasslands represented by concentrations of native grasses at relatively high densities are rare in California.

Localized stands of other native species occurring within the California annual grasslands include native wildflowers such as California poppy (*Eschscholzia californica*), purple owl's clover (*Castilleja exserta*), blue-eyed grass (*Sisyrhynchium bellum*), and creeping wildrye (*Leymus triticoides*) (Vollmar Consulting, 2008). In several locations the upland species of this plant community intermix or co-occur with many of the wetland plants that dominate the seasonal wetlands habitat described below. Where the upland grasses and forbs dominate, such areas were identified as occurring within the California annual grassland. An earlier study (Vollmar Consulting, 2008) described this area as "seasonally-saturated annual grasslands," noting that additional hydrologic monitoring of such areas is needed in order to clarify the break between the uplands and wetlands. Intensive monitoring of this area was completed in early 2009 during the preparation of this report, and a more definitive boundary between these two intermixed plant communities was mapped.

It has also been previously reported that alkali grassland species have the potential to occur within the annual grassland habitat on the site. Alkali grasslands are commonly defined as areas dominated by saltgrass (*Distichlis spicata*) and alkali sacaton (*Sporobolis airoides*). Surveys conducted by H.T. Harvey & Associates in 2009 detected only several small patches of alkali grassland habitat within the greater grassland areas on slightly moist to mesic sites. The alkali grasslands support a mixture of saltgrass and non-alkali grassland species such as red-leaf filaree (*Erodium cicutarium*) and rattail fescue (*Vulpia myuros* var. *myuros*). Regionally, alkali grasslands are known to occur on soil types that are not present on the site, thus alkali grassland is extremely limited on the site. Tall wheatgrass (*Elytrigia pontica* ssp. *pontica*) does occur in relatively small stands within the annual grassland community; however, its presence does not appear to rely on the existence of a saline-alkali substrate, but is more likely related to the mesic soil conditions.

It is also important to note that there are many locations within the California annual grasslands that are dominated by species adapted to, or able to tolerate, disturbance of the ground surface resulting from mechanical disking or import of soil fill material. The term "ruderal" is used to describe plant species that occur in weedy, disturbed areas that are typically dominated by non-native annual or perennial species. Such areas that have not experienced substantial disturbance (e.g., disking) for a number of years may develop into annual grasslands. Where vegetation is present, ruderal land cover is dominated by a mixture of non-native annual grasses and weedy species—such as black mustard (*Brassica nigra*), thistle (*Cirsium* spp.), and wild radish (*Raphanus sativa*)—that tend to colonize quickly after disturbance. The rock quarry at the site is an example of a highly disturbed area with complex topography and vegetation. This area is characterized by steep slopes with loose, broken rock and numerous large boulders. Vegetation in this area consists mainly of grasses, fennel (*Foeniculum vulgare*), and woody plants such as coyote brush (*Baccharis pilularis*), valley oak (*Quercus lobata*), and *Prunus* spp. (Downard et al., 1999); however, several native herbaceous species including California figwort (*Scrophularia californica*), blue dicks (*Dichelostemma capitatum*), and California poppy are found along the east side of the quarry.

8.1.2.2 Coyote Brush Scrub/Coastal Sage Scrub

There are two shrub-dominated plant communities occupying limited areas on the site (collectively comprising less than 0.01 percent of the site) that form near monocultures of shrub species that are very different from the surrounding vegetation types. The first area occurs near the old airfield and is dominated by mature stands of coyote brush. Although there is a relatively sparse understory comprised 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. This shrub is generally avoided by grazing livestock and is a prolific seed producer; thus, there is every indication that this community will continue to expand over time into the adjoining grasslands.

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 coastal sage scrub (also classified as Diablan sage scrub in inland areas), as it is dominated by California sagebrush (*Artemisia californica*). Unlike the coyote brush scrub, which may continue to expand in areal extent, the coastal sage scrub community has little room to

expand, as it is bordered by grasslands and a dense overstory of mature trees from the mixed oak woodland community.

8.1.2.3 Developed

Approximately ~~9~~10.2 percent of the site consists of developed (urban and industrial) areas, including roadways, parking lots, runways, railroad yards, and asphalt aprons surrounding buildings. Also included are a wide variety of structures, including buildings, bridges, and bunkers. This relatively broad category is collectively used to describe any land surface on the site that consists primarily of steel, asphalt, or concrete. Such areas often contain patches of ruderal vegetation as well as landscaped trees and shrubs.

The Magazine Area, also referred to as "Bunker City," as indicated on Figure 8-1, contains the majority of the formerly used ammunition storage bunkers. In this area, the railroad line, loading docks, asphalt roadways, and concrete aprons are included in the "developed" land use category. During construction by the Navy, the tops of these bunkers were covered with soil and a plant community similar in structure and composition to the adjacent grasslands that have developed over the years. As such, the top of the bunker structures has been included in the California annual grassland plant community.

8.1.2.4 Golf Course and Recreation

As shown on Figure 8-1, the Diablo Creek Golf Course is located at the northwestern end of the site. It is bisected by Mt. Diablo Creek. The dominant tree species observed within the Diablo Creek Golf Course include elm (*Ulmus* sp.), palm (*Phoenix canariensis*), blue gum eucalyptus (*Eucalyptus globulus*), beefwood (*Casuarina* sp.), and pine (*Pinus* sp.). The perimeter and shallow portions of the golf course ponds support relatively sparse stands of cattails (*Typha* sp.) and bulrushes (*Schoenoplectus* sp.), and a drainage ditch located along the south side of the golf course supports a dense stand of cattails. 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 fescues (*Festuca* sp.). The description of the aquatic component of the golf course ponds is included in section 8.1.2.9. This category also includes the ball fields located west of East Olivera Road, as shown on Figure 8-1. Collectively, the golf course and recreational areas comprise approximately 2.2 percent of the site.

8.1.2.5 Oak Woodland/Savannah

Both oak woodland and oak savannah occur at the site, although they occupy a small percentage (approximately 2.1 percent) of the site. The ECCC HCP/NCCP defines oak woodland as grassland with a tree canopy cover of greater than 10 percent. The majority of oak woodland found at the site, however, is in the form of small, clustered pockets of trees occurring on more mesic sites within the larger oak savannah/grassland. The two community types are therefore discussed together in this Draft EIR. As shown in Table 8-1, the combined oak community type comprises a relatively small percentage of the cover. Typical oak species are coast live oak (*Quercus agrifolia*), blue oak (*Q. douglassii*), and valley oak (*Quercus lobata*). Scattered buckeye trees (*Aesculus californica*) represent a subdominant species of the oak woodlands in some of the deeper and more protected drainages within the Los Medanos Hills. The valley oak, coast live oak, and buckeye form closed canopies within the oak woodland communities in some of the ephemeral drainages

on the site, with forbs such as miner's lettuce (*Claytonia perfoliata* ssp. *perfoliata*), common chickweed (*Stellaria media*), and shepherd's purse (*Capsella bursa-pastoris*) forming the understory. Typical understory species within the oak savannah include the same suite of non-native annual grasses and forbs that occur in much of the California annual grassland habitat on the site.

8.1.2.6 Orchards and Plantations

Abandoned walnut orchards are present in several locations in and around Bunker City and north of Willow Pass Road, occupying approximately 3.1 percent of the site. The native California black walnut (*Juglans californica*) and the northern California black walnut variety (*Juglans californica* var*. hindsii*) may naturally occur or be found around early orchards and settlements with the commonly cultivated Persian or English walnut (*Juglans regia*), which freely hybridizes with the northern California variety; historically, California black walnut was used as a rootstock for the English walnut (Hickman, 1993). The older eucalyptus groves were planted by homesteaders as windbreaks and shade trees during the late 1800s (Downard et al., 1999). Later, the University of California Cooperative Extension planted test groves of eucalyptus to evaluate the cost of eucalyptus energy production (Sandiford and Ledig, 1983). The U.S. Forest Service maintained several plantations at the site that consisted of test plantings of pine, including Coulter pine (*Pinus coulteri*) and others, and bluegum eucalyptus (*Eucalyptus globulus*). Each stand has several hundred trees and, with the exception of one stand of eucalyptus, all of the trees are located at the southern end of the site. The program lost sponsorship some years ago, and the plots are no longer maintained. The Magazine Area also contains remnant orchard trees from when the area was used for farming prior to Navy acquisition and development.

8.1.2.7 Riparian Woodland

Riparian plant communities, from an ecological perspective, are generally described as a transition between aquatic habitats and the adjacent upland terrestrial habitats. They are identified by distinctive vegetation communities that generally border streams, creeks, and drainage channels. The vegetation becomes established in response to elevated moisture content of the soils resulting from flowing water on a seasonal or perennial basis. On the site, riparian plant communities 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 plant communities on the site were described by Vollmar Consulting (2008) and Tierra Data, Inc. (2008).

Riparian woodland on the site is very limited in extent, occupying less than 1 percent of the site. This habitat type is most well developed along Mt. Diablo Creek. 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, California black walnut, 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*). Due to the heavy overstory of trees and shrubs along much of its length and variable water flows within the creek, very little wetland vegetation grows below the top-of-bank of the creek. As noted by Vollmar Consulting (2008), there are a number of species that have become established on the eroded banks of the creek, including bush

monkeyflower (*Mimulus aurantiacus*), black sage (*Salvia mellifera*), and yerba santa (*Eriodictyon californicum*). These species are worthy of note, as they are typically found within chaparral habitats.

Riparian vegetation associated with Willow Pass Creek at the north end of the site is largely comprised 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 majority of the bed and banks of Willow Pass Creek are geomorphically unstable, which precludes the establishment of high-quality riparian habitat along much of the channel. Riparian trees and shrubs observed by H.T. Harvey & Associates in this area include California black walnut, valley oak, poison oak, and mulefat.

There are two areas located southeast of the old airfield that support riparian vegetation. Portions of these two wetlands are described below as supporting emergent hydrophytes typically found within freshwater marshes. The riparian species that occur in association with the emergent vegetation include Himalayan blackberry and willows. These areas are characterized by a system with permanent water that drains to the west. Both drainages continue through and past the Little League baseball fields west of East Olivera Road, before draining into Holbrook Channel along Holbrook Drive, eventually reaching Walnut Creek and Suisun Bay. Water is sufficiently permanent to support emergent hydrophytes.

8.1.2.8 Seasonal and Perennial Wetlands

Up to this point, upland plant communities, namely those dominated by plants adapted to relatively dry soil conditions, have been discussed. This section discusses communities whose dominant plant species rely upon saturated soil conditions during some portion of the growing season. This Draft EIR describes the wetlands, both seasonal and perennial, not as potential regulatory features, but as plant communities. The jurisdictional status of wetlands is described later, in section 8.1.6. The wetland plant communities on the site have been discussed in at least two previous reports, including Tierra Data, Inc. (2008) and Vollmar Consulting (2008). To refine previous mapping and descriptions of wetlands on the site, intensive monitoring was conducted by H.T. Harvey & Associates during the rainfall season of 2008–2009 to document surface hydrologic conditions present on the site.

As mentioned above, wetlands are distinguished as seasonal or perennial based on the duration of the wetland hydrology. In the case of many wetland habitats within the project boundaries, the presence of saturated soil conditions corresponds directly with the seasonal rainfall patterns typical of a Mediterranean climate. In other locations, the hydrology supporting wetland species, although ultimately driven by rainfall, is perennial in nature with saturated soil conditions extending well outside of the typical rainfall season. Significantly different assemblages of plants have developed on the site depending on these two types of hydrologic conditions. For the purposes of this discussion, these wetland communities are divided into three main subcategories of seasonal and perennial wetlands: freshwater marsh, seeps and springs, and seasonal wetlands. Water features such as creeks, drainages, canals, and ponds are assessed separately.

Despite the relatively immense size of habitats such as the California annual grassland and oak woodland/savannah habitats that cover the Los Medanos Hills, surface runoff from these areas within the majority of the steep drainages was only observed as occurring during and immediately after rainfall events (i.e., ephemeral). Thus, there is little opportunity

for surface flows to collect unless man-made impoundments have been constructed as part of ranch management practices or incidental to work the Navy performed when the base was active. Similarly, incident rainfall on the site appears to collect in relatively few topographic depressions because much of the project area is steep and the soils on the flat portions of the project are underlain by clays and clay loams with high water holding capacities. Such localized ponding does occur on the site, but such areas are relatively small. The largest area of surface ponding occurs in the flat fields adjacent to a perennial spring near the old airfield.

Some of the previous reports prepared for the project area have speculated about the possibility of vernal pools existing on the site (Vollmar Consulting, 2008), whereas others have dismissed their presence based upon a lack of specific site characteristics (Tierra Data, Inc., 2008). After conducting intensive monitoring of surface hydrology and the floristic composition of seasonal depressional wetlands during the 2008–2009 rainy season (a season in which Concord received slightly below average rainfall for the year), H.T. Harvey & Associates concluded that vernal pools of the type that are underlain by soil having a restrictive subhorizon and supporting endemic plant species and/or invertebrate species are entirely absent from the site. These features are best described as shallow topographic depressions that pond rainfall for a relatively short duration.

Freshwater Marsh

This first category of wetlands includes freshwater marsh, which is present at the Cistern Pond, perennial stock ponds, portions of the Contra Costa Canal, two areas near the old airfield, a linear ditch that extends along the southern portion of the northwest boundary of the site just south of the old airfield, marsh at the southeast border of the property, and the perimeter of several golf course ponds. These areas occupy a very limited area on the site (approximately 0.1 percent). These areas have been identified and described in previous reports prepared for the property (Downard et al., 1999; Smallwood and Morrison, 2007; Tierra Data, Inc., 2008) and have been confirmed during field surveys conducted by H.T. Harvey & Associates in 2008–2009 in preparation of this document. What all of these features have in common is perennial or near-perennial wetland hydrology that supports a predominance of emergent wetland plants.

Although wetland vegetation dominates these areas, there is typically an open water component to these habitats that tends to be too deep to allow emergent vegetation to become established. Although the floristic composition of these wetlands is fairly variable, typical dominant species include California bulrush (*Schoenoplectus californicus*), American bulrush (*Schoenoplectus americanus*), cattails (*Typha* sp.), sedges (*Carex* sp.), and Baltic rush (*Juncus balticus*). Associate wetlands plants adapted to the moist soil conditions present around these areas include curly dock (*Rumex crispus*), annual beard grass (*Polypogon monspeliensis*), and bristly ox-tongue (*Picris echioides*). The perennial stock pond located just east of the Cistern Pond retains standing water well into August (Vollmar Consulting, 2008). The dominant species occurring around the perimeter of this pond includes cosmopolitan bulrush (*Bolbschoenus maritumus*).

Seeps and Springs

This plant community develops from localized groundwater that makes its way to the soil surface as a seep or spring. Such areas generally do not have deep pools of water as

freshwater marsh wetlands do. Such areas include numerous stands of cattails within the native drainages of the upper and lower terraces of the Los Medanos Hills along the Clayton Faultline (Vollmar Consulting, 2008) and seeps near the Cistern Pond, including a small seep associated with the quarry adjacent to the Cistern Pond. Unlike the seasonal wetlands discussed below, saturated soil conditions within these seep and spring wetlands may not develop until late spring or early summer after the majority of the winter storms. Common plants include cattails, Baltic rush, and annual beard grass. Seeps and springs are very limited in extent on the site, occupying less then 0.1 percent of the site.

Seasonal Wetlands

The limited areas of seasonal wetlands on the site, which occupy approximately 0.3 percent of the site, are generally supported by incident rainfall and runoff of excess moisture into topographic depressions, especially within the clay soils on the relatively flat grasslands, in low points, or behind man-made impoundments. These areas include native channels, two main wetland areas near the old airfield, wetlands within and adjacent to Willow Pass Creek, within portions of man-made ditches near Bunker City, along the railroad line in the northwest section of the site near Mt. Diablo Creek, around the perimeter of seasonal stock ponds, and in numerous shallow depressions within the grasslands, including those previously described by others as vernal pools. In contrast with the obligate emergent wetland plants found within the freshwater marsh habitats, the majority of seasonal wetlands on the site support a predominance of marginal wetland grass species (Vollmar Consulting, 2008) such as Italian ryegrass (*Lolium perenne*) and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), as well as bristly ox-tongue and bird's-foot trefoil (*Lotus corniculatus*).

The largest seasonal wetlands on the site consist of two patches of wetlands near the old airfield. As described in ~~the May 2008 Draft EIR~~section 7.1.4.1, ~~(~~"Mt. Diablo Creek"~~)~~, this area has been highly disturbed by diversion of Mt. Diablo Creek at least a century ago to prevent flooding of farms and homes. In addition, farming through the 1930s construction of the airfield, canals, and ditches in the 1940s, and subsequent construction of military magazines and residences in the uplands during the 1950s and beyond have all influenced these areas. The wetlands have developed due to a combination of incident rainfall supporting many of the marginal species listed above, as well as a deeper seep that maintains high levels of soil moisture well into the summer. These areas are primarily dominated by iris-leaved rush (*Juncus xiphioides*). Surrounding the two central monocultures of rush expanding outward into the microtopographic depressions of the grasslands are species such as Mediterranean barley, perennial ryegrass, and bird's-foot trefoil. Other species include water bentgrass (*Agrostis viridis*), tall fescue (*Festuca arundinacea*), and stachys (*Stachys ajugoides*). This system is likely part of the old Mt. Diablo Creek that traversed this area up until the late 1800s before it was diverted to its present course 100 or more years ago.

Several limited areas of wetlands were observed within an area identified as the Willow Pass Creek alluvial fan. Water contained within the stream overflows the banks of the relatively shallow channel during high rainfall events. A well-defined channel of Willow Pass Creek within its lower reaches does not exist much below the last major culvert crossing, thus water is forced to flow overland in numerous directions downhill toward Mt. Diablo Creek. It is within these areas that numerous wetlands have become established. These

areas are dominated by annual grasses but also contain *Juncus* spp. and other facultative wetland plants (Tierra Data, Inc., 2008). This same location has been called the "Summer Pools" in a report prepared by the Natural Heritage Institute (NHI) (2006). They described that after the December 31, 2005 storms, the Willow Pass alluvial fan had an approximate 4- to 6-inch layer of newly deposited sediment that had eroded from upslope near the on-ramp to SR 4. These authors conclude that seasonal wetlands are dependent on both the groundwater/surface water interactions likely associated with the adjacent Mt. Diablo Creek, and the sediment provided by the alluvial fan and source hill slopes nearby (NHI, 2006). The results of extensive monitoring conducted by H.T. Harvey & Associates as part of a formal wetland delineation during the 2008–2009 rainfall period indicate that these wetland patches are entirely supported by incident rainfall and limited surface runoff.

Numerous drainage ditches associated with the railroad lines and roadways were excavated by the Navy at various locations within the relatively flat portions of the project area, especially within Bunker City. For the most part these drainage ditches remain entirely dry even during periods of average rainfall amounts; however, in some locations, topographic low points have formed from differential settlement of the underlying soil, or pools have formed behind sediment that has accumulated in the many years since these features were actively maintained by the Navy. Additionally, a linear ditch supporting small pools and seasonal wetlands occurs adjacent to a railroad line located in the northwest section of the site near Mt. Diablo Creek.

Most of these seasonal wetlands support plants such as curly dock and annual beard grass, along with other annual hydrophytes ("water-loving plants"). At the northern extent of Bunker City, significantly more water collects from these drainages as it enters Mt. Diablo Creek, and this wetland system supports cattails and other plants that favor wetlands.

A few topographic depressions located within the annual grasslands in the northwest portion of the site support species such as stipitate popcorn-flower (*Plagiobothyrs stipitatus var. micranthus*), as reported by Vollmar Consulting (2008). Although this species can occur within vernal pool habitats, it is not endemic to such features and its distribution is noted as occurring within valley and foothill grasslands extending from Humboldt and Siskyou counties to San Diego County. Associate plant species within the seasonal wetlands on the site include Mediterranean barley and hyssop loosestrife (*Lythrum hyssopifolium*).

8.1.2.9 Creeks, Drainages, Canals, and Ponds

This section describes linear drainage features, both natural and man-made, and impoundments including stock ponds and golf course ponds. The important features that characterize these habitats are the presence of surface water (at least seasonally) and the general absence of vegetation. For the purposes of this discussion, these communities are divided into four main subcategories: creeks, drainages, canals, and ponds. These features occupy a limited area on the site, collectively comprising approximately 0.5 percent of the project site.

Creeks

By far the largest creek on the site is Mt. Diablo Creek. The course of the creek has been substantially altered from its natural condition. As described in section 7.1.4.1, ~~(~~"Mt. Diablo Creek"~~)~~, h~~H~~istorical maps show that the location of the creek was altered in the late 1800s (NHI, 2006). In addition, the network of roads, rail lines, and munitions bunkers developed

by the Navy since 1944 has substantially altered runoff, drainage, and vegetation patterns in the watershed.

The greatest flow levels in the creek occur during heavy rainstorms in the winter months, and the creek is dewatered in many reaches during the late spring, summer, and fall months (see Chapter 7, Hydrology and Water Quality). Observations made during periods of high rainfall amounts in the winter of 2008–2009 have shown the creek to drop as much as 4 or 5 feet in just a couple of weeks after cessation of major rains. During a period of relatively high rainfall in mid-February, Mt. Diablo Creek was observed at around two-thirds bank full in the Bunker City reach of the creek on February 24, 2009. By March 3 the water level in the creek had dropped substantially and the live stream was entirely confined to within the toe-of-slope of the creek banks. By March 12 this same reach of the creek was less than 6 feet wide and 6 inches deep, with minimal flows. These observations are entirely consistent with a study conducted for the City by CH2M HILL in 2008 (CH2MHILL 2008b). That study describes the creek as being very “flashy,” meaning that the lag time between peak precipitation and peak discharge is very short. Additional field observations in 2009 have shown that the channel bed was entirely dry on March 23 in the reach located downstream of Bailey Road. During this same field visit, rapidly flowing water was observed upstream (off site) at the Ayers Road crossing of Mt. Diablo Creek. The flows continued downstream although they diminished progressively downstream from the Ayers Road crossing, and the live stream had entirely infiltrated into the relatively loose soils materials (sands, gravels, and stones) in the creek bed approximately 300 yards upstream of Bailey Road.

The second drainage that diverts flows into Mt. Diablo Creek on the site is Willow Pass Creek. The flows within the stream are also best characterized as flashy because peak flows correspond directly with high rainfall amounts, quickly followed by a substantial decline in flows. The May 2008 Draft EIR states that spring-fed perennial pools are present within this creek.

H.T. Harvey & Associates reviewed the Vine Hill, Honker Bay, Walnut Creek, and Clayton U.S. Geological Survey (USGS) quadrangle maps, including historic maps, in preparation of this report. Review of the historic 1959 Honker Bay map revealed that the seasonal wetlands associated with the primary railroad line described above in the northwest section of the site near Mt. Diablo Creek was previously mapped as a small, unnamed intermittent creek channel. The USGS map also shows that the southern portion of the drainage began as a swale in the low-lying grasslands of the site approximately 1/2 mile south of the current location of SR 4, extending north for a short distance before draining into Mt. Diablo Creek, in what is now part of the Diablo Creek Golf Course. Although this historic intermittent drainage has been altered as a result of installing the railroad line, the seasonal wetlands associated with the lines may persist, in part, due to the presence of this historic creek channel.

Drainages

Numerous non-vegetated drainages associated with the mid to upper slopes of the Los Medanos Hills drain minimal surface flows from the adjacent foothill grasslands on the site during the winter rainfall period. The majority of the drainages are comprised of steep, narrow, swale-like features that extend in a westward direction toward Mt. Diablo Creek. In locations where the slope of the hills steepens, the channel incises with clear evidence of channel downcutting, erosion, and sediment transport. Occasional in-channel pools are

present but do not pond water long enough to support wetland vegetation. Flows within these drainages are ephemeral in nature, only occurring during and immediately after relatively high rainfall events. The majority of these drainages transition into alluvial fans supporting upland grassland before reaching the creek. As a result, only a few of the drainages are hydrologically connected to Mt. Diablo Creek. The majority of the Los Medanos Hills drainages support only a minimal amount of herbaceous vegetation, including grasses and forbs comprised largely of non-native species.

Canals

Portions of the Contra Costa Canal and the Clayton Canal extend generally in a northwest-southeast direction bisecting the site. The Contra Costa Canal is part of the Bureau of Reclamation's California Central Valley Project (CCVP). The canal diverts Sacramento–San Joaquin Delta water and sends the water as far as Martinez. The water is used for both agricultural and municipal purposes. The Contra Costa Canal enters the northwest section of the site and exits in the southwest corner of the site, crossing Willow Pass Road. The north end of the Clayton Canal begins on the site from an aqueduct connected to the east side of the Contra Costa Canal in the northeast portion of the site, extending south where it exits the west-central portion of the site.

Ponds

The site includes approximately 20 small ephemeral stock ponds, watering holes, and seepage ponds. The majority of these water features are located in the Los Medanos Hills where natural water sources are scarce. The water levels in the ponds fluctuate seasonally. Water levels in the ponds are highest in the winter as a result of runoff, and they gradually dry out during the summer. The only identified perennial "natural" pond is the Cistern Pond; the upper Indian Springs Pond has been reported to be perennial (Downard et al., 1999; Navy, 2006), but it contained no water in March 2009. The Diablo Creek Golf Course ponds are perennial as well; however, they are entirely supported by artificial hydrology. The vegetative components of the Cistern Pond and golf course ponds are described above in section 8.1.2.4.

8.1.3 Wildlife Habitats and Common Wildlife Species

8.1.3.1 Wildlife Habitat

The Navy conducted a biological resources survey of the Tidal and Inland Areas of the CNWS in 1981–1982 (JSA, 1982) and repeated those studies again in 1998–1999 (Downard et al., 1999), as introduced previously in section 8.1.1. The 1982 study inventoried wildlife to identify the presence and distribution of bird, mammal, amphibian, and reptile species by habitat type and season to determine the occurrence of sensitive (rare and officially protected) species, and to identify important wildlife habitats.

In the 1998–1999 study, the University of Arizona conducted similar year-long, multiseason, comprehensive and intensive surveys of both the Inland and Tidal portions of the CNWS, including multiseasonal surveys for small mammals and birds, and seasonal trapping

Table 8–2: General Methodology, Periodicity, and Frequency ~~-~~of Wildlife Surveys at the Concord Naval Weapons Station: 1998–1999

Animal Group	General Methodology	Survey Periods and Frequency
Large Mammals	Evening spotlight surveys along driving routes. Use of infrared camera monitoring systems in areas that cannot be driven. Identification of tracks/scat when observed.	Four surveys each season. Continuous monitoring with Trail Master cameras.
Rodents	Use of Sherman live traps set in grids or transects within all representative environments.	Sampling occurred seasonally among all representative environments.
Bats	Use of ultrasonic detectors to identify areas of bat use and evaluate levels of activity. Surveys conducted at water sources and building structures throughout CNWS. Mist netting to identify species where bats are detected.	Continuous surveys to identify areas of activity followed by mist netting efforts where bats are detected.
Owls	Evening playback call surveys at specified stations (Map 1*). Daytime surveys in areas that have the potential to support burrowing owl habitat. Nest searching.	February to March 1999, two surveys per station. Continuous surveys January to April 1999.
Raptors	Automobile surveys along specified routes in the Tidal and Inland Areas (Map 2*). Nest searching.	Six surveys each season (three Tidal Area/three Inland Area) for a total of 24 surveys. March to June 1999.
Songbirds, shorebirds, and waterfowl	Variable-circular point surveys, variable-width transect surveys, and area-restricted searches (Map 1*). Nest searching.	Each site once per month. April to August 1999.
Black rail surveys	Playback call surveys at listening stations set in tidal marshes and along waterways (Map 1*).	April to July 1999, two surveys at each listening station.
Amphibians and reptiles	Area-restricted searches at sites (Map 1*) likely to support populations of particular amphibians and reptiles: permanent and ephemeral water sources and rocky outcrops. Day and evening surveys. Canoe surveys for western pond turtle along sloughs and channels of tidal marshes. Funnel trap arrays.	Each location was surveyed at least once per season and during periods when certain species are more likely to be active (e.g., high humidity). May to July 1999.

* Maps referenced in the table are correlated to the 1998–1999 University of Arizona survey work conducted for the Navy. The report containing these references is on the City of Concord's website (www.concordreuseproject.org/).

Source: Downard et al., 1999

surveys of amphibians and reptiles (see section 8.1.1.2). These surveys were conducted using standard wildlife techniques for detecting common wildlife species, including night spotlighting, track/scat sighting, baited tracking stations, trapping, and use of remotely triggered recording cameras (e.g., Trail Masters), mist nets, and ultrasonic detection (for bats) methods. The 1998–1999 data represent a complete assessment of wildlife use of the

entire CNWS. In total, 155 bird species, 23 mammal species, 7 amphibian species, and 15 reptile species were observed from July 1998 to September 1999. Table 8-2 summarizes how the 1998–1999 surveys were conducted. These methods and locations are similar to those used during the earlier wildlife surveys conducted in 1981 and 1982.

In addition to the studies conducted in 1981–1982 and 1998–1999, additional information on wildlife habitat and wildlife use of the site was derived from the 2002 Integrated Natural Resources Management Plan and Environmental Assessment (Tetra Tech, Inc., 2002), 2007 surveys by Tierra Data, Inc. (2008), surveys conducted by CH2M HILL in 2007 and 2008 (CH2M HILL, 2008a and May 2008 Draft EIR), verification surveys conducted in 2008 and 2009 by H.T. Harvey & Associates ecologists for the preparation of this EIR, Christmas Bird Count data provided by the Mt. Diablo Audubon Society (unpublished), and other focused surveys and habitat assessments summarized previously.

8.1.3.2 Characteristic Common Wildlife Species

A review of previous studies demonstrates that the status and abundance of some wildlife species has changed since the first comprehensive surveys were conducted in 1981–1982. For example, California red-legged frogs have been found more widely and in greater abundance on the site during recent surveys than they were in 1981 and 1982. However, the general habitats provided by the project site, and the general wildlife communities associated with these habitats, have not changed appreciably since the early 1980s. As a result, the following descriptions of general wildlife use of the habitats previously described are derived from the collective observations of all prior studies on the site.

California Annual Grassland

In general, annual grasslands support relatively low wildlife diversity due to the structural simplicity of this habitat type. However, because the site provides broad expanses of grasslands, and because this habitat type is interspersed with small patches of oak woodland, riparian woodland, wetlands, and other habitats providing particular breeding, feeding, perching, and cover resources required by wildlife species, the California annual grasslands on the project site, particularly in the areas to be preserved as open space, provide relatively high-quality habitat for species typical of central California grasslands.

Characteristic wildlife species in annual grasslands on the site include reptiles such as the western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), and western rattlesnake (*Crotalus viridis*). These species use small mammal burrows, denser patches of vegetation, rock outcrops, or other features within the grassland for cover. Amphibians such as the Pacific treefrog (*Pseudacris regilla*) and western toad (*Bufo boreas*) are widespread, and they are often found in moister areas within the grassland on the site. California tiger salamanders spend most of their lives in subterranean refugia, typically small mammal burrows, and may disperse more than a mile from aquatic breeding areas; as a result, they are found in grassland throughout much of the area southeast of Willow Pass Road, where the species' breeding ponds and pools occur. Common mammals using these grasslands include the black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse *(Reithrodontomys megalotis*), California vole (*Microtus californicus*), and coyote (*Canis latrans*).

Only a few species of birds, primarily western meadowlarks (*Sturnella neglecta*), but also including a few pairs of burrowing owls (*Athene cunicularia*), horned larks (*Eremophila alpestris*), killdeer (*Charadrius vociferus*), and mourning doves (*Zenaida macroura*), nest on the ground within the site's annual grasslands. A number of other bird species that nest in adjacent habitats, or that occur on the site only as nonbreeders, forage regularly in grasslands on the site. These include the loggerhead shrike (*Lanius ludovicianus*), savannah sparrow (*Passerculus sandwichensis*), and a variety of raptors, including the American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), and golden eagle (*Aquila chrysaetos*).

Coyote Brush Scrub/Coastal Sage Scrub

Neither coyote brush scrub, which occurs primarily near the old airfield and in smaller patches elsewhere on the site, nor coastal sage scrub, which occurs in upper Rattlesnake Canyon, are extensive enough to support distinctive wildlife communities on the site. As a result, most of the wildlife species using these habitat types are associated more generally with dense scrubby vegetation or are characteristic of the adjacent California annual grassland and, in the case of the sage scrub, oak woodland habitats. Reptiles such as western fence lizards, western whiptails (*Cnemidophorus tigris*), and western rattlesnakes occur in the coastal sage scrub. The only brush mouse (*Peromyscus boylii*) recorded on the CNWS was trapped in Rattlesnake Canyon (Downard et al., 1999), and this species may occur within the sage scrub. Birds such as the California towhee (*Pipilo crissalis*) and spotted towhee (*Pipilo maculatus*) may nest in either scrub type on the site. The dense nature of this habitat type provides cover for white-crowned sparrows (*Zonotrichia leucophrys*), golden-crowned sparrows (*Zonotrichia atricapilla*), and a variety of mammals.

Developed Areas

Developed areas typically support a small suite of relatively common, often urban-associated wildlife species that are tolerant of periodic human disturbance. Within the developed areas in the northern part of the project area, some of the most abundant species, such as the European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), and black rat (*Rattus rattus*), are non-native species that are well adapted to the cover, nesting/denning, and foraging conditions provided by developed areas. In addition, a number of native species have adapted to these conditions. Native bird species commonly found in developed habitats on the site include the house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), Anna's hummingbird (*Calypte anna*), and California towhee. Native mammals such as the deer mouse (*Peromyscus maniculatus*), raccoon (*Procyon lotor*), California ground squirrel, Botta's pocket gopher, and striped skunk (*Mephitis mephitis*) utilize these developed areas heavily as well.

Bridges, bunkers, and other structures on the site provide nesting and roosting habitat for some species of birds and bats. Bats such as the Yuma myotis (*Myotis yumanensis*), Brazilian free-tailed bat (*Tadarida brasiliensis*), and big brown bat (*Eptesicus fuscus*) may roost in crevices in bridges and in unoccupied buildings and bunkers. During field surveys in 2007, bird droppings and bat guano were observed in a few locations around old buildings in the Administrative Area in the northern part of the site. Although most of the structures

remain in fairly good condition, which would generally restrict their use for nesting or roosting, opportunistic birds and bats could find openings or access over time. The black phoebe (*Sayornis nigricans*), cliff swallow (*Petrochelidon pyrrhonota*), and barn swallow (*Hirundo rustica*) build their mud nests on bridges on the site, although no particularly large concentrations of nesting cliff swallows have been observed on the site. Observations by H.T. Harvey & Associates biologists suggest that northern rough-winged swallows (*Stelgidopteryx serripennis*) and white-throated swifts (*Aeronautes saxatilis*) apparently nest in cavities within the SR 4 bridge over Mt. Diablo Creek.

Golf Course and Recreation

Despite the relatively high level of human activity present on the Diablo Creek Golf Course, a number of wildlife species are present here. The ornamental trees provide nesting sites for common birds such as the American robin (*Turdus migratorius*), Brewer's blackbird, bushtit (*Psaltriparus minimus*), chestnut-backed chickadee (*Poecile rufescens*), Bullock's oriole (*Icterus bullockii*), lesser goldfinch (*Carduelis psaltria*), and Nuttall's woodpecker (*Picoides nuttallii*), and a variety of other species forage here. California ground squirrels, Botta's pocket gophers, raccoons, opossums, and striped skunks forage on the Diablo Creek Golf Course, and reptiles such as the gopher snake and common garter snake (*Thamnophis sirtalis*) occur here as well. Species associated with the golf course ponds are described under "Creeks, Drainages, Canals, and Ponds," below.

The Little League fields on the west side of East Olivera Road on the western edge of the site provide few food or habitat resources for wildlife due to their intensively maintained nature and lack of structural habitat diversity. However, common wildlife species such as those described above for developed habitats may forage in or move through these recreational areas.

Oak Woodland/Savannah

Due to the provision of food resources, structural diversity, and refugia such as cavities and hollows, oak woodlands support a distinctive and relatively diverse wildlife community. Common reptiles using oak woodlands on the site include the gopher snake and western fence lizard. Mammals such as the deer mouse and gray fox (*Urocyon cinereoargenteus*) often occur in oak woodlands. The native western gray squirrel (*Sciurus griseus*) may occur here as well, though it is outnumbered by non-native eastern gray squirrels (*Sciurus carolinensis*) and fox squirrels (*Sciurus niger*) on the site. Representative birds using oak woodland on the site include the red-tailed hawk, American kestrel, barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker, northern flicker (*Colaptes auratus*), white-breasted nuthatch (*Sitta carolinensis*), oak titmouse (*Baeolophus inornatus*), western bluebird (*Sialia mexicana*), violet-green swallow (*Tachycineta thalassina*), California quail (*Callipepla californica*), western kingbird (*Tyrannus verticalis*), spotted towhee, Bewick's wren (*Thryomanes bewickii*), and bushtit.

Hollow oaks may provide nest sites for turkey vultures (*Cathartes aura*) and a variety of other birds, as well as dens for mammals. Bats often roost in cavities and crevices in oaks. Although the bat species of the project area have not been well studied, a variety of species may occur here, possibly including the California myotis (*Myotis californicus*), Yuma myotis, big brown bat, pallid bat (*Antrozous pallidus*), Brazilian free-tailed bat, and others.

Orchards and Plantations

The walnut orchards and pine and eucalyptus plantations provide habitat for various bird, mammal, and reptile species. Common reptiles include the gopher snake and western fence lizard. The deer mouse, eastern gray and fox squirrels, and gray fox use these habitat types. The larger eucalyptus trees provide nest sites for large raptors such as the red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), white-tailed kite, and great horned owl; Bullock's orioles (*Icterus bullockii*), western kingbirds, and other birds nest in these trees as well, and eucalyptus flowers provide insects and nectars for a variety of bird species. Walnut trees provide nest sites for the loggerhead shrike, acorn woodpecker, Nuttall's woodpecker, northern flicker, white-breasted nuthatch, and other birds. Dense foliage within the pine plantations provides ideal roost sites for owls; a long-eared owl (*Asio otus*) was recorded in one of the pine plantations during the 2003 Central Contra Costa County Christmas Bird Count (Mt. Diablo Audubon Society, unpublished), and several barn owls were observed roosting in one of the plantations by H.T. Harvey & Associates in March 2009.

Riparian Woodland

Riparian habitats in California generally support exceptionally rich animal communities and contribute a disproportionately high amount to landscape-level wildlife species diversity. The presence of water, at least seasonally, and abundant invertebrate fauna provide foraging opportunities for many species, and the diverse habitat structure provides a variety of cover and nesting opportunities.

Most of the 32 acres of riparian woodland on the 5,028-acre site occur along Mt. Diablo Creek. Nesting birds in this riparian habitat include the species described above for the oak woodland/savannah, as well as chestnut-backed chickadees, downy woodpeckers (*Picoides pubescens*), lesser goldfinches, Anna's hummingbirds, song sparrows (*Melospiza melodia*), Pacific-slope flycatchers (*Empidonax difficilis*), black-headed grosbeaks (*Pheucticus melanocephalus*), tree swallows (*Tachycineta bicolor*), and others. A variety of raptors, including red-tailed hawks, red-shouldered hawks, American kestrels, white-tailed kites, and great horned owls, nest in riparian trees on the site. However, due to the degraded condition of riparian habitat on the site as a result of grazing and stream incision, coupled with the intermittent nature of most of the reach of Mt. Diablo Creek that occurs on the site, sensitive riparian-obligate birds such as the yellow warbler (*Dendroica petechia*) and yellow-breasted chat (*Icteria virens*) do not breed here.

Riparian woodland on the site supports many more species of birds that occur only as migrants and winter residents. Such species include the yellow-rumped warbler (*Dendroica coronata*), Wilson's warbler (*Wilsonia pusilla*), orange-crowned warbler (*Vermivora celata*), Swainson's thrush (*Catharus ustulatus*), hermit thrush (*Catharus guttatus*), and fox sparrow (*Passerella iliaca*).

Common mammals found in this cover type on the site include the raccoon, gray fox, striped skunk, deer mouse, western harvest mouse, and broad-handed mole (*Scapanus latimanus*). Neither the mule deer (*Odocoileus hemionus*) nor the bobcat (*Lynx rufus*) is common on the site, but both species have been observed in riparian habitats here. The cover and food resources provided by riparian woodland on the site make this habitat useful for species moving within the site. Migrant hoary bats (*Lasiurus cinereus*) and western red bats

(*Lasiurus blossevillii*) may roost in the foliage within riparian habitats on the site, while other bat species may roost in cavities or crevices in riparian trees.

In addition to the common and widespread Pacific treefrog and western toad, common kingsnakes (*Lampropeltis getula*), common garter snakes (*Thamnophis sirtalis*), arboreal salamanders (*Aneides lugubris*), and California slender salamanders (*Batrachoseps attenuatus*) are among the reptiles and amphibians that occur in riparian habitats on the site. Suitable breeding habitat for California red-legged frogs is absent from Mt. Diablo Creek due to the scarcity of surface water in spring, but nonbreeding individuals have been recorded in the creek.

Seasonal and Perennial Wetlands

Freshwater Marsh. Freshwater marsh habitat on the project site provides resources used by large numbers of wildlife species. Amphibians such as California red-legged frogs, California tiger salamanders, western toads, and Pacific treefrogs breed in freshwater marsh such as that present at the Cistern Pond. This pond supports the only high-quality aquatic habitat for the western pond turtle (*Actinemys marmorata*) as well. Freshwater marsh elsewhere on the project site is limited in extent, and habitat quality is lower in areas such as the ditch southeast of the old airfield and the edges of the golf course ponds. Nevertheless, marsh habitat in these areas still supports common amphibians such as western toads and Pacific treefrogs, and common garter snakes may occur in this habitat throughout the project site.

Due to the limited extent of freshwater marsh habitat on the site, waterbirds associated with more extensive freshwater marshes (e.g., rails) are not expected to breed in this habitat on the project site. Nevertheless, waterbirds such as the mallard (*Anas platyrhynchos*) and American coot (*Fulica americana*) may breed in this habitat, and the green heron (*Butorides virescens*) and great blue heron (*Ardea herodias*) forage here. Red-winged blackbirds (*Agelaius phoeniceus*), song sparrows, and San Francisco common yellowthroats (*Geothlypis trichas sinuosa*) nest in wetland vegetation in and around freshwater marshes on the site, and limited numbers of marsh wrens (*Cistothorus palustris*) breed here as well. Many mammals frequent permanent wetlands for foraging and use them as a source of drinking water.

Seeps and Springs. Although vegetation within seeps and springs is similar to that in freshwater marsh habitats, the limited extent of the seeps and springs on the site, and the lack of ponding associated with these features, limits their use by the wildlife species associated with freshwater marsh habitats. Although the seeps and springs on the site may not provide ponding necessary for breeding by amphibians, the moist conditions in these features provide refugia for dispersing amphibians, which in turn may serve as prey for common garter snakes and other predators. Red-winged blackbirds, song sparrows, and San Francisco common yellowthroats nest in cattails and other wetland vegetation associated with seeps and springs on the site.

Seasonal Wetlands. During the wet season, seasonal wetlands are used by a variety of wildlife, including various amphibians such as the Pacific treefrog and western toad, and shorebirds such as the killdeer, greater yellowlegs (*Tringa melanoleuca*), and Wilson's snipe (*Gallinago delicata*). California tiger salamanders often breed in seasonal wetlands in other areas, and they have been found breeding in seasonal wetlands on the project site.

However, the majority of seasonal wetlands on the site occur in areas northwest of Willow Pass Road, where multiple surveys have not detected tiger salamanders, and most breeding tiger salamanders on the site are associated with ponds.

Several species of ducks, including mallards, gadwall (*Anas strepera*), and northern pintails (*Anas acuta*), forage in seasonal wetlands with deeper water. However, most of the seasonal wetlands in Figure 8-1 lacked sufficient standing water to provide foraging habitat for waterbirds during the 2008–2009 wet season, even though Concord received slightly below-average rainfall (www.wrh.noaa.gov/total_forecast/getprod.php?wfo=mtr&pil=PNS&sid=MTR&version=0).

During the dry season, most of the seasonal wetlands on the site provide wildlife habitat similar to non-native annual grasslands, and even burrowing mammals such as California voles, Botta's pocket gophers, and California ground squirrels may use seasonal wetlands during the dry season.

As described in section 8.1.2.8 above, vernal pools are absent from the site. Furthermore, protocol-level surveys of seasonal wetlands and ponds on the project site by EDAW (2008b) confirmed that special-status vernal pool branchiopods, such as vernal pool fairy shrimp, vernal pool tadpole shrimp (*Lepidurus packardi*), and longhorn fairy shrimp (*Brachinecta longiantenna*), are absent from the site.

Creeks, Drainages, Canals, and Ponds. The reach of Mt. Diablo Creek that flows through the site has been extensively and adversely affected by human activities over the past century. These impacts to the character and function of the creek include the following (CH2M HILL, 2007):

- Bank failures and erosion related to cattle grazing
- Channel incision due to land use practices
- Alterations in channel hydraulics from culvert structures
- Stream flow changes due to rechannelization and land use practices
- Loss of connectivity with the floodplain and stream bank riprapping
- Degraded water quality due to erosion, sedimentation, and non–point source pollution

All these human-induced disturbances have resulted in changes in channel hydraulics, geomorphic processes, and stream functions, which have resulted in adverse effects on the aquatic habitats of Mt. Diablo Creek within the site. The historical rechannelization that diverted Mt. Diablo Creek out of its historical watershed into the Seal Creek watershed, and subsequent land use activities, cattle grazing, and the construction and operation of the CNWS facilities, have dramatically changed the hydrology, geomorphology, and aquatic habitat at the site. For example, the channelized segments of the creek immediately upstream of the site create seasonally inhospitable conditions during warm weather periods of excessive water temperature and poor water quality for coldwater fishes (Contra Costa Resource Conservation District, 2006). These actions and disturbances have resulted in diminished quality and geographic extent of habitats suitable for supporting coldwater fisheries at the site. Furthermore, barriers to fish migration, discussed in greater detail in

section 8.1.4.3 below, inhibit the migration of fish upstream onto and through the site (NHI, 2006; CH2M HILL, 2008e).

The flow in most of the reach of Mt. Diablo Creek on the site is seasonal (CH2M HILL, 2008b). A survey of the creek on March 23, 2009, after a wet season of slightly below-average precipitation, revealed moderately heavy flow upstream from the site that infiltrated into the ground several hundred yards upstream from Bailey Road, before the creek enters the site. The creek was dry virtually throughout the project site downstream to an area just above the Kinne Boulevard crossing of the creek near SR 4, at which point a small amount of flow appeared, continuing downstream.

In 2005, four sites on the main stem of Mt. Diablo Creek were sampled (Contra Costa County Community Development Department [CCCCDD], 2006). The type and abundance of benthic macroinvertebrates (small aquatic species such as insects, worms, and larvae of aquatic insects that dwell on the bottom or in the mud, sand, and gravel of the stream) collected in this sampling provided an indicator of water quality, instream habitat, and other physical and biological factors. Results of this survey indicated that the sampling locations in the lowermost portion of the creek (i.e., on the project site) exhibited lower overall species diversity and lower presence of insects in the orders Ephemeroptera, Plecoptera, and Trichoptera, which are pollution-sensitive groups of species that function as indicators of high water quality. These degraded conditions are a result of development, bank incision, and cumulative upstream pollutants (CCCCDD, 2006). The non-native Asian clam (*Corbicula fluminea*) was observed in Mt. Diablo Creek below Kinne Boulevard by H.T. Harvey & Associates, but no other mollusks have been reported from the site.

In general, the on-site reach of Mt. Diablo Creek is a fairly open, relatively warm channel with little shading, few deep pools, no long-lived or perennial pools, and no well-developed riffle complexes (CH2M HILL, 2008d). The consistent lack of perennial stream flow and seasonally unsuitable water temperatures throughout most of the site were likely significant factors historically limiting coldwater fishes in the lower portions of the Mt. Diablo Creek watershed. Those conditions continue to the present time, and this reach of the creek does not provide suitable habitat for spawning or rearing by coldwater fishes.

During heavy flows, fish from upstream areas may be washed onto the project site, and fish from downstream areas may be able to move upstream over impediments that are impassable at lower flows. As a result, several fish species have been observed in Mt. Diablo Creek and its floodplain. These species are listed in Table 8-3.

Table 8–3: Fish Species Observed in Mt. Diablo Creek on the Site

Common Name	Scientific Name	Native	Source
Common carp	*Cyprinus carpio*	No	Miller, pers. comm., 2007; H.T. Harvey & Associates, pers. obs.
Golden shiner	*Notemigonus crysoleucas*	No	Miller, pers. comm., 2007
Minnows	*Cyprinidaea*	No/Yes	Hamaker, pers. obs., 2007
Prickly sculpin	*Cottus asper*[*]	Yes	Leidy, 1999
Sacramento sucker	*Catostomus occidentalis*	Yes	Leidy, 1999
Three-spined stickleback	*Gasterosteus aculeatus*	Yes	Miller, pers. comm., 2007; Tierra Data, Inc., 2008

Common Name	Scientific Name	Native	Source
California roach	*Lavinia symmetricus*	Yes	Tierra Data, Inc., 2008
Speckled dace	*Rhinichthys osculus*	Yes	Tierra Data, Inc., 2008

* Identified to family level only

Tierra Data, Inc. (2008) reported the speckled dace (*Rhinichthys osculus*), California roach (*Lavinia symmetricus*), and three-spine stickleback (*Gastenosteus aculeatus*) from the lower end of Willow Pass Creek and pools within the alluvial fan associated with this creek. These fish had likely been washed into this area during higher (overbank) flows in Mt. Diablo Creek. Tierra Data, Inc. also observed introduced mosquitofish (*Gambusia affinis*) in a freshwater marsh pool near the old airfield, where H.T. Harvey & Associates also observed this species in 2008 and 2009.

It is likely that several species of introduced fish may be found seasonally in the lower reach of Mt. Diablo Creek when and if water is present, as exotic species are commonly introduced into or downstream of urban areas. Exotic species that could be present include fathead minnows (*Pimephales promelas*), numerous shiner species commonly used as baitfish and released into urban creeks, carp, goldfish, sailfin mollies (*Poecilia latipinna*), and other aquarium species commonly released by hobbyists in urban areas where perennial water is present. These species may also occur within canals on the site.

Western toads and Pacific treefrogs occur within all the aquatic habitats on the site. These species may breed in Mt. Diablo Creek, but because of the short-lived nature of surface water in most of the on-site reach of the creek, canals on the site probably provide higher-quality breeding habitat for these species. Likewise, California red-legged frogs and western pond turtles may use Mt. Diablo Creek as foraging habitat and for dispersal when it contains water, but this creek does not contain suitable breeding pools for the frog or high-quality, long-lived aquatic habitat for pond turtles. Waterbirds such as mallards and great blue herons occur along Mt. Diablo Creek when and where water is present, but make little use of the creek during most of the year when it is dry. For most of the year, most use of the creek by aquatic species is confined to the reach within the golf course, which contains water for a longer duration than the remainder of the on-site reach. Ducks, herons, and egrets forage within the Clayton Canal and Contra Costa Canal when these features hold water.

The seasonal drainages that flow out of the Los Medanos Hills convey flow ephemerally or intermittently, and thus do not support fish. Although amphibians such as red-legged frogs likely use these features as moist refugia during dispersal, and may disperse along these drainages during the wet season, these drainages do not provide high-quality aquatic or wetland habitat aside from the ponds that are scattered among the drainages.

A number of ponds of varying size and hydrology are present on the project site. Few of the ponds on the site are perennial. The Cistern Pond provides water year round, and as a result provides high-quality habitat for California red-legged frogs and western pond turtles, as well as foraging and nesting habitat for ducks and coots. The golf course ponds are also perennial, and despite the moderately high levels of human activity, they also provide aquatic habitat for frogs and waterfowl. The Indian Springs Pond, reported by Downard et al. (1999) as perennial, did not contain water during H.T. Harvey & Associates' March 2009

field surveys. Like most of the ponds on the site, this pond provides only seasonal surface water. The seasonal ponds on the site are nevertheless important breeding sites for California tiger salamanders, western toads, and Pacific treefrogs, which in turn provide food for predators such as herons, egrets, belted kingfishers (*Megaceryle alcyon*), raccoons, and other species.

8.1.4 Special-Status Species

8.1.4.1 Special-Status Species Definition

The California Environmental Quality Act (CEQA) requires assessment of the effects of a project on species that are "threatened, rare, or endangered"; such species are typically described as "special-status species." Special-status species are plants and animals legally protected under the California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA), respectively, or other laws or regulations, and species considered sufficiently rare by the scientific community to qualify for such listing. More specifically, for the purposes of this EIR, special-status species include the following:

- Species listed, proposed for listing, or designated as candidates for listing as threatened or endangered under FESA
- Species listed, proposed for listing, or designated as candidates for listing by the State of California as threatened or endangered under CESA
- Plants listed as rare under the California Native Plant Protection Act (CNPS)
- Plants considered by the CNPS to be "rare, threatened, or endangered in California," and thus on CNPS List 1A, 1B, or 2
- Plants listed by the CNPS on List 3 or 4, but only (1) if the known populations of these species occur in the vicinity of the project site; (2) if the species is recorded from fewer than two counties in California (i.e., very limited distribution), (3) for populations at the periphery of a species' range or in areas where the taxon is especially uncommon or has sustained heavy losses, (4) for the type locality of a plant, or (5) for populations exhibiting unusual morphology or occurring on unusual substrates.
- Animals that are designated by the CDFG as California species of special concern
- Animals listed in the California Fish and Game Code as fully protected species (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515)

A number of other State and federal laws, such as the federal Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act, and various sections of the California Fish and Game Code, protect wildlife species that occur on the project site. However, for purposes of this CEQA impact assessment, regulatory protection by such laws does not confer "special status" on a species that does not meet at least one of the criteria in the bullets above.

8.1.4.2 Methodology for Identifying Potentially Occurring Special-Status Species

Information concerning special-status species that may occur on the project site was collected from a variety of sources and reviewed by H.T. Harvey & Associates' biologists. These information sources included the following:

- Results of a search of the California Natural Diversity Database (CNDDB, 2009) for all special-status species within the four USGS 7.5-minute topographic quadrangle maps in which the project site is located (Vine Hill, Honker Bay, Walnut Creek, and Clayton). In addition, the CNDDB was also queried for the eight quadrangles that surround these four to the west, south, and east, which include Benicia, Briones Valley, Oakland East, Las Trampas Ridge, Diablo, Tassajara, Antioch South, and Antioch North. Surrounding quadrangles to the north were not searched since they are located across Suisun Bay from the project site.
- USFWS species lists obtained from their Sacramento office's website (www.fws.gov/sacramento/es/spp_list.htm) for the 12 USGS topographic quadrangles listed above.
- For plants, the current CNPS Lists 1A, 1B, 2, 3, and 4, which identify plants occurring in one of the 12 USGS topographic quadrangles listed above. Also considered were all plants occurring within Contra Costa County, as quadrangle-level records are not kept for CNPS List 4 species. The list of species included in the CNPS's Locally Unusual and Significant (LU&S) Plants of Alameda and Contra Costa Counties (Lake 2007) was also reviewed.
- The ECCC HCP/NCCP (Contra Costa County, 2006).
- Information and comments received from State and federal resource agencies and other entities during site visits and meetings, the scoping process for this EIR, and the public comment period on the May 2008 Draft EIR for the project, and public and agency comments on that draft.
- The reports of earlier surveys conducted on the site to evaluate the potential for occurrence of special-status species or their habitat on the site (e.g., Downard et al., 1999; JSA, 1982; Tetra Tech, Inc., 2002; Smallwood and Morrison, 2007; CH2M HILL, 2008a; Vollmar Consulting, 2008).

8.1.4.3 Special-Status Animal Species

Various reports from previous studies of the site and nearby vicinity provide a comprehensive assessment of wildlife resources on or in the vicinity of the site (e.g., JSA, 1982; Downard et al., 1999; Mills Associates, 2005; Contra Costa County, 2006; Department of the Navy, 2006; Smallwood and Morrison, 2007). Recent local and regional EIRs, such as the City of Concord 2030 Urban Area General Plan Draft EIR (City of Concord 2006), also provide some perspective on the wildlife resources in the central and eastern Contra Costa County area with similar habitats and wildlife species of concern.

Using these sources, and input received from the USFWS and CDFG during the scoping process for this EIR, an initial list was assembled that identified all of the special-status wildlife species known to occur or that could occur in the region. That list is presented in

Appendix 8A, Table 8A-1. Many of these species are not expected to occur on the site due to the absence of suitable habitat and/or because the project site is outside the range of these species. Table 8-4 lists the special-status animal species that are known or expected to occur on the project site, as well as those special-status wildlife species that are not expected to occur on the site but (a) have been previously reported as potentially occurring on the site, (b) for which focused surveys or habitat assessments have been conducted on the site, or (c) for which State or federal resources agencies have expressed particular concern for this project. Figure 8-2 identifies representative areas on the site where special-status species have been observed.

Critical habitat proposals and designations were also reviewed. This review confirmed that no proposed or designated critical habitat is present on the site.

Special-status animals that are known to occur on the site, could potentially occur on the site regularly, and/or could potentially breed on the site include the California red-legged frog, California tiger salamander, western pond turtle, Alameda whipsnake, coast horned lizard (*Phrynosoma coronatum frontale*), northern harrier, golden eagle, white-tailed kite, burrowing owl, loggerhead shrike, San Francisco common yellowthroat, American badger, pallid bat, and Townsend's big-eared bat (*Corynorhinus townsendii*).

Some special-status animal species may occur on the project site only as uncommon to rare nonbreeding visitors (e.g., in winter), migrants, or transients, or may forage on the site in low numbers while breeding in adjacent areas. However, these species are not expected to breed on the site, or to be substantially affected by the proposed project. These species include the bald eagle, American peregrine falcon, short-eared owl, long-eared owl, Vaux's swift, olive-sided flycatcher, yellow warbler, grasshopper sparrow, Bryant's savannah sparrow, tricolored blackbird, and western red bat.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Federal or State Threatened, Endangered, and Proposed/Candidate Species					
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Grassy or mud-bottomed swales, earth slump, or basalt-flow depression pools in grasslands.	Absent	No known records on the site or in the general vicinity. Dry-season samples collected in September 2003 and wet-season samples collected from November 2003 to April 2004 from 16 sites in a 145-acre area near the old airfield did not detect the species (ECORP Consulting, Inc., 2004). Protocol-level dry-season and wet-season surveys conducted in 2007 and 2008 throughout the project site did not detect the species (EDAW, 2008b).
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	Grass or mud-bottomed swales in grasslands on old alluvial soils underlain by hardpan.	Absent	No known records on the site or in the general vicinity. Dry-season samples collected in September 2003 and wet-season samples collected from November 2003 to April 2004 from 16 sites in a 145-acre area near the old airfield did not detect the species (ECORP Consulting, Inc, 2004). Protocol-level dry-season and wet-season surveys conducted in 2007 and 2008 throughout the project site did not detect the species (EDAW, 2008b).
Longhorn fairy shrimp	*Branchinecta longiantenna*	FE	Vernal pools with clear to turbid water in grass-bottomed pools and clear-water sandstone depression pools.	Absent	No known records on the site or in the general vicinity. Dry-season samples collected in September 2003 and wet-season samples collected from November 2003 to April 2004 from 16 sites in a 145-acre area near the old airfield did not detect the species (ECORP Consulting, Inc, 2004). Protocol-level dry-season and wet-season surveys conducted in 2007 and 2008 throughout the project site did not detect the species (EDAW, 2008b).

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Central California coast steelhead	*Oncorhynchus mykiss*	FT, CSSC	In freshwater, adults hold and migrate in cool water temperatures with adequate pool and riffle depths, moderate stream velocities, and clean spawning gravels. Juvenile rearing habitat includes the presence of appropriate depths, velocities, and substrate size; cool water temperatures; and cover.	Absent	The lack of suitable habitat, the barriers to fish migration (such as a utility berm near Clyde that completely blocks lower Mt. Diablo Creek, downstream of the site, except during very high flows), and the absence of the species during site surveys indicate that the species does not occur on the project site. As cited by Leidy et al. (2005), steelhead spawning migrations were last observed in Mt. Diablo Creek in the 1970s. In field collections conducted within the site during the 1980s and 1990s, no steelhead were collected (Leidy et al., 2005). The last reliable record of steelhead within the Mt. Diablo Creek watershed was from Mitchell Creek, an upper watershed tributary that enters Mt. Diablo Creek in Clayton more than 3 miles upstream from the site. In Mitchell Creek, several steelhead fry and parr were reported within the Mt. Diablo State Park in December 1993 (Leidy et al., 2005).
Central Valley steelhead	*Oncorhynchus mykiss*	FT, CSSC	In freshwater, adults hold and migrate in cool water temperatures with adequate pool and riffle depths, moderate stream velocities, and clean spawning gravels. Juvenile rearing habitat includes the presence of appropriate depths, velocities, and substrate size; cool water temperatures; and cover.	Absent	The lack of suitable habitat, the barriers to fish migration (such as a utility berm near Clyde that completely blocks Mt. Diablo Creek except during very high flows), and the absence of the species during site surveys indicate that the species does not occur on the project site. Not known to enter or spawn in freshwater streams in Contra Costa County.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Central Valley spring-run Chinook salmon	*Oncorhynchus tshawytscha*	FT, ST	Adults migrate and hold in deep cool pools in freshwater streams in the Sacramento Valley during the summer months. They require adequate pool and riffle depths, spawning in early fall. Juvenile rearing habitat includes the presence of appropriate depths, velocities, and substrate size, and cool temperatures.	Absent	The lack of suitable habitat, the barriers to fish migration (such as a utility berm near Clyde that completely blocks Mt. Diablo Creek except during very high flows), and the absence of the species during site surveys indicate that the species does not occur on the project site. Not known to enter or spawn in freshwater streams in Contra Costa County.
Sacramento River winter-run Chinook salmon	*Oncorhynchus tshawytscha*	FE, SE	Migrates into and spawns in cool portions in the mainstem Sacramento River and some tributaries during the spring and summer months. Requires adequate pool and riffle depths. Juvenile rearing habitat includes the presence of appropriate depths, velocities, and substrate size; cool temperatures; and cover.	Absent	The lack of suitable habitat, the barriers to fish migration (such as a utility berm near Clyde that completely blocks Mt. Diablo Creek except during very high flows), and the absence of the species during site surveys indicate that the species does not occur on the project site. Not known to enter or spawn in freshwater streams in Contra Costa County.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Central California coast coho salmon	*Oncorhynchus kisutch*	FE, SE	Prefers short, lower sections of the larger coastal drainages. Requires adequate stream flows, water temperature, depths, and velocities, and appropriate spawning and rearing gravels and availability of instream cover and food; newly emerged fry require rearing habitats with low velocities, open cobble substrate, and cool water temperatures.	Absent	The lack of suitable habitat, the barriers to fish migration (such as a utility berm near Clyde that completely blocks Mt. Diablo Creek except during very high flows), and the absence of the species during site surveys indicate that the species does not occur on the project site. Not known to enter or spawn in freshwater streams in Contra Costa County.
Green sturgeon	*Acipenser medirostis*	FT, CSSC	Large rivers where spawning and incubation takes place in swift, deep water (greater than 10 feet) where eggs are broadcast over clean sand to large cobble substrates.	Absent	The lack of suitable habitat, the barriers to fish migration (such as a utility berm near Clyde that completely blocks Mt. Diablo Creek except during very high flows), the absence of the species during site surveys, and lack of any records from the project's watershed indicate that the species does not occur on the project site.
Delta smelt	*Hypomesus transpacificus*	FT, ST	Euryhaline species living along the freshwater edges of the mixing zone (saltwater-freshwater interface) within the delta, where the salinity is approximately 2 parts per thousand. Most spawning occurs in tidally influenced backwater sloughs and channel edgewaters.	Absent	Aquatic habitats on the project site are entirely freshwater habitats and are thus not suitable for this species.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Longfin smelt	*Spirinchus thaleichthys*	ST	Spawn in fresh water in the upper end of the San Francisco Bay and in the Sacramento–San Joaquin Delta. When not spawning, most abundant where salinity generally ranges from 2 to 20 parts per thousand.	Absent	Aquatic habitats on the project site are entirely freshwater habitats and are thus not suitable for this species.
Tidewater goby	*Eucyclogobius newberryi*	FE, CSSC	Habitat is brackish shallow lagoons and lower stream reaches where water is still, but not stagnant. Prefers salinities of 0 to 10 parts per thousand and temperatures from 35 to 73 degrees Fahrenheit. Spends all life stages in lagoons; enters marine environment only when forced out of the lagoon by strong storms.	Absent	Aquatic habitats on the project site are entirely freshwater habitats and are thus not suitable for this species.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
California red-legged frog	*Rana draytonii*	FT, CSSC	Breeds in ponds and pools, usually with long-duration ponding (e.g., through July). Uses a variety of aquatic and wetland habitats for foraging, cover, and aquatic refugia. May disperse long distances over uplands, particularly during the wet season.	Present	Red-legged frog tadpoles were introduced into the Cistern Pond in May 1982 by the CDFG (JSA, 1982). During 1998–1999 surveys, red-legged frogs were observed at 10 of 22 survey locations at the site (Downard et al., 1999). The greatest numbers of red-legged frogs observed were at the Cistern Pond and upper Indian Springs Pond; however, none were observed at the freshwater marsh and seasonal pools near the old airfield, where crayfish (*Procambarus* sp.), a known predator of red-legged frogs, were observed. This survey found frogs breeding at four sites southeast of Bailey Road. During spring of 2005 and 2006, extensive amphibian surveys conducted by Smallwood and Morrison (2007) detected red-legged frogs at the Cistern Pond and the upper Cistern Pond, and at several locations along Mt. Diablo Creek. Populations in the Cistern Ponds were robust. Notably no bullfrogs were detected during these surveys, whereas one bullfrog was previously detected in 1999, and numerous bullfrogs were observed at the time of introduction in 1982. A check of the Cistern Pond in March 2009 by H.T. Harvey & Associates revealed 17 or more egg masses in a limited portion of the pond, indicating a high population density here. Although the species has not been recorded breeding at the Diablo Creek Golf Course, the ponds provide potential breeding habitat. Due to the absence of suitable breeding pools, Mt. Diablo Creek does not provide suitable breeding habitat. However, this species may disperse widely, and could occur virtually throughout the project area.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
California tiger salamander	*Ambystoma californiense*	FT, SCE, CSSC	Breeds in ponds and seasonal pools, usually those ponding into or through May. Spends most of life in subterranean refugia such as small mammal burrows or soil cracks.	Present	Breeds in the southeastern half of the site in a number of seasonal pools or small ponds (Downard et el., 1999). Observed at nine site locations in 1999. The greatest number of individuals were observed at the Cistern Pond and lower Indian Springs Pond. Smallwood and Morrison (2007) conducted focused larval surveys in spring of 2005 and 2006, years of above-average rainfall, and conducted upland sampling using drift fences and pitfall traps. They recorded the species in a number of locations, all in the southeastern half of the site. To date, despite these intensive surveys, none have been recorded in the northwestern half of the project site. There are no records northwest of Willow Pass Road or in the Tidal Area. The only record from the southwest side of Mt. Diablo Creek is a larval record from a seasonal pool in a ditch in Bunker City; this pool did not pond at all in 2008–2009, and contains sufficient water for breeding only in above-average rainfall years such as 2005 and 2006. Otherwise, the northwesternmost record is from the ridgeline along the eastern edge of the site 1.5 miles southeast of the Willow Pass Road/SR 4 interchange. EDAW (2008a) assessed upland habitat in the project area based on known breeding locations, upland habitat quality (as determined by abundance of small mammal burrows), and the species' dispersal capabilities. This assessment determined that most of the area southeast of Willow Pass Road provided at least potential upland habitat, but that no habitat is present northwest of Willow Pass Road.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT, ST	Inhabits chaparral and scrub habitats, especially those with rock outcrops. May also use adjacent oak woodland, grassland, riparian, and evergreen forest, usually within 500 feet of high-quality scrub.	Potentially present	A whipsnake reported from the Tidal Area during the 1998–1999 surveys (Downard et al., 1999) is the only report from the project site or its general vicinity. However, this observation was made in an area of extensive wetlands rather than in habitat typically used by Alameda whipsnakes, and there is a reasonable probability that this individual was a misidentified aquatic garter snake (*Thamnophis atratus*) (Ecology & Environment and Swaim Biological, 2008). The closest verified records are from Black Diamond Mines Regional Preserve, 4 miles southeast of the site. The nearest high-quality habitat for whipsnakes is 1.5 to 2.0 miles south of the site on the slope of Mt. Diablo (Contra Costa County, 2006). A habitat assessment performed by Ecology & Environment and Swaim Biological (2008) determined that the lack of extensive scrub, short-grazed nature of the grassland, and distance from potential source populations reduce the quality of habitat on the site for this species. However, potential 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. There is a low probability that this species would disperse into portions of the site farther to the northwest.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Bald eagle	*Haliaeetus leucocephalus*	SE	Nests in tall trees, and occasionally on cliffs and electrical towers, usually near large water bodies. Typically forages in and near such water bodies, but may also feed in grassland or other open habitats.	Present	A juvenile bald eagle was observed during spring surveys in 1982 (JSA, 1982). Although individuals may occasionally forage on the site, the species is not known or expected to breed, occur regularly, or occur in large numbers on the site. It has not been recorded on the CNWS in any of the 11 years of the Central Contra Costa County Christmas Bird Count for which data were provided (Mt. Diablo Audubon Society, unpublished).
American peregrine falcon	*Falco peregrinus anatum*	SE, SP	Nests on cliffs, and occasionally on buildings or bridges; forages for birds over many habitats.	Present	Forages on the site infrequently and in low numbers during migration and winter. Single individuals have been recorded on the CNWS during 5 of the 11 years of the Central Contra Costa County Christmas Bird Count for which data were provided (Mt. Diablo Audubon Society, unpublished). There is no suitable nesting habitat on the site. Not expected to breed, occur frequently, or occur in large numbers on the site.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Least Bell's vireo	*Vireo bellii pusillus*	FE, SE	Typically nests in willow and cottonwood-dominated riparian habitat.	Absent	The site is outside the species' known historical and current breeding range. Although the species formerly bred north to Redding in the Central Valley, there is no evidence that it historically bred in the Concord Community Reuse Project (CCRP) area, as southern Santa Clara County was the northern limit of the species' historical breeding range west of the Central Valley. The site is nearly 50 miles northwest of the nearest recent breeding record at the San Joaquin River National Wildlife Refuge, 56 miles north of the next northernmost recent record along Coyote Creek in Santa Clara County, and 74 miles north of recent records along lower Llagas Creek in southern Santa Clara County. Riparian habitat on the site is not suitable for the species due to its narrow extent, fragmented nature, and poorly developed understory (largely due to grazing) (Ecology and Environment, 2008). ~~To confirm presence or absence, the Navy has received authorization from the USFWS to conduct protocol-level surveys in spring and summer 2009; as of mid-July, these surveys had not detected the species on the site.~~ Riparian-associated species such as the yellow warbler, warbling vireo (*Vireo gilvus*), and Swainson's thrush were recorded during intensive surveys in 1998 and 1999 only as migrants; none were recorded during the breeding season (Downard et al., 1999). These species are much more abundant, widespread, and tolerant of a wide variety of riparian habitat conditions than the least Bell's vireo. The absence of breeding pairs of these other riparian-associated species from the site is thus indicative of the absence of suitable least Bell's vireo habitat. To confirm presence or absence, the Navy conducted protocol-level surveys in spring and summer 2009. These surveys did not detect the species, confirming that it is absent from the site (Ecology and Environment and Foothill Associates, 2009).

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, ST	Flat or gently sloping grasslands on the margins of the San Joaquin Valley and adjacent valleys.	Absent	No records from the project site or its vicinity. This species was reported in 1996 and 1997 at Black Diamond Mine Regional Preserve, approximately 3 miles southeast of the site (CNDDB 2009). The 1982 survey did not detect kit fox and concluded that their occurrence is highly improbable based on data available at the time. San Joaquin kit fox were also observed in 1996 within the Kellog Watershed, approximately 15 miles southeast of the site (Downard et al., 1999). The kit fox was determined to be absent from the adjacent property at Bailey Road Estates (Mills Associates, 2005). The ECCC HCP/NCCP noted that a recent survey of Contra Costa County and Alameda Counties within the known range of the San Joaquin kit fox using detection dogs found no evidence of recent occupancy (Smith et al., 2006). Based on the lack of any records of the kit fox from the project site and its vicinity, coupled with the absence of recent records from other areas in adjoining areas in Contra Costa County, this species is determined to be absent from the site.
California Species of Special Concern					
Central Valley fall-run/late fall-run Chinook salmon	*Oncorhynchus tshawytscha*	CSSC	Migrates into and spawns in cool portions in the mainstem Sacramento River and some tributaries, as well as some south San Francisco Bay streams, during the later summer and fall months. Requires adequate pool and riffle depths. Juvenile rearing habitat includes appropriate depths, velocities, and substrate size; cool temperatures; and cover.	Absent	The lack of suitable habitat, the barriers to fish migration (such as a utility berm near Clyde that completely blocks Mt. Diablo Creek except during very high flows), and the absence of the species during site surveys indicate that the species does not occur on the project site. Not known to enter or spawn in freshwater streams in Contra Costa County.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Foothill yellow-legged frog	*Rana boylii*	CSSC	Streams, usually with relatively little riparian vegetation, a cobble substrate, and perennial flow.	Absent	No records from the project site or vicinity. According to the ECCC HCP/NCCP (Contra Costa County, 2006), all known extant occurrences of this species in the county are around Mt. Diablo. This species is most frequently associated with large streams having substantial flow over and around cobbles; such conditions are absent from the site. The on-site reach of Mt. Diablo Creek does not provide suitable breeding habitat due to the absence of flow for most of the year and absence of cobble substrate. A survey of the reach for more than 1/2 mile upstream from the project site in March 2009 did not detect the species. Even if the species is present in the upper part of the Mt. Diablo Creek watershed (which has not been demonstrated), it is unlikely to disperse through the urbanized reaches upstream to be able to reach the project site. Although this species was reported as having some potential for occurrence in the May 2008 Draft EIR, reevaluation of habitat on the site has determined that it is absent.
Western pond turtle	*Actinemys marmorata*	CSSC	Creeks, ponds, and other aquatic habitat. Breeds in upland areas.	Present	Numerous individuals were observed along brackish ponds and sloughs within the Tidal Area during surveys conducted in 1982 and again in 1998–1999 (JSA, 1982; Downard et el., 1999). Within the Inland Area, this species has been observed only at the Cistern Pond, and only in small numbers. It may use ponds on the Diablo Creek Golf Course, and individuals likely disperse along Mt. Diablo Creek, albeit irregularly. Small numbers may nest in uplands near the Cistern Pond, and possibly elsewhere on the site.
Silvery legless lizard	*Anniella pulchra pulchra*	CSSC	Occurs in sandy or loose loamy soils in a variety of habitats.	Absent	Suitable habitat is absent from the site due to the absence of loose soils. The nearest known occurrence is approximately 12 miles east of the site (CNDDB, 2009), and the closest areas of potential habitat occur more than 10 miles to the east and 4 miles to the southeast of the site, according to the ECCC HCP/NCCP (Contra Costa County, 2006). Although this species was reported as having some potential for occurrence in the May 2008 Draft EIR, reevaluation of the species' range and of habitat on the site has determined that it is absent.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Coast horned lizard	*Phrynosoma coronatum frontale*	CSSC	Sandy soils, usually in dry creek channels or coastal dunes.	Potentially present	A single individual reported by Kuenzi and Morrison (1994, as cited in Downard et al., 1999) in the Inland Area represents the only record for CNWS. This species is typically associated with loose, often sandy soils, which are completely absent from the project site. The location of the 1994 report is unknown, but the most likely area of occurrence is in the area southeast of Bailey Road.
Western spadefoot	*Spea hammondii*	CSSC	Breeds in temporary rain pools; spends much of life in burrows or cracks in hard soil.	Absent	No records from the project site or vicinity. This species breeds in seasonal pools, which have been surveyed intensively for California tiger salamanders and vernal pool branchiopods on the site. Surveys for those species, as well as other surveys such as those conducted in 1981–1982 and 1998–1999, should certainly have detected spadefoots if they are present. Although this species was reported as having some potential for occurrence in the May 2008 Draft EIR, reevaluation of this species' status has determined that the site is outside of the species' range, and it is absent from the project site.
Northern harrier	*Circus cyaneus*	CSSC (breeding)	Nests in extensive marshes and wet fields; forages in marshes, grasslands, and ruderal habitats.	Present	Individual harriers have been frequently observed in several areas on the CNWS during general natural resource surveys (JSA, 1982; Downard et al., 1999). However, breeding was suspected only in the tidal marsh in the Tidal Area during 1998–1999 surveys (Downard et al., 1999). This species forages commonly in grassland on the project site, but it is expected to occur here primarily, or solely, as a nonbreeding forager, as the grassland on the project site does not provide enough protection from mammalian predators to provide high-quality nesting habitat for this species. It has been recorded on the CNWS in all 11 years of the Central Contra Costa County Christmas Bird Count for which data were provided (Mt. Diablo Audubon Society, unpublished), with a high of 27 individuals (on the CNWS as a whole, including both the Tidal and Inland Areas) in 1999.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Burrowing owl	*Athene cunicularia*	CSSC	Grasslands and ruderal habitats where ground squirrel burrows or other burrows are present.	Present	Burrowing owls have been observed in small numbers within grassland on the site. Individuals were observed in one location in 1981–1982 (JSA, 1982) and six locations in 1992–1993 (Kuenzi and Morrison 1994, as cited in Downard et al., 1999; A. Kuenzi, pers. comm.), but only during the fall and winter. During surveys in 1998–1999, burrowing owls were observed in three locations on the site, again only during fall and winter. The species has been recorded on the site only once (one individual in 2008) during 11 years of the Central Contra Costa County Christmas Bird Count (Mt. Diablo Audubon Society, unpublished). A burrowing owl was detected in the area southeast of Bailey Road during site visits in 2007 (CH2M HILL, 2007), but none were seen during general field surveys conducted throughout the site by H.T. Harvey & Associates between November 2008 and June 2009. Short grassland with abundant ground squirrel burrows is present throughout much of the project area, providing ostensibly high-quality habitat for burrowing owls. However, the results of surveys of the site have consistently demonstrated this species to be present only in small numbers, and primarily during the nonbreeding season. If it breeds on the site, it does so only in very low numbers.
Short-eared owl	*Asio flammeus*	CSSC (breeding)	Breeds in extensive marshes and moist grasslands; forages over wetlands, grasslands, and ruderal habitats.	Potentially present	Short-eared owls have been recorded in low numbers in the Tidal Area of the CNWS but have not been documented in the Inland Area (Downard et al., 1999). If they occur on the project site at all, they are expected to occur only as infrequent nonbreeding foragers, as the grassland on the project site does not provide enough protection from mammalian predators to provide suitable nesting habitat for this species.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Long-eared owl	*Asio otus*	CSSC (breeding)	Nests in dense woodland, including riparian woodland; forages in open habitats.	Present	A single individual recorded in a pine plantation during the Central Contra Costa County Christmas Bird Count in 2003 (Mt. Diablo Audubon Society, unpublished) is the only record from the project site. This species likely occurs only as a rare and irregular nonbreeding visitor, and it is not expected to nest on the site, to occur regularly, or to occur in large numbers.
Vaux's swift	*Chaetura vauxi*	CSSC (breeding)	Nests in chimneys and in hollow snags in evergreen forests.	Present	Nonbreeding individuals forage over the site, primarily during migration. However, suitable breeding habitat is absent from the site, and the species does not breed here.
Olive-sided flycatcher	*Contopus cooperi*	CSSC (breeding)	Nests in montane forests.	Present	Expected to occur on the site only as an infrequent nonbreeding forager during migration. Not expected to breed, occur regularly, or occur in large numbers on the site.
Loggerhead shrike	*Lanius ludovicianus*	CSSC (breeding)	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Present	This species has been observed regularly and fairly commonly in grasslands during biological surveys of the site. It has been recorded on the CNWS in all 11 years of the Central Contra Costa County Christmas Bird Count for which data were provided (Mt. Diablo Audubon Society, unpublished), with a high of 40 individuals (on the CNWS as a whole, including both the Tidal and Inland Areas) in 1999. Based on field surveys conducted by H.T. Harvey & Associates in spring 2009, it is likely that 8 to 10 pairs breed on the project site.
Yellow warbler	*Dendroica petechia*	CSSC (breeding)	Nests in dense stands of cottonwood, willow, and other riparian habitat; forages in a wide variety of habitats during migration.	Present	The riparian habitat on the site is of low quality for this species due to understory degradation (likely resulting from grazing). The yellow warbler is a common migrant, particularly in fall, but it has not been recorded breeding, or even summering, on the project site, and it is thus absent as a breeder.
San Francisco common yellowthroat	*Geothlypis trichas sinuosa*	CSSC	Nests in tall, emergent, herbaceous wetlands.	Present	This species breeds abundantly in tidal marsh in the Tidal Area, but much less commonly in the Inland Area of the CNWS. Small numbers nest in the project area in freshwater marsh, and possibly in seeps and springs, in emergents and other wetland vegetation.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Grasshopper sparrow	*Ammondramus savannarum*	CSSC (breeding)	Breeds and forages in meadows, fallow fields, and pastures.	Potentially present	May occur as a migrant in grasslands in the project area, but this species is not known or expected to breed, occur regularly, or occur in large numbers in the project area.
Bryant's savannah sparrow	*Passerculus sandwichensis alaudinus*	CSSC	Breeds and forages in meadows, fallow fields, pastures, and salt marshes.	Potentially present	This species may breed in tidal marsh in the Tidal Area, but it is not known to breed in the Inland Area. Savannah sparrows (of unknown subspecies) forage commonly in grasslands in the project area during the nonbreeding season, but they are not expected to breed here.
Suisun song sparrow	*Melospiza melodia maxillaris*	CSSC	Tidal salt and brackish marsh around Suisun Bay.	Absent	Suisun song sparrows breed in tidal brackish and salt marsh in the Tidal Area of the CNWS. In the Inland Area, song sparrows breed in riparian and freshwater marsh habitat, and Suisun song sparrows have been reported on the project site. However, due to the habitat associations of *maxillaris* (tidal salt and brackish marsh) vs. *gouldii*, which is the common, widespread subspecies breeding in nontidal and freshwater habitats throughout the San Francisco Bay area, it is likely that all song sparrows occurring on the project site represent *gouldii*. Therefore, *maxillaris* is presumed absent from the project site.
Tricolored blackbird	*Agelaius tricolor*	CSSC (breeding)	Nests near fresh water in dense emergent vegetation; forages in a variety of open habitats.	Present	The tricolored blackbird has been known to occur in the salt/brackish marsh areas at the CNWS Tidal Area but had not been reported at the site (JSA, 1982, Downard et al., 1999) until five were reported on the Inland Area during the 2006 Central Contra Costa County Christmas Bird Count (Mt. Diablo Audubon Society, unpublished). Approximately 100 were observed by H.T. Harvey & Associates in a large flock of mixed blackbird species foraging in grassland on the site in March 2009. The only freshwater marsh habitat on the site potentially extensive enough to support breeding by this species is at the Cistern Pond, and possibly in cattails near the old airfield, but no breeding activity has been observed there. Likely occurs only as an occasional nonbreeder.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
American badger	*Taxidea taxus*	CSSC	Typically associated with extensive grasslands containing small mammal prey, but will use other open and scrub habitats.	Present	A road-killed badger was documented in the tidal area of CNWS in May 1994 (A. Kuenzi, pers. comm.). In the multiseason University of Arizona study, only a single badger was observed, a dead individual along Kinne Boulevard (Downard et al., 1999). Several burrows in upland grasslands also were identified that exhibited characteristics of typical badger burrows (e.g., elliptical), but no other individuals were observed during that study. Downard et al. (1999) also cited a badger recorded by the Public Works Engineering Division (1980). Badgers are known to occur in low densities in grasslands to the southeast of the site; for example, in March 2007, a road-killed badger was identified at the Roddy Ranch Golf Course on Deer Valley Road (Kent Fickett, Audubon Society), and on June 2007, another road-killed badger was identified at the crest of Ygnacio Valley Road in Concord, between the sections of Lime Ridge Open Space, north and south of the road (Malcolm Sproul, Save Mt. Diablo). As a result, individuals may occasionally occur on the project site. However, based on the infrequency with which it has been recorded and the lack of observations of this species' distinctive dens during field surveys conducted by H.T. Harvey & Associates, this species is expected to occur infrequently and in low numbers.
San Francisco dusky-footed woodrat	*Neotomoa fuscipes annectens*	CSSC	Builds large stick nests in a variety of habitats, including riparian areas, oak woodlands, and scrub.	Absent	This species was reported to potentially occur in riparian woodland and scrub in the 2008 Draft EIR. However, none of the intensive biological surveys of the site have recorded it, and field surveys by H.T. Harvey & Associates did not detect any nests on the site. Thus, this species was determined to be absent.
Pallid bat	*Antrozous pallidus*	CSSC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops, and rocky crevices in mines and caves.	Potentially present	The CNDDB documents a known occurrence of a pallid bat adjacent to the western boundary of the site. During the multiseason University of Arizona studies, bats were detected at a pond at the base of Rattlesnake Canyon, freshwater marsh, Indian Springs, and two other locations (Downard et el., 1999). Species presence, however, could not be determined from the surveys. Trees with cavities and crevices, and possibly rock outcrops and crevices in bunkers, bridges, or buildings, provide potential roost sites, and this species may form maternity roosts

					on the site.

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
Townsend's big-eared bat	*Corynorhinus townsendi*	CSSC	Roosts primarily in caves, mines, attics, abandoned buildings, and large trees with bowls such as found in burned old-growth redwoods Forages over many habitats.	Potentially present	Although this species has not been recorded on the site, Downard et al. (1999) and Tetra Tech, Inc. (2002) concluded that it could occur here. Trees with cavities, and possibly old buildings or bunkers, provide potential roost sites, and this species may occur (and could possibly even form maternity roosts) on the site. An old mine in upper Rattlesnake Canyon could possibly provide a roost site as well.
Western red bat	*Lasiurus blossevillii*	CSSC	Often found in forest or woodlands, especially in or adjacent to riparian habitat.	Potentially present	Although this species has not been recorded on the site, Downard et al. (1999) concluded that it could occur here. This species is not known or expected to breed on or in the vicinity of the site, but it could roost on the site in small numbers during migration or in winter.
California Fully Protected Species					
Golden eagle	*Aquila chrysaetos*	FP	Nests in tall trees or on cliffs, forages in grasslands and other open habitats.	Present	A pair of golden eagles has nested regularly in a eucalyptus grove located along the eastern boundary of the site (Eagle's Nest EOD Area) (JSA, 1982; Downard et al., 1999). This nest site, which has been active for a number of years, has been enclosed with fencing and posted by the Navy with information regarding the provisions of the Bald Eagle and Golden Eagle Protection Act. Additionally, several nesting pairs of golden eagles occur on East Bay Regional Park District (EBRPD) lands to the south of site. Eagles from one or more of these nest sites (most likely, and frequently, the on-site nesting pair) regularly forage in grasslands on the site, concentrating their activities predominantly in the areas east of Mt. Diablo Creek and southeast of Willow Pass Road. This species has been recorded on the CNWS during 6 of 11 years of the Central Contra Costa County Christmas Bird Count for which data were provided (Mt. Diablo Audubon Society, unpublished), with a high of six individuals (on the CNWS as a whole, including both the Tidal and Inland Areas).

Table 8–4: Special-Status Animal Species Considered for Potential Occurrence on the Site

Common Name	Scientific Name	Status	General Habitat Description	Presence/ Absence on the Site	Rationale
White-tailed kite	*Elanus leucurus*	FP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	Present	Nests in pine and eucalyptus plantations, oak woodland, and riparian habitat in a number of areas on the site, and forages in grassland and other open areas virtually throughout the site. Based on H.T. Harvey & Associates' field surveys during early spring of 2009, it is likely that four to six pairs nest on the project site. It has been recorded on the CNWS in 10 of 11 years of the Central Contra Costa County Christmas Bird Count for which data were provided (Mt. Diablo Audubon Society, unpublished), with a high of 20 individuals (on the CNWS as a whole, including both the Tidal and Inland Areas) in 1999.

Special status species code designations:
FE = Federally listed Endangered
FT = Federally listed Threatened
SE = State listed Endangered
ST = State listed Threatened
SCE = State Candidate Endangered
CSSC = California Species of Special Concern
~~SF~~P = California Fully Protected Species (California Fish and Game Code §§ 3511, 4700, 5050, and 5515)

Present = species is known to be present.

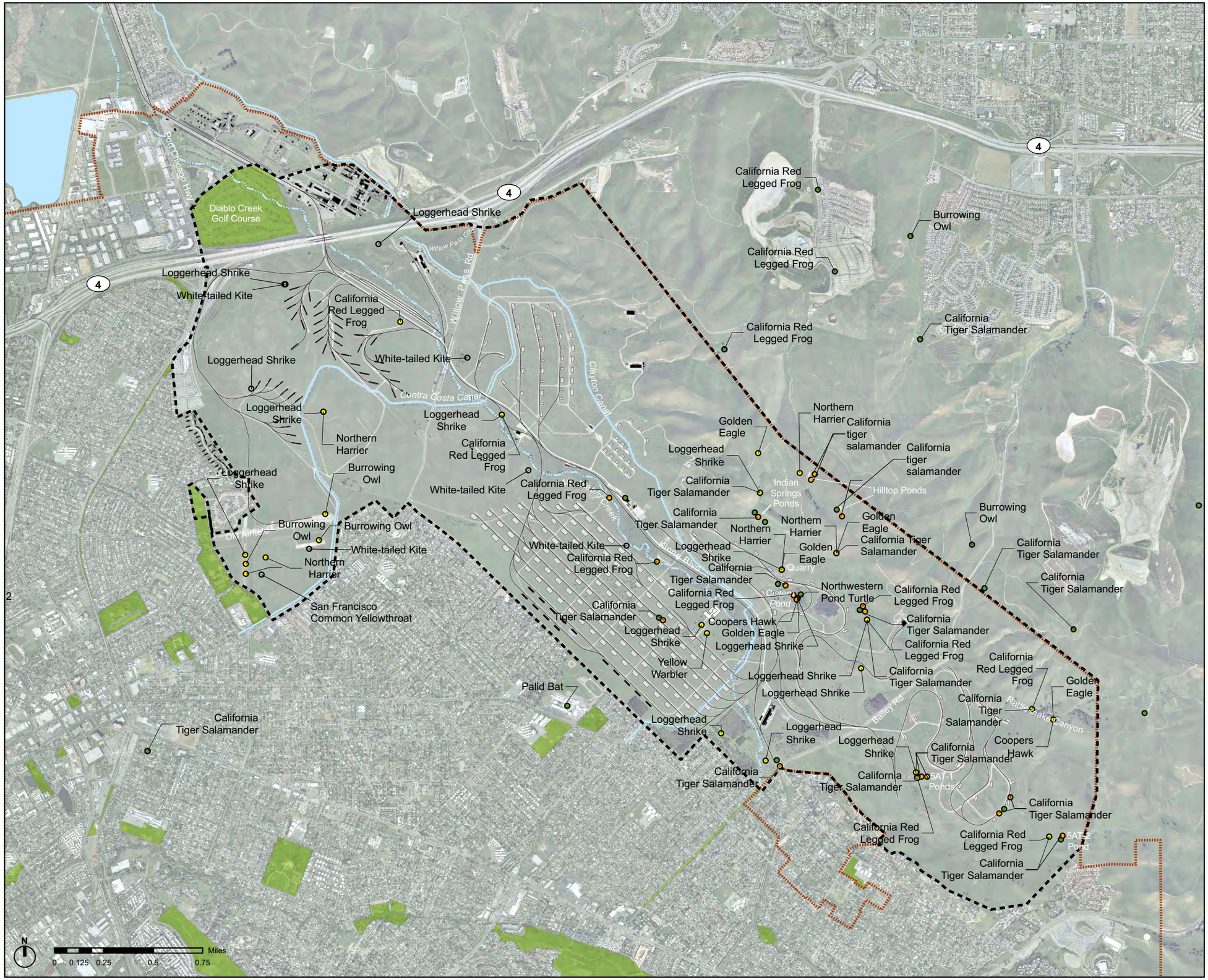
Potentially present = general habitat is present and species may be present, but presence (at least currently) is not confirmed.

Absent = Species is considered absent due to absence of suitable habitat, range, or other considerations.

The other special-status animal species that were considered because they are known to occur in the region are absent from the project site. The project site is outside the known range of, and/or lacks suitable habitat for, several special-status species that occur elsewhere in Contra Costa County or nearby areas. Surveys have documented the absence of rare vernal pool branchiopods, such as the vernal pool fairy shrimp, vernal pool tadpole shrimp, and longhorn fairy shrimp, from the site (ECORP Consulting, Inc., 2004; EDAW, 2008b). Several species of anadromous fish that are known to occur in Suisun Bay during migrations to and from Central Valley spawning streams, including the Central Valley steelhead, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, Central Valley fall-run/late fall-run Chinook salmon, and green sturgeon, are not known or expected to enter Contra Costa County streams, and therefore are not expected to attempt to enter Mt. Diablo Creek. The Delta smelt, longfin smelt, and tidewater goby occur in specific habitats and salinity regimes that are absent from the site. Habitat assessments have concluded that the site does not provide suitable habitat for, and is outside the range of, the foothill yellow-legged frog, silvery legless lizard, western spadefoot, least Bell's vireo, and Suisun song sparrow. The site is also outside the known range of the San Joaquin kit fox. Although potential habitat for the San Francisco dusky-footed woodrat is present on the site, this species has not been recorded on the site, and it is presumed absent as well.

The only special-status fish species with any potential to attempt to enter Mt. Diablo Creek is the Central California coast steelhead. As a result, an assessment was performed to determine whether steelhead are present on the site. Steelhead are an anadromous fish that hatch in freshwater streams, migrate to the ocean until reaching reproductive maturity, and then return to freshwater streams to spawn.

The segment of Mt. Diablo Creek present at the site has been extensively and adversely affected by human activities over the past century. In addition, barriers to fish migration exist at multiple locations on the site and in upstream and downstream reaches of Mt. Diablo Creek (NHI, 2006; CH2M HILL, 2007 and 2008e). The most substantial impediment to movement of fish between Mt. Diablo Creek and tidal areas of the Suisun Bay is a berm that blocks the creek channel downstream of the site, west of the community of Clyde. Here, the drainage is crossed by five oil and gas pipelines buried in a berm that blocks the creek. The Mt. Diablo Creek channel narrows to a linear channel (called the EBMUD Wasteway) that was built in the 1930s to facilitate drainage of the Contra Costa Canal during infrequent maintenance operations and emergencies (NHI, 2006). This channel narrows until it ends at the berm that carries pipelines across it. During high flows, Mt. Diablo Creek spills into a wetland area east of the Wasteway and south of the berm. The Federal Emergency Management Agency (FEMA) has mapped the entire area in which the wasteway and berm are located as being inundated by the 100-year flood, and during such high flows, it is possible that fish from tidal areas downstream could move upstream over the berm. However, under normal conditions and lower flows, the physical blockage of the channel by the utility berm prevents the upstream migration of fish into Mt. Diablo Creek from downstream tidal areas.



Legend

- Smallwood and Morrison, 2007 Locations
- Department of the Navy, 2006 Locations
- CNDDB Occurrences
- H.T. Harvey & Associates, 2009 Locations

Base Map

- Concord City Limit
- Site Boundary
- Mt. Diablo Creek
- Canal
- Other Creek or Stream
- Parks

Notes and Sources

Sources: H.T. Harvey & Associates, 2009; EDAW, 2008a; Smallwood and Morrison, 2007; Department of the Navy, 2006; Downard *et al.*, 1999

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Figure 8-2
Representative Special-Status Species Occurrences

Numerous corrugated steel and reinforced concrete box culverts within the site and the road bridge at Bailey Road present significant impediments to upstream migration of steelhead. A fish passage assessment performed by CH2M HILL (2008e) determined that none of the 11 culverts through which Mt. Diablo Creek flows on the project site meet the criteria for steelhead passage recommended by the CDFG for any of the flow rates modeled. These culverts are wide, multiple-barrel concrete box or corrugated metal pipe culverts that were constructed primarily to pass large flood flows. In low-flow conditions, water is spread broadly and shallowly across the bottoms of these culverts, providing very poor fish passage conditions.

Monitoring of water temperatures in Mt. Diablo Creek on the project site during the winter of 2007–2008 further documented the absence of suitable conditions for steelhead on the site (CH2M HILL, 2008d). Of five locations where water temperature was monitored, only the downstream-most station (immediately upstream from SR 4) contained water long enough to record continuous water temperatures. At this station, winter temperatures were within the range suitable for rearing juvenile steelhead, but water temperatures after mid-February were higher than optimal temperatures for adult steelhead spawning, egg incubation, and emergence. This study concluded that water temperatures during spring and early summer would likely be so high that they may prevent successful smolting and emigration from Mt. Diablo Creek.

The potential presence of steelhead in the lower reach of Mt. Diablo Creek has been assessed in other recent studies (Leidy et al., 2005). As cited by Leidy et al. (2005), steelhead spawning migrations were last observed in Mt. Diablo Creek in the 1970s. In field collections conducted within the site during the 1980s and 1990s, no steelhead were collected (Leidy et al., 2005). The last reliable record of steelhead within the Mt. Diablo Creek watershed was from Mitchell Creek, an upper watershed tributary to Mt. Diablo Creek, where several steelhead fry and parr (juveniles) were found within the Mt. Diablo State Park in December 1993 (Leidy et al., 2005). According to East Bay Regional Parks District staff, this population no longer persists in Mitchell Creek (P. Alexander, pers. comm., as cited by Leidy et al., 2005). The Contra Costa Resource Conservation District (CCRCD) (2006) cited NHI (2005) as indicating that “Several barriers currently block potential migration from Suisun Bay to spawning areas in Mitchell Creek.” It is possible that the fish assumed to be steelhead in 1993 were actually resident rainbow trout (NHI, 2005), which do not migrate to the ocean and are not a special-status species.

Through previous investigations, it is evident that the creek channel throughout a substantial portion of the site is low gradient and is contained within deeply incised channel banks. A Surface Water Ambient Monitoring Program was implemented at three locations in 2003 in the Mt. Diablo Creek watershed (CCCCDD, 2006). The site is located predominately in the middle watershed and includes a portion of the lower watershed. Water quality parameters for temperature, pH, and dissolved oxygen were found to be in the unacceptable range for steelhead and other coldwater species during the dry season in the portion of the creek located on the site. In the lower watershed, dissolved oxygen was far below minimum standards for coldwater fish. (Additional discussion of Mt. Diablo Creek appears in Chapter 7, Hydrology and Water Quality.)

In summary, steelhead do not use or occupy the Mt. Diablo Creek watershed, and current habitat conditions do not support the presence of this species within the site boundaries, even on a seasonal basis. Steelhead are considered absent from the site, and no recent evidence (i.e., over the past several decades) exists that would indicate the presence of this special-status species in the creek.

8.1.4.4 Special-Status Plants

Special-status plants are known to occur in the Tidal Area of the CNWS; however, several general plant surveys have failed to detect any special-status plants at the Inland Area of the site (JSA, 1982; Downard et al., 1999). Species-specific or multiple-season botanical surveys for special-status plants that may occur at the site were recently conducted by Vollmar Consulting during the spring and summer of 2008.

As mentioned above, the City of Concord hired Vollmar Consulting to conduct sitewide plant surveys during the spring and summer of 2008. Several rounds of protocol-level surveys, corresponding to early, peak, and late special-status plant flowering periods, were conducted. The surveys assessed the overall geomorphic plant community characteristics and described sensitive habitats and the occurrence of special-status plants and noxious weeds. All surveys were floristic in nature and were conducted using an “intuitive controlled” approach, whereby the entire site was surveyed, with more focused efforts in those microhabitats with higher potential to support special-status plants (Vollmar Consulting, 2008).

Although the surveys documented occurrences of 56 different species of CNPS-designated Locally Unusual and Significant (LU&S) plants, no occurrences of any plants meeting the definition of special-status plants in section 8.1.4.1 were documented on site. The LU&S list is an inventory of native plants that are relatively uncommon in Contra Costa and Alameda Counties. It is important to point out that plants considered to be LU&S are not necessarily considered “rare” under CEQA, as they are relatively common outside of the region. The Vollmar Consulting (2008) study concludes that the lack of special-status plants is most likely due to the high level of disturbance the site has experienced and the absence of unique or specialized microhabitats preferred by many such species.

Vollmar Consulting (2008) raised the possibility that the lack of special-status plants could have been influenced by an unusually dry spring season of 2008. Of the special-status plants with suitable habitat present on the project site, Vollmar (2008) concluded that the growth of three species—big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), and Contra Costa goldfields (*Lasthenia conjugens*)—may have been negatively influenced by the relatively dry spring experienced in 2008, and it could not conclude absence because of the relatively dry winter.

During preparation of this EIR, a search of the databases as described in section 8.1.4.2 for the site and surrounding USGS topographic quadrangle maps identified many special-status plants considered for potential occurrence on or near the site. Table 8A-2 in Appendix 8A summarizes the results of these database reviews by presenting the sensitive plants considered for potential occurrence on the site along with the likelihood of their occurrence. The use of the term “considered for potential occurrence” in the title of Appendix 8A, Table 8A-2 can be somewhat confusing. In this context, the term is meant as an exhaustive listing of all plants that were initially considered for occurrence based on database review. For

plants for which no suitable habitat is present within the study area, an entry of "No Suitable Habitat Present" was made; these species were removed from further consideration. Conversely, for those species that are known to occur in similar plant communities elsewhere in California, there is an entry in the table entitled "Suitable Habitat Present." The potential for species occurrence for a particular plant was then assessed as a refinement of the list of species for which suitable habitat is present (see the last column of Appendix 8A, Table 8A-2). This analysis was conducted on a species-by-species basis with the specific habitat types and microhabitats for each plant species in mind, and includes an assessment of local geology, soil types, elevation, topographic position, ecological condition of the preferred habitat, and proximity to known occurrences of special-status species in the vicinity of the site, among other factors.

Of the 71 different plants considered for potential occurrence during the preparation of this EIR (i.e., those listed in Appendix 8A, Table 8A-2), habitat for many of these species is entirely absent (i.e., specialized habitats such as tidal marsh, or saline-alkali or serpentine soils). Additional field surveys conducted by H.T. Harvey & Associates in the spring of 2009 failed to locate any populations of special-status plants or habitats having unique hydrologic or edaphic characteristics capable of supporting many of the potential special-status species. Additionally, after monitoring the site's hydrology during the winter and spring of 2008–2009 (a season of slightly below-average rainfall), H.T. Harvey & Associates concluded that vernal pool habitats are not present on the site, and as such, suitable habitat for the Contra Costa goldfields does not occur on the project site.

For the remainder of the special-status plants (42 species), more generalized habitats described in the various databases as capable of supporting certain special-status species, such as valley and foothill grassland, are present on the site (listed as "Suitable Habitat Present" in Appendix 8A, Table 8A-2). Some of these plants have much less potential to occur on the site than others, for a wide variety of reasons. For example, some may not have been documented within the last several decades, or the species' preferred habitat is present but the ecological condition is considered poor (e.g., altered hydrologic conditions, lack of associate species, dominance by invasive plants, etc.). Special-status plants for which suitable habitat was determined to be present represent those species that were considered during the survey efforts by Vollmar Consulting (2008), regardless of the potential for occurrence.

As a result of the negative findings concluded by prior investigations into the potential occurrence of special-status plants on the site, results of the protocol-level field surveys recently conducted by Vollmar Consulting (2008), and results of the additional field surveys conducted by H.T. Harvey & Associates (2009), none of the special-status plants for which suitable habitat was determined to be on the site are considered present at this time, with the possible exception of the big tarplant and round-leaved filaree. The germination and growth of these two species may have been negatively affected by the rainfall amount and distribution experienced on the site during the rainfall year of 2007–2008; thus, conclusive statements regarding their absence cannot be made at this time.

Based on existing conditions present on the project site, all of the special-status plants considered for occurrence are determined to be absent, with the exception of big tarplant and round-leaved filaree.

Critical habitat proposals and designations were also reviewed. This review confirmed that no proposed or designated critical habitat for special-status plants is present on the site.

8.1.5 Heritage Trees

The City of Concord's Heritage Tree Ordinance requires mature trees in the City to be assessed to determine if they meet eligibility characteristics. The City of Concord Tree Ordinance (Municipal Code section 114-32) defines a heritage tree as follows:

- Any tree in the City, whether located on public or private property, which is at least 72 inches in circumference (approximately 24 inches in diameter) as measured 4.5 feet above natural or established grade.
- A multi-stemmed tree that has one stem of at least 24 inches or more in circumference.
- Any tree or group of trees that has a relationship to an event of historical significance or is of public interest and that has been designated by action of the Planning Commission as a heritage tree.

A heritage tree is (1) any tree as defined in the definition of "heritage tree" in section 114-32, or (2) any tree on public or private property that has been so designated by action of the Planning Commission or that has been previously designated by the City Community Services Commission. To be designated a "heritage tree" by the Planning Commission, a tree or trees must meet the following criteria:

- The tree must be considered an outstanding specimen (or group) of its species by virtue of either its location, health, conformation, age, size, or rarity, or any combination of the same.[1]
- The tree must be in a location and in a state of health that indicates a high possibility of survival, given reasonable care, and in a location that would not automatically preclude reasonable future development of the site.[2]

A number of trees on the site may meet the definition of heritage trees. As shown on Figure 8-1, the vast majority of the trees within the oak woodland and oak savannah habitats occurs south of Bailey Road. The remaining oak trees located north of Bailey Road generally occur as individuals or small groups of trees within the California annual grasslands. The ordinance also applies to trees that occur within the riparian woodland habitat of Mt. Diablo Creek and Willow Pass Creek that occur north of Bailey Road.

8.1.6 Jurisdictional Habitats

section 8.1.2 of this chapter describes the major plant communities and common plant species found within the project boundaries. Several of the plant communities described in that section are considered "jurisdictional habitats," as activities conducted within them are potentially regulated by State and federal resource agencies, as described in greater detail below. Thus, plant communities on the site—including freshwater marsh; seeps and springs; seasonal wetlands; creeks, drainages, channels, and ponds; and riparian woodland—are discussed again in this section within the regulatory context. For the most

[1] Code 1965, § 4308.1; Ord. No. 867; Ord. No. 1006; Ord. No. 1148; Ord. No. 8734; Ord. No. 87-36; Ord. No. 89-15

[2] Code 1965, § 4308.1; Ord. No. 867; Ord. No. 1006; Ord. No. 1148; Ord. No. 89-15

part there is a complete overlap in the extent and distribution of the plant communities listed above and what is described below as jurisdictional habitats. As an example, seasonal and perennial wetlands (described in section 8.1.2.8) are the same as "potential jurisdictional wetlands" described below.

8.1.6.1 Waters of the U.S./Waters of the State

Regulatory Overview

Areas meeting the regulatory definition of "waters of the U.S." (jurisdictional waters) are subject to the jurisdiction of the Corps of Engineers under provisions of section 404 of the Clean Water Act (CWA) (1972) and section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce; all waters subject to the ebb and flow of the tide; all interstate waters; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds (the use, degradation, or destruction of which could affect interstate or foreign commerce); all impoundments of waters otherwise defined as "waters of the U.S."; tributaries of waters otherwise defined as "waters of the U.S."; the territorial seas; and wetlands (termed "Special Aquatic Sites") adjacent to "waters of the U.S." (33 CFR, Part 328, section 328.3).

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

The discharge of dredged or fill material into jurisdictional waters requires a section 404 permit from the Corps of Engineers. Under section 401 of the CWA, section 404 permits require a certification from the State that the proposed discharge will not violate state water quality standards. In California, section 401 certifications are issued by the State Water Resources Control Board (State Water Board) and its associated RWQCBs.

The RWQCB also regulates discharges that may affect "waters of the State" pursuant to the Porter-Cologne Act, which defines "waters of the State" as "any surface water or groundwater, including saline waters, within the boundaries of the state." In contrast to the Corps of Engineers, the RWQCB has no regulations or formal technical manual that defines the physical features that qualify an aquatic resource as a "water of the state." In practice, the RWQCB routinely asserts Porter-Cologne Act jurisdiction over many areas possessing wetland characteristics or evidence of water conveyance that the Corps of Engineers has declined to take jurisdiction over under the CWA, as well as upland slopes along major waterways between the ordinary high water mark and the top-of-bank. In addition, the RWQCB can assert jurisdiction over (i.e., consider as waters of the State) lands (including uplands) upon which activities are proposed to be conducted if those actions may reasonably result in degradation of water quality of traditional waters of the U.S./State. In these latter situations, the identification of State jurisdiction is an "effects based" analysis (i.e., an analysis based on the effects of a certain action on State waters), unlike that of the Corps of Engineers process that defines and describes field characteristics to identify federal jurisdiction. As an example, the Corps of Engineers uses the presence of specific field characteristics such as a down-cut channel bed, sediment deposition, and evidence of seasonal flowing water to define and describe certain drainages as "other waters" (a subset

of waters of the U.S.). The RWQCB considers these same drainages as "waters of the State," but it may also elect to extend waters of the State jurisdiction into seasonal drainages entirely devoid of these specific field characteristics that the Corps of Engineers utilizes. Acknowledging these differences, it is not the goal of the current study to define and describe all of the potential locations on the site that might be considered waters of the State, beyond those areas described below that overlap with waters of the U.S. It is fully anticipated that mapping RWQCB-jurisdictional areas will be a future phase of work on the project conducted in close consultation with representatives of the RWQCB. Based on the extensive field work conducted for this Draft EIR, the acreage of additional waters of the State is likely to be relatively small, and all or most of such areas will be located within the portion of the project site proposed as open space.

Survey Results

The descriptions of wetlands and other waters of the U.S./State at the site that were contained within the May 2008 Draft EIR were based on the Navy's wetland report (Tierra Data, Inc., 2008) and on supplemental data obtained from the Navy relevant to wetland types. Subsequent to that effort, and building upon the important data provided in that document, substantial additional field surveys and detailed hydrology monitoring were conducted by H.T. Harvey & Associates during the 2008–2009 rainfall period. The purpose of that work was to further refine the Tierra Data work, and precisely map the location and boundaries of each aquatic feature within the project site that may constitute waters of the U.S./State. Thus, the results provided in this Draft EIR constitute a further and more detailed refinement of the preliminary results presented in previous reports. For example, the Tierra Data, Inc. report (2008) recommended that additional field studies be conducted in several areas of the site that it tentatively mapped as wetlands, as Tierra Data's field studies were primarily conducted during the dry season and thus relied heavily on the presence of hydrophytic vegetation and hydric soil characteristics (very often relictual features). Tierra Data concluded that additional hydrologic monitoring needed to be conducted during the wet season in order to determine if several of the grassland areas tentatively labeled as wetlands are actually inundated/saturated for sufficient duration to qualify as wetland hydrology. The field studies conducted by H.T. Harvey & Associates during the 2008–2009 wet season in preparation of this Draft Revised EIR chapter included such hydrologic monitoring, which resulted in a refinement of the wetland mapping on the site.

During the field studies conducted in 2008–2009, the vegetation, soils, and hydrology of the site were examined following the guidelines outlined in the Routine Determination Method in the Corps of Engineers 1987 Wetlands Delineation Manual (Environmental Laboratory 1987). In addition, the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps of Engineers, 2006) was followed to document site conditions relative to hydrophytic vegetation, hydric soils, and wetland hydrology. As noted in the latter report, the Regional Supplement is designed to be used with the current version of the Corps of Engineers 1987 Manual; where differences in the two documents occur, the Regional Supplement takes precedence over the Corps of Engineers 1987 Manual. All surveys and data collected were compiled in accordance with guidance provided in Information Needed for Verification of Corps Jurisdiction (Corps of Engineers, 2000).

The 2008–2009 field studies were also conducted within the project areas for "other waters." All surveys were conducted using the Review of Ordinary High Water Mark Indicators for Delineation Arid Streams in the Southwestern United States (Corps of Engineers, 2004). "Other waters" include lakes, seasonal ponds, channels, tributary waters, and seasonal springs. Such areas are identified by the presence of standing or running water and generally lack hydrophytic vegetation. "Other waters" extend to the ordinary high water (OHW) mark on opposing channel banks in non-tidal drainage channels. The OHW mark is typically indicated by physical characteristics such as a clear, natural line impressed on the bank, bank shelving, changes in character of soil, destruction of vegetation, exposed roots on the bank, deposition of leaf litter and other debris materials, or lower limit of moss growth on channel banks.

As an initial verification of the work approach and mapping results of H.T. Harvey & Associates' 2008–2009 field work, a Wetland Specialist from the Regulatory section of the San Francisco District of the Corps of Engineers conducted a site visit with H.T. Harvey & Associates wetlands ecologists in early March 2009. The purpose of the involvement of the Corps of Engineers Wetland Specialist at this stage in the study was to obtain feedback and guidance regarding the identification of wetlands and other waters under environmental conditions that allowed firsthand observation of the hydric soil conditions and surface hydrologic characteristics present on the site. This guidance was strictly followed in mapping and describing wetland and channel habitats throughout the site, as shown on Figure 8-1, including the identification of such habitats as seasonal and perennial wetlands and creeks, drainages, and ponds. A technical report summarizing the results of the field surveys along with supporting data sheets is currently in preparation. Table 8-5 provides the total size and linear distance of the wetlands, other waters, and riparian habitats on the site.

Table 8–5: Summary of Wetlands, Other Waters, and Riparian Habitats on the Site

Regulatory Habitat	Area (square feet)	Area (acres)	Linear Features (linear feet)
Waters of the U.S./State[1]			
Potential jurisdictional wetlands[2]	1,045,440	24	n/a
Potential other waters[b]	784,080[c]	18[3]	110,700[c]
Total	1,829,520	42	
Riparian habitats	1,393,920	32	31,558

[1] The areas and linear distances provided in this table are for those features (wetlands and other waters) for which there is a complete correspondence between habitats regulated by the Corps of Engineers and RWQCB. As described above, there may be additional small amounts of areas considered waters of the State that are not waters of the U.S. The extent of such areas will be analyzed and discussed in the future in close consultation with representatives from the RWQCB.

[2] The term "potential" is used in this context to refer to the quantity of wetlands and others waters on the site in order to be consistent with Corps of Engineers policy, which states that the description of their jurisdiction can only become confirmed (and thus no longer just "potential") as part of the formal Corps of Engineers jurisdictional determination process, which has not yet occurred. These numbers should be considered preliminary until the final field surveys are completed and work is verified by the Corps of Engineers. However, given the comprehensive field studies performed to date, and the guidance provided by Corps of Engineers staff during a thorough site visit in March 2009, it is expected that the Corps of Engineers' final and official determination of the extent of jurisdictional waters on the site will be the same as, or very close to, these figures.

[3] These values include the Contra Costa and Clayton Canals (which total 36,002 linear feet), Mt. Diablo Creek (29,395 linear feet), Willow Pass Creek (2,013 linear feet), the old airfield riparian (150 linear feet), and multiple drainages occurring within the annual grasslands (43,140 linear feet).

Source: H.T. Harvey & Associates

8.1.6.2 Habitats Regulated Under Fish and Game Code Section 1600 et seq.

Regulations Overview

Activities that result in the diversion or obstruction of the natural flow of a stream; or substantially change its bed, channel, or bank; or utilize any materials (including vegetation) from the streambed require that the project applicant enter into a Streambed Alteration Agreement with the CDFG, under sections 1600 to 1603 of the California Fish and Game Code. The CDFG potentially extends the definition of "stream" to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams mapped on USGS quads, and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (CDFG, 1994).

Survey Results

Based upon the floristic composition, hydrologic characteristics, and geomorphic structure of waterways on the site, there are three features that meet the above definition. These include the aquatic channel and riparian vegetation associated with Mt. Diablo Creek, Willow Pass Creek, and the two riparian springs located near the old airfield. As described previously, the riparian woodland on the site is most well developed along Mt. Diablo Creek. Following guidance developed by the CDFG, the outside edge of riparian vegetation along both sides of Mt. Diablo Creek was taken as the lateral extent of regulated habitats. This same approach was applied to Willow Pass Creek and the riparian habitats near the old airfield. Table 8-5 provides the total extent and linear distance of the riparian habitats on the site.

8.2 Standards of Significance

Criteria for determining the significant impacts associated with biological resources have been developed based on Appendix G of the CEQA Guidelines and any relevant agency thresholds. For purposes of this EIR, an alternative may have a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS
- Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the CWA through direct removal, filling, hydrological interruption, or other means

- Interfere substantially with the movement of any native resident or migratory species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or State HCP
- Have a substantial adverse effect on State protected wetlands as defined by section 404 of the CWA or the Porter-Cologne Act through direct removal, filling, hydrological interruption, or other means

8.3 Potential Biological Resources Impacts

This section begins with a description of the methodology used and the assumptions that have been incorporated in the analysis of potential biological resources impacts. Then, impacts are identified, first for the Preferred Alternative, followed by those for the Concentration and Conservation Alternative, and then those for the No Project Alternative. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented. Impacts are ordered roughly in order of decreasing ecological importance.

8.3.1 Methodology and Assumptions about Potential Biological Resources Impacts

This analysis is based on an extensive review of the existing literature regarding the biological resources of the site, supplemented by field observations by the biologists preparing this chapter. Impacts to biological resources are analyzed in the context of the existing information available for the site, which includes historical information, relevant studies and reports, field verification studies, and selected protocol-level surveys, and on the site field visits. The available data from the various sources are discussed in detail in section 8.1.

This biological resources analysis evaluates the impacts to species primarily on the basis of projected habitat loss. Table 8-6 summarizes the acreage of each habitat type present within the proposed development footprints for the Preferred Alternative and the Concentration and Conservation Alternative, and thus the potential maximum acreage of impact for each habitat type, with several caveats:

- These estimates assume that the entire Mt. Diablo Creek channel and riparian corridor could potentially be impacted for flood control and/or creek restoration purposes. At this time, it is not known with certainty whether such impacts will occur, or what the extent of such impacts will be.
- These estimates do not include impacts that may result from recreational or interpretive development in open space areas outside the development footprints. Any impacts to

biological resources resulting from recreational or interpretive activities in the open space area will be mitigated according to the mitigation ratios and other requirements established in the biological resources mitigation measures below.

- Under either reuse alternative, it is expected that some areas will be avoided during construction. For example, impacts to sensitive habitats such as streams, wetlands, and riparian habitats will be avoided where practicable, and the eucalyptus groves in the southeastern portion of the Preferred Alternative will likely not be impacted. However, because the precise construction footprints are not yet known, Table 8-6 includes all the acreage of each habitat type within each development footprint.

Table 8–6: Maximum Vegetation Acreage Affected by Each of the Two Alternative Concepts

Vegetation Type	Total Acres On Site (acres)	Preferred Alternative Impacts (acres)	Concentration and Conservation Alternative Impacts (acres)
California Annual Grassland	4,20~~661~~	2,002~~2,045~~	~~1,593~~1,583
Coyote Brush Scrub/Coastal Sage Scrub	5	5	5
Developed	537~~482~~	~~389~~432	~~190~~200
Golf Course/Recreation	114	114	114
Oak Woodland/Savannah	109	10	10
Orchards/Plantations	162	119	29
Riparian Woodland[1]	32	32	32
Freshwater Marsh	6	1	1
Seeps and Springs	1	0	0
Seasonal Wetlands	17	10	9
Creeks, Drainages, Canals, and Ponds[2]	24	20	20
TOTAL	5,213	2,811	2,170

[1] Riparian acreages for the site include riparian habitats along the approximate 2.25 miles of Mt. Diablo Creek.

[2] This category includes Mt. Diablo Creek, Willow Pass Creek, Contra Costa and Clayton Canals, drainages, and ponds, including the golf course ponds.

Source: Habitat Mapping by H.T. Harvey & Associates

As future specific development projects are developed after transfer of the land by the Navy, the project-specific proponents will implement those mitigation measures from this EIR that are relevant to the impacts of their proposed projects. In addition, those specific development projects will likely have to conduct additional, project-specific environmental reviews that could result in additional mitigation measures, depending on project-specific circumstances. As site-specific development is proposed, site-specific studies can be initiated to determine the appropriate and feasible mitigation measures, based on the nature of anticipated impacts. This requirement will apply to land transferred to private ownership through the Base Realignment and Closure (BRAC) conveyance process and any lands transferred under a public benefits conveyance.

Following are the assumptions that have been applied in the analysis of potential biological resources impacts of the reuse alternatives. The assumptions are based on information gathered during the planning process. This information has been incorporated, as appropriate, into the alternatives as ways to avoid or minimize their environmental consequences.

- No development would occur in the Los Medanos Hills in areas with slopes greater than 30 percent.
- Pending the outcome of future studies of flood risk and measures to mitigate such risk, as well as studies of creek restoration opportunities, it is possible that flood control and/or restoration measures may include physical reconfiguration of the Mt. Diablo Creek channel. Such reconfiguration may be needed to increase flow capacity within the channel, increase the extent of riparian vegetation (by providing benches for riparian plantings closer to the groundwater table than is currently possible due to the incised nature of the creek), construct wetlands along the creek, improve in-channel habitat complexity, and improve passage for aquatic species. Whether such measures will be required, and the extent of both adverse and beneficial effects on the creek, its riparian habitats, and other adjacent habitats, are unknown at this time. Nevertheless, this Draft EIR has made the conservative assumption that the entire reach of Mt. Diablo Creek within the project area may need to be reconfigured. It is therefore assumed that such effects may occupy a 300-foot-wide swath ~~centered on~~that includes the creek. These assumptions are the same for both reuse alternatives.
- Following the completion of any flood control or creek restoration measures that may need to be implemented along Mt. Diablo Creek (as described above), a minimum 300-foot riparian buffer will be ~~centered on~~that includes the creek. No development would occur in this buffer zone, although trails or other passive recreation could be established in this area.
- Several of the possible Parks/Active Recreation land uses identified in the reuse alternatives (but outside of the riparian zone) could include facilities construction to support active recreation, with the following conditions:
  - No development would occur within the Cistern Pond area.
  - Specific elements of possible future restoration efforts along Mt. Diablo Creek are not identified in the program-level description of open space activities for the alternative concepts in this EIR, although the potential effects (both beneficial and

adverse) of reconfiguration of the creek for flood control and/or restoration purposes are considered as described above.

  - Active recreational use would not occur within the Mt. Diablo Creek buffer zone or in other areas set aside for wetland preservation or wetland mitigation.

  - All areas designated for future Parks/Active Recreation land use, excluding those above, would be fully developed. At a minimum, the Parks/Active Recreation areas would likely be landscaped, and maintained as a non-natural environment. Although such areas may maintain some of the functions and values of natural habitats, such as wetlands, those are not considered in this evaluation.

- It is assumed that all the areas identified as developable within each of the two reuse alternatives will be impacted. However, it is expected that some areas described as being impacted will instead be avoided, and thus in some cases, impact acreages are described as "up to" a certain amount.

- ~~Portions of the site that are outside the development footprint for the two reuse alternatives will be available for use as mitigation for project-related impacts. For example, at least portions of the areas depicted on the conceptual plans for the two reuse alternatives as "Potential Recreation areas (Subject to habitat restriction)" and "Open Space (Areas set aside for recreation & habitat restoration)" will be enhanced or otherwise managed to compensate for impacts to certain habitats and species, as described in this chapter. The first priority for the future use of these open space lands will be as mitigation habitat for species and habitats impacted by the Concord Community Reuse Project (CCRP), with future recreational use being considered after necessary preservation and enhancement for mitigation purposes has been achieved. However, features such as potential hiking trails, picnic areas, and recreation staging areas, as well as an environmental education, historical interpretation, and Port Chicago visitors center, may also be located within these "open space" areas. It is assumed that planning for future recreational and interpretive uses of the "open space" areas described above will consider any restrictions placed on those uses by the mitigation measures of this EIR, and that those future uses will therefore be compatible with the use of these lands for mitigation. The process by which the proponents of individual projects in the future will be able to use the on-site open space areas as mitigation (e.g., by the purchase of mitigation "credits") will be established by the City prior to any development on the site.~~

- Because the specific locations and descriptions of ~~the~~ recreational and interpretive facilities proposed in the open space areas ~~described in the previous bullet~~ are not known at this time, impacts resulting from activities in these areas are described only qualitatively within this impact assessment. For the purpose of determining project impacts under each of the two reuse alternatives, it is assumed that such activities do not differ between the two alternatives.

- ~~Any necessary habitat mitigation for impacts to sensitive habitats or species will occur in open space areas on the CCRP site to the extent practicable. If on-site mitigation is not practicable, first priority will be given to off-site locations within the same watershed or species population. Finally, if necessary, mitigation may occur within off-site locations~~

~~elsewhere in Contra Costa County. No mitigation required by this EIR will occur outside Contra Costa County.~~

- ~~Any habitat used to mitigate impacts to less than significant levels for CEQA compliance purposes will be preserved via a conservation easement or other instrument adequate to ensure preservation of the site in perpetuity. An endowment, with an amount capable of producing sufficient interest to fund annual monitoring and management measures, will be established to ensure that the desired functions and values for which the mitigation site is intended are maintained in perpetuity.~~

- The majority of wetlands (and possibly all wetlands) in the vicinity of the old airfield may be preserved, rather than impacted, by the project. For the sake of the impact assessment, this Draft EIR assumes that these wetlands could be impacted, but the City will consider plans that entail preservation of these wetlands.

- Estimates of impacts to wetlands, creeks, and other potentially jurisdictional waters of the U.S./State are preliminary, and are based on the amount of the area identified as potentially jurisdictional based on studies to date. The boundaries of these features have not yet been verified by the Corps of Engineers or RWQCB. Additional monitoring and documentation of these features is ongoing, and verification by these agencies will be pursued. For clarification, impacts to seasonal and perennial wetlands, freshwater marsh, seeps and springs, creeks, and ponds assessed in this chapter do not depend on whether such areas are ultimately claimed or disclaimed as jurisdictional waters based upon current federal regulatory guidance. It is assumed that such areas are still regulated as waters of the State if they possess wetland characteristics, even if disclaimed by the Corps of Engineers. Any potential disparity between the extent of State and federal jurisdiction is not an issue if wetlands are treated as plant communities without regard to jurisdictional status, as is done in this chapter.

- Estimates of impacts to the riparian habitat associated with Mt. Diablo Creek and Willow Pass Creek include all areas extending from the outward edge of trees/shrubs, where they interface with the adjacent California annual grassland habitat, to the edge of the aquatic habitat associated with the creek channels. The impacts thus include all areas from the edge of the OHW mark, beyond the top-of-bank, and continuing outward from the creeks to the riparian vegetation edge. As noted above, these areas represent riparian habitats regulated by the CDFG, as well as waters of the State (regulated by the RWQCB) extending outside of the creek channel, as defined by the OHW mark.

- Future specific development projects, which would be proposed and implemented following transfer of the property by the Navy, may (depending on project-specific design and circumstances) be required to obtain permits from one or more State or federal resource agencies, such as the CDFG, RWQCB, USFWS, or Corps of Engineers. Those agencies, through their own permitting processes, may require mitigation for certain biological resource impacts that is different in kind and/or amount from the mitigation specified in this EIR. The proponents of such projects will have to comply with both the applicable mitigation measures in this EIR and any additional non-duplicative mitigation measures imposed by State or federal resource agencies. In the event that a State or federal resource agency prescribes mitigation for a biological resource impact identified in this EIR, and the City determines that such mitigation

provides equal or greater mitigation value to the affected resource as compared to the mitigation specified in this EIR, then the mitigation prescribed by the resource agency may be implemented in lieu of the mitigation measure specified in this EIR.

- In the future, the City of Concord or some other entity could obtain State and federal resource agency permits for the entire site, or a substantial portion of the site, which could then be used by future specific development projects. This could eliminate the need for specific development projects to obtain their own project-specific resource agency permits. Again, through such a permitting approach, those state and federal resource agencies may require mitigation for biological resources impacts that is different in kind and/or amount from the mitigation specified in this EIR. The City, and any individual development projects seeking to use such permits, would have to comply with both the applicable mitigation measures in this EIR and any additional non-duplicative mitigation measures imposed by State or federal resource agencies. In the event that a state or federal resource agency prescribes mitigation for a biological resources impact identified in this EIR, and the City determines that such mitigation provides equal or greater mitigation value to the affected resource as compared to the mitigation specified in this EIR, then the mitigation prescribed by the resource agency may be implemented in lieu of the mitigation measure specified in this EIR.

In addition, the following assumptions have been made with respect to areas used as compensatory mitigation for impacts to biological resources, specifically with respect to the use of on-site open space areas for mitigation:

- Portions of the site that are outside the development footprint for the two reuse alternatives will be available for use as mitigation for project-related impacts. For example, at least portions of the areas depicted on the conceptual plans for the two reuse alternatives as “Potential Recreation areas (Subject to habitat restriction)” and “Open Space (Areas set aside for recreation & habitat restoration)” will be enhanced or otherwise managed to compensate for impacts to certain habitats and species, as described in this chapter. The first priority for the future use of these open space lands will be as mitigation habitat for species and habitats impacted by the CCRP, with future recreational use being considered after necessary preservation and enhancement for mitigation purposes has been achieved. However, features such as potential hiking trails, picnic areas, and recreation staging areas, as well as an environmental education, historical interpretation, and Port Chicago visitors center, may also be located within these “open space” areas. It is assumed that planning for future recreational and interpretive uses of the “open space” areas described above will consider any restrictions placed on those uses by the mitigation measures of this EIR, and that those future uses will therefore be compatible with the use of these lands for mitigation. The process by which the proponents of individual projects in the future will be able to use the on-site open space areas as mitigation (e.g., by the purchase of mitigation “credits”) will be established by the City prior to any development on the site.

- Any necessary habitat mitigation for impacts to sensitive habitats or species will occur in open space areas on the CCRP site to the extent practicable, and it is expected that the on-site open space areas will adequately support the project’s compensatory mitigation needs. If on-site mitigation does not fully satisfy compensatory mitigation requirements and some off-site mitigation is needed, first priority will be given to off-site locations

within the same watershed or species population. Finally, if necessary, mitigation may occur within off-site locations elsewhere in Contra Costa County. No mitigation required by this EIR will occur outside Contra Costa County.

- Any habitat used to mitigate impacts to less than significant levels for CEQA compliance purposes will be preserved via a conservation easement or other instrument adequate to ensure preservation of the site in perpetuity. An endowment, with an amount capable of producing sufficient interest to fund annual monitoring and management measures, will be established to ensure that the desired functions and values for which the mitigation site is intended are maintained in perpetuity.
- Habitat mitigation provided to compensate for impacts to one biological resource can count toward compensation for impacts to other biological resources as long as construction, enhancement, or management of the habitat benefits all such resources. For example, upland habitat that is enhanced and preserved as mitigation for impacts to California tiger salamander upland habitat can serve as mitigation for impacts to upland habitat of the California red-legged frog, burrowing owl, and other species. Similarly, ponds that might be created as mitigation for impacts to California tiger salamander breeding habitat, or to enhance tiger salamander mitigation areas, can count toward mitigation requirements for impacts to wetlands or ponds as well.

8.3.1.1 Application of Standards of Significance to Alternative Concepts

This section summarizes the impacts of the alternatives in accordance with the significance standards presented in section 8.2. The impacts, mitigation measures, and levels of significance are similar for sensitive habitats and special-status species between the two alternatives. The difference among alternatives is based on the magnitude (not the type) of the impacts.

For all impacts, mitigation measures are proposed that would reduce impacts to a level that is less than significant. Table 8-7 presents the summary findings relevant to the significance criteria in section 8.2.

Table 8–7: Summary of Significance Criteria Findings

Significance Criterion	Summary Findings
Candidate, sensitive, or special-status species	Each of the reuse alternatives would result in land use changes that could affect special-status plant and wildlife species. Each of the alternatives would also result in preservation of hillside slopes of the Los Medanos Hills in areas that have more than a 30 percent slope. In addition, both of the reuse alternatives retain a minimum 300-foot-wide riparian corridor along the portions of Mt. Diablo Creek that traverse the site. With the specified mitigation, none of the alternatives would result in a significant impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG, USFWS, or CNPS.
Riparian habitat or other sensitive natural community/federally protected wetlands (CWA, section 404)	Both of the reuse alternatives would result in impacts to riparian habitats, wetlands, and other sensitive habitats. With implementation of specified mitigation, neither alternative would have a significant impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the CDFG or other State or federal agencies. With implementation of specified mitigation, neither alternative would have a significant impact on federally protected wetlands as defined by section 404 of the CWA through direct removal, filling, hydrological interruption, or other means. Most of the wetlands within impact areas on the site are disturbed and located in areas historically used for agriculture and currently subject to ongoing heavy grazing. As a result, such wetlands have decreased functions and values when compared with unaltered wetlands. In addition, the majority of the on-site riparian habitat is incorporated into a riparian buffer in which development would not occur. Although this riparian habitat may be impacted by flood control and/or creek restoration, any such impacts would be mitigated to less than significant levels. Both reuse alternatives include a minimum 300-foot buffer along Mt. Diablo Creek within the site and preserve riparian habitats and wetlands, and other sensitive natural communities in the open space areas. The EIR analysis conservatively assumes that fill could be placed in wetlands, streams, and ponds, and therefore presents mitigation measures, including avoidance and minimization, mitigation and monitoring plans, and best management practices. Implementing these measures would reduce potential impacts to a level that is less than significant.
Migratory species movement	The alternatives would not interfere substantially with the movement of any native resident or migratory species, or with established native resident or migratory wildlife corridors or existing landscape linkages, or impede the use of native wildlife nursery sites. Habitat value and function at the site is currently impaired by grazing, internal and perimeter fencing, pesticide application, and previous industrial uses (concrete bunkers, rail and road network, ground disturbance, and other factors) that limit the overall habitat use by wildlife. Nevertheless, many common and special-status wildlife use the habitats under existing conditions and would continue to use these habitats in the open space under either reuse alternative.

Significance Criterion	Summary Findings
Conflicts with local policies/ordinances for biological resources/adopted HCP, NCCP, other State HCP	None of the alternatives would conflict with any local policies or ordinances protecting biological resources, and none of the alternatives conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State HCP. Various local and regional planning documents provide guidance and regulations for protecting biological resources. Both Contra Costa County and the City of Concord implement ordinances and planning documents that establish protection for such resources. The relevant plans and policies are discussed below in the context of how the potential alternatives either comply with or do not conflict with these policies. Beneficial effects would occur from the reuse alternatives' designation of open space.
East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (County Ordinance 2007-53)	The site is not within the permit area of the ECCC HCP/NCCP, and therefore would not conflict with the conservation strategy in that HCP/NCCP. Although the eastern portion of the site shares a boundary with the ECCC HCP/NCCP area, the conservation measures are not applicable to the site, and the ECCC HCP/NCCP does not discuss adjacent projects.
Contra Costa County General Plan (Contra Costa County, 1996), Conservation Element (Ordinance No. 1995-2010)	The Contra Costa County General Plan (County General Plan) contains goals and policies applicable to unincorporated portions of the planning area. The site is within an incorporated area of the County and is entirely in the City of Concord; therefore, the goals and policies presented in the County General Plan (Contra Costa County, 1996) and protected through County Ordinance 1995-2010 are not applicable. The alternatives are consistent with the County's Conservation Element that includes the conservation of natural resources through "control of the direction, extent, and timing of urban growth." Policies in the County General Plan seek to protect wetlands, habitat, and special-status species, and to encourage preservation and restoration of the San Francisco Bay/Delta estuary and adjacent lands. The alternatives are all consistent with these goals.
Contra Costa County Code, Natural Watercourses (County Code, Chapter 914-4)	The code provides for protection of watercourses in their "natural state" if they are determined to be a scenic attraction or possess significant riparian habitat. The section of Mt. Diablo Creek within the site is not in the jurisdiction of the County, and therefore is not subject to the code's consideration. If it were under County jurisdiction, however, it is unlikely that the creek would be designated as a scenic attraction or have significant riparian habitat, based on the historical uses of extensive cattle grazing and munitions storage at the site. Additional detail on the historical uses of the site that result in a degraded condition of the creek are in Chapter 7, Hydrology and Water Quality; Chapter 10, Hazardous Materials; and in section 8.1 of this chapter.
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 as a heritage tree. 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. The biological resources analysis in this chapter discusses the conformity of the alternatives with that code requirement.

8.3.2 Biological Resources Impacts of the Preferred Alternative

This section summarizes the impacts of the Preferred Alternative in the context of the key resources presented in section 8.3.1. Specifically, these resources are vegetation, common wildlife, special-status species, and sensitive habitats (e.g., wetlands and riparian habitats). In addition, this section includes impacts relevant to the consistency of the Preferred Alternative with local plans and policies for biological resources. These impacts are described and identified as potentially significant (section 8.3.2.1) or less than significant (section 8.3.2.2).

8.3.2.1 Potentially Significant Biological Resources Impacts of the Preferred Alternative

Impact Biological Resources 1: The Preferred Alternative could result in a potential impact to wetland habitats from direct fill or alteration of hydrology. This impact is considered to be potentially significant.

As described in sections 8.1.1.2, 8.1.2.8, and 8.1.6, wetland habitats on the site have been mapped preliminarily. Wetland boundaries will be delineated, and a delineation report will be submitted to the Corps of Engineers for verification. Wetlands encountered on the site have been categorized into freshwater marsh, seeps and springs, and seasonal wetlands. The majority of the wetlands that would be affected by the Preferred Alternative are located in historically and currently grazed rangeland. Such moderate levels of livestock grazing have limited the functions and values of wetlands on the project site below their full potential to some extent. However, the wetlands on the site serve as foraging habitat for some waterbirds, watering areas for mammals, and moist refugia and foraging areas for amphibians. Wetlands that pool water for a sufficient period also provide breeding habitat for amphibians. Loss of wetlands could occur through placement of fill, construction of crossings, alterations of drainage, and other construction activities. These impacts would be considered significant.

The Preferred Alternative could potentially impact up to 11 acres of wetlands (including freshwater marsh and seasonal wetlands). However, the majority of wetlands in the vicinity of the old airfield may be preserved, rather than impacted, by the project. For the sake of this impact assessment, this Draft EIR assumes that these wetlands could be impacted, but the City will consider plans that entail preservation of these wetlands, and thus impacts could be lower than the estimates given above. The Preferred Alternative would preserve wetlands located within open space areas.

> **Mitigation Measure Biological Resources 1: Prior to approving any construction potentially impacting wetlands on the site, the City of Concord shall require project proponents to demonstrate avoidance of wetland fill to the extent practicable and agree to mitigate unavoidable temporary impacts to wetlands by restoration in place following construction; mitigate permanent fill of wetlands at a minimum 1:1 acreage ratio, concurrent with or prior to wetlands impacts; and provide the City with evidence of the purchase of credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for creation of wetlands coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this**

mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

As described in section 8.3.1 above, either the City or individual project proponents will obtain any necessary permits from State and federal resource agencies to allow the fill of wetlands prior to construction. In addition, ~~T~~the City shall require proponents of future development projects potentially impacting wetlands to implement the following measures so that there will be no net loss of wetland habitat functions and values:

- Avoid the fill of wetlands to the maximum extent practicable. The project proponent must demonstrate to the satisfaction of the City that any proposed fill cannot practicably be avoided, taking into account cost, logistics, physical conditions, and any other relevant, site-specific, and project-specific circumstances.

- Mitigate unavoidable fill of wetlands through the creation of an equal amount (1:1 ratio) of similar wetlands, preferably within the CCRP's open space areas or as close to the site as feasible, with secondary priority given to sites elsewhere in the Mt. Diablo Creek watershed, but in any event within Contra Costa County. As mentioned earlier, extensive field surveys have been conducted on the site to document the soils, hydrology, and geomorphology of various existing habitats. From these investigations, it has been concluded that the location with the greatest potential for on-site wetland restoration is in the annual grasslands surrounding the freshwater marsh/seasonal wetlands/riparian woodland complex located south of the old airfield. The heavy clays underlying these grasslands and juxtaposition to the perennial spring afford an opportunity for creation of additional wetlands. It is fully anticipated that created wetlands in this area would become established within a very short time period. Once in place these wetlands would possess relatively higher functions and values when compared to any of the impacted wetlands on the site. It may be possible to create wetlands in additional on-site areas as well, though a detailed mitigation feasibility assessment would be required to determine whether other areas on the site are suitable for creating high-quality wetlands.

  If on-site wetland mitigation is not implemented, wetlands will have to be created off-site, or be mitigated by the purchase of credits in a Corps of Engineers/RWQCB-approved wetland mitigation bank whose designated service area includes the site.

- Prior to construction, the project proponent shall~~will~~ provide the City with either proof of purchase of the required number of credits in an approved mitigation bank, or a Habitat Mitigation and Monitoring Plan describing the proposed creation of mitigation wetlands. Project grading may not commence until the City receives proof of purchase of mitigation bank credits or approves the Habitat Mitigation and Monitoring Plan. When necessary, t~~T~~he Habitat Mitigation and Monitoring Plan shall~~will~~ be prepared by a qualified restoration ecologist and shall~~will~~ provide the following:

  1. A summary of wetland impacts and the proposed wetland creation mitigation
  2. Goals of the restoration to achieve no net loss of habitat functions and values
  3. The location of mitigation site(s) and description of existing site conditions
  4. Mitigation design:
     - Existing and proposed site hydrology, geomorphology, and geotechnical stability, if applicable

- Grading plan if appropriate, including bank stabilization or other site stabilization features
- Soil amendments and other site preparation elements as appropriate
- Planting plan
- Irrigation and maintenance plan
- Construction schedule
- Measures to reduce, to the extent feasible, all short-term construction-related impacts associated with wetland creation and/or restoration activities

5. Monitoring plan (including specific, objective final ~~and~~ performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.)
6. A contingency plan for mitigation elements that do not meet performance or final success criteria within 5 years; this plan shall include specific triggers for remediation if performance criteria are not being met.

- When necessary for mitigation of project impacts through wetland creation, ~~T~~the Habitat Mitigation and Monitoring Plan ~~may~~shall include a detailed description of restoration actions to be taken to replace several different habitat types impacted by the project, including riparian habitat, aquatic channel habitat, and ponds in addition to wetlands.
- The mitigation area will be part of a larger area preserved via a master mitigation strategy for the entire CCRP, or if not part of a master mitigation strategy such as a NCP or HCCP, individual project proponents ~~will~~shall provide proof to the City that the mitigation site has been preserved in perpetuity via a conservation easement or similar instrument, and that an endowment has been established to provide for the monitoring and management of the site in perpetuity.
- Mitigation wetlands shall be created concurrent with or prior to filling of existing wetlands.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including enforcing requirements for the construction of the mitigation and documentation that the mitigation has achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City may issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Avoiding the fill of wetlands to the maximum extent practicable, replacing any filled wetlands with an equal amount of created wetlands that are likely to have higher ecological functions and values than the filled wetlands, and preservation and management of the created wetlands in perpetuity will reduce impacts to wetlands to a less than significant level.

Impact Biological Resources 2: The Preferred Alternative could result in a potential impact to the channel of Mt. Diablo Creek and its aquatic habitat. This impact is considered to be potentially significant.

Aquatic habitat is differentiated from the wetland habitat described above in that hydrophytic vegetation is not present within the aquatic habitat. As mentioned in section 8.3.1, future studies of flood risk and measures to mitigate such risk, as well as studies of creek restoration opportunities, will determine the degree to which flood control and/or restoration measures will be implemented along the Mt. Diablo Creek channel. Such reconfiguration may be needed to increase flow capacity within the channel, increase the extent of riparian vegetation (by providing benches for riparian plantings closer to the groundwater table than is currently possible due to the incised nature of the creek), construct wetlands along the creek, improve in-channel habitat complexity, and improve passage for aquatic species. For the purposes of this impact assessment, this analysis has assumed that the entire reach of Mt. Diablo Creek within the project area may need to be reconfigured, and that such effects may occupy a 300-foot-wide swath ~~centered on~~that includes the creek.

Possible future restoration or construction near or within Mt. Diablo Creek can result in loss of aquatic habitat or channel habitat within the bed and bank of the creek. In the case of restoration activities conducted primarily to halt further downcutting of the channel bed and prevent further losses due to channel erosion, such impacts would be considered temporary in nature because the bed, bank, and channel would be restored using native materials. In contrast, activities related specifically to site development that result in the replacement of the bed and bank with hardscape, such as construction of culverts, bridge abutments, poured-concrete aprons, or similar structures, would be considered a permanent loss of the aquatic habitat. Stream crossings and encroachment may be needed to allow for construction of pathways, roadways, bridges, water and sewer lines, stormwater outfalls, and other utilities to serve the projected buildout concepts. The Preferred Alternative proposes seven bridge crossings of Mt. Diablo Creek, potentially resulting in long-term impacts to aquatic resources of the creek.

Such activities may have a number of effects on the channel and on aquatic habitat in the channel and in downstream areas. Most such work would occur during the dry season, when the on-site reach of Mt. Diablo Creek contains no surface water. Nevertheless, mobilization of sediments disturbed by the project could result in siltation and increased turbidity of downstream areas. If temporary diversion of streamflow is required during this work, movement of aquatic life through the diversion channel may be temporarily disrupted. Construction of bridges and other features within or across the channel could disrupt flow patterns or introduce impediments to movement of both aquatic and terrestrial animals along the creek.

Without implementation of existing requirements, the proposed development could also potentially impact Mt. Diablo Creek by increasing the extent of impervious surface and associated runoff entering the creek, which could alter the creek's hydrology and increase erosion and siltation. Pollutants in such runoff could also reduce water quality in the creek. However, as discussed in Chapter 7, Hydrology and Water Quality, specifically in Hydrology and Water Quality Impacts 3, 4, 5, and 6, these impacts are less than significant due to the implementation of measures in compliance with existing regulatory requirements.

In its current condition, Mt. Diablo Creek provides relatively low-quality aquatic habitat due to the absence of flow for most of the year, absence of deep pools and scarcity of structural diversity of aquatic habitat, existing impediments to movement of aquatic species (both on the site and in upstream and downstream areas), and high water temperatures. As a result,

particularly sensitive aquatic resources such as coldwater and anadromous fish are absent from this reach of the creek. Nevertheless, the temporary disturbance to and permanent loss of aquatic habitat associated with the channel of Mt. Diablo Creek would be a significant impact.

Flood control and/or restoration measures may include physical reconfiguration of the Mt. Diablo low-flow channel totaling approximately 10 acres along the reach of creek on the site. Also, a minimum 300-foot-wide corridor that includes the channel will be maintained free from development (with the exception of crossings, trails, and possibly outfalls and utilities) following the completion of construction.

> **Mitigation Measure Biological Resources 2: Prior to approving any construction involving impacts to Mt. Diablo Creek, the City of Concord shall require project proponents to demonstrate avoidance of creek impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts to the creek by restoration in place following construction; mitigate unavoidable permanent fill of the creek at a minimum 1:1 acreage ratio, concurrent with or prior to creek impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

As described in section 8.3.1 above, either the City or individual project proponents will obtain any necessary permits from State and federal resource agencies to allow for impacts to Mt. Diablo Creek prior to construction. The City shall require proponents of future development projects involving impacts to Mt. Diablo Creek to implement the following measures:

- When designing flood control measures, outfalls, bridges, or other features that impact Mt. Diablo Creek, project proponents must demonstrate avoidance of adverse effects on habitat and hydrology of the creek, including the placement of permanent fill or structures outside the channel, to the maximum extent practicable. Recognizing that the existing bridges and culverts are not conducive to movement of aquatic life due to very high flow velocities, which may inhibit upstream migration of fish (CH2M HILL, 2008e), lack of a low-flow channel, and drops in elevation at their downstream ends, project proponents should design any new crossings to better permit movement of aquatic life. For example, these crossings should be designed to span the channel, or to allow for a low-flow channel to be maintained over natural substrate even in low-water conditions (e.g., with offset culvert boxes).
- Best management practices (BMPs) for water quality ~~will~~shall be implemented during all construction activities within the bed and banks of Mt. Diablo Creek to minimize mobilization of sediments and other harmful materials into downstream areas. These BMPs must consider not only mobilization of sediments during construction (which will likely occur primarily in dry conditions), but also the potential for sediments loosened by project activities to be moved downstream during the following wet season. These BMPs must address at least the following items: mobilization of sediment due to gravity,

erosion, or runoff during construction; potential spills of fuel or other chemicals into aquatic habitats; operation of equipment within flowing water; and stabilization (e.g., with vegetative cover) of any bare soils to prevent erosion and sedimentation.

- Fill and other temporary construction-related impacts to the creek resulting from activities that are intended and designed to provide a net improvement in aquatic and riparian habitat quality, as determined by the City, will not require habitat mitigation. For example, creek restoration may require the placement of rock (which is considered fill) in portions of the creek to create pools, stabilize eroding banks, or otherwise improve habitat quality; such fill would not require mitigation if it is placed using BMPs to minimize temporary water quality and habitat impacts and performed in the context of habitat improvements.

- Unavoidable fill resulting in the permanent loss of aquatic habitats within Mt. Diablo Creek for purposes other than habitat restoration (e.g., construction of bridge abutments or concrete aprons) ~~will~~shall be mitigated through the creation or enhancement of an equal amount (1:1 ratio, on an acreage basis) of similar aquatic habitat. Such mitigation will occur preferably within the CCRP's open space areas or as close to the site as feasible, with secondary priority given to sites elsewhere in the Mt. Diablo Creek watershed, but in any event within Contra Costa County. Temporary disturbance to aquatic habitat within Mt. Diablo Creek shall be mitigated through the restoration of the bed, bank, and channel ~~within Mt. Diablo Creek~~ of any area affected. Restoration activities shall use ~~using~~ only ~~the~~ native soil and other natural materials, such as logs and boulders, to restore and/or replace the affected acreage of the creek at a minimum 1:1 ratio.

  There are a number of opportunities for on-site mitigation of aquatic habitat. One of the locations on the site that would benefit greatest from being "daylighted" is a buried culvert located near the old airfield that currently conveys perennial flows from the springs in that location off site. Restoring the culvert to an open channel would greatly enhance many of the beneficial uses associated with perennial linear drainage features. In addition, there are many thousands of feet of native channels that were filled or placed within culverts by the Navy as part of early site development. Most of these features were located in the lower reaches of the Los Medanos Hills. The upper reaches of these drainages are shown on Figure 8-1. Many of these features either end abruptly with some surface flows continuing on fill slopes, or were placed within excavated linear surface drainage features or buried culverts.

- Such mitigation shall be performed in accordance with a Habitat Mitigation and Monitoring Plan, as described under Mitigation Measure Biological Resources 1.~~,~~ Such a Plan ~~that~~ shall be submitted to the City for review and approval. Project grading may not commence until the City approves the Habitat Mitigation and Monitoring Plan.

- Any mitigation area for permanent impacts to Mt. Diablo Creek will either be part of a larger area preserved via a master mitigation strategy for the entire CCRP, or individual project proponents will provide proof to the City that the mitigation site has been preserved in perpetuity via a conservation easement or similar instrument, and that an endowment has been established to provide for the monitoring and management of the site in perpetuity.

- Mitigation measures shall be implemented concurrent with or prior to filling of the existing channel of Mt. Diablo Creek.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including the construction of the mitigation and documentation that the mitigation has achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City may issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Avoiding impacts to Mt. Diablo Creek to the maximum extent practicable, implementing BMPs to avoid and minimize impacts to water quality, replacing any permanently impacted areas of the creek with an equal amount of created aquatic habitats, and preservation and management of the created aquatic habitats in perpetuity will reduce impacts to Mt. Diablo Creek to a less than significant level.

Impact Biological Resources 3: The Preferred Alternative could result in a potential impact to riparian habitat. This impact is considered to be potentially significant.

Under the Preferred Alternative, development is proposed on both sides of Mt. Diablo Creek, thereby creating the potential need for stream crossings to allow pedestrian, vehicle, or utility crossings of the creek. The Preferred Alternative proposes seven bridge crossings of Mt. Diablo Creek, resulting in the loss of riparian habitat within the footprints of these bridges. Although a minimum 300-foot buffer ~~centered on~~that includes Mt. Diablo Creek will preserve the stream corridor, it will not preclude the placement of materials (pilings, culverts, or other support structures) within riparian habitats associated with the creek.

As discussed previously, it is possible that portions of Mt. Diablo Creek, and possibly up to the entire on-site segment of the creek, may need to be reconfigured for flood control or restoration purposes. Development under the Preferred Alternative proposes to fill the entire length of Willow Pass Creek, and the riparian woodland located near the old airfield could also be directly affected by proposed development under this alternative. Thus, the Preferred Alternative could result in the removal of up to 32 acres of riparian habitat. Although riparian habitat on the site has been degraded by grazing, stream incision, bank erosion, and other factors, this habitat supports more wildlife species than any other habitat on the site, and thus any loss of riparian habitat as a result of the project is significant.

> **Mitigation Measure Biological Resources 3: Prior to approving any construction involving impacts to riparian habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of riparian habitat impacts to the extent practicable and agree to mitigate unavoidable impacts at a minimum 3:1 acreage ratio, concurrent with or prior to riparian impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of riparian habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

As described in section 8.3.1 above, either the City or individual project proponents will obtain any necessary permits from State and federal resource agencies to allow for impacts to jurisdictional waters prior to construction. In addition, ~~T~~the City shall also require proponents of future development projects involving impacts to riparian habitats to implement the following measures:

- Impacts to riparian habitat on the site ~~will~~shall be avoided and minimized to the maximum extent practicable. Where feasible, impacts to riparian habitat shall be avoided by placing bridge piles outside of the top-of-bank of creeks and avoiding dense riparian vegetation areas during road construction.
- Unavoidable losses of riparian habitats ~~will~~shall be mitigated by restoring riparian habitat along reaches of Mt. Diablo Creek, Willow Pass Creek, and the stream/wetland system near the old airfield that are not developed. Such restoration can occur by planting riparian trees and shrubs in existing gaps in the vegetation canopy. As shown in the habitat map on Figure 8-1, there are many areas along the top-of-bank of Mt. Diablo Creek that are devoid of perennial riparian vegetation or have particularly sparse vegetation. Part of this lack of vegetation may be directly attributed to the flashy nature of the surface flows within the creek and to the unrestricted grazing along and within Mt. Diablo Creek. If Mt. Diablo Creek is reconfigured for flood control or creek restoration purposes, benches to allow for the restoration of higher-quality riparian vegetation closer to the groundwater table can be created.
- Due to the long temporal lag between the impact to the riparian trees and shrubs and their full canopy development, such impacts would be considered a long-term effect, requiring mitigation at a 3:1 replacement ratio based on acreage. Given suitable soil and hydrologic conditions along both sides of Mt. Diablo Creek, implementation of this mitigation on the site within the prescribed minimum 300-foot buffer of Mt. Diablo Creek is entirely feasible even with the maximum impact anticipated (32 acres). The surface area within the 300-foot riparian buffer along the length of the creek exceeds 200 acres.
- Such mitigation shall be performed in accordance with a Habitat Mitigation and Monitoring Plan, as described under Mitigation Measure Biological Resources 1, that shall be submitted to the City for review and approval. Project grading may not commence until the City approves the Habitat Mitigation and Monitoring Plan.
- Any mitigation area for impacts to riparian habitat ~~will~~shall either be part of a larger area preserved via a master mitigation strategy for the entire CCRP, or individual project proponents ~~will~~shall provide proof to the City that the mitigation site has been preserved in perpetuity via a conservation easement or similar instrument, and that an endowment has been established to provide for the monitoring and management of the site in perpetuity.
- Mitigation measures shall be implemented concurrent with or prior to removing riparian vegetation associated with Mt. Diablo Creek, Willow Pass Creek, or the stream/wetland system near the old airfield.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including the construction of the mitigation and documentation that the mitigation has achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling

of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City may issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Avoiding impacts to riparian habitats to the maximum extent practicable, replacing any permanently impacted riparian habitats at a minimum 3:1 ratio, and preservation and management of the created riparian habitats in perpetuity will reduce impacts to these habitats to a less than significant level.

Impact Biological Resources 4: The Preferred Alternative could result in a potential impact to the channel of Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats. This impact is considered to be potentially significant.

Loss of the aquatic or channel habitat of Willow Pass Creek, drainages within the California annual grasslands, and ponds may occur as part of site development. Although most of the drainages and ponds on the site are located in open space areas outside the development footprint, Willow Pass Creek is located within the development footprint, and Diablo Creek Golf Course ponds could be impacted by road construction, under both alternatives. The Preferred Alternative could result in impacts to up to 13 acres of these habitats. Placement of fill, grading, and alteration of drainage patterns could result in the direct or indirect loss of these habitats. Although Willow Pass Creek and the ephemeral drainages on the site provide low-quality wildlife habitat due to their flashy flows, dry conditions most of the year, and lack of pools, they are used by amphibians as dispersal and foraging habitat, and as aquatic refugia when they contain water. Also, as noted under Impacts Biological Resources 5 and 7, the Diablo Creek Golf Course ponds could potentially provide aquatic habitat for special-status species such as the California red-legged frog and western pond turtle. Thus, impacts to these features would be considered significant.

Without implementation of existing requirements, the proposed development could also potentially impact Willow Pass Creek and other waterbodies on the site by increasing the extent of impervious surface and amount of runoff entering creeks and drainages, which could alter hydrology and increase erosion and siltation. Pollutants in such runoff could also reduce water quality in these waterbodies. However, as discussed in Chapter 7, Hydrology and Water Quality, specifically in Hydrology and Water Quality Impacts 3, 4, 5, and 6, these impacts are less than significant due to the implementation of measures in compliance with existing requirements.

> **Mitigation Measure Biological Resources 4: Prior to approving any construction involving impacts to Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats, the City of Concord shall require project proponents to demonstrate avoidance of aquatic habitat impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts by restoration in place following construction; mitigate unavoidable permanent fill of aquatic habitats at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in**

perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

As described in ~~S~~section 8.3.1 above, either the City or individual project proponents will obtain any necessary permits from State and federal resource agencies to allow for impacts to jurisdictional waters prior to construction. In addition, ~~T~~the City shall require proponents of future development projects involving impacts to aquatic habitats to implement the following measures:

- Impacts to aquatic or channel habitat of Willow Pass Creek, drainages within the California annual grasslands, and pond habitats ~~will~~shall be avoided to the maximum extent practicable.
- BMPs for water quality ~~will~~shall be implemented during all construction activities within the bed and banks of Willow Pass Creek and other drainages to minimize mobilization of sediments and other harmful materials into downstream areas. These BMPs must consider not only mobilization of sediments during construction (which will likely occur primarily in dry conditions), but also the potential for sediments loosened by project activities to be moved downstream during the following wet season. These BMPs must address at least the following items: mobilization of sediment due to gravity, erosion, or runoff during construction; potential spills of fuel or other chemicals into aquatic habitats; operation of equipment within flowing water; and stabilization (e.g., with vegetative cover) of any bare soils to prevent erosion and sedimentation.
- Fill and other impacts resulting from activities that provide a net improvement in aquatic and riparian habitat quality, as determined by the City, will not require habitat mitigation.
- Except for ponds providing breeding habitat for California red-legged frogs or California tiger salamanders, which will be mitigated at a 3:1 ratio as described under Mitigation Measures Biological Resources 5 and 6, unavoidable fill resulting in the permanent loss of aquatic habitats ~~will~~shall be mitigated through the creation or enhancement of an equal amount (1:1 ratio, on an acreage basis) of similar aquatic habitat. Such mitigation ~~will~~shall occur preferably on the site or as close to the site as feasible, with secondary priority given to sites elsewhere in the Mt. Diablo Creek watershed, but in any event within Contra Costa County. Temporary disturbance to aquatic habitat ~~will~~shall be mitigated through the restoration of the bed, bank, and channel of any area affected using only the native soil and other natural materials, such as logs and boulders, to replace the impacted acreage at a minimum 1:1 ratio. As described under Mitigation Measure Biological Resources 1, there are a number of opportunities for on-site mitigation of aquatic habitat.
- Such mitigation shall be performed in accordance with a Habitat Mitigation and Monitoring Plan, as described under Mitigation Measure Biological Resources 1, that shall be submitted to the City for review and approval. Project grading may not commence until the City approves the Habitat Mitigation and Monitoring Plan.
- Any mitigation area for permanent impacts to aquatic habitats ~~will~~shall either be part of a larger area preserved via a master mitigation strategy for the entire CCRP, or

individual project proponents ~~will~~shall provide proof to the City that the mitigation site has been preserved in perpetuity via a conservation easement or similar instrument, and that an endowment has been established to provide for the monitoring and management of the site in perpetuity.

- Mitigation measures shall be implemented concurrent with or prior to filling of the existing channel of Willow Pass Creek, drainages in annual grasslands, or ponds.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including the construction of the mitigation and documentation that the mitigation has achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City may issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Avoiding impacts to Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats to the maximum extent practicable, implementing BMPs to avoid and minimize impacts to water quality, replacing any permanently impacted aquatic habitats with an equal amount of created aquatic habitats, and preservation and management of the created aquatic habitats in perpetuity will reduce impacts to these habitats to a less than significant level.

Impact Biological Resources 5: The Preferred Alternative could result in a potential impact to California red-legged frogs and their habitats. This impact is considered to be potentially significant.

The California red-legged frog occurs on the site primarily in ponds and freshwater marsh habitat, which provide suitable breeding habitat, in the southeastern half of the site. Ponds on the Diablo Creek Golf Course provide potentially suitable breeding habitat as well. Although Mt. Diablo Creek, the other drainages on the site, and the wetlands near the old airfield do not provide suitable breeding habitat for red-legged frogs due to the relatively short hydroperiod and/or lack of deep, long-lived pools, red-legged frogs have been recorded at several locations in Mt. Diablo Creek, and at one location in grassland west of the creek just south of SR 4. These recorded sightings away from breeding habitat exemplify this species' dispersal capabilities, and red-legged frogs could occur virtually anywhere on the site, especially during wet-season dispersal. The California red-legged frog has been identified on the site at the upper and lower Cistern Ponds, Mt. Diablo Creek, 5AT-1 Pond and adjoining freshwater marsh, Rattlesnake Canyon Pond, upper and lower 5AT-2 Pond and adjoining marsh, in the lower and upper ponds and along the drainage at Indian Springs, and in Rattlesnake Canyon.

Based on the results of previous surveys, it is clear that the vast majority of locations where California red-legged frogs have been recorded breeding on the site will be avoided by development under the Preferred Alternative, and that conversely, red-legged frogs have not been detected in the vast majority of this alternative's impact areas.

The only potential breeding habitat for red-legged frogs that will be impacted by the project is in the golf course ponds. Red-legged frogs have not been recorded at these ponds, but

breeding here is possible. Construction of a proposed road could impact at least a portion of the ponds on the golf course, and such construction could result in the loss of red-legged frogs, eggs, larvae, and red-legged frog aquatic habitat.

Project development could also result in the fill of wetlands near the old airfield (or at least the isolation of these wetlands by surrounding development) and elsewhere on the site, the fill or isolation of channels and canals, and impacts to Mt. Diablo Creek. These impacts would result in the effective loss of nonbreeding aquatic habitat used by dispersing and nonbreeding red-legged frogs as foraging and aquatic refugia. The project will also result in the loss of upland dispersal habitat.

Following project construction, including any reconfiguration of Mt. Diablo Creek necessary for flood control and/or creek restoration purposes, red-legged frogs will still be able to disperse through the site via Mt. Diablo Creek. Maintenance of the minimum 300-foot buffer ~~centered on~~that includes the creek will help to maintain this potential avenue of movement for frogs. Nevertheless, movement of frogs through the site will be inhibited to some extent by the presence of future development in areas that currently do not constrain overland dispersal.

Increased human activity, such as increased traffic and the construction of new roadways, increased active and passive recreational use, or increased disturbance by domestic animals could result in California red-legged frog mortality from vehicles, alteration of hydrology and water quality, potential introduction of predatory non-native species, increased nighttime lighting, and increased harassment by humans and domestic animals. The potential for introduction of predatory non-native fish, amphibians, and crustaceans into California red-legged frog habitat would also result in adverse impacts to this species. Indirect impacts to California red-legged frogs include potential degradation of water quality resulting from unregulated discharge of contaminants or sediment from development and alteration of hydrology in aquatic habitats. Collectively, impacts to individual California red-legged frogs and their habitat are potentially significant.

Within the development footprint, areas on the east side of Mt. Diablo Creek south of SR 4, areas on the west side but close to the creek, and possibly Diablo Creek Golf Course (due to the presence of ponds) are the areas that are expected to be most regularly used by California red-legged frogs. In contrast, most of the area west of Mt. Diablo Creek provides relatively low-quality habitat for red-legged frogs since the use of such areas does not facilitate breeding or dispersal of frogs between breeding areas. As a result, it is not surprising that only one red-legged frog has been recorded in the areas west of Mt. Diablo Creek. Nevertheless, all impact areas on the site that are not mapped on Figure 8-1 as "developed," with the exception of the recreational area along East Olivera Road, are considered to represent impacted red-legged frog habitat. The Preferred Alternative could impact up to approximately ~~2,400~~2,379 acres of potential California red-legged frog habitat.

Mitigation Measure Biological Resources 5: Prior to approving any construction in or near potential California red-legged frog habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of red-legged frog breeding habitat impacts and impacts to Mt. Diablo Creek to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in red-legged frog

breeding habitat and use only low-intensity or downcast lighting near red-legged frog ~~breeding or~~ dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which frogs may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for red-legged frogs; mitigate unavoidable temporary impacts to red-legged frog habitat at a 1.1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation at a 0.1:1 ratio); mitigate unavoidable permanent impacts to red-legged frog breeding habitat at a minimum 3:1 acreage ratio and to red-legged frog nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of red-legged frog habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of red-legged frog habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

As described in section 8.3.1 above, either the City or individual project proponents will obtain any necessary approval from the USFWS to allow incidental take of the California red-legged frog prior to construction. Implementation of the mitigation measures described for impacts to wetland, aquatic, and riparian habitats (see Impacts Biological Resources 1, 2, 3, and 4) will avoid, minimize, and compensate for impacts to habitats that are potentially most limiting to red-legged frog populations on the site. In addition, the City of Concord shall require proponents of future development projects in or near potential California red-legged frog habitat to implement the following measures.

Construction-Related Measures

- Construction activities within areas where red-legged frogs are most likely to occur (i.e., wetlands, streams, riparian habitats, and areas within 200 feet of these features) shall be performed during the dry season to the maximum extent practicable. Construction activities in or near potential red-legged frog breeding habitat should occur during the July–November period if feasible to avoid the period when red-legged frogs are breeding and the period when eggs or larvae are most likely to be present.
- Prior to the initiation of any other protective measures, a qualified biologist (i.e., a biologist experienced with red-legged frogs) ~~will~~shall determine, in consultation with the USFWS, appropriate relocation sites for any adult, juvenile, and larval California red-legged frogs that may be observed during the pre-construction survey described below and need to be relocated.
- Prior to pre-construction surveys, the project proponent ~~will~~shall enclose the construction area with a 3-foot-high silt fence, of which approximately 6 inches are buried underground, that will remain in place during construction in order to prevent red-legged frogs from entering the construction area. Escape ramps, funnels, or other features that allow animals to exit the construction area, but which will prohibit the entry

of such animals, shall be provided in the exclusion fencing. A qualified biologist ~~will~~shall conduct a pre-construction survey of the fence installation area immediately prior to (i.e., the day of) the commencement of installation. The exclusion fencing ~~will~~shall be inspected daily by construction personnel and maintained for the duration of construction.

Such fencing is not feasible for instream work or work in very rocky areas, and installation of such fencing may cause more damage than construction activities if construction (e.g., in the open space areas) involves only minimal disturbance from trail establishment or interpretive signage. In such situations, the biologist ~~will~~shall conduct a pre-construction survey as described below and determine, in consultation with the USFWS, whether construction monitoring or other measures are preferable in lieu of exclusion fencing.

- After the exclusion fence is installed and immediately prior to construction, the project proponent ~~will~~shall have surveys performed in construction areas where the California red-legged frog is most likely to occur, by a qualified biologist possessing all necessary permits to handle red-legged frogs. Such surveys ~~will~~shall be conducted according to the following protocols:
  - Any ponds or pools within the project area ~~will~~shall be seined for California red-legged frog larvae within 7 days prior to construction. Pools or ponds that will be impacted should be pumped or drained during the seining operation if necessary (i.e., based on the professional judgment of the qualified biologist performing the seining) to ensure that the waterbody to be affected is completely seined for red-legged frogs. Any California red-legged frog larvae found during seining ~~will~~shall be salvaged and relocated by the biologist to the designated location.
  - The biologist shall conduct one nighttime survey and one daytime survey of the construction area for California red-legged frogs within 48 hours before the onset of construction activities. Such surveys shall focus on wetlands, streams, ponds, riparian habitats, and areas within 200 feet of these features, but they shall also include a pedestrian survey of the entire impact area to survey for red-legged frogs in vegetation, under debris, in culverts, or in other areas that could provide refugia for this species. If California red-legged frogs of any life stage are found, they ~~will~~shall be moved to the designated location. During construction, if a California red-legged frog is observed within the construction area, construction activities that could potentially harm the individual ~~will~~shall be stopped immediately and until the California red-legged frog is moved to a designated area by the biologist. No other individuals ~~will~~shall handle California red-legged frogs.
- BMPs ~~will~~shall be implemented during construction activities for water quality, as described in Mitigation Measure Biological Resources 2 above and Chapter 7, Hydrology and Water Quality. A Stormwater Pollution and Prevention Plan (SWPPP) ~~will~~shall be implemented containing BMPs designed to prevent construction-related discharge into all surface waters, including those containing California red-legged frog and other aquatic and amphibious species.
- A construction personnel education program ~~will~~shall take place before the commencement of construction, and a qualified biologist ~~will~~shall explain to construction

workers how best to avoid the accidental take of California red-legged frogs. This training session ~~will~~shall be required to be scheduled as a mandatory informational field meeting for contractors and all construction personnel involved in vegetation clearing, demolition, or rough grading. The field meeting ~~will~~shall include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis ~~will~~shall be placed on the importance of the habitat and life stage requirements within the context of project avoidance and minimization measures. Handouts, illustrations, photographs, and project mapping showing areas where minimization and avoidance measures are being implemented ~~will~~shall be included as part of this education program. The program ~~will~~shall increase the awareness of the contractors and construction workers about existing federal and State laws regarding endangered species, as well as increase their compliance with conditions of this EIR and requirements of resource agencies.

Design-Related Measures

- Project proponents ~~will~~shall demonstrate to the City that known or potential breeding habitat for California red-legged frogs has been avoided to the maximum extent practicable during project design. Recreational or interpretive development within the open space areas southeast of Mt. Diablo Creek ~~will~~shall be located as far from breeding areas as practicable. Such development ~~will~~shall not be constructed in such a way as to inhibit movement of frogs to and from their aquatic breeding sites (e.g., no retaining walls or other impediments ~~will~~shall be constructed in these open space areas).
- Installation of permanent exclusion fencing around new residential or industrial developments when adjacent or near aquatic habitat shall be required to reduce access by pets. Pamphlets ~~will~~shall be dispersed to all new residents explaining the importance of maintaining control of pets and avoiding sensitive areas near their residences. Signage adjacent to preserve or mitigation areas shall be installed to provide information to residents and visitors in the area and discourage disturbance.
- No lighting ~~will~~may be placed within or immediately adjacent to (within 100 feet of) known California red-legged frog breeding habitat. Where lighting is to be placed within or adjacent to California red-legged frog ~~breeding or~~ dispersal habitat, low-intensity lighting, downcast lighting, or other appropriate lighting technology shall be incorporated into the design to reduce potential adverse effects of lighting on red-legged frog movements and to reduce visibility of frogs to nocturnal predators.
- To avoid impacts to aquatic species, placement of permanent bridge supports or other permanent structures in Mt. Diablo Creek ~~will~~shall be avoided to the maximum extent practicable. Any new creek crossings ~~will~~shall be designed so as not to impair the passage of aquatic species.

Compensatory Habitat Mitigation

- As described in ~~S~~section 8.3.1 above, either the City will obtain any necessary regulatory approvals (i.e., FESA incidental take authorization) on a programmatic basis for the entire site, or individual project proponents will obtain such approvals on a project-by-project basis.

- Permanent impacts to California red-legged frog breeding habitat ~~will~~shall be mitigated by creating suitable breeding habitat at a 3:1 (mitigation-to-impact) ratio on an acreage basis. Currently, the only potential red-legged frog breeding habitat that may be impacted is in the golf course ponds. If development activity does result in the fill of any of these ponds, either the affected pond(s) must be assumed to constitute breeding habitat such that mitigation ~~will~~shall be provided at a 3:1 ratio, or focused presence/absence breeding-season surveys must be conducted in accordance with standard USFWS survey protocols, in which case mitigation will only be required if such survey confirms that red-legged frogs are actually using the pond(s) for breeding.

- Permanent impacts to California red-legged frog nonbreeding aquatic and upland habitat ~~will~~shall be mitigated through the enhancement, preservation, and management of other suitable habitat. The majority of the impact areas provide relatively low-quality nonbreeding aquatic habitat and upland habitat for red-legged frogs, owing to the lack of frog detections in these areas and the fact that most project impact areas are not located in areas that are important for dispersal between known breeding locations. Therefore, whereas impacts to frog breeding habitat will be mitigated at a 3:1 ratio, it is biologically appropriate that mitigation for impacts to nonbreeding aquatic and upland habitat be provided at a ratio of 1:1. Based on this mitigation ratio, buildout of the Preferred Alternative would necessitate providing up to ~~2,400~~2,379 acres of California red-legged frog nonbreeding aquatic and upland mitigation habitat.

- Temporary impacts to California red-legged frog habitat may occur in areas where grading will occur but where natural substrates and vegetation will be restored following grading (as opposed to turf, landscaping, or other ornamental vegetation, which would be considered a permanent impact). Such impacts are only considered temporary if they occur adjacent to open space that will continue to provide habitat for California red-legged frogs (e.g., red-legged frog habitat surrounded by development following grading is considered permanently impacted). Temporary impacts ~~will~~shall be mitigated at a 1.1:1 ratio, in which 1:1 replacement occurs in situ (i.e., the temporarily impacted area itself is restored to suitable habitat conditions after grading is completed) and an additional 0.1:1 mitigation occurs via on-site/off-site habitat preservation and management, as described above for permanent impacts. However, temporary impacts that occur during activities that could have a net benefit to California red-legged frogs and other aquatic/amphibious species, such as removal of hardscape within open space areas, wetland creation or restoration, or stream restoration, do not require mitigation for red-legged frog habitat impacts beyond the in situ restoration being performed by that particular activity.

- Because development of the project site will be phased, it is possible that development in one phase may effectively isolate areas that are currently considered to provide potential red-legged frog habitat, but that will not be developed for some time later. In such a case, subsequent developers might contend that red-legged frogs are absent and thus that no mitigation is required. To ensure that appropriate habitat mitigation is provided regardless of project phasing, the City ~~will~~shall require mitigation for impacts to all habitat currently shown on Figure 8-1 other than “developed” areas and the recreational areas along East Olivera Road for all future development in the project area.

- The mitigation obligations described above may be satisfied either through the purchase of appropriate red-legged frog mitigation credits at a USFWS-approved mitigation bank whose designated service area includes the project site, or through the appropriate creation and/or enhancement of habitat as detailed in a Habitat Mitigation and Monitoring Plan. Prior to construction, the project proponent either must provide the City with proof of purchase of the required number of mitigation bank credits, or it must provide the City a Habitat Mitigation and Monitoring Plan for review and approval that includes, at a minimum, the following information:

  1. A summary of habitat impacts and the proposed mitigation
  2. A description of the location and boundaries of the mitigation site and description of existing site conditions
  3. A description of measures to be undertaken to enhance the mitigation site for use by California red-legged frogs and to protect particularly sensitive resources (e.g., breeding ponds)
  4. Mitigation measures to address any temporary construction-related impacts associated with creation and/or restoration of habitat for red-leged frogs
  ~~4.~~5. A description of maintenance measures, including regular maintenance (e.g., of fencing) and less frequent, longer-term maintenance (e.g., maintenance of ponds and berms to ensure long-term functionality as red-legged frog breeding habitat)
  ~~5.~~6. A description of habitat and species monitoring measures on the mitigation site, including specific, objective final ~~and~~ performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.
  ~~6.~~7. A contingency plan for mitigation elements that do not meet performance or final success criteria within 5 years; this plan shall include specific triggers for remediation if performance criteria are not being met and a description of the process by which remediation of problems with the mitigation site (e.g., presence of non-native predators and competitors) will occur

  Within limits, passive recreation with limited infrastructure for visitors can be consistent with management of red-legged frog populations. Nevertheless, if recreational or interpretive activities will occur within the mitigation area (e.g., in the on-site open space area), it will be necessary to ensure that the location of the mitigation area and the types of activities proposed in that area are consistent with the long-term conservation of California red-legged frog populations. The Habitat Mitigation and Monitoring Plan shall describe any recreational activities that may be allowed within the mitigation site, how those activities are consistent with a red-legged frog mitigation site, and measures that will be implemented to ensure that levels of those activities remain consistent with red-legged frog conservation.

- Any mitigation area for permanent impacts to red-legged frog habitats ~~will~~shall either be part of a larger area preserved via a master mitigation strategy for the entire CCRP, or individual project proponents ~~will~~shall provide proof to the City that the mitigation site has been preserved in perpetuity via a conservation easement or similar instrument, and that an endowment has been established to provide for the monitoring and management of the site in perpetuity.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including the construction of the mitigation and documentation that the mitigation has

achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City may issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Implementation of the design measures listed above will provide long-term minimization of impacts to red-legged frogs on the site, while implementation of the aforementioned construction-phase measures will minimize impacts to individual frogs and their habitats during construction. The enhancement and permanent preservation and management of suitable red-legged frog habitat will compensate for any residual impacts to California red-legged frog habitat. Collectively, these measures will reduce impacts to California red-legged frogs to a less than significant level.

Impact Biological Resources 6: The Preferred Alternative could result in a potential impact to California tiger salamanders and their habitats. This impact is considered to be potentially significant.

California tiger salamanders are known to breed in a number of locations in the southeastern half of the site, including the upper and lower Cistern Ponds, Rock Quarry Pond, 5AT-1 Pond and adjoining marsh, 5AT-2 Pond, Rattlesnake Canyon Pond, lower Indian Springs Pond, north and south Hilltop Ponds, and other pools. Although passive recreation (such as hiking) or interpretive development could occur in the vicinity of these locations, no other development is proposed in or near these areas.

Smallwood and Morrison (2007) conducted focused larval surveys in spring of 2005 and 2006, years of above-average rainfall, and conducted upland sampling using drift fences and pitfall traps. They recorded the species in a number of locations, all in the southeastern half of the site. To date, despite these intensive surveys, no California tiger salamanders have been recorded in the northwestern half of the project site. There are no records northwest of Willow Pass Road or in the Tidal Area of the CNWS. The only record from within the proposed development area, and the only record from the southwest side of Mt. Diablo Creek, is a larval record from a seasonal pool in a ditch in Bunker City; this pool did not pond at all in 2008–2009, and it thus contains sufficient water for breeding only in well-above-average rainfall years such as 2005 and 2006. Otherwise, the northwesternmost record is from the ridgeline along the eastern edge of the site 1.5 miles southeast of the Willow Pass Road/SR 4 interchange.

Based on these surveys, it is clear that the vast majority of locations where California tiger salamanders have been recorded will be avoided by development under the Preferred Alternative, and that conversely, tiger salamanders have not been detected in the vast majority of this alternative's impact areas.

Placing fill in aquatic habitats containing California tiger salamanders would result in loss of breeding habitat and potential injury or mortality of individuals. Such impacts are unlikely given that the seasonal pool in Bunker City, which holds water only in very wet years, is the only breeding location that is proposed to be impacted under the Preferred Alternative.

California tiger salamanders use upland habitats surrounding their breeding sites for aestivation (i.e., spending the dry season underground in small mammal burrows or cracks in the soil) and for dispersal between breeding sites and aestivation areas. With the exception of the aforementioned seasonal pool in Bunker City, all recorded tiger salamander breeding locations in the project vicinity are located east of the development area under the Preferred Alternative. These breeding sites and their surroundings are to remain open space. Therefore, project development will not impede dispersal of salamanders among breeding locations. Nevertheless, grading and development of upland areas could result in injury or mortality of any California tiger salamanders within the construction area, and could result in the loss of aestivation and dispersal habitat.

Increased human activity, such as increased traffic and the construction of new roadways, increased active and passive recreational use, or increased disturbance by domestic animals, could result in California tiger salamander mortality from vehicles, alterations of hydrology and water quality, potential introduction of predatory non-native species, increased nighttime lighting, and increased harassment by humans and domestic animals. The potential for introduction of predatory non-native fish, amphibians, and crustaceans into California tiger salamander habitat would also result in adverse impacts to California tiger salamanders. Indirect impacts to California tiger salamanders include potential degradation of water quality resulting from unregulated discharge of contaminants or sediment from development and alteration of hydrology in aquatic habitats. Thus, impacts to individual California tiger salamanders and their habitats are potentially significant.

According to the Final Rule for listing the central population of the California tiger salamander as threatened under the FESA (USFWS, 2004), “Adult California tiger salamander have been observed up to 2,092 meters (1.3 miles) from breeding ponds (S. Sweet, University of California, Santa Barbara, in litt. 1998), which may be vernal pools, stock ponds, or other seasonal or perennial water bodies.” However, Dr. Sweet has confirmed to H.T. Harvey & Associates that the individual salamander to which this report referred was actually 0.9 miles from the nearest pond, and 1.05 miles from the pond to which Dr. Sweet thought the salamander was traveling (Dr. Sam Sweet, pers. comm. to J. Wilkinson, February 10, 2006, and to Steve Rottenborn, April 28, 2006). California tiger salamanders at Stanford University have been recorded up to 1 mile from their breeding pond (Dr. Alan Launer, pers. comm. to Steve Rottenborn, February 24, 2006), and Austin and Shaffer (1992) reported dispersal distances of at least 1 mile. Trenham et al. (2001) observed a high probability of adult California tiger salamander dispersing between pools up to 2,200 feet apart, but did not observe dispersal events longer than 2,300 feet. Trenham and Shaffer (2005) estimated 50, 90, and 95 percent of adult California tiger salamanders were within 492, 1,608, and 2,034 feet of their study pond, respectively, and that 95 percent of juvenile California tiger salamanders were within 2,067 feet of the pond, with 85 percent concentrated between 656 and 1,969 feet, but none were found at 2,625 feet. However, Orloff (2007) reported longer-distance dispersal by a few individuals in a population in Pittsburg, immediately east of the CCRP site; her results suggested that some individuals may be been traveling at least 1.3 miles from aquatic breeding habitat to upland aestivation habitat. Collectively, these studies suggest that dispersal distances may vary among populations and/or sites, that California tiger salamander abundance likely decreases with increasing distance from a breeding pond, and that a few individuals may disperse 1 mile or more from breeding areas.

EDAW (2008a) conducted an assessment of potential California tiger salamanders upland habitat on the project site. This study considered previously identified breeding locations, the distribution of small mammal burrows (concentrations of which were mapped throughout the site), potential impediments to dispersal (such as Mt. Diablo Creek due to its incision and Willow Pass Road due to traffic mortality), and information concerning the dispersal capabilities of the tiger salamander to evaluate various areas on the site according to its upland habitat value. This study ranked the relative value of various sections of the site as upland habitat for California tiger salamanders based on proximity to known breeding ponds, abundance of upland refugia such as burrows, and location relative to impediments such as Mt. Diablo Creek and Willow Pass Road, identifying 10 levels of habitat suitability.

Based on EDAW's upland habitat suitability analysis, the Preferred Alternative could impact up to ~~1,159~~1,116 acres of potential California tiger salamander habitat, including the seasonal pool in Bunker City where breeding was previously detected. Figure 8-3 depicts these habitat impact areas.

Mitigation Measure Biological Resources 6: Prior to approving any construction or other ground-disturbing activities within areas identified as providing California tiger salamander habitat at the site, the City of Concord shall require project proponents to demonstrate avoidance of tiger salamander breeding habitat impacts to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in tiger salamander breeding habitat and use only low-intensity or downcast lighting near tiger salamander ~~breeding or~~ dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which tiger salamander may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for tiger salamander; mitigate unavoidable temporary impacts to tiger salamander habitat at a 1.1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation at a 0.1:1 ratio); mitigate unavoidable permanent impacts to tiger salamander breeding habitat at a minimum 3:1 acreage ratio and to tiger salamander nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of tiger salamander habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of tiger salamander habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

As described in section 8.3.1 above, either the City or individual project proponents will obtain any necessary approval from the USFWS and CDFG to allow incidental take of the California tiger salamander prior to construction.

In addition, ~~T~~the City shall require proponents of future development projects within areas identified as providing California tiger salamander habitat to implement the following measures:

Construction-Related Measures

- Construction activities within California tiger salamander habitat, as identified on Figure 8-3, shall be performed between April 30 and the first heavy rains in fall (i.e., during the nonbreeding season) to the maximum extent practicable to avoid impacts to tiger salamanders moving aboveground.
- Prior to the initiation of any other protective measures, a qualified biologist (i.e., a biologist with a experience with California tiger salamanders) ~~will~~shall determine, in consultation with the USFWS and CDFG, appropriate relocation sites for any adult, juvenile, and larval California tiger salamanders that may be observed during the pre-construction survey described below and need to be relocated.
- Prior to pre-construction surveys, the project proponent ~~will~~shall enclose the construction area with a 3-foot-high silt fence, of which approximately 6 inches are buried underground, that will remain in place during construction in order to prevent California tiger salamanders from entering the construction area. Escape ramps, funnels, or other features that allow animals to exit the construction area, but which shall prohibit the entry of such animals, will be provided in the exclusion fencing. A qualified biologist ~~will~~shall conduct a pre-construction survey of the fence installation area immediately prior to (i.e., the day of) the commencement of installation. The exclusion fencing ~~will~~shall be inspected daily by construction personnel and maintained for the duration of construction.

  Such fencing is not feasible for instream work or work in very rocky areas, and installation of such fencing may cause more damage than construction activities if construction (e.g., in the open space areas) involves only minimal disturbance from trail establishment or interpretive signage. In such situations, the biologist ~~will~~shall conduct a pre-construction survey as described below and determine, in consultation with the USFWS and CDFG, whether construction monitoring or other measures are preferable to exclusion fencing.
- After the exclusion fence is installed and immediately prior to construction, the project proponent ~~will~~shall have surveys performed in construction areas where the California tiger salamander could occur, by a qualified biologist possessing all necessary permits to handle tiger salamanders. Such surveys ~~will~~shall be conducted according to the following protocol:
  - Any ponds or pools within the project area ~~will~~shall be seined for California tiger salamander larvae within 7 days prior to construction. Pools or ponds that will be impacted should be pumped or drained during the seining operation if necessary (i.e., based on the professional judgment of the qualified biologist performing the seining) to ensure that the waterbody to be affected is completely seined for tiger

salamanders. Any California tiger salamander larvae found during seining ~~will~~shall be salvaged and relocated by the biologist to the designated location.

– The biologist shall survey the construction area for California tiger salamanders within 48 hours before the onset of construction activities. Such surveys ~~will~~shall focus on wetlands, ponds, and pools, and areas within 200 feet of these features, but they must also include a pedestrian survey of the entire impact area (if identified on Figure 8-3 as providing potential California tiger salamander habitat) to survey for tiger salamanders in vegetation, under debris, in culverts, or in other areas that could provide refugia for this species. If California tiger salamanders of any life stage are found, they ~~will~~shall be moved to the designated location. During construction, if a California tiger salamander is observed within the construction area, construction activities that could potentially harm the individual ~~will~~shall be stopped immediately and until the California tiger salamander is moved to a designated area by the biologist. No other individuals ~~will~~may handle California tiger salamanders.

- BMPs ~~will~~shall be implemented during construction activities for water quality, as described in Mitigation Measure Biological Resources 2 above and Chapter 7, Hydrology and Water Quality. A Stormwater Pollution and Prevention Plan (SWPPP) ~~will~~shall be implemented containing BMPs designed to prevent construction-related discharge into all surface waters, including those containing California tiger salamander and other aquatic and amphibious species.
- A construction personnel education program ~~will~~shall take place before the commencement of construction, and a qualified biologist ~~will~~shall explain to construction workers how best to avoid the accidental take of California tiger salamanders. This training session ~~will~~shall be required to be scheduled as a mandatory informational field meeting for contractors and all construction personnel involved in vegetation clearing, demolition, or rough grading. The field meeting ~~will~~shall include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis ~~will~~shall be placed on the importance of the habitat and life stage requirements within the context of project avoidance and minimization measures. Handouts, illustrations, photographs, and project mapping showing areas where minimization and avoidance measures are being implemented ~~will~~shall be included as part of this education program. The program will increase the awareness of the contractors and construction workers about existing federal and State laws regarding endangered species as well as increase their compliance with conditions of this EIR and requirements of resource agencies.

Design-Related Measures

- Project proponents ~~will~~shall demonstrate to the City that known or potential breeding habitat for California tiger salamanders has been avoided to the maximum extent practicable during project design. Recreational or interpretive development within the open space areas southeast of Mt. Diablo Creek ~~will~~shall be located as far from breeding areas as practicable. Such development ~~will~~shall not be constructed in such a way as to inhibit the movement of salamanders to and from their aquatic breeding sites (e.g., no curbs, retaining walls, or other impediments ~~will~~may be constructed in these open space areas).

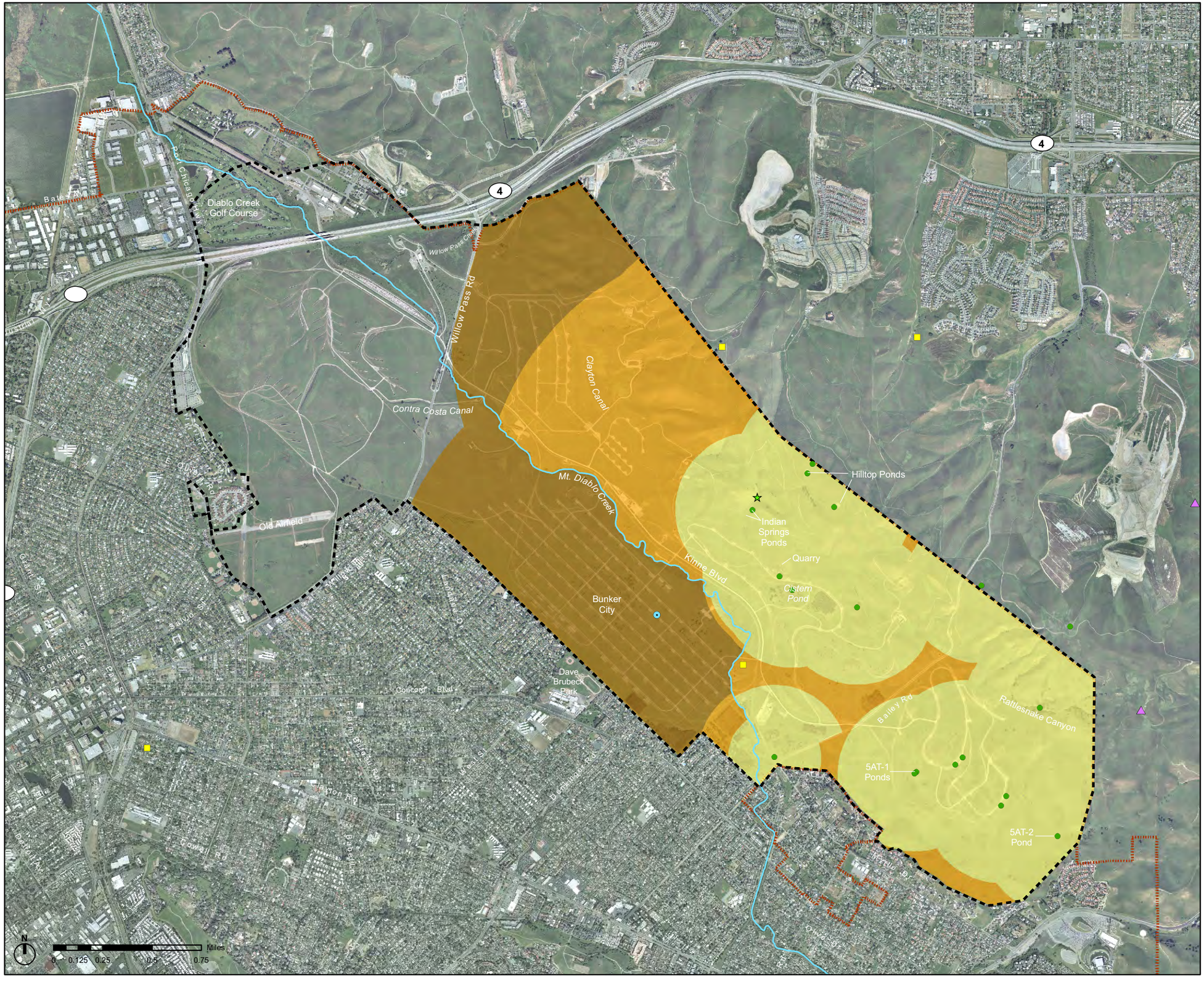
- Installation of permanent exclusion fencing around new residential or industrial developments when adjacent or near aquatic habitat shall be required to reduce access to aquatic habitats by pets. Pamphlets ~~will~~shall be dispersed to all new residents explaining the importance of maintaining control of pets and avoiding sensitive areas in their proximity. Signage adjacent to preserve or mitigation areas shall be installed to provide information to residents and visitors in the area and discourage disturbance.
- No lighting may be placed within or immediately adjacent to (within 100 feet of) known California tiger salamander breeding habitat. Where lighting is to be placed within or adjacent to California tiger salamander ~~breeding or~~ dispersal habitat, low-intensity lighting, downcast lighting, or other appropriate lighting technology shall be incorporated into the design to reduce potential adverse effects of lighting on tiger salamander movements and to reduce visibility of salamanders to nocturnal predators.

Compensatory Habitat Mitigation

- As described in section 8.3.1 above, either the City will obtain any necessary regulatory approvals (i.e., FESA and CESA incidental take authorization) on a programmatic basis for the entire site, or individual project proponents will obtain such approvals on a project-by-project basis.
- Permanent impacts to California tiger salamander breeding habitat ~~will~~shall be mitigated by creating suitable breeding habitat at a 3:1 (mitigation-to-impact) ratio on an acreage basis. Currently, the only tiger salamander breeding location proposed to be impacted under the Preferred Alternative is a small seasonal pool within Bunker City; in a very wet year, this pool likely does not exceed 500 square feet in size.
- The amount of mitigation required for impacts to California tiger salamander upland habitat ~~will~~shall be determined according to the suitability of the habitat being impacted. The upland habitat suitability analysis (EDAW, 2008a) identified 10 levels of upland habitat suitability for tiger salamanders on the site. For the purpose of determining mitigation requirements, those 10 levels have been simplified into 3, as depicted on Figure 8-3. Compensatory mitigation for impacts to these three habitat classifications ~~will~~shall be provided as follows:
  - Permanent impacts to up to 15.6 acres of high-quality/high-use upland habitat (suitability levels 8–10 in EDAW, 2008a) ~~will~~shall be compensated by enhancement, preservation, and management of other suitable upland habitat at a 2:1 ratio.
  - Permanent impacts to up to ~~183.7~~179.7 acres of medium-quality/medium-use upland habitat (suitability levels 5–7 in EDAW, 2008a) ~~will~~shall be compensated by enhancement, preservation, and management of other suitable upland habitat at a 1.5:1 ratio.
  - Permanent impacts to up to ~~959.5~~917.9 acres of low-quality/low-use upland habitat (suitability levels 1–4 in EDAW, 2008a) ~~will~~shall be compensated by enhancement, preservation, and management of other suitable upland habitat at a 1:1 ratio.

  Based on these mitigation ratios, full buildout of the Preferred Alternative would necessitate providing up to ~~1,266~~1,219 acres of California tiger salamander mitigation habitat.

- Temporary impacts to California tiger salamander habitat may occur in areas where grading will occur but where natural substrates and vegetation will be restored following grading (as opposed to turf, landscaping, or other ornamental vegetation, which would be considered a permanent impact). Such impacts are only considered temporary if they occur adjacent to open space that will continue to provide habitat for California tiger salamanders (e.g., tiger salamander habitat surrounded by development following grading is considered permanently impacted). Temporary impacts will be mitigated at a 1.1:1 ratio, in which 1:1 replacement occurs in situ (i.e., the temporarily impacted area itself is restored to suitable habitat conditions after grading is completed) and an additional 0.1:1 mitigation occurs via on-site/off-site habitat preservation and management, as described above for permanent impacts. However, temporary impacts that occur during activities that could have a net benefit to California tiger salamander and other aquatic/amphibious species, such as removal of hardscape within open space areas, wetland creation or restoration, or stream restoration, do not require mitigation for tiger salamander habitat impacts beyond the in situ restoration being performed by that particular activity.
- Because development of the project site will be phased, it is possible that development in one phase may effectively isolate areas that are currently considered to provide potential tiger salamander habitat, but that will not be developed for some time later. In such a case, subsequent developers might contend that tiger salamanders are absent and thus that no mitigation is required. To ensure that appropriate habitat mitigation is provided regardless of project phasing, the City ~~will~~shall rely on Figure 8-3 to determine whether or not mitigation is required, and at what ratio it will be required, for all future development in the project area.



Legend

California Tiger Salamander (CTS) Occurrences

- Larval
- Juvenile
- Adult
- Adult & Egg Mass
- Adult & Juvenile

CTS Habitat Suitability

- Low-quality/low-use habitat
- Medium-quality/medium-use habitat
- High-quality/high-use habitat

Base Map

- Site Boundary
- Concord City Limit

Notes & Sources

Data are derived from an upland habitat suitability analysis performed by EDAW (2008a) based on known California tiger salamander records, distance from breeding ponds, and abundance of burrows and other refugia. The 10 levels of habitat suitability determined by EDAW have been condensed into three levels by H. T. Harvey & Associates for this Draft EIR.

Concord
Community Reuse Plan

Revised August 19, 2009

Figure 8-3
California Tiger Salamander Habitat Assessment Map

- The mitigation obligations described above may be satisfied either through the purchase of appropriate California tiger salamander mitigation credits at a USFWS- and CDFG-approved mitigation bank whose service area includes the project site, or through the appropriate creation and/or enhancement of habitat as detailed in a Habitat Mitigation and Monitoring Plan. Prior to construction, the project proponent must provide the City with either proof of purchase of the required number of mitigation bank credits, or it must provide to the City for review and approval a Habitat Mitigation and Monitoring Plan that includes, at a minimum, the following information:

    1. A summary of habitat impacts and the proposed mitigation
    2. A description of the location and boundaries of the mitigation site and description of existing site conditions
    3. A description of measures to be undertaken to enhance the property for use by California tiger salamanders and to protect particularly sensitive resources (e.g., breeding ponds)
    4. A description of maintenance measures, including regular maintenance (e.g., of fencing) and less frequent, longer-term maintenance (e.g., maintenance of ponds and berms to ensure long-term functionality as tiger salamander breeding habitat)
    5. A description of habitat and species monitoring measures on the mitigation site, including specific, objective final performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.
    6. A contingency plan for mitigation elements that do not meet performance or final success criteria within 5 years; this plan shall include specific triggers for remediation if performance criteria are not being met and a description of the process by which remediation of problems with the mitigation site (e.g., presence of non-native predators and competitors) will occur

    Within limits, passive recreation with limited infrastructure for visitors can be consistent with management of tiger salamander populations. Nevertheless, if recreational or interpretive activities will occur within the mitigation area (e.g., in the on-site open space area), it will be necessary to ensure that the location of the mitigation area and the types of activities proposed in that area are consistent with the long-term conservation of California tiger salamander populations. The Habitat Mitigation and Monitoring Plan shall describe any recreational activities that may be allowed within the mitigation site, how those activities are consistent with a tiger salamander mitigation site, and measures that will be implemented to ensure that levels of those activities remain consistent with tiger salamander conservation.

- Any mitigation area for permanent impacts to California tiger salamander habitats ~~will~~shall be part of a larger area preserved via a master mitigation strategy for the entire CCRP, or individual project proponents ~~will~~shall provide proof to the City that the mitigation site has been preserved in perpetuity via a conservation easement or similar instrument, and that an endowment has been established to provide for the monitoring and management of the site in perpetuity.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including the construction of the mitigation and documentation that the mitigation has achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City may

issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Implementation of the design measures listed above will provide long-term minimization of impacts to tiger salamanders on the site, while implementation of the aforementioned construction-phase measures will minimize impacts to individual salamanders and their habitats during construction. The enhancement and permanent preservation and management of suitable tiger salamander habitat will compensate for any residual impacts to California tiger salamander habitat. Collectively, these measures will reduce impacts to California tiger salamanders to a less than significant level.

Impact Biological Resources 7: The Preferred Alternative could result in a potential impact to individual western pond turtles. This impact is considered to be potentially significant.

The western pond turtle is known to occur on the site at the Cistern Pond. It has not been recorded at other locations in the Inland Area of the CNWS, but larger numbers are present in the Tidal Area (Downard et al., 1999). As a result, pond turtles are expected to disperse to some extent between the two areas, most likely along Mt. Diablo Creek, but possibly also along the Contra Costa and Clayton canals. This species may also occur in other ponds in the project area, including temporary ponds as well as perennial ponds such as those at the Diablo Creek Golf Course.

The Preferred Alternative does not include development between the Cistern Pond and Mt. Diablo Creek. Thus, to the extent that dispersal of turtles may currently occur along the creek between the Cistern Ponds and the Tidal Area, the project will not block dispersal between the pond and the creek. Construction within the creek (e.g., for flood control or restoration purposes) and construction of new crossings of Mt. Diablo Creek could provide impediments to such dispersal, but the new crossings will be required to be constructed and maintained to facilitate aquatic movement compared to the existing culverts along the creek (see Mitigation Measure Biological Resources 2 above).

Western pond turtles likely nest in upland habitats near the Cistern Pond, and they could possibly lay eggs in upland habitats adjacent to Mt. Diablo Creek as well. Upland habitat could be affected by construction-related activities near Mt. Diablo Creek, including loss of upland nesting and aestivation habitat from conversion of grassland to development. Increased human presence and domestic animal activity near the creek could also result in adverse effects. The minimum 300-foot buffer along Mt. Diablo Creek will minimize impacts to aquatic dispersal habitat within the creek, with the exception of the areas in which new road crossings are proposed, and any reconfiguration of the creek for flood control or restoration purposes will be temporary and will be designed, constructed, and maintained to result in improved habitat structure within the creek. As discussed in Impacts Biological Resources 2 and 3, although a greater number of crossings have the potential to result in a more extensive area of impact to the riparian habitat, the crossings will also require flood control mitigations and other restoration that would enhance the existing degraded condition and improve the existing habitat (see Chapter 7, Hydrology and Water Quality).

Grading in suitable habitat where western pond turtles are present and the removal of upland nesting habitat would be direct impacts to habitat and may result in the loss of

individuals or their nests. Potential indirect impacts to this species include water quality impacts resulting from unregulated discharge of contaminants or sediment from development, alteration of hydrology in aquatic habitats, increased disturbance or predation from domestic animals and humans, increased nighttime lighting, and the construction of roadways that could separate habitat areas and lead to mortality from vehicles. Western pond turtles may lay eggs 1/4 mile or more from aquatic habitats (Jennings and Hayes, 1994), and thus development or disturbance of upland habitats within 1/4 mile of the Cistern Pond, and possibly in other areas, may affect turtle nest sites. These potential impacts pertain not only to development activities within the proposed development footprint of the Preferred Alternative, but also to recreational and interpretive development in the open space northeast of Mt. Diablo Creek.

This project will not impact the Cistern Pond. Impacts to other aquatic habitats that may be used by this species, such as Mt. Diablo Creek and the golf course ponds, are discussed in Impacts Biological Resources 2 and 4, and compensatory mitigation will be provided for such impacts. Because of the widespread nature of habitat that is potentially suitable for nesting by pond turtles, the maintenance of a 150-foot-wide buffer on either side of Mt. Diablo Creek, the lack of development on most of the northeast side of Mt. Diablo Creek (especially near the Cistern Pond, where movement of turtles between the creek and the Cistern Pond could occur), and the passive nature of any recreational development in the vicinity of the Cistern Pond, impacts to potential nesting habitat for this species will not be substantial.

The number of individual turtles that have been observed at the Cistern Pond is very low, and the species has not been documented elsewhere on the project site. As a result, the number of individuals or their nests that could be impacted by the project is likely low. Nevertheless, this species has suffered declines throughout much of its range (Jennings and Hayes, 1994), and loss of individual turtles would constitute a significant impact. Western pond turtles occasionally nest communally, and thus the loss of a single nesting area could adversely affect a large proportion of a breeding population and possibly result in the loss of an entire cohort of incubating eggs or hatchlings, which would also be a significant impact.

> **Mitigation Measure Biological Resources 7: Prior to approving any construction in or near potential western pond turtle habitat on the site, the City of Concord shall require project proponents to minimize grading impacts within 1/4 mile of the Cistern Pond and minimize permanent impacts to Mt. Diablo Creek, and agree to have a qualified biologist conduct surveys for communal/traditional nesting areas, implement measures to minimize impacts to turtle nests if a communal/traditional nesting area is detected, install temporary exclusion fencing around any construction areas, and have a qualified biologist conduct pre-construction surveys for all construction within 1/4 mile of aquatic pond turtle habitat; have a qualified biologist relocate any turtles detected during pre-construction surveys or during construction to suitable habitat well away from active construction areas; and have a qualified biologist conduct a construction personnel education program. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Implementation of the mitigation measures described for impacts to wetland, aquatic, and riparian habitats (see Impacts Biological Resources 1, 2, 3, and 4) will avoid, minimize, and

compensate for impacts to habitats that are potentially most limiting to western pond turtle populations on the site. In addition, the City of Concord shall require proponents of future development projects in or near potential western pond turtle habitat to implement the following measures:

- Grading and other habitat disturbance for passive recreation activities within 1/4 mile of the Cistern Pond ~~will~~shall be minimized to ~~minimize~~ avoid impacts to nests and potential nesting habitat for the western pond turtle.
- Prior to any grading of grassland or other natural habitats within 1/4 mile of the Cistern Pond, Mt. Diablo Creek, or the Diablo Creek Golf Course ponds, a qualified biologist ~~will~~shall conduct a survey for communal/traditional nesting sites within the construction area to determine whether any such nesting sites are present. Because pond turtle nests are extremely difficult to detect, the biologist would be looking primarily for egg shells indicating the presence of nests that have already hatched or that have been depredated (and secondarily for egg-laying females, in the unlikely event one is detected). A nesting area would be defined as a "communal/traditional nesting site" if evidence of more than one nest is found within a 1-acre area. Ideally, this survey should be conducted during the design phase for a particular development project so that planning can avoid these nesting sites, and dispersal pathways between these sites and the associated water body, if feasible. However, because measures to minimize impacts to any such nesting areas will be implemented, as described in the next bullet point, and because project impacts to nesting habitat will not be substantial, avoidance during design is not mandatory.
- If a communal/traditional nesting area is found and the area cannot be avoided, a qualified biologist ~~will~~shall consult with the CDFG to determine measures that should be implemented to determine whether active nests are present and how impacts to nests may be minimized. According to Jennings and Hayes (1994), western pond turtles may lay eggs as early as April or as late as August, and young turtles may hatch and overwinter in the nest, emerging in spring. As a result, it is possible for turtle nests with eggs or young to be present virtually year round, necessitating coordination with the CDFG to minimize impacts. In the event that a communal/traditional nesting area is detected, grading in that area ~~will~~shall only occur during the season in which the potential for active nests is lowest, which will be determined in consultation with the CDFG to minimize impacts.
- Exclusion fencing (e.g., silt fencing) ~~will~~shall be installed to keep western pond turtles out of upland construction areas within 1/4 mile of the Cistern Pond, Mt. Diablo Creek, or the Diablo Creek Golf Course ponds. Escape ramps, funnels, or other features that allow animals to exit the construction area, but which prohibits the entry of such animals, shall be provided in the exclusion fencing. A qualified biologist ~~will~~shall survey the area of fencing installation immediately prior to (i.e., the day of) the commencement of installation. Fencing ~~will~~shall then be installed between the construction area and the body of water from which dispersal by a turtle is most likely. For construction areas very close to a water body known to support turtles (e.g., if turtles are found in the Diablo Creek Golf Course ponds), the entire construction area should be surrounded by silt fencing. If a pond turtle is found within the uplands in or within 50 feet of the construction area, the biologist ~~will~~shall consult with the CDFG regarding an appropriate

relocation site (which may vary depending on whether the turtle is a dispersing male or a female preparing to lay eggs). The relocation site ~~will~~shall be outside the construction zone limits, in or near suitable habitat. The turtle will then be relocated by the biologist. The exclusion fencing ~~will~~shall be inspected daily by construction personnel and maintained for the duration of construction.

Such fencing is not feasible for instream work or work in very rocky areas, and installation of such fencing may cause more damage than construction activities if construction (e.g., in the open space areas) involves only minimal disturbance from trail establishment or interpretive signage. In such situations, a qualified biologist ~~will~~shall conduct a pre-construction survey as described below and determine whether construction monitoring or other measures are preferable to exclusion fencing.

- After the exclusion fence is installed and immediately prior to construction, the project proponent shall have surveys performed in construction areas where the western pond turtle could occur, by a qualified biologist. Such surveys shall be conducted according to the following protocol:
  - Any ponds or pools within the project area shall be seined for western pond turtles within 7 days prior to construction. Pools or ponds that will be impacted should be pumped or drained during the seining operation if necessary (i.e., based on the professional judgment of the qualified biologist performing the seining) to ensure that the waterbody to be affected is completely inspected for turtles. Any western pond turtle found during seining shall be salvaged and relocated by the biologist to the designated location.
  - Pre-construction surveys, consisting of daytime visual surveys (mornings are optimal to detect the species basking), ~~will~~shall be conducted after the installation of exclusionary fencing, and prior to ground disturbance within 1/4 mile of the Cistern Pond, Mt. Diablo Creek, or the Diablo Creek Golf Course ponds by a qualified biologist. Such surveys ~~will~~shall focus on wetlands, streams, riparian habitats, ponds, and areas within 200 feet of these features, but they ~~will~~must also include a pedestrian survey of any portion of a grading or construction area within 1/4 mile of the aforementioned waterbodies to survey for turtles in vegetation, under debris, in culverts, or in other areas that could provide refugia for this species. These surveys ~~will~~shall be conducted within 48 hours prior to construction to ensure that no turtles are present. If turtles are observed on or within 50 feet of the proposed work area during the pre-construction survey, the biologist ~~will~~shall consult with the CDFG regarding an appropriate relocation site (which may vary depending on whether the turtle is a dispersing male or a female preparing to lay eggs).
- During construction, if construction personnel or biologists who are on-site for other purposes detect a western pond turtle on or within 50 feet of the construction area, construction work that might result in harm to the turtle ~~will~~shall cease until the turtle is relocated by a qualified biologist to a suitable area outside the construction zone that has been identified in consultation with the CDFG.
- To avoid impacts to aquatic species, placement of permanent bridge supports or other structures in Mt. Diablo Creek ~~will~~shall be avoided to the maximum extent practicable.

Any new creek crossings must ~~will be required to~~ be designed so as not to impair the passage of aquatic species.

- A construction personnel education program ~~will~~shall take place before the commencement of construction, and a qualified biologist ~~will~~shall explain to construction workers how best to avoid the accidental take of western pond turtles. This training session ~~will~~shall be required to be scheduled as a mandatory informational field meeting for contractors and all construction personnel involved in vegetation clearing, demolition, or rough grading. The field meeting ~~will~~shall include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis ~~will~~shall be placed on the importance of the habitat and life stage requirements within the context of project avoidance and minimization measures. Handouts, illustrations, photographs, and project mapping showing areas where minimization and avoidance measures are being implemented ~~will~~shall be included as part of this education program. The program will increase the awareness of the contractors and construction workers about existing federal and State laws regarding endangered species, and increase their compliance with conditions of this EIR and requirements of resource agencies.

Minimization of impacts to aquatic habitat and to upland habitat close to aquatic pond turtle habitat, and implementation of construction-phase measures to avoid impacts to individual pond turtles and their nests, will reduce impacts to western pond turtles to a less than significant level.

Impact Biological Resources 8: The Preferred Alternative could result in a potential impact to individual Alameda whipsnakes and coast horned lizards. This impact is considered to be potentially significant.

As discussed in section 8.1.4.3, no whipsnakes were found during the 1982 surveys. The 1999 University of Arizona surveys (Downard et al., 1999) resulted in a report of a whipsnake in grasslands of the Tidal Area of the CNWS. If valid, this record would suggest that whipsnakes inhabit the CNWS, and possibly that they disperse between the Inland and Tidal Areas. However, a habitat assessment for the Alameda whipsnake by Ecology & Environment and Swaim Biological (2008) cast some doubt on this earlier report. To date, there are no verified records of the Alameda whipsnake on the CNWS, and the closest verified records are from Black Diamond Mines Regional Preserve, 4 miles southeast of the site. The nearest high-quality habitat for whipsnakes is 1.5 to 2.0 miles south of the site on the slope of Mt. Diablo (Contra Costa County, 2006).

The habitat assessment performed by Ecology & Environment and Swaim Biological (2008) determined that the lack of extensive scrub, short-grazed nature of the grassland, and distance from potential source populations reduce the quality of habitat on the site for this species. However, this habitat assessment determined that the small patches of sage scrub in upper Rattlesnake Canyon and the grassland with rock outcrops in the areas southeast and just northwest of Bailey Road provided potential whipsnake habitat.

The coast horned lizard has been reported only once on the CNWS: a single individual was reported by Kuenzi and Morrison (1994, as cited in Downard et al., 1999) in the Inland Area. This species is typically associated with loose, often sandy soils, which are completely absent from the project site. No details concerning the 1994 record, including the location,

are extant (A. Kuenzi, pers. comm.), but the most likely area of occurrence is in the area southeast of Bailey Road, outside areas proposed for development.

Under the Preferred Alternative, the project's development footprint does not include suitable habitat for either the Alameda whipsnake or the coast horned lizard. Any recreational or interpretive development that may occur in the open space areas outside the development footprint would be so limited in extent, especially in the area southeast of Bailey Road and east of the Cistern Pond where scrub or rock outcrops provide the highest potential to support these species, that habitat impacts would be very limited. Based on the lack of confirmed records of the whipsnake and the presence of only a single record of the horned lizard, both species are expected to occur on the site only in very low numbers, if they are present at all. In the unlikely event that an individual were to wander into the development footprint, it would be so far from high-quality habitat that it would likely be effectively removed from the population even it were not affected by the development. In other words, the project site does not provide important dispersal habitat even if the occasional individual were to disperse into it, since the project site does not lie near high-quality habitat, or between two core areas of high-quality habitat. As a result, impacts to habitat of the Alameda whipsnake and coast horned lizard will not be substantial.

Nevertheless, if either species is present, there is at least some potential for individuals to be injured or killed during project construction. Increased human activity, such as increased traffic and the construction of new roadways, increased active and passive recreational use, or increased disturbance by domestic animals, could result in mortality from vehicles, potential introduction of predatory non-native species, increased nighttime lighting, and increased harassment by humans and domestic animals. Such impacts are unlikely within the main development footprint, but more likely in open space areas in the southeastern part of the site where whipsnakes and horned lizards have the greatest potential for occurrence and where passive recreation may occur.

Project impacts to these species would affect only a very few individuals, if any. However, if these species are present, the site would be at the extreme edge of these species' ranges. In light of the potential for shifts in vegetation and habitat in the face of global climate change, conservation at the margins of the ranges of species with relatively low mobility such as these reptiles is important. As a result, project impacts to individuals of these species would be significant.

> **Mitigation Measure Biological Resources 8: Prior to approving construction in areas southeast of Willow Pass Road on the site, the City of Concord shall require project proponents to avoid planning trails or other recreation features within 200 feet of coastal sage scrub in Rattlesnake Canyon; to agree to deposit construction materials only in areas lacking snakes or suitable cover for snakes; and to agree to have a qualified biologist conduct a construction personnel education program, conduct pre-construction surveys prior to the construction of recreational or interpretive features in open space areas with rock outcrops, and relocate any whipsnakes or horned lizards detected near construction areas to suitable habitat areas well away from construction areas. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City of Concord shall require proponents of any development projects southeast of Willow Pass Road to implement the following measures:

- Any trails or other passive recreation features ~~will~~shall maintain a buffer of at least 200 feet from the two small patches of coastal sage scrub in the upper part of Rattlesnake Canyon, since these patches represent the highest-quality habitat for whipsnakes on the site.
- A construction personnel education program ~~will~~shall take place before the commencement of construction, and a qualified biologist ~~will~~shall explain to construction workers how best to avoid the accidental take of Alameda whipsnakes and coast horned lizards. This training session ~~will~~shall be required to be scheduled as a mandatory informational field meeting for contractors and all construction personnel involved in vegetation clearing, demolition, or rough grading. The field meeting ~~will~~shall include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis ~~will~~shall be placed on the importance of the habitat and life stage requirements within the context of project avoidance and minimization measures. Handouts, illustrations, photographs, and project mapping showing areas where minimization and avoidance measures are being implemented ~~will~~must be included as part of this education program. The program will increase the awareness of the contractors and construction workers about existing federal and State laws regarding endangered species as well as increase their compliance with conditions of this EIR and requirements of resource agencies.
- For recreational or interpretive construction activities in open space areas with rock outcrops, a qualified biologist (i.e., a biologist familiar with the identification and biology of both of these reptiles) ~~will~~shall conduct pre-construction surveys within 48 hours prior to the initiation of construction.
- If a coast horned lizard is found in or near the construction area, it ~~will~~shall be relocated to a suitable location more distant from the construction zone. If an Alameda whipsnake is found in or near the construction area, it ~~will~~shall also be relocated to an appropriate area, with USFWS approval, and only by a qualified biologist possessing all necessary permits authorizing the handling of Alameda whipsnakes.
- Construction materials, soil, construction debris, or other material shall be deposited only on areas where vegetation has been mown (so that any snakes present would be readily visible) or where inspection by a qualified biologist has determined that snakes are absent.

Avoidance of impacts in close proximity to areas providing the highest potential for Alameda whipsnake and coast horned lizard occurrence and implementation of construction-phase measures to avoid and minimize impacts to these species will reduce impacts to Alameda whipsnakes and coast horned lizards to a less than significant level.

Impact Biological Resources 9: The Preferred Alternative could result in a potential impact to nesting golden eagles. This impact is considered to be potentially significant.

A pair of golden eagles has nested within a eucalyptus grove located along the eastern boundary of the site, at least sporadically, since the early 1980s. This nest site has been enclosed with fencing and posted by the Navy with information regarding the provisions of the Bald Eagle and Golden Eagle Protection Act. Additionally, several nesting pairs of

golden eagles occur on EBRPD lands to the south of the site. Eagles from one or more of these nest sites (most likely, and frequently, the on-site nesting pair) regularly forage in grasslands on the site, concentrating their activities predominantly in the areas east of Mt. Diablo Creek and southeast of Willow Pass Road, most of which will remain undeveloped under both alternatives.

The Preferred Alternative will result in the loss of ~~2,045~~2,002 acres of California annual grassland habitat that is currently used by foraging golden eagles. Because of the abundance of such habitat in the region, and because most foraging activity by these birds occurs in areas that will be preserved as open space by this project, impacts to foraging habitat are not considered substantial.

The Preferred Alternative does not propose to impact the known eagle nest tree, which is more than 1/2 mile from the eastern edge of where construction may occur along Mt. Diablo Creek during flood control or creek restoration activities. Buffers of 1/4 mile have been recommended to avoid disturbance of golden eagle nests. As a result, the Preferred Alternative is not expected to result in disturbance of nesting eagles unless the eagles move to a nest site closer to the project footprint (e.g., a eucalyptus along Mt. Diablo Creek), or unless recreational activities in the open space area occur in close proximity to the existing nest. If either situation were to occur, there is some potential for removal of the nest tree (if the eagles move to a new nest location within the development footprint); disturbance of the nesting eagles to the point of abandonment of the nest, and possibly eggs and chicks; or reduced reproductive success due to construction or recreation-related disturbance of the nest. Due to the relatively low size of regional golden eagle populations, the loss or disturbance of an active nest would be considered significant. If the eagles were to move to a tree closer to the development footprint, construction (even during the nonbreeding season) could cause the eagles to abandon that site in subsequent years due to proximity to development. In such a case, it is presumed that adequate alternative nesting sites (such as the existing nest tree) would be available farther from developed areas.

> **Mitigation Measure Biological Resources 9: Prior to approving any construction in or near potential golden eagle nesting habitat on the site, the City of Concord shall require project proponents to avoid planning trails or other recreational features within 1/4 mile of the existing eagle nest (unless seasonal closure of such trails or recreational features occurs) and to agree to have a qualified biologist conduct a pre-construction survey for nesting eagles and to maintain a 1/4 mile buffer between any active nest and new construction disturbance during the breeding season. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City of Concord shall require proponents of future development projects in or near potential golden eagle nesting habitat to implement the following measures:

- A survey to determine whether and where golden eagles are nesting in the project area should be conducted early in the breeding season (e.g., February) to inform decisions regarding where construction will be permissible in the upcoming construction season. This measure is not mandatory because the following survey will be required, but it is recommended for construction planning purposes.

- Within 15 days prior to the initiation of construction during the breeding season (February 1 to August 31) for a given project, a qualified biologist ~~will~~shall conduct a pre-construction survey for nesting golden eagles within 1/4 mile of the limits of construction, including access and staging areas. If nesting eagles are present, a buffer free from new disturbance ~~will~~shall be established within a 1/4-mile radius of the nest. No new project-related activities (i.e., activities that were not already ongoing when the nest was established, or that are of a substantially greater intensity than when the nest was established) ~~will~~shall be undertaken within the buffer. In some cases (e.g., if the development is not visible from the nest site), it is possible that a lesser buffer would be adequate to avoid disturbance of the nesting eagles, but such a variance would require approval of the CDFG and USFWS. In such a case, the biologist and agency personnel ~~will~~must agree on a reduced buffer, and the biologist ~~will~~shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist ~~will~~shall look for signs of stress such as repeated alarm calls, agitated behavior, or departure of the birds from the nest. If the birds do not show signs of habituation to the new disturbance by resuming their normal nesting activities, work within the vicinity of the nest ~~will~~shall stop and the CDFG and USFWS ~~will~~shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist ~~will~~shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFG and USFWS) for as long as the nest is active and work is ongoing within the reduced buffer to confirm that the birds are tolerant of the construction activities.
- Any required buffer ~~will~~shall remain in place until young are no longer dependent on the nest, or until the nesting attempt fails (for reasons other than project activities) and it is determined that the birds will not attempt to re-nest. A qualified biologist ~~will~~shall determine through direct observation when the nest is no longer in use (e.g., if the young have fledged or the nesting fails for non-project-related reasons). Constant monitoring of the nest is not necessary, but before construction activities occur within the agreed-upon buffer, the biologist must have confirmed that the nest is no longer active.
- No trails or other recreational features that can be seen by eagles on the existing nest tree ~~will~~may be established within 1/4 mile of the existing eagle nest unless the agency responsible for these features closes all trails and other recreational features within 1/4 mile of the nest during the breeding season, when the nest is active. If, prior to the establishment of trails or other recreational features, the eagles move to a new nest tree and breed successfully there, then ~~this prohibition~~these measures could be shifted from the existing nest tree to the new one with City approval. In either case, such a buffer should be provided around at least one known nest tree on the site. If eagles initiate nesting in any given area at any time, ongoing activities that were part of the existing environmental background at the time of nest establishment can continue, since by establishing a nest in a given area the eagles would be demonstrating tolerance of ongoing conditions in the area.

Avoidance of the construction of trails or other facilities (or breeding-season use of such facilities) in close proximity to active eagle nests, pre-construction surveys to detect eagle nests, and maintenance of buffers around eagle nests free from new construction-related

disturbance will minimize disturbance of nesting golden eagles by construction and recreational activities, reducing potential impacts to golden eagles to a less than significant level.

Impact Biological Resources 10: The Preferred Alternative could result in a potential impact to burrowing owls and their habitat. This impact is considered to be potentially significant.

Burrowing owls have been observed in small numbers within grassland on the site, but it appears as though the species occurs primarily as a winter visitor. Individuals were observed in one location on CNWS as a whole in 1981–1982 (JSA, 1982) and six locations in 1992–1993 (Kuenzi and Morrison 1994, as cited in Downard et al., 1999; A. Kuenzi, pers. comm.), but only during the winter. During surveys in 1998–1999, burrowing owls were observed in three locations on the site, again only during fall and winter. The species has been recorded on the site only once (one individual in 2008) during 11 years of the Central Contra Costa County Christmas Bird Count (Mt. Diablo Audubon Society, unpublished). A burrowing owl was detected in the area southeast of Bailey Road during site visits in 2007 (CH2M HILL, 2007), but none were seen during general field surveys conducted throughout the site by H.T. Harvey & Associates between November 2008 and June 2009.

Short grassland with abundant ground squirrel burrows is present throughout much of the project area, providing ostensibly high-quality habitat for burrowing owls. The Preferred Alternative would impact ~~2,045~~2,002 acres of grassland that provides potential burrowing owl habitat. However, the results of surveys of the site have consistently demonstrated this species to be present only in small numbers, and primarily during the nonbreeding season. If it breeds on the site, it does so only in very low numbers. The low number of burrowing owls using the site, relative to the abundance of high-quality habitat, suggests that habitat availability is not limiting on-site numbers of this species.

Development and construction activities in occupied burrowing owl habitat can result in injury or mortality of individual owls that are trapped in burrows underground, regardless of the season. During the breeding season, nests with eggs or young can be lost by such direct disturbance, or by abandonment of burrows by adults that are disturbed by construction-related activities. Other potential impacts to burrowing owls include increased predation by domestic animals and increased road mortality due to the construction of new roads and an increase in traffic in the project area. Burrowing owls in the area to be preserved as open space may be subject to increased disturbance by recreational users as well. Due to the precipitous declines of San Francisco Bay Area burrowing owl populations in recent decades, any loss of burrowing owls resulting from the project would be significant.

> **Mitigation Measure Biological Resources 10: Prior to approving any construction in or near potential burrowing owl habitat at the site, the City of Concord shall require project proponents to agree to maintain buffers free from new disturbance around active owl burrows during the breeding season; have a qualified biologist conduct pre-construction surveys, relocate burrowing owls from burrows that are to be disturbed by construction during the nonbreeding season, and conduct comprehensive breeding-season and nonbreeding-season surveys to determine owl use of the individual project site prior to construction; mitigate permanent impacts to burrowing owl habitat at a minimum ratio of 6.5 acres of mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs on-site and of 9.75-19.5 acres of**

mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs off-site; and provide the City with evidence of the purchase of burrowing owl habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of burrowing owl habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

The City of Concord shall require proponents of specific development projects in or near potential burrowing owl nesting habitat to implement the following measures:

- Pre-construction surveys for burrowing owls shall be performed before project grading commences. A survey to determine presence or absence may be performed at any time to facilitate passive relocation efforts (which can only occur outside of the nesting season of February 1 to August 31). In addition, a pre-construction survey must be conducted no more than 15 days prior to the commencement of grading, to confirm the absence of burrowing owls. This survey ~~will~~shall be conducted in all areas on and within 250 feet of the impact area, and ~~will~~shall be conducted in accordance with the California Burrowing Owl Consortium (1993) guidelines.

- For burrowing owls present during the nonbreeding season (generally September to January 31), a 150-foot buffer zone ~~will~~shall be maintained around the occupied burrow(s) if practicable. If such a buffer is not practicable, then a buffer adequate to avoid injury or mortality of owls ~~will~~shall be maintained, or the birds ~~will~~shall be passively relocated. During the breeding season (generally February 1 to August 31), a 250-foot buffer, within which no new activity will be permissible, ~~will~~shall be maintained between project activities and occupied burrows. Owls present on the site after February 1 will be assumed to be nesting unless evidence indicates otherwise. This protected buffer area ~~will~~shall remain in effect until August 31, or based upon monitoring evidence, until the young owls are foraging independently or the nest is no longer active.

- If construction will directly impact occupied burrows, eviction of owls should occur outside the nesting season to prevent injury or mortality of individual owls. No burrowing owls ~~will~~may be evicted from burrows during the nesting season (February 1 through August 31) unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season). Relocation of owls during the nonbreeding season ~~will~~shall be performed by a qualified biologist using one-way doors, which should be installed in all burrows within the impact area and left in place for at least two nights. These one-way doors ~~will~~shall then be removed and the burrows backfilled immediately prior to the initiation of grading.

- As mentioned previously, the low number of owls using the site, relative to the abundance of high-quality habitat, suggests that habitat availability is not limiting on-site numbers of burrowing owls. Nevertheless, to ensure that any impacts to burrowing owl habitat are adequately mitigated, the project proponent shall preserve and manage burrowing owl habitat ~~permanently preserve 6.5 acres of suitable burrowing owl habitat~~

~~per pair of owls (or per single owl, if unpaired) displaced from the project site by development,~~ per California Burrowing Owl Consortium (1993) guidelines to compensate for loss of habitat use due to displacement of owls from the site. The project proponent shall permanently preserve 6.5 acres of suitable burrowing owl habitat per pair of owls (or per single owl, if unpaired) displaced from the project site by development if mitigation occurs on-site (e.g., in the on-site open space areas). If mitigation is not satisfied on the CCRP site, the project proponent shall permanently preserve mitigation habitat according to the following ratios if owls are displaced from the site by development:

- 9.75 acres per pair (or single owl) for replacement of occupied habitat on-site with occupied habitat off-site
- 13.0 acres per pair (or single owl) for replacement of occupied habitat on-site with unoccupied habitat contiguous to currently occupied habitat off-site
- 19.5 acres per pair (or single owl) for replacement of occupied habitat on-site with suitable unoccupied habitat off-site that is not contiguous to currently occupied habitat

Numbers of owls occurring on the site appear to fluctuate considerably based on the variable numbers of owls reported by previous surveys. As a result, there is no clear baseline for abundance of owls in a given portion of the project site. Thus, a comprehensive survey of each project site ~~will~~shall be conducted according to California Burrowing Owl Consortium (1993) guidelines during both the nonbreeding (September 1 to January 31) and breeding (February 1 to August 31) seasons, sometime within 3 years prior to the initiation of construction in a given portion of the site; the maximum number of owls or pairs recorded on that particular project site during these surveys ~~will~~shall be used to determine mitigation requirements.

Because mitigation provided for impacts to upland California tiger salamander and California red-legged frog habitats are expected to entail preservation and management of grassland for burrowing mammals such as ground squirrels, and because of the extent of salamander and frog mitigation habitat that will be required, salamander and frog mitigation is expected to satisfy any burrowing owl habitat mitigation needs. However, in the event that tiger salamander and red-legged frog mitigation requirements are satisfied through the purchase of credits in a conservation bank, burrowing owl mitigation requirements ~~will have to~~must be satisfied by other means. This requirement may be satisfied through the purchase of credits at a CDFG-approved conservation bank, or by preserving the appropriate acreage of suitable burrowing owl habitat elsewhere on or off the project site.

- If burrowing owl mitigation is required pursuant to the standards described above, then prior to construction, the project proponent ~~will~~shall provide the City with either proof of purchase of the required number of credits in an approved conservation bank, or a Habitat Mitigation and Monitoring Plan describing the proposed habitat mitigation. This Plan, which must be approved by the City, must at a minimum include the following information:

    1. A summary of habitat impacts and the proposed mitigation

2. A description of the location and boundaries of the mitigation site and description of existing site conditions
3. A description of measures to be undertaken to enhance and manage the property for use by burrowing owls
4. A description of site maintenance measures (e.g., maintenance of fencing)
5. A description of habitat and species monitoring measures on the mitigation site, including specific, objective final performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.
6. A contingency plan for mitigation elements that do not meet performance or final success criteria within 5 years; this plan shall include specific triggers for remediation if performance criteria are not being met and a description of the process by which remediation of problems with the mitigation site (e.g., presence of non-native predators) will occur

The portions of such a plan pertaining to burrowing owls may be integrated into a Habitat Mitigation and Monitoring Plan prepared for other species, such as the California tiger salamander and California red-legged frog.

- Within limits, passive recreation with limited infrastructure for visitors can be consistent with management of burrowing owl populations. Nevertheless, if recreational or interpretive activities will occur within the mitigation area (e.g., in the on-site open space area), it will be necessary to ensure that the location of the mitigation area and the types of activities proposed in that area are consistent with the long-term conservation of burrowing owl populations. Ideally, the Habitat Mitigation and Monitoring Plan would describe any recreational activities that are allowed within the mitigation site, how those activities are consistent with a burrowing owl mitigation site, and measures that ~~will~~must be implemented to ensure that levels of those activities remain consistent with burrowing owl conservation.
- Any mitigation area for permanent impacts to burrowing owl habitats ~~will~~shall either be part of a larger area preserved via a master mitigation strategy for the entire CCRP, or individual project proponents ~~will~~shall provide proof to the City that the mitigation site has been preserved in perpetuity via a conservation easement or similar instrument, and that an endowment has been established to provide for the monitoring and management of the site in perpetuity.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including the construction of the mitigation and documentation that the mitigation has achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City may issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Implementation of pre-construction surveys, buffers around burrows during the breeding season, and relocation of owls from burrows that are located within construction areas will avoid the loss of individual owls, including eggs and young, as a result of construction activities. Comprehensive surveys to determine site occupancy and preservation, enhancement, and management of suitable mitigation habitat will compensate for impacts to

occupied burrowing owl habitat. Collectively, these measures will reduce impacts to burrowing owls to a less than significant level.

Impact Biological Resources 11: The Preferred Alternative could result in a potential impact to special-status songbirds such as loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds. This impact is considered to be potentially significant.

Three songbirds that are California species of special concern are known to breed or could potentially breed on the site. Loggerhead shrikes have been observed regularly and fairly commonly in grasslands during biological surveys of the site. They are most abundant on the site during the nonbreeding season, but based on field surveys conducted by H.T. Harvey & Associates in spring 2009, it is likely that 8 to 10 pairs breed on the project site, with approximately half occurring in the Preferred Alternative's proposed development area.

Small numbers of San Francisco common yellowthroats nest in the project area in freshwater marsh, and possibly in seeps and springs, in emergents and other wetland vegetation. This species breeds on the site both within and outside of the proposed development footprint.

The tricolored blackbird has been recorded on the site only as an occasional winter visitor. However, there is some potential for the species to breed on the site, either in freshwater marsh around the Cistern Pond or in fairly extensive cattails near the old airfield.

If project construction occurs during the nesting season (roughly February 1 to August 31), construction could reduce the productivity of nesting birds in several ways. Nests with eggs or young could be destroyed directly due to removal of the substrate on which the birds are nesting (typically trees or shrubs, but also artificial structures and grassland). Although adult birds can avoid direct injury or mortality in most such cases, such an impact would destroy any eggs or young in the nest, and the adults would either lose that season's reproductive effort or have to undertake another nesting attempt. Construction near an active nest could cause adults to abandon the nest, including eggs and young, due to the construction-related disturbance of noise, vibrations, heavy equipment, and construction personnel, even if the nest or its substrate is not physically disturbed. Construction during the breeding season in close proximity to nesting birds may also reduce foraging habitat to the point that fledging success is reduced due to low food supplies or longer foraging trips that need to be made by adults.

All three of these species have suffered population declines, and the loggerhead shrike and San Francisco common yellowthroat occur on the site in sufficient abundance that project-related construction could potentially impact multiple nests of these species. Though tricolored blackbirds are not known to breed on the site, this species could breed there in the future, and because it typically breeds in large colonies, there is some potential for the loss of large numbers of nests due to project development. As a result, construction impacts to active nests of these species are potentially significant.

> **<u>Mitigation Measure Biological Resources 11</u>: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds to the extent practicable; to have a qualified biologist conduct pre-**

construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.

To avoid impacts to nests of these species, the City shall require project proponents to implement the following measures:

- It is recognized that most of the avian nesting season (February 1 to August 31) overlaps with the prime construction season, but to the extent feasible, construction activities involving removal of trees, shrubs, grassland, or other vegetation, demolition of buildings and bridges, and grading should be avoided during the avian breeding season. Any potential nesting substrate that will be impacted by construction in a particular area should be removed during the period September 1 to January 31 if feasible to avoid impacts to nesting birds such as the loggerhead shrike, San Francisco common yellowthroat, and tricolored blackbird, and to minimize the potential for active nests of these species to constrain construction activities.
- If construction activities involving physical disturbance of potential nesting substrate or involving intensive construction-related disturbance (noise, vibrations, heavy equipment, and construction personnel) within close proximity (as defined by the 100-foot and 400-foot survey areas defined below) to potential nesting substrate will occur during the period February 1 to August 31, a pre-construction survey ~~will~~shall occur within 7 days prior to commencing such activities. The survey shall be conducted by a qualified biologist to determine if any pairs of these three special-status bird species are nesting on or near the construction area. The survey area ~~will~~shall include the entire construction area (including access and staging areas) plus a buffer of 100 feet for loggerhead shrikes and San Francisco common yellowthroats. Because large colonies of tricolored blackbirds are potentially more sensitive to disturbance, the survey radius for active colonies of this species ~~will~~shall be 400 feet. If removal of potential nesting substrate or project grading will occur during more than one nesting season, or in different parts of the site in phases over the course of a single season, then additional pre-construction surveys must be performed within 7 days prior to initiation of work in any particular area.
- If the pre-construction survey does not identify the presence of any active nests of loggerhead shrikes and San Francisco common yellowthroats on or within 100 feet of the site, or any active nests of tricolored blackbirds on or within 400 feet of the site, construction activities may proceed.
- If any active nests of loggerhead shrikes and San Francisco common yellowthroats are detected on or within 100 feet of the site, or any active nests of tricolored blackbirds are detected on or within 400 feet of the site, the following mitigation measures shall be implemented:
  - If nest starts (i.e., nests that are under construction but that do not yet contain eggs or young) are found, they may be removed by a qualified biologist before eggs are laid.

- If nests known to have eggs or young, or that cannot be confirmed to be inactive or to lack eggs or young, are found, a qualified biologist ~~will~~shall establish an appropriate buffer around each nest. The dimensions of buffers necessary to prevent nest abandonment vary by species and the particular circumstances of the nest (e.g., level of proposed new activity relative to the level of existing human activity, or presence or absence of screening vegetation, structures, or topography that may screen the nest from the construction area). As a result, the biologist ~~will~~shall determine an appropriate buffer for each nest in consultation with the CDFG. Generally, a buffer of 100 feet for loggerhead shrikes and San Francisco common yellowthroats and 400 feet for tricolored blackbird colonies is adequate to avoid causing nest abandonment, even without continued monitoring by a biologist.
- No new project-related activities (i.e., activities that were not already ongoing when the nest was established, or that are of a substantially greater intensity than when the nest was established) ~~will~~shall be undertaken within the buffer agreed upon by the biologist and the CDFG. The buffer ~~will~~shall be marked (e.g., with flagging or mesh fencing) to ensure that construction personnel respect the buffer.
- With approval of the CDFG, work can occur within a reduced buffer if a qualified biologist monitors the behavior of the nesting birds while work is ongoing. In such a case, the biologist and CDFG ~~will~~must agree on a reduced buffer, and the biologist ~~will~~shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist ~~will~~shall look for signs of stress such as repeated alarm calls, scolding, agitated behavior, or departure of the birds from the nest. If the birds do not show signs of habituation to the new disturbance by resuming their normal nesting activities, work within the vicinity of the nest ~~will~~must stop and the CDFG ~~will~~shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist ~~will~~shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFG) for as long as the nest is active and work is ongoing within the reduced buffer to confirm that the birds are tolerant of the construction activities.
- A qualified biologist ~~will~~shall determine through direct observation when the nest is no longer in use (e.g., if the young have fledged or the nesting fails for non-project-related reasons). Constant monitoring of the nest is not necessary, but before construction activities occur within the agreed-upon buffer, the biologist must have confirmed that the nest is no longer active.

Minimization of impacts to potential nesting habitat during the breeding season, implementation of pre-construction surveys for active nests, and maintenance of buffers around active nests free from new construction-related disturbance will reduce impacts to loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds to a less than significant level.

Impact Biological Resources 12: The Preferred Alternative could result in a potential impact to nesting white-tailed kites and northern harriers. This impact is considered to be potentially significant.

White-tailed kites nest in riparian woodland, oak savannah, pine and eucalyptus plantations, and other trees at scattered locations throughout the site. Based on H.T. Harvey & Associates' field surveys during early spring of 2009, it is likely that 4 to 6 pairs nest on the project site, approximately half of which occur in the proposed development footprint for the Preferred Alternative. Northern harriers forage commonly in grasslands on the project site, but there is a low probability that they breed within the project site, as the grassland here does not provide enough protection from mammalian predators to provide high-quality nesting habitat for this ground-nesting species. Nevertheless, it is possible that harriers could at least attempt nesting in the wetlands and taller grassland near the old airfield.

Impacts to wetland and riparian habitats that may be used by these species are described in Impacts Biological Resources 1 and 3; mitigation for loss of these sensitive habitats will be provided. Impacts to California annual grassland, developed areas, coyote brush scrub, golf course/recreational areas, orchards, and tree plantations, which could also be used by one or both of these species, are described in Impact Biological Resources 20 below. Due to the widespread nature of nesting and foraging habitat for the white-tailed kite and northern harrier, the loss of habitat for these species is not considered a substantial impact.

If project construction occurs during the nesting season (roughly February 1 to August 31), construction could reduce the productivity of nesting birds in several ways. Nests with eggs or young could be destroyed directly due to removal of the substrate on which the birds are nesting (typically trees or shrubs, but also artificial structures and grassland). Although adult birds can avoid direct injury or mortality in most such cases, such an impact would destroy any eggs or young in the nest, and the adults would either lose that season's reproductive effort or have to undertake another nesting attempt. Construction near an active nest could cause adults to abandon the nest, including eggs and young, due to the construction-related disturbance of noise, vibrations, heavy equipment, and construction personnel, even if the nest or its substrate is not physically disturbed. Construction during the breeding season in close proximity to nesting birds may also reduce foraging habitat to the point that fledging success is reduced due to low food supplies or longer foraging trips that need to be made by adults. Even in areas outside the development footprint, recreational activities in open space areas could result in disturbance of nesting pairs of these species. Due to the number of nesting pairs of white-tailed kites on the site, and because this species is listed as a fully protected species by the State, this impact would be considered significant. Harriers do not often nest in relatively dry, California annual grassland, and thus disturbance of an active nest of this species of special concern in such an unusual setting would also constitute a significant impact.

> **<u>Mitigation Measure Biological Resources 12</u>: Prior to approving construction in or near potential white-tailed kite and northern harrier habitat on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for these species to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.**

To avoid impacts to nests of these species, the seasonal avoidance, pre-construction survey, nest buffering, and monitoring measures described by Mitigation Measure Biological Resources 11 above will be implemented for white-tailed kites and northern harriers as well. In the case of these two raptors, the survey area ~~will~~shall include construction areas and adjacent habitat within 250 feet of project activities, and buffers around nests of these species ~~will~~shall be 250 feet in radius, unless otherwise agreed to by the CDFG as described in Mitigation Measure Biological Resources 11.

Minimization of impacts to potential nesting habitat during the breeding season, implementation of pre-construction surveys for active nests, and maintenance of buffers around active nests free from new construction-related disturbance will reduce impacts to white-tailed kites and northern harriers to a less than significant level.

Impact Biological Resources 13: The Preferred Alternative could result in a potential impact to substantial numbers of nesting birds from development-related construction disturbance and direct removal of nests during the breeding season. This impact is considered to be potentially significant.

A number of species of birds nest in the varied habitats of the project site. Project development will alter these habitats, and for most bird species will reduce the availability of nesting and foraging habitat. Impacts to wetland and riparian habitats in which these birds nest are described in Impacts Biological Resources 1 and 3; mitigation for loss of these sensitive habitats ~~will~~shall be provided. Impacts to California annual grassland, developed areas, coyote brush scrub, golf course/recreational areas, orchards, and tree plantations are described in Impact Biological Resources 20 below. Due to the widespread nature of these regionally common habitats, the loss of nesting habitat for common bird species will not be a substantial impact.

If project construction occurs during the nesting season (roughly February 1 to August 31, though it varies by species), construction could reduce the productivity of nesting birds in several ways. Nests with eggs or young could be destroyed directly due to removal of the substrate on which the birds are nesting (typically trees or shrubs, but also artificial structures and grassland). Although adult birds can avoid direct injury or mortality in most such cases, such an impact would destroy any eggs or young in the nest, and the adults would either lose that season's reproductive effort or have to undertake another nesting attempt. Construction near an active nest could cause adults to abandon the nest, including eggs and young, due to the construction-related disturbance of noise, vibrations, heavy equipment, and construction personnel, even if the nest or its substrate is not physically disturbed. Construction during the breeding season in close proximity to nesting birds may also reduce foraging habitat to the point that fledging success is reduced due to low food supplies or longer foraging trips that need to be made by adults.

Project buildout will occur in phases, as specific development projects occupying portions of the development area are approved and constructed. As a result, for project components that are limited in scope and occur in habitats supporting low nesting bird densities, the number of pairs of nesting birds that could potentially be affected will be fairly low. For example, the large expanses of California annual grassland in the project footprint support low densities of only a few species (western meadowlarks and the occasional mourning dove, killdeer, or burrowing owl) of nesting birds. For a few project components, however,

nesting bird densities may be quite high. Reconstruction or restoration of Mt. Diablo Creek, which may or may not be undertaken, will involve extensive clearing of trees and shrubs along the creek. If such vegetation removal occurs during the avian breeding season, numerous active nests could be affected.

The extent of development proposed (approximately 2,811 acres for the Preferred Alternative) indicates that, with full project buildout, large numbers of active nests are potentially subject to disturbance. As a result, impacts to nesting birds are considered significant for the project as a whole.

Some of the birds whose nests could be disturbed by project construction are special-status species that are fairly rare, declining, or very local in distribution; impacts to these species are discussed in Impacts Biological Resources 9, 10, 11, and 12 above. However, most of the birds that nest on the site are not special-status species, and are regionally common to abundant. Even some of the raptors potentially subject to nest disturbance, such as red-tailed hawks, red-shouldered hawks, American kestrels, and great horned owls, are regionally common and widespread species. Project development will have a negligible effect on regional (e.g., Contra Costa County, or Central California) populations of some of the more common species, such as mourning doves, lesser goldfinches, and Anna's hummingbirds. Nevertheless, due to the scale of potential development, large numbers of active nests could be subject to disturbance.

In addition, all native birds on the project site are protected by State and federal law. The federal MBTA (16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations described by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Migratory birds are also protected in and by the State of California. The State Fish and Game Code §3503 (and other sections and subsections) emulates the MBTA and protects birds' nests and eggs from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG. Although some of the species on the project site are very sedentary and thus would not be considered "migratory" in the literal sense of the word, all native birds on the site are protected by these laws. Raptors (i.e., eagles, hawks, and owls) and their nests are also specifically protected in California under Fish and Game Code section 3503.5. 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."

Mitigation Measure Biological Resources 13: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for nesting birds to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests of native birds prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of native birds. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.

The City shall require project proponents to implement the following measures:

- It is recognized that most of the avian nesting season (February 1 to August 31) overlaps with the prime construction season, but to the extent feasible, construction activities involving removal of trees, shrubs, grassland, or other vegetation, demolition of buildings and bridges, and grading should be avoided during the avian breeding season. Any potential nesting substrate that will be impacted by construction in a particular area should be removed during the period September 1 to January 31 if feasible to avoid impacts to nesting birds, and to minimize the potential for active nests of these species to constrain construction activities.
- If construction activities involving physical disturbance of potential nesting substrate (e.g., vegetation, buildings, bridges, or undisturbed ground) or involving intensive construction-related disturbance (noise, vibrations, heavy equipment, and construction personnel) within 250 feet of potential nesting substrate will occur during the period February 1 to August 31, a pre-construction survey ~~will~~shall occur within 7 days prior to commencing such activities. The survey shall be conducted by a qualified biologist to determine if any birds are nesting on or near the construction area. The survey area ~~will~~shall include the entire construction area (including access and staging areas) plus a buffer of 250 feet for nesting raptors and 100 feet for other nesting birds.[3] If removal of potential nesting substrate or project grading will occur during more than one nesting season, or will occur in different parts of the site in phases over the course of a single season, then additional pre-construction surveys must be performed within 7 days prior to initiation of work in any particular area.
- If the pre-construction survey does not identify the presence of nesting raptors (other than golden eagles; see Impact Biological Resources 9) on or within 250 feet of the site, or other nesting native birds (other than tricolored blackbirds; see Impact Biological Resources 11) on or within 100 feet of the site, construction activities may proceed.
- If any native bird species is found nesting in the survey areas described above, the following mitigation measures shall be implemented:
  - If nest starts (i.e., nests that are under construction but that do not yet contain eggs or young) are found, they may be removed by a qualified biologist before eggs are laid.
  - If nests known to have eggs or young, or that cannot be confirmed to be inactive or to lack eggs or young, are found, a qualified biologist ~~will~~shall establish an appropriate buffer around each nest. The dimensions of buffers necessary to prevent nest abandonment vary by species and the particular circumstances of the nest (e.g., level of proposed new activity relative to the level of existing human activity, or presence or absence of screening vegetation, structures, or topography that may screen the nest from the construction area). As a result, the biologist ~~will~~shall determine an appropriate buffer for each nest in consultation with the CDFG. Generally, a buffer of 250 feet for nesting raptors (other than golden eagles) and 100 feet for other nesting birds (other than tricolored blackbird colonies) is adequate to avoid causing nest abandonment, even without continued monitoring by a biologist.

[3] The required buffers, and thus the survey areas, would be larger for the golden eagle and tricolored blackbird; see Impacts Biological Resources 9 and 11 for the dimensions of the survey areas for those species.

- No new project-related activities (i.e., activities that were not already ongoing when the nest was established, or that are of a substantially greater intensity than when the nest was established) ~~will~~shall be undertaken within the buffer agreed upon by the biologist and the CDFG. The buffer ~~will~~shall be marked (e.g., with flagging or mesh fencing) to ensure that construction personnel respect the buffer.
- With approval of the CDFG, work can occur within a reduced buffer (e.g., less than 250 feet for a raptor nest or less than 100 feet for the nest of another bird species) if a qualified biologist monitors the behavior of the nesting birds while work is ongoing. In such a case, the biologist and CDFG ~~will~~must agree on a reduced buffer, and the biologist ~~will~~shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist ~~will~~shall look for signs of stress such as repeated alarm calls, scolding, agitated behavior, or departure of the birds from the nest. If the birds do not show signs of habituation to the new disturbance by resuming their normal nesting activities, work within the vicinity of the nest ~~will~~must stop and the CDFG ~~will~~shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist ~~will~~shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFG) for as long as the nest is active and work is ongoing within the reduced buffer to confirm that the birds are tolerant of the construction activities.
- A qualified biologist ~~will~~shall determine through direct observation when the nest is no longer in use (e.g., if the young have fledged or the nesting fails for non-project-related reasons). Constant monitoring of the nest is not necessary, but before construction activities occur within the agreed-upon buffer, the biologist must have confirmed that the nest is no longer active.

Minimization of impacts to potential nesting habitat during the breeding season, implementation of pre-construction surveys for active nests, and maintenance of buffers around active nests free from new construction-related disturbance will reduce impacts to nesting native birds to a less than significant level.

Impact Biological Resources 14: The Preferred Alternative could result in a potential impact to bat roosts, including those of special-status bat species. This impact is considered to be potentially significant.

The abundance, distribution, and species composition of bats using the project site have not been well documented. However, it is expected that a number of bat species occur on the site, including common species as well as species of special concern such as the pallid bat, Townsend's big-eared bat, and western red bat.

Western red bats and hoary bats are foliage roosters that typically occur solitarily; small numbers of these bats may roost in the foliage of trees on the site, but they do not breed on the site. Several other species may roost in colonies ranging from a few individuals to hundreds of bats. Such colonies may occur in crevices in bridges, in buildings or bunkers, or in cavities in the larger trees on the site.

If bats are day-roosting in trees or structures within the project area, the removal of these structures will result in the permanent loss of day-roost habitat, and the removal of roost

sites containing bats may result in the injury or mortality of individual bats. Construction activities in close proximity to active roosts may also cause roost abandonment. Although some displaced bats would be able to find alternative roost sites safely, bats abandoning a roost during daylight hours are subject to high predation risk, and disturbance of a maternity roost to the point of abandonment could result in the mortality of young in that roost. While the loss of small numbers of common bats, and the roosts supporting such colonies, would not have measurable effects on regional populations, impacts to special-status species or to large colonies of common species would result in a potentially significant impact. Project impacts on bat foraging habitat are not considered substantial, as ample foraging habitat for bats is present outside the development footprint.

> **Mitigation Measure Biological Resources 14: Prior to approving any construction in or near potential bat roosting habitat on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct a pre-construction/pre-demolition survey for roosting bats; to maintain buffers free from new construction-related disturbance around active bat roosts during the maternity season and around roosts that do not have to be removed; to have a qualified biologist evict bats from roosts that must be disturbed or removed (during the non-maternity season); and to provide alternative roost sites (designed by a qualified biologist) if roosts of pallid bats or Townsend's big-eared bats are removed. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City shall require proponents of future development projects in or near potential bat roosting habitat to implement the following measures:

- A pre-construction/pre-demolition survey for roosting bats ~~will~~shall be conducted by a qualified bat biologist prior to any removal of trees, buildings, bridges, bunkers, or other structures that could potentially support roosting bats. Any trees or structures immediately adjacent to the impact areas that are identified by a qualified bat biologist as being high-potential roost sites ~~will~~shall be surveyed as well. If suitable roost sites are found but a visual survey is not adequate to determine presence or absence of bats (which would be particularly likely in the case of potential roost trees), acoustical equipment ~~will~~shall be used to determine occupancy. This survey ~~will~~shall be conducted prior to the beginning of the breeding season (i.e., prior to March 1) in the year in which construction or demolition in a given area is scheduled to occur so that adequate measures can be implemented, if feasible, to relocate the bats during the nonbreeding season.
- Because the aforementioned survey will be conducted prior to the breeding season, weeks or months may pass between that survey and the initiation of construction or demolition in a given area. Therefore, a second pre-construction/pre-demolition survey for roosting bats, following the methods described above, ~~will~~shall be conducted within 15 days prior to the commencement of these activities in a given area to determine whether bats have occupied a roost in or near the project's impact areas.
- If a maternity roost of any bat species is present, the bat biologist (in consultation with the CDFG) ~~will~~shall determine the extent of a buffer free from new construction-related disturbance around the active roost that will be maintained. A typical buffer is 100 feet,

though this buffer may be reduced in consultation with the CDFG. This buffer would be maintained from April 1 until the young are flying, typically after August 31.

- If a day roost is found on a bridge, in a building, or in a tree that is to be completely removed or replaced, individual bats ~~will~~shall be safely evicted under the direction of a qualified bat biologist. Eviction of bats ~~will~~shall occur at night, so that bats will have less potential for predation compared to daytime roost abandonment. Eviction ~~will~~shall occur between September and March 31, outside the maternity season, but ~~will~~may not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. If a roost is found in a bridge, building, or bunker, bats ~~will~~shall be evicted by installing one-way doors on entry/exit points, or by opening the roosting area to allow air flow through the cavity. Demolition should then follow no sooner than the following day (i.e., there should be no less than one night between initial disturbance for air flow and the demolition). This action should allow bats to leave during hours of darkness, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. If feasible, one-way doors ~~will~~shall also be used to evict bats from tree roosts. If use of a one-way door is not feasible, or the exact location of the roost entrance in a tree is not known, the trees with roosts that need to be removed ~~will~~shall first be disturbed by removal of some of the trees' limbs not containing the bats. Such disturbance ~~will~~shall occur at dusk to allow bats to escape during the darker hours. These trees would then be removed the following day. All of these activities ~~will~~shall be performed under the supervision of the bat biologist.
- If a day roost of pallid bats or Townsend's big-eared bats will be impacted, an alternative bat roost structure ~~will~~shall be provided since suitable roosts of these special-status bats are likely more limited than those of other, more common species. The design and placement of this structure ~~will~~shall be determined by the bat biologist based on the species of bat to be displaced, the location of the original roost, and the habitat conditions in the vicinity. This bat structure ~~will~~shall be erected at least one month prior to removal of the original roost structure. This structure ~~will~~shall be checked during the breeding season for up to 3 years following completion of the project, or until it is found to be occupied by bats, to provide information for future projects regarding the effectiveness of such structures in minimizing impacts to bats.
- In some circumstances in which construction will occur near a roost, but the roost itself will not be destroyed or altered, it may be beneficial to the bats to allow them to continue using a roost while construction is occurring on or near the roost site. If a qualified bat biologist, in consultation with the CDFG, determines that the risks to bats from eviction (e.g., increased predation or exposure, or competition for roost sites) are greater than the risk of colony abandonment, then the bats ~~will~~may not be evicted.

Implementation of pre-construction surveys for bat roosts, maintenance of buffers around active roosts during the maternity season, and relocation of bats from roosts that are located within proposed construction areas will avoid the loss of individual bats as a result of construction activities. Creation of alternative roost sites will compensate for the loss of any active roosts of rare species such as pallid bats and Townsend's big-eared bats. Collectively, these measures will reduce impacts to roosting bats to a less than significant level.

Impact Biological Resources 15: The Preferred Alternative could result in a potential impact to individual American badgers. This impact is considered to be potentially significant.

American badgers have been recorded on the project site on only a few occasions, but the species has the potential to occur in grassland habitat virtually anywhere on the site. The Preferred Alternative would impact 2,044 acres of grassland that provides potential badger habitat. American badgers typically occur in low densities. Due to the low number of records of the species on the site relative to the vast extent of suitable habitat, it is ~~clear~~ possible that habitat availability is not limiting the abundance of the species on the site, and thus the loss of habitat resulting from project construction will not substantially impact badger populations. However, construction activities could result in injury or mortality of badgers (including adults and young) in their dens, and increased human activity on the site may increase vehicular mortality or disturbance of badger dens. Due to the scarcity of the American badger in the region, the loss of individuals due to project activities is considered potentially significant.

> **Mitigation Measure Biological Resources 15: Prior to approving any construction in or near California annual grassland on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct pre-construction surveys for badger dens prior to initiation of grading; to maintain buffers free from new construction-related disturbance around active maternity dens; ~~and~~ to have a qualified biologist relocate badgers from dens located within proposed construction areas during the non-maternity season; and to have a qualified biologist resurvey the impact areas immediately prior to construction if badgers are relocated. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City shall require proponents of future development projects in or near California annual grassland to implement the following measures:

- Pre-construction surveys for badger dens shall be performed within 15 days prior to commencement of grading. These surveys shall be conducted by a qualified biologist familiar with the characteristics of badger burrows. If active badger burrows are identified within the proposed development area, they should be avoided to the maximum extent practicable. If avoidance is not feasible, a qualified biologist should determine if the burrow is being used as a maternity den. If young are determined to be present, a buffer free from new construction-related disturbance ~~will~~shall be established around the den; the dimensions of this buffer ~~will~~shall be determined by the biologist in consultation with the CDFG. The buffer ~~will~~shall be maintained until young vacate the den. If the burrow is simply being used as a refugium by a single badger, or after young have been weaned from a maternity den, the potential loss of individual badgers shall be mitigated through one of the following measures:
  - Active trapping and relocation of badgers to suitable off-site habitat by a qualified biologist
  - An on-site passive relocation program, through which badgers are excluded from occupied burrows by installation of a one-way door in burrow entrances, monitoring

of the burrow for one week to confirm badger usage has been discontinued, and hand-excavation and collapse of the burrow to prevent reoccupation

If relocation of badgers is necessary, the biologist shall conduct a follow-up survey of the impact areas the day that grading or construction is to commence to determine whether any relocated badgers have returned to the construction site. If badgers have returned to the construction site, they shall be relocated again using one of the measures described above.

Implementation of pre-construction surveys for active badger dens, maintenance of buffers around active dens during the maternity season, and relocation of badgers from dens that are located within proposed construction areas will avoid the loss of individual badgers as a result of construction activities, reducing impacts to badgers to a less than significant level.

Impact Biological Resources 16: Although no special-status plant species have been identified on the site, the Preferred Alternative could result in potential disturbance or loss of the big tarplant and round-leaved filaree and their habitat if they are identified within the development footprint in the future. This impact is considered to be potentially significant.

In 2008 the City of Concord completed multiseason special-status plant surveys for the entire site (Vollmar Consulting, 2008; see section 8.1.4.4). Although the surveys documented occurrences of 56 different species of LU&S plants, no occurrences of any special-status plants, as defined in section 8.1.4.1, were documented on the site. The LU&S list is an inventory of native plants that are relatively uncommon in Contra Costa and Alameda counties. It is important to point out that plants considered to be Locally Unique and Significant are not necessarily considered “rare” under CEQA, as they are relatively common outside of the region.

As described in section 8.1.4.4, the site’s potential to support special-status plants has been considered in detail. After review of the 2008 botanical survey results, the historical and current land use practices, the ecological requirements of special-status plants considered for potential occurrence, and site characteristics relative to soils and hydrology, among other factors, it was concluded that only big tarplant and round-leaved filaree, out of all potential special-status plants, may occur on the site in its existing condition. The ability of these two plants to germinate and grow in 2008 may have been negatively affected by the relatively low rainfall experienced on the site in the spring of 2008. It is for this reason that their absence cannot be absolutely determined at this time.

The Preferred Alternative would impact ~~2,045~~2,002 acres of grassland that provides potential habitat for these two plants. If present on the site, big tarplant and round-leaved filaree could potentially be directly impacted by grading or trampling by heavy equipment or people, either in the development footprint or in the open space areas where some recreational and interpretive development will occur. Due to the regional rarity of these special-status species, such impacts would be significant.

Mitigation Measure Biological Resources 16: Prior to approving any construction within California annual grassland on the site, the City of Concord shall require project proponents to have a qualified biologist conduct surveys for the big tarplant and round-leaved filaree; to avoid impacts to these species to the extent practicable if they are detected on the site; and to mitigate permanent impacts to populations of these species by managing appropriate

portions of the on-site open space to provide suitable conditions for these species. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

The City shall require the proponents of any future development project within California annual grassland to implement the following measures:

- The project proponent shall retain a qualified botanist to document the presence or absence, and the specific locations and extent, of big tarplant and round-leaved filaree within any areas on the site that may experience any ground disturbance activities associated with either of the two development alternatives.

  This shall be accomplished by conducting plant surveys according to survey protocols established by the USFWS and/or the CDFG. The surveys would be conducted during the flowering period (i.e., July–November for big tarplant and March–May for round-leaved filaree) during a year of average or above-average rainfall to confirm the presence or absence of these two special-status plants occurring within the site. Due to the variability in rainfall amount and distribution, it is advisable for project proponents to plan ahead regarding these surveys, as environmental conditions suitable for the germination and growth of these plants does not take place every year. A survey conducted for these two species will be considered valid for a period of 3 years after it is conducted. If development in a given area is delayed such that more than 3 years have elapsed since surveys were conducted, another survey must be conducted.

  If conditions are inappropriate for conducting a survey for these species (e.g., due to drought), a survey should be completed during a subsequent year with appropriate conditions, or presence should be assumed and areas providing high-quality habitat should be identified by a qualified botanist. Mitigation for impacts to habitat would then be provided as described below.

- If populations of either of these special-status plants are detected, impacts should be avoided to the maximum extent practicable. For populations that occur outside of but directly adjacent to the grading limit line, mapping, flagging, and fencing shall be used to protect either of the two special-status plants within 200 feet of any work areas, including access, grading, and staging areas. Silt fencing shall be installed to protect such plants in highly sensitive areas or under conditions where erosion could affect a special status plant or its habitat. For populations that fall within the development footprint and have been determined to be saved, prior to site grading, any populations of the big tarplant and round-leaved filaree identified during the surveys shall be protected by a permanent buffer zone. The buffer zone shall be established around these populations. The size of the setback buffers generally depends upon the proposed use of the immediately adjacent lands, and includes consideration of the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, and edaphic physical and chemical characteristics) and adjacent uses (e.g., sprinkler irrigation or shading from multistory buildings). The buffer for these two species shall be established at 50 feet from the perimeter of the population or the individual plants unless otherwise agreed upon by a qualified botanist retained by the project proponent and agreed to by the City.

To the extent that impacts to special-status plants cannot be avoided, the following additional measure ~~will~~shall be implemented:

- The destruction of populations of big tarplant and round-leaved filaree within the development footprint shall be mitigated by specifically managing portions of the open grasslands within areas designated as open space for these species. The vast majority of the Los Medanos Hills and areas located southeast of Bailey Road are not proposed for development. These same areas represent the most suitable habitat for big tarplant and round-leaved filaree on the entire site. A review of the regional occurrences of these two species reported in various databases reveals that off-site populations generally occur on specific soil types (namely Altamont clay, Altamont-Fontana Complex, and Diablo clay). These same soil types underlie much of the open space area within the project boundaries. As such, specific habitat management measures described under Impacts Biological Resources 5, 6, and 10 to enhance the open space for the California red-legged frog, California tiger salamander, and burrowing owl, respectively, will also benefit the germination, growth, and long-term viability of populations of the big tarplant and round-leaved filaree, if they are present.

Implementation of additional surveys for the big tarplant and round-leaved filaree and avoidance of impacts to on-site populations to the extent practicable would avoid impacts to these species. Management of habitat in the on-site open space areas for conditions suitable for these species would compensate for any unavoidable impacts. Collectively, these measures will reduce impacts to the big tarplant and round-leaved filaree to a less than significant level.

Impact Biological Resources 17: The Preferred Alternative could result in a potential impact to heritage trees. This impact is considered to be potentially significant.

Trees that meet the criteria for the City of Concord Heritage Tree Ordinance, as described in section 8.1.5 above, could be removed, trimmed, or otherwise affected by construction-related activities (such as trenching within or adjacent to the crown of the tree canopy) of the Preferred Alternative. The City's Heritage Tree Ordinance states that the preservation of trees is necessary for the health and welfare of the citizens of the City to conserve the scenic beauty, prevent erosion of topsoil, protect against flood hazards, counteract the pollutants in the air, and maintain the climatic and ecological balance of the area.

The number of heritage trees that could be impacted by the Preferred Alternative is unknown, as no comprehensive tree survey has been performed for the entire site. The vast majority of trees on the site that may fit the criteria established for the Heritage Tree Ordinance occur within areas mapped as either oak woodland/savannah or riparian woodland, as shown on Figure 8-1. The Preferred Alternative could potentially impact up to the entirety of the on-site reach of Mt. Diablo Creek by implementing flood control or creek restoration, and it could thus impact heritage trees in riparian areas. The Preferred Alternative would preserve the Los Medanos Hills above the 30 percent grade, which includes much of the oak woodland/savannah habitat, especially south of Bailey Road.

Impacts to heritage trees under the Preferred Alternative would conflict with the Heritage Tree Ordinance and would thus be a significant impact.

> **Mitigation Measure Biological Resources 17: Prior to approving any construction on the site, the City of Concord shall require project proponents to ensure compliance with all of the requirements of the City of Concord's Heritage Tree Ordinance. With implementation of this mitigation measure, this**

potentially significant impact would be reduced to a level that is less than significant.

To protect heritage trees, the City ~~will~~shall require the project proponent to apply and implement, where relevant, all applicable provisions of the City Heritage Tree Ordinance, including those specifically related to proposed subdivisions. Such measures include obtaining a tree removal permit from the City and implementation of tree protection measures during construction subject to the approval of the City. These measures include installation of a temporary chain-link fence around the drip line of the heritage tree(s); prohibition of excavation and storage or construction materials within the drip line; prohibition against locating utility services or irrigation lines within the drip line; and additional measures as deemed appropriate by the City.

Implementation of measures in compliance with the City of Concord's Heritage Tree Ordinance will reduce potential impacts to heritage trees to a less than significant level.

Impact Biological Resources 18: The Preferred Alternative could result in a potential impact to oak woodland/savannah. This impact is considered to be potentially significant.

Most of the oak woodland and savannah habitat on the site is located in areas that are to remain open space in the southeastern part of the site. However, a few small patches of this habitat type are present within the development footprint, as shown on Figure 8-1.

As described in section 8.1.3.2, oak woodland and savannah habitats support a distinctive suite of wildlife species and frequently support high wildlife diversity. Due to the value of mature oak trees and oak-dominated habitats to wildlife communities, the loss of oak woodland/savannah would be considered significant.

<u>Mitigation Measure Biological Resources 18</u>: Prior to approving any construction on a parcel that contains oak woodland/savannah habitat, the City of Concord shall require project proponents to demonstrate avoidance of impacts to oak woodland/savannah to the extent practicable; agree to have a qualified arborist prepare an Oak Protection Plan describing measures to protect trees to be saved; and mitigate unavoidable impacts to oak-dominated habitats through the replacement of impacted oaks, as described in a Tree Replacement and Planting Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

The City shall require proponents of development projects on parcels containing oak woodland/savannah habitat to implement the following measures:

- Project proponents ~~will~~shall demonstrate to the City that impacts to oak woodland/savannah and individual oak trees on the site have been avoided to the maximum extent practicable. Temporary construction access and staging areas ~~will~~shall be located away from oak trees to the extent practicable. A certified arborist ~~will~~shall examine any oak trees that are to be preserved within a particular project site and prepare an Oak Protection Plan describing the measures that will need to be implemented to avoid impacts to the trees, including consideration of drainage, grading, the extent of the trees' root systems, and other factors. This plan ~~will~~shall be submitted

to the City for review and approval, and it ~~will~~shall be implemented by the project proponent during construction. Project grading may not commence until the City approves this plan.

- Unavoidable losses of oak-dominated habitats ~~will~~shall be mitigated by planting oaks on the site. For any oak tree that will be directly lost, or for which a certified arborist considers oak-protection measures inadequate to ensure the long-term health of the tree, three oaks of 5-gallon container size ~~will~~shall be planted for every 6 inches of diameter of trunk removed. For example, the removal of a 12-inch diameter tree would require that six oaks be planted. Oak trees ~~will~~shall be planted in areas where they can enhance small or degraded patches of oak woodland, or within the California annual grassland habitat or riparian woodland, not in areas within or adjacent to the proposed development areas. A Tree Replacement and Planting Plan ~~will~~shall be prepared by a certified arborist. This plan ~~will~~shall contain the same elements as described for the Habitat Mitigation and Monitoring Plan as described under Mitigation Measure Biological Resources 1. This plan ~~will~~shall be submitted to the City for review and approval, and it ~~will~~shall be implemented by the project proponent during construction. Project grading may not commence until the City approves this plan.

The City is responsible for enforcing implementation of the Habitat Mitigation and Monitoring Plan, including the construction of the mitigation and documentation that the mitigation has achieved its success criteria. If the Plan is not implemented concurrent with or prior to filling of existing wetlands, or if the mitigation has not met success criteria within 5 years and the project proponent has not remediated the deficiencies with the mitigation, the City can issue a stop work order and/or levy a fine due to noncompliance. The City shall also conduct its own regular monitoring of the mitigation activities to ensure compliance with permit conditions.

Avoidance of impacts to oak woodland/savannah to the extent practicable and implementation of a plan to protect oak trees to be saved will avoid and minimize impacts to oaks. Mitigation of unavoidable impacts to oak-dominated habitats through the replacement of impacted oaks will compensate for the loss of any oaks as a result of development on the site. Collectively, these measures will reduce impacts to oak-dominated habitats to a less than significant level.

Impact Biological Resources 19: The Preferred Alternative could result in a potential impact from the spread or introduction of invasive plant and animal species. This impact is considered to be potentially significant.

A floristic survey of the site by Vollmar Consulting (2008) identified stands of several species of noxious weeds, specifically artichoke thistle (*Cynara cardunculus*), whitetop (*Cardaria pubescens*), giant reed (*Arundo donax*), medusahead (*Taeniatherum caput-medusae*), and peppergrass (*Lepidium latifolium*). All of these species are on the watch list of the California Invasive Plant Council and could potentially spread on the site.

In addition, urban development on the site could introduce invasive plant species to natural habitats, including grassland, wetland, riparian, and other habitats. With increased development and access to the project area, the potential exists for introduction of invasive plants that could colonize, forage, use, or otherwise impair the functions and values of

natural habitats in the project area. These plants may displace native plants, thus reducing habitat quality for native wildlife and disrupting existing natural communities.

The San Francisco Bay Area has been identified as having some of the highest numbers of invasive species in the world, including numerous invasive plants. The existing grassland and riparian habitats of the project site already support many invasive species, and the Navy has implemented an invasive species control and weed management project for many years. Given the potential that additional invasive species could be introduced to the site through construction, development, and human use, the potential exists for the existing functions and values of natural habitats on the site (e.g., in areas that are to remain open space) to be adversely affected, resulting in a significant impact.

Non-native animals may also be introduced as a result of project development. In particular, humans may intentionally introduce (e.g., as a result of release of pets that are no longer wanted or for other reasons) species such as bullfrogs, crayfish, or non-native fish to aquatic habitats on the project site. Downard et al. (1999) documented a decline in bullfrogs on the site since 1982, which coincided with an increase in California red-legged frogs. Because bullfrogs, crayfish, and fish prey upon and compete with special-status natives such as red-legged frogs and tiger salamanders, introduction of non-native animals to the site could result in significant impacts on native biota.

> **Mitigation Measure Biological Resources 19: Prior to approving any construction on the site, the City of Concord shall prepare an Invasive Species Control Plan and require project proponents to ~~develop and~~ agree to implement the Plan ~~an Invasive Species Control Plan~~. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City shall prepare a comprehensive Invasive Species Control Plan to prevent the introduction or spread of non-native invasive plant and animal species to natural open space areas and sensitive habitats. This Plan ~~will~~shall be a single document that addresses the entire project area (rather than addressing only a specific development area), and it may be integrated with another habitat management plan to ensure that impacts to special-status species and their habitats are avoided.

The Invasive Species Control Plan ~~will~~shall describe measures to avoid the unintentional introduction of invasive species to the site, list plant species that should not be used in landscaping, list animal species that should not be introduced into natural areas, describe monitoring measures to ensure that any invasions are detected before they become substantial, describe control measures that will be implemented if invasions occur, and describe the process by which the Plan will be implemented (e.g., individual project proponents shall be ~~the entity~~ responsible for funding and implementing the plan and for reporting the results, and the City shall be responsible for enforcing implementation~~it, funding mechanisms, and reporting procedures~~). The Plan ~~will~~shall include literature that shall be distributed to homeowners and businesses within the development area and surrounding areas, informing them of known non-native invasive species commonly used in landscaping and encouraging the use of native species.

Preparation and implementation of an Invasive Species Control Plan will prevent invasive species from colonizing and/or spreading on the site, thus reducing potential impacts from the introduction or spread of invasive species to a less than significant level.

8.3.2.2 Biological Resources Impacts of the Preferred Alternative That Are Less Than Significant

Impact Biological Resources 20: The Preferred Alternative would result in impacts to regionally abundant land use and vegetation types, including California annual grassland, developed areas, coyote brush/coastal sage scrub, golf course/recreational areas, orchards, or tree plantations, or the common wildlife species associated with these habitats. This impact is considered to be less than significant.

Under the Preferred Alternative, development will result in the conversion of extensive areas of relatively common and widespread habitats to more urban and suburban uses. This habitat conversion will result in a loss of existing habitat and changes in the abundance of wildlife species that currently use these habitats on the project site.

Table 8-6 lists the acreage of annual grassland, developed areas, coyote brush/coastal sage scrub, golf course/recreational areas, and orchards/tree plantations that could potentially be impacted under the Preferred Alternative. Although the total acreage of these impacts is large, the habitats themselves are common and widespread in the region. In addition, the project proposes to preserve extensive grasslands, oak woodland/savannah, and other more sensitive habitats in open space areas.

The loss of these habitats will have only a small effect on the regional availability of these vegetation types. As a result, for most wildlife species associated with these common habitats, the loss of these habitats will result in a very slight reduction in regional populations. As a result, the project's impacts do not meet the CEQA standard of having a *substantial* adverse effect on these species' populations, and the loss of these habitats and associated species is considered less than significant (except as noted for individual special-status species in section 8.3.2.1).

Mitigation Measure Biological Resources 20: None required.

Impact Biological Resources 21: The Preferred Alternative could result in a potential impact to special-status wildlife species that occur on the site only as occasional nonbreeding visitors, foragers, or migrants. However, this impact is considered to be less than significant.

Some special-status animal species may occur on the project site only as uncommon to rare nonbreeding visitors (e.g., in winter), migrants, or transients, or may forage on the site in low numbers while breeding in adjacent areas. However, these species are not expected to breed on the site. These species include the bald eagle, American peregrine falcon, short-eared owl, long-eared owl, Vaux's swift, olive-sided flycatcher, yellow warbler, grasshopper sparrow, and Bryant's savannah sparrow.

The status of these species on the site, and their known or potential use of the project site, are summarized in Table 8-4. Compared to the special-status species for which impacts were described as potentially significant in section 8.3.2.1, these species are not expected to breed on the site, occur on the site regularly, or occur on the site in large numbers. As a result, project development is not expected to result in appreciable effects on regional populations of these species that occur only as occasional nonbreeding visitors or foragers. Therefore, project impacts to these species are considered less than significant.

Mitigation Measure Biological Resources 21: None required.

Impact Biological Resources 22: The Preferred Alternative would result in potential impacts to wildlife movement. However, this impact is considered to be less than significant.

Wildlife movement within or in the vicinity of the site takes many forms, and is different for the various suites of species associated with these lands. Bird and bat species move readily over the landscape, and many forage over and within both natural lands and landscaped or disturbed areas. Some species, particularly birds and bats, are migratory, moving into or through the project area during specific seasons. Aquatic species move along stream corridors to the extent allowed by existing impediments. Mammals of different species move within their home ranges, but also disperse between patches of habitat. Generally, reptiles and amphibians similarly settle within home ranges, sometimes moving between breeding areas and alternative refugia (e.g., aestivation sites), but also dispersing to new areas. The young of many mammal species disperse from their natal home ranges, sometimes moving over relatively long distances, in search of new areas to establish themselves within home ranges.

Wildlife corridors, while long recognized as important, have been a major topic in conservation ecology over the past few decades, partly in response to increasing urban development and continued isolation of native habitats and species. Connections between patches of native habitat are important for maintaining wildlife populations in both patches. These connections are referred to as a wildlife corridor, which was defined by Hilty et al. (2006) as “any space, usually linear in shape, that improves the ability of organisms to move among patches of their habitats.” Such corridors are scale dependent, and the requirements are different for various species. For large mammals with the ability to move long distances in short periods of time (e.g., over a single night), a corridor can be relatively narrow if it supports good cover and suitable habitat exists on both ends of the corridor. For smaller animals, dispersal may take much longer, and the success of dispersal depends upon suitable habitat that provides food and shelter. In other cases, animals within the corridor are within home ranges, and individual animals may never move the entire distance between larger patches of core habitat; rather, smaller local movements and breeding activities allow for genetic exchange between more distant populations over time.

CH2M HILL (2008f) discussed wildlife movement in the vicinity of the site and the potential effects of the project on such movement. That technical memorandum described the project site in its landscape context, described existing movement by wildlife known to occur on the site, and described potential effects on the project on such movement. The present analysis reiterates and expands upon the salient points of that memorandum, focusing on specific wildlife taxa to describe the potential effects of the project on wildlife movement. This discussion concentrates on the movement of wildlife within the project site and between the project site and off-site areas. Because areas to the west and southwest of the project site are completely developed, wildlife movement between the site and areas to the west and southwest are not discussed further. Also, because birds and bats are able to move on and off the site freely due to their mobility, no further discussion of these species is provided. Rather, this analysis focuses on movement of less mobile or more restricted species between high-quality habitat areas.

Aquatic Species. As discussed in sections 8.1.3.2 and 8.1.4.3, Mt. Diablo Creek provides some means by which aquatic species such as fish and aquatic invertebrates can move through the site. Such movement is expected to occur primarily during high-flow events, and then primarily through the site in a downstream direction. For most of the year, the on-site reach of the creek contains no water, and thus movement of aquatic species along the creek, and especially through the site, occurs only during the wet season. During high-flow events, aquatic animals can swim or are carried through the site from areas upstream that provide aquatic habitat year round. During such events, sufficient flow may also be present to allow stronger-swimming fish to move upstream along Mt. Diablo Creek; such movement may allow fish in downstream reaches with perennial flow to swim upstream into the project site, and potentially through the site.

However, there are substantial impediments to upstream movement of fish into and through the site. As discussed in section 8.1.4.3, a berm carrying utility lines north of the EBMUD Wasteway physically blocks the Mt. Diablo Creek channel, and upstream-migrating fish may be able to bypass the berm only during very high flows. Even if such fish are able to reach the site, movement through the on-site segment of Mt. Diablo Creek is constrained by 11 culverts that convey the creek. A fish passage assessment performed by CH2M HILL (2008e) determined that none of these culverts meets the criteria for steelhead passage recommended by the CDFG for any of the flow rates modeled. These culverts are wide, multiple-barrel concrete box or corrugated metal pipe culverts that were constructed primarily to pass large flood flows. In low-flow conditions, water is spread broadly and shallowly across the bottoms of these culverts, providing very poor fish passage conditions.

The Preferred Alternative proposes to construct seven bridges over Mt. Diablo Creek. Some of these bridges would replace existing crossings, which would be removed or reconstructed. Mitigation Measure Biological Resources 2 requires that new crossings be constructed so as to allow the movement of aquatic species more easily than currently occurs with the existing culverts. For example, new bridges may be required to either span the creek or provide offset culverts so that one lower culvert “cell” will convey a low-flow channel that is more conducive to movement of aquatic life than the current culvert configurations. As a result, movement of aquatic species through the project site could be facilitated, not further constrained, by the project.

In addition, if all or portions of the on-site reach of Mt. Diablo Creek require reconfiguration for flood control purposes, or if massive creek restoration is pursued, the channel can be reconstructed to increase habitat quality within and along the channel and remove some of the impediments (such as existing culverts) to aquatic life movement that currently exist.

Impact Biological Resources 2 discusses the potential impacts of the project on Mt. Diablo Creek and its aquatic inhabitants, and Mitigation Measure Biological Resources 2 includes measures to avoid and minimize both short-term and long-term adverse effects of development on movement of aquatic life through the site. Thus, the project will not result in significant impacts to the movement of aquatic species.

Reptiles and Amphibians. Under current conditions, reptiles and amphibians move relatively freely within most of the project site. Western fence lizards, gopher snakes, western toads, and Pacific treefrogs are common and widespread on the site, and obviously move over and among most of the site’s habitats. California red-legged frogs, California tiger salamanders, and western pond turtles have been recorded primarily from the

southeastern half of the site. The absence of records of California tiger salamanders from areas northwest of, or even near, Willow Pass Road indicates that this species does not make regular movements into the northwestern part of the site, and it has not been recorded anywhere on the CNWS as a whole, including the project site, north of SR 4. Thus, although the project will result in the development of limited habitat where the species currently occurs (which will be mitigated as described in Mitigation Measure Biological Resources 6), it will not have large-scale effects on tiger salamander movement or restrict movement between the site and off-site areas.

California red-legged frogs have been recorded in Mt. Diablo Creek, and once on the west side of the creek south of SR 4. This species is expected to disperse more readily along Mt. Diablo Creek than the California tiger salamander, and such individuals may disperse under SR 4 along the creek as well. Western pond turtles have been recorded on the site only at the Cistern Pond, but because this species is known from the Tidal Area as well, it also may disperse up and down Mt. Diablo Creek.

Buildout of the Preferred Alternative would convert most of the habitats west of Mt. Diablo Creek, and some areas east of the creek, to uses that would no longer support most reptiles and amphibians. Such development will also introduce impediments to movement of reptiles and amphibians through these portions of the site. Although it is possible that some areas that would otherwise be suitable for use by these species will still be present within the development footprint (e.g., if wetlands near the old airfield are avoided), reptiles and amphibians would be unable to move freely between these preserved areas and larger expanses of core habitat that will remain in the open space areas. Constraints on movement within the site would have only very local effects, and would not affect broader-scale, regional movements between core habitat areas.

Reptiles and amphibians currently move between the site and certain off-site areas as well. The entire eastern and southeastern borders of the site abut open space areas supporting populations of the species that occur on the site, and the fences that surround the project site are expected to be easily penetrated by these taxa. As a result, dispersal between the project site and areas to the southeast is expected to occur freely under existing conditions, and because the eastern and southeastern portions of the project site will remain open space, such movement would not be affected by the project.

Reptiles and amphibians may enter the site from upstream areas along Mt. Diablo Creek, although due to the urbanized nature of land uses through which upstream reaches must flow before reaching the project site, numbers of individuals moving onto the site from upstream areas are likely low, and are probably limited to common species. As is the case for aquatic species, project development is not expected to affect the rate at which reptiles and amphibians enter the site via upstream reaches of Mt. Diablo Creek. Biologically important dispersal of reptiles and amphibians from the site into upstream areas along the creek is currently limited, both by the drop structure and riprap at Bailey Road (which would make it very difficult for most species to move upstream through this area) and by the urbanized stream reaches immediately upstream of the site that such individuals would have to traverse before reaching higher-quality habitat supporting viable populations far upstream in the watershed, above the City of Clayton. As a result, the magnitude of successful dispersal of species such as the California red-legged frog or western pond turtle

from the project site to upstream populations, or from upstream areas to the project site, is not expected to be affected substantially by project development.

Movement of reptiles and amphibians between most of the project site and areas to the north is currently impeded by the presence of SR 4, whose median barriers, BART tracks, and heavy traffic would make a surface crossing highly unlikely. Although undercrossings of SR 4 are present at Willow Pass Road and in two tunnels between Willow Pass Road and Kinne Boulevard, these paved undercrossings provide little or no cover for reptiles and amphibians, and are not located in landscape positions (such as creeks or drainages) conducive to directing movement of these species. As a result, it is likely that very little dispersal by reptiles and amphibians occurs through these crossings. Rather, any movement of reptiles and amphibians that currently occurs across SR 4 likely occurs along Mt. Diablo Creek. Development on both sides of the creek, and in uplands between source populations in open space areas to the south and this undercrossing, is expected to reduce the number of individual reptiles and amphibians that use this crossing following development of the project. However, the two special-status species (California red-legged frog and western pond turtle) that may currently use this crossing are expected to continue to do so even if development occurs, given the minimum 300-foot-wide creek corridor that will be provided. Thus, the project is not expected to result in significant impacts to the movement of reptiles and amphibians.

Mammals. Small mammals such as mice, voles, ground squirrels, and pocket gophers are currently able to move fairly freely around the site, and between the site and areas of suitable habitat off-site, as was described above for reptiles and amphibians. However, the tall fencing that surrounds the entire project site, and is topped by barbed wire, presents an impediment to movement of larger animals onto the site. Such fencing is present around the perimeter of the site, including the areas where the site borders Bailey Road, Willow Pass Road, and SR 4. Such fencing is also present in several areas within the interior of the site. Larger animals such as coyotes, gray foxes, and bobcats can pass through these fences only where there are gaps under or within the fences (e.g., at gates with small gaps or in the grating where the perimeter fence crosses Mt. Diablo Creek at Bailey Road). While the presence of these species on the project site indicates that they do enter and exit the site at times, movement of these species on and off the site is certainly constrained. Mule deer are present on the site only in very small numbers and are infrequently seen, attesting to the difficulty of movement through the perimeter fencing for this typically widespread species.

Under the No Project Alternative, this fencing would remain, and it would remain a constraint to wildlife movement in and out of the site. However, under the Preferred Alternative, the perimeter fencing around the project site could be removed, allowing much easier movement of mammals between the site and open space areas upstream along Mt. Diablo Creek and to the east and southeast of the site than currently occurs. Because the project will preserve extensive open space in the eastern and southeastern sections of the site, removal of fencing would facilitate the use of several thousand acres of relatively natural habitat by species such as the mule deer for which movement onto the site is currently constrained.

As mentioned above for reptiles and amphibians, there are very few locations in which animals can cross SR 4. No high-quality crossings are present for several miles to the east of the site, and intensive development west of the project site precludes the presence of any

high-quality avenues of movement between the north and south sides of SR 4 in areas west of the site. As a result, most movement by mammals between the north and south sides of SR 4 in the Concord area is expected to occur via the four undercrossings on and adjacent to the project site: the Willow Pass Road undercrossing, the Kinne Boulevard/Mt. Diablo Creek undercrossing, and the two small vehicle tunnels located between these two larger undercrossings.

The Preferred Alternative proposes development in the vicinity of these four undercrossings. Although the minimum 300-foot-wide corridor along Mt. Diablo Creek will be preserved, and will allow for some movement of mammals through the site and under SR 4, the urban development proposed on the south side of all four undercrossings, and on the north side of the two tunnels and the Kinne Boulevard/Mt. Diablo Creek crossing, by this project will inhibit wildlife use of these crossings. The physical presence of buildings and roads, human activity, domestic animals, and fencing will discourage mammals that might currently be using these crossings from moving through the developed areas to even gain access to these crossings. As a result, the Preferred Alternative is expected to reduce the movement of mammals between the north and south sides of SR 4 to some extent.

Whether the development associated with the Preferred Alternative will result in a significant impact on the movement of mammals between the north and south sides of SR 4 depends on three factors. A discussion of each of these factors follows.

1. The degree to which mammals currently use the four undercrossings: Small mammals can currently cross through existing fencing to reach each of these undercrossings. Larger mammals, such as gray foxes, coyotes, and mule deer, must approach the Kinne Boulevard/Mt. Diablo Creek undercrossing via the road itself, or by crossing a series of low culverts. Examination of mud under and around these culverts in February and March 2009 by H.T. Harvey & Associates did not reveal any prints indicating their use by mammals. This is not surprising, as traffic on Kinne Boulevard is currently so sparse that mammals are inhibited little by having to use the roadway. Likewise, larger mammals would have to approach the two vehicle tunnels via the road surfaces, but this poses little impediment to the tunnels' use by mammals. Whereas the Kinne Boulevard/Mt. Diablo Creek undercrossing and the two tunnels are on Navy property, the Willow Pass Road undercrossing is not, and thus animals would not only have to cross the undercrossing (which is narrow and heavily used by traffic), but also cross through the perimeter fencing to enter or exit the project site.

   To get some sense of the degree to which the Kinne Boulevard/Mt. Diablo Creek undercrossing and the two tunnels are used by mammals, H.T. Harvey & Associates installed motion-sensing cameras at each of these three locations to record mammal movement through the gap in the fence at Kinne Boulevard and through each of the two tunnels. Five cameras were installed at various locations at the Kinne Boulevard/Mt. Diablo Creek crossing, and single cameras were placed in each of the two tunnels. These cameras were installed on March 16, 2009, and images were downloaded on March 23 and 31 and April 6. Thus, each camera recorded images for 20 days and nights.

   After review of the date/time imprints on the images to account for multiple photos of the same animal being detected by different cameras, it was determined that five mammal detections occurred at cameras at the Kinne Boulevard/Mt. Diablo Creek

undercrossing: four of single coyotes and one of a mule deer. It is unknown whether the coyote images, which were recorded in the early morning of March 24, the late evening of the same day, the late evening of March 30, and the early morning of April 1, represented the same individual or multiple animals.

In the eastern tunnel, single raccoons in the late evening of March 31 and early morning of April 1 were the only animal images recorded. In the western tunnel, a raccoon was detected in the late evening of March 19, a striped skunk in the evening of March 19, and single gray foxes in the early morning and late evening of March 21 and the early morning of April 1.

These cameras were set to record images during all times of the day, and numerous images of passing vehicles and humans were obtained. Thus, it is interesting to note that all the images of mammals were captured in the hours of darkness.

Collectively, these images indicate that these three undercrossings were used by one to four coyotes, one mule deer, one striped skunk, one to three raccoons, and one to three gray foxes (i.e., 5 to 12 mammals) during their 20 days of operation. Although these data represent only 20 days of effort, they suggest that these undercrossings are used regularly, but by small numbers of regionally common species.

2. The degree to which current use of the four undercrossings will be reduced by project development: It is difficult to predict the degree to which mammals will use these undercrossings after development occurs. Because mammals seem to (and are expected to) currently use these crossings primarily at night, some animals may use them even after project development occurs, as human activity and vehicular traffic will be lower at night when the animals are moving. However, at the Willow Pass Road undercrossing and the two on-site tunnels, development will likely inhibit the ability of animals to access the tunnels, and thus use of these tunnels by wildlife will likely be curtailed substantially.

   After project development, the minimum 300-foot-wide corridor along Mt. Diablo Creek will still offer some potential for wildlife to use this crossing. Riparian vegetation will provide some cover for dispersing mammals as well. At least the urban-adapted wildlife species such as raccoons and stripe skunks are expected to regularly use this corridor to move beneath SR 4. Because mule deer will have much greater access to the site as a whole if the perimeter fencing is removed, and because this species is at least somewhat tolerant of suburban development, it is possible that movement of mule deer under SR 4 could even increase as a result of the project. However, more sensitive species such as coyotes and gray foxes may use this undercrossing less frequently after development since animals would have to follow the creek through large expanses of new development on the site south of SR 4.

3. The effect of a reduction in movement of mammals on regional populations and communities: Assuming that wildlife movement is curtailed at these undercrossings, it is necessary to assess whether a reduction in such movement will have large-scale consequences on populations or communities. If the crossings at which movement will be reduced were critical areas of connectivity between large core habitat areas supporting sizeable populations of species, or if they allow for movement of special-status species that will be reduced substantially as a result of the project, then the reduction in connectivity could affect a substantial proportion of a species' populations

by isolating populations on either side of SR 4. However, after assessing the land cover and extent of open space on the north side of SR 4, it was determined that this is not the case. The extent of open space that provides habitat for mammals north of SR 4 is not so great that maintaining current levels of connectivity is critical to the maintenance of large, regionally important populations. As a result, reduced habitat connectivity for raccoons, skunks, coyotes, foxes, and similar species is not expected to "interfere substantially with the movement of any native resident or migratory species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites," which are the criteria for determining that an impact to wildlife movement is significant under CEQA.

Furthermore, only a portion of the grassy hills north of SR 4 is part of the Tidal Area of the CNWS. The remainder is predominantly private land that will likely be developed in the future. For example, a large portion of the grassy hills north of SR 4 is within Contra Costa County's urban limit line (ULL). Thus, whether under existing conditions or projected future conditions, there is no justification for determining that project development will have a substantial effect on wildlife movement under SR 4.

Mitigation Measure Biological Resources 22: None required.

Impact Biological Resources 23: The Preferred Alternative would not result in an impact to the San Joaquin kit fox. This impact is considered to be less than significant.

As discussed in Table 8-4, San Joaquin kit fox have not been observed at the site. The year-long, multiseason University of Arizona study (Downard et al., 1999) and subsequent site surveys have documented the gray fox and coyote, and noted a single red fox on the site. However, neither the 1981–1982 nor 1998–1999 surveys (JSA, 1982; Downard et al., 1999) detected any evidence of kit fox on the site, despite conducting both daylight and nighttime surveys for mammals.

There are no records of the kit fox from the project site or its vicinity. This species was reported in 1996 and 1997 at Black Diamond Mine Regional Preserve, approximately 3 miles southeast of the site (CNDDB 2009). San Joaquin kit foxes were also observed in 1996 within the Kellog Watershed, approximately 15 miles southeast of the site (Downard et al., 1999). The kit fox was determined to be absent from the adjacent property at Bailey Road Estates (Mills Associates, 2005). The ECCC HCP/NCCP noted that a recent survey of Contra Costa County and Alameda Counties within the known range of the San Joaquin kit fox using detection dogs found no evidence of recent occupancy (Smith et al., 2006).

Based on the lack of any records of the kit fox from the project site and its vicinity, coupled with the absence of recent records from other areas in adjoining areas in Contra Costa County, this species is determined to be absent from the site, and impacts of the project on kit fox will be less than significant.

Mitigation Measure Biological Resources 23: None required.

8.3.3 Biological Resources Impacts of the Concentration and Conservation Alternative

This section summarizes the impacts of the Concentration and Conservation Alternative in the context of the key resources presented in section 8.3.1. Specifically, these resources

are Vegetation, Common Wildlife, Special-Status Species, and Sensitive Habitats (e.g., wetlands and riparian habitats). In addition, this section includes impacts relevant to the consistency of the Concentration and Conservation Alternative with local plans and policies for biological resources. These impacts are described and identified as potentially significant (section 8.3.3.1) or less than significant (section 8.3.3.2).

No impacts to biological resources are unique to either the Preferred Alternative or the Concentration and Conservation Alternative. Although the magnitude of some impacts varies between the two reuse alternatives, there are no impacts identified for the Preferred Alternative above that do not also apply to the Concentration and Conservation Alternative, and no impacts to biological resources that will result from the Concentration and Conservation Alternative that were not already described above for the Preferred Alternative. As a result, discussion of the impacts expected to result from the Concentration and Conservation Alternative focuses on differences between the two reuse alternatives.

8.3.3.1 Potentially Significant Biological Resources Impacts of the Concentration and Conservation Alternative

Impact Biological Resources 24: The Concentration and Conservation Alternative could result in a potential impact to wetland habitats from direct fill or alteration of hydrology. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would impact wetlands by the same means described for Impact Biological Resources 1 (for the Preferred Alternative) above. These impacts are potentially significant.

Because the Concentration and Conservation Alternative has a somewhat more limited footprint than the Preferred Alternative, the Concentration and Conservation Alternative could potentially impact up to 10 acres of wetlands, in contrast to 11 acres under the Preferred Alternative. However, the majority of wetlands in the vicinity of the old airfield may be preserved, rather than impacted, by either alternative. Both of the reuse alternatives preserve wetlands located within the open space element of each alternative.

> **Mitigation Measure Biological Resources 24: Prior to approving any construction potentially impacting wetlands on the site, the City of Concord shall require project proponents to demonstrate avoidance of wetlands fill to the extent practicable and agree to mitigate unavoidable temporary impacts to wetlands by restoration in place following construction; mitigate permanent fill of wetlands at a minimum 1:1 acreage ratio, concurrent with or prior to wetlands impacts; and provide the City with evidence of the purchase of credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for creation of wetlands coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

As described in section 8.3.1 above, either the City or individual project proponents will obtain any necessary permits from State and federal resource agencies to allow the fill of wetlands prior to construction. Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting wetlands

to mitigate those impacts as described under Mitigation Measure Biological Resources 1 (for the Preferred Alternative) above.

Avoiding the fill of wetlands to the maximum extent practicable, replacing any filled wetlands with an equal amount of created wetlands that are likely to have higher ecological functions and values than the filled wetlands, and preservation and management of the created wetlands in perpetuity will reduce impacts to wetlands to a less than significant level.

Impact Biological Resources 25: The Concentration and Conservation Alternative could result in a potential impact to the channel of Mt. Diablo Creek and its aquatic habitat. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would impact Mt. Diablo Creek and its aquatic habitat by the same means described for Impact Biological Resources 2 (for the Preferred Alternative) above. These impacts are potentially significant.

The potential for permanent and temporary impacts to this habitat would be similar under both reuse alternatives since creek reconfiguration and restoration could occur under either alternative. Such flood control and/or restoration measures may include physical reconfiguration of the Mt. Diablo low-flow channel totaling approximately 10 acres along the reach of creek on the site. This potential maximum temporary impact would be the same under the two reuse alternatives. Also, under both alternatives, a minimum 300-foot-wide corridor ~~centered on~~that includes the channel ~~will~~shall be maintained free from development (with the exception of crossings, trails, and possibly outfalls and utilities) following the completion of construction. However, the Concentration and Conservation Alternative proposes five bridge crossings of Mt. Diablo Creek, compared to the seven crossings proposed by the Preferred Alternative.

> **Mitigation Measure Biological Resources 25: Prior to approving any construction involving impacts to Mt. Diablo Creek, the City of Concord shall require project proponents to demonstrate avoidance of creek impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts to the creek by restoration in place following construction; mitigate unavoidable permanent fill of the creek at a minimum 1:1 acreage ratio, concurrent with or prior to creek impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure this potentially significant impact would be reduced to a level that is less than significant.**

As described in section 8.3.1 above, either the City or individual project proponents ~~will~~shall obtain any necessary permits from State and federal resource agencies to allow for impacts to Mt. Diablo Creek prior to construction. Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting Mt. Diablo Creek to mitigate those impacts as described under Mitigation Measure Biological Resources 2 (for the Preferred Alternative) above.

Avoiding impacts to Mt. Diablo Creek to the maximum extent practicable, implementing BMPs to avoid and minimize impacts to water quality, replacing any permanently impacted

areas of the creek with an equal amount of created aquatic habitats, and preservation and management of the created aquatic habitats in perpetuity will reduce impacts to Mt. Diablo Creek to a less than significant level.

Impact Biological Resources 26: The Concentration and Conservation Alternative could result in a potential impact to riparian habitat. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would impact riparian habitat by the same means described for Impact Biological Resources 3 (for the Preferred Alternative) above. These impacts are potentially significant.

Under both reuse alternatives, development is proposed on both sides of Mt. Diablo Creek, thereby creating the potential need for stream crossings and resulting in impacts to riparian habitat. With respect to impacts to riparian habitat, the two alternatives differ only in the number of proposed road crossings (five under the Concentration and Conservation Alternative and seven under the Preferred Alternative). However, up to the entire length of Mt. Diablo Creek is subject to impact from creek reconfiguration for restoration and/or flood control, and thus potential impacts to riparian habitat along Mt. Diablo Creek do not differ between the two reuse alternatives. Development under both reuse alternatives could fill the entire length of Willow Pass Creek, and the riparian woodland located near the old airfield could also be directly affected by proposed development under both reuse alternatives. Thus, both reuse alternatives could result in the removal of up to 32 acres of riparian habitat.

> **Mitigation Measure Biological Resources 26: Prior to approving any construction involving impacts to riparian habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of riparian habitat impacts to the extent practicable and agree to mitigate unavoidable impacts at a minimum 3:1 acreage ratio, concurrent with or prior to riparian impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of riparian habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

As described in section 8.3.1 above, either the City or individual project proponents ~~will~~shall obtain any necessary permits from State and federal resource agencies to allow for impacts to jurisdictional waters prior to construction. Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting riparian habitats to mitigate those impacts as described under Mitigation Measure Biological Resources 3 (for the Preferred Alternative) above.

Avoiding impacts to riparian habitats to the maximum extent practicable, replacing any permanently impacted riparian habitats at a minimum 3:1 ratio, and preservation and management of the created riparian habitats in perpetuity will reduce impacts to these habitats to a less than significant level.

Impact Biological Resources 27: The Concentration and Conservation Alternative could result in a potential impact to the channel of Willow Pass Creek and its aquatic

habitat, drainages within the California annual grasslands, and pond habitats. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would impact aquatic or channel habitat of Willow Pass Creek, drainages within the California annual grasslands, and ponds by the same means described for Impact Biological Resources 4 (for the Preferred Alternative) above. These impacts are potentially significant.

The maximum impact to these habitats (13 acres) does not differ between the two reuse alternatives.

> **Mitigation Measure Biological Resources 27: Prior to approving any construction involving impacts to Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats, the City of Concord shall require project proponents to demonstrate avoidance of aquatic habitat impacts to the extent practicable and agree to implement best management practices to avoid and minimize adverse effects on water quality during construction; mitigate unavoidable temporary impacts by restoration in place following construction; mitigate unavoidable permanent fill of aquatic habitats at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with a Habitat Mitigation and Monitoring Plan for creation of aquatic habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

As described in section 8.3.1 above, either the City or individual project proponents ~~will~~shall obtain any necessary permits from State and federal resource agencies to allow for impacts to jurisdictional waters prior to construction. Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting aquatic or channel habitat of Willow Pass Creek, drainages within the California annual grasslands, and ponds to mitigate those impacts as described under Mitigation Measure Biological Resources 4 (for the Preferred Alternative) above.

Avoiding impacts to Willow Pass Creek and its aquatic habitat, drainages within the California annual grasslands, and pond habitats to the maximum extent practicable, implementing BMPs to avoid and minimize impacts to water quality, replacing any permanently impacted aquatic habitats with an equal amount of created aquatic habitats, and preservation and management of the created aquatic habitats in perpetuity will reduce impacts to these habitats to a less than significant level.

Impact Biological Resources 28: The Concentration and Conservation Alternative could result in a potential impact to California red-legged frogs and their habitats. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would impact California red-legged frogs and their habitats by the same means described for Impact Biological Resources 5 (for the Preferred Alternative) above. These impacts are potentially significant.

All impact areas on the site that are not mapped on Figure 8-1 as “developed,” with the exception of the recreational area along East Olivera Road, are considered to represent

impacted red-legged frog habitat. The Preferred Alternative could impact up to approximately ~~2,400~~2,374 acres of potential California red-legged frog habitat. The Concentration and Conservation Alternative would have lower impacts to this species, as it would impact up to approximately ~~1,850~~1,965 acres of potential California red-legged frog habitat and maintain more open space (with less development) on the west side of Mt. Diablo Creek in the southern part of the site. The Concentration and Conservation Alternative would also support fewer new residents than the Preferred Alternative and thus could potentially result in less human disturbance of red-legged frogs by recreational users of the open space areas.

> **Mitigation Measure Biological Resources 28: Prior to approving any construction in or near potential California red-legged frog habitat on the site, the City of Concord shall require project proponents to demonstrate avoidance of red-legged frog breeding habitat impacts and impacts to Mt. Diablo Creek to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in red-legged frog breeding habitat and use only low-intensity or downcast lighting near red-legged frog ~~breeding or~~ dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which frogs may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for red-legged frogs; mitigate unavoidable temporary impacts to red-legged frog habitat at a 1.1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation at a 0.1:1 ratio); mitigate unavoidable permanent impacts to red-legged frog breeding habitat at a minimum 3:1 acreage ratio and to red-legged frog nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of red-legged frog habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of red-legged frog habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

As described in section 8.3.1 above, either the City or individual project proponents ~~will~~shall obtain any necessary approval from the USFWS to allow incidental take of the California red-legged frog prior to construction. Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting California red-legged frogs and their habitats to mitigate those impacts as described under Mitigation Measure Biological Resources 5 (for the Preferred Alternative) above.

Implementation of design measures will provide long-term minimization of impacts to red-legged frogs on the site, while implementation of construction-phase measures will minimize impacts to individual frogs and their habitats during construction. The enhancement and permanent preservation and management of suitable red-legged frog habitat will

compensate for any residual impacts to California red-legged frog habitat. Collectively, these measures will reduce impacts to California red-legged frogs to a less than significant level.

Impact Biological Resources 29: The Concentration and Conservation Alternative could result in a potential impact to California tiger salamanders and their habitats. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would impact California tiger salamanders and their habitats by the same means described for Impact Biological Resources 6 (for the Preferred Alternative) above. These impacts are potentially significant.

Based on the upland habitat suitability analysis conducted by EDAW (2008a), the Concentration and Conservation Alternative would impact less potential California tiger salamander habitat (~~514~~ 504 acres) than the Preferred Alternative (1,159 acres). Also, the Concentration and Conservation Alternative would not impact any known California tiger salamander breeding areas, whereas the Preferred Alternative would impact a seasonal pool in Bunker City where breeding was previously detected. The Concentration and Conservation Alternative would also support fewer new residents than the Preferred Alternative and thus could potentially result in less human disturbance of red-legged frogs by recreational users of the open space areas.

Mitigation Measure Biological Resources 29: Prior to approving any construction or other ground-disturbing activities within areas identified as providing California tiger salamander habitat at the site, the City of Concord shall require project proponents to demonstrate avoidance of tiger salamander breeding habitat impacts to the extent practicable and agree to construct permanent exclusion fencing around new residential or industrial development; distribute pamphlets to new residents and construct signage explaining the importance of controlling pets near sensitive areas; avoid installation of any lighting in tiger salamander breeding habitat and use only low-intensity or downcast lighting near tiger salamander ~~breeding or~~ dispersal habitat; minimize wet-season construction near aquatic habitats; enclose construction areas with temporary exclusion fencing; implement best management practices to avoid and minimize adverse effects on water quality during construction; have a qualified biologist identify a suitable site to which tiger salamander may be relocated if detected during construction, conduct a construction personnel education program, and perform pre-construction surveys for tiger salamander; mitigate unavoidable temporary impacts to tiger salamander habitat at a 1.1:1 acreage ratio (i.e., by restoration in place following construction plus additional habitat mitigation at a 0.1:1 ratio); mitigate unavoidable permanent impacts to tiger salamander breeding habitat at a minimum 3:1 acreage ratio and to tiger salamander nonbreeding habitat at a minimum 1:1 acreage ratio, concurrent with or prior to such impacts; and provide the City with evidence of the purchase of tiger salamander habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of tiger salamander habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

As described in section 8.3.1 above, either the City or individual project proponents ~~will~~shall obtain any necessary approval from the USFWS and CDFG to allow incidental take of the California tiger salamander prior to construction. Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting California tiger salamanders and their habitats to mitigate those impacts as described under Mitigation Measure Biological Resources 6 (for the Preferred Alternative) above. Based on the habitat assessment performed by EDAW (2008a), buildout of the Concentration and Conservation Alternative would necessitate providing up to ~~529~~ 519 acres of California tiger salamander mitigation habitat.

Implementation of design measures will provide long-term minimization of impacts to tiger salamanders on the site, while implementation of construction-phase measures will minimize impacts to individual salamanders and their habitats during construction. The enhancement and permanent preservation and management of suitable tiger salamander habitat will compensate for any residual impacts to California tiger salamander habitat. Collectively, these measures will reduce impacts to California tiger salamanders to a less than significant level.

Impact Biological Resources 30: The Concentration and Conservation Alternative could result in a potential impact to individual western pond turtles. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would impact western pond turtles by the same means described for Impact Biological Resources 7 (for the Preferred Alternative) above. These impacts are potentially significant.

The extent of proposed development is greater for the Preferred Alternative (2,811 acres) than for the Concentration and Conservation Alternative (2,170 acres). The primary areas proposed for development under the Preferred Alternative, but not under the Concentration and Conservation Alternative, are the majority of Bunker City and grasslands in the northeastern part of the site. None of these “additional” areas to be impacted under the Preferred Alternative provide aquatic habitat for western pond turtles, but if pond turtles occur in these additional areas, and particularly if they nest in those areas, the Preferred Alternative could potentially result in a somewhat greater impact to this species than the Concentration and Conservation Alternative. The Concentration and Conservation Alternative would also support fewer new residents than the Preferred Alternative and thus could potentially result in less human disturbance of western pond turtles by recreational users of the open space areas.

> **<u>Mitigation Measure Biological Resources 30</u>: Prior to approving any construction in or near potential western pond turtle habitat on the site, the City of Concord shall require project proponents to minimize grading impacts within 1/4 mile of the Cistern Pond and minimize permanent impacts to Mt. Diablo Creek, and agree to have a qualified biologist conduct surveys for communal/traditional nesting areas, implement measures to minimize impacts to turtle nests if a communal/traditional nesting area is detected, install temporary exclusion fencing around any construction areas, and have a qualified biologist conduct pre-construction surveys for all construction within 1/4 mile of aquatic pond turtle habitat; have a qualified biologist relocate any turtles detected during pre-construction surveys or during construction to suitable habitat well away from active construction areas; and have a qualified**

biologist conduct a construction personnel education program. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Implementation of the mitigation measures described for impacts to wetland, aquatic, and riparian habitats (see Impacts Biological Resources 24, 25, 26, and 27) will avoid, minimize, and compensate impacts from the Concentration and Conservation Alternative to habitats that are potentially most limiting to pond turtle populations on the site. In addition, under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting western pond turtles to mitigate those impacts as described under Mitigation Measure Biological Resources 7 (for the Preferred Alternative) above.

Minimization of impacts to aquatic habitat and to upland habitat close to aquatic pond turtle habitat, and implementation of construction-phase measures to avoid impacts to individual pond turtles and their nests will reduce impacts to western pond turtles to a less than significant level.

Impact Biological Resources 31: The Concentration and Conservation Alternative could result in a potential impact to individual Alameda whipsnakes and coast horned lizards. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact Alameda whipsnakes and coast horned lizards by the same means described for Impact Biological Resources 8 (for the Preferred Alternative) above. These impacts are potentially significant.

As was the case with the Preferred Alternative, the Concentration and Conservation Alternative's development footprint does not include suitable habitat for either the Alameda whipsnake or the coast horned lizard. The Preferred Alternative will impact more area than the Concentration and Conservation Alternative, and thus has a marginally greater potential for impacting individual whipsnakes or horned lizards. However, because there is such a low probability of occurrence of these species within the development footprint, and because both alternatives include the potential for reconfiguration of Mt. Diablo Creek, differences in potential impacts within the development footprint itself are negligible. The Concentration and Conservation Alternative would support fewer new residents than the Preferred Alternative, and thus could potentially result in less human disturbance of Alameda whipsnakes and coast horned lizards by recreational users of the open space areas.

Mitigation Measure Biological Resources 31: Prior to approving construction in areas southeast of Willow Pass Road on the site, the City of Concord shall require project proponents to avoid planning trails or other recreation features within 200 feet of coastal sage scrub in Rattlesnake Canyon; to agree to deposit construction materials only in areas lacking snakes or suitable cover for snakes; and to agree to have a qualified biologist conduct a construction personnel education program, conduct pre-construction surveys prior to the construction of recreational or interpretive features in open space areas with rock outcrops, and relocate any whipsnakes or horned lizards detected near construction areas to suitable habitat areas well away from construction areas. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

As described in section 8.3.1 above, either the City or individual project proponents ~~will~~shall consult with the USFWS regarding whether incidental take of the Alameda whipsnake will occur, and incidental take approval ~~will~~shall be obtained, if necessary, prior to construction. In addition, under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting Alameda whipsnakes and coast horned lizards to mitigate those impacts as described under Mitigation Measure Biological Resources 8 (for the Preferred Alternative) above.

Avoidance of impacts in close proximity to areas providing the highest potential for Alameda whipsnake and coast horned lizard occurrence and implementation of construction-phase measures to avoid and minimize impacts to these species will reduce impacts to Alameda whipsnakes and coast horned lizards to a less than significant level.

Impact Biological Resources 32: The Concentration and Conservation Alternative could result in a potential impact to nesting golden eagles. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact nesting golden eagles by the same means described for Impact Biological Resources 9 (for the Preferred Alternative) above. These impacts are potentially significant.

Like the Preferred Alternative, the Concentration and Conservation Alternative would not result in impacts to the known eagle nest tree. The Concentration and Conservation Alternative would result in less impact to California annual grassland habitat (~~1,593~~1,583 acres) that is currently used by foraging golden eagles than the Preferred Alternative (~~2,045~~2,002 acres). Also, the Concentration and Conservation Alternative would support fewer new residents than the Preferred Alternative and thus could potentially result in less human disturbance of nesting golden eagles by recreational users of the open space areas.

> **Mitigation Measure Biological Resources 32: Prior to approving any construction in or near potential golden eagle nesting habitat on the site, the City of Concord shall require project proponents to avoid planning trails or other recreational features within 1/4 mile of the existing eagle nest, to agree to have a qualified biologist conduct a pre-construction survey for nesting eagles, and to maintain a 1/4-mile buffer between any active nest and new construction disturbance during the breeding season. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting nesting golden eagles to mitigate those impacts as described under Mitigation Measure Biological Resources 9 (for the Preferred Alternative) above.

Avoidance of the construction of trails or other facilities in close proximity to active eagle nests, pre-construction surveys to detect eagle nests, and maintenance of buffers around eagle nests free from new construction-related disturbance will minimize disturbance of nesting golden eagles by construction and recreational activities, reducing potential impacts to golden eagles to a less than significant level.

Impact Biological Resources 33: The Concentration and Conservation Alternative could result in a potential impact to burrowing owls and their habitat. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact burrowing owls by the same means described for Impact Biological Resources 10 (for the Preferred Alternative) above. These impacts are potentially significant.

The Concentration and Conservation Alternative would result in less impact to California annual grassland habitat (~~1,593~~1,583 acres) that provides potential habitat for burrowing owls than the Preferred Alternative (~~2,045~~2,002 acres). Also, the Concentration and Conservation Alternative would support fewer new residents than the Preferred Alternative and thus could potentially result in less human disturbance of burrowing owls by recreational users of the open space areas.

> **Mitigation Measure Biological Resources 33: Prior to approving any construction in or near potential burrowing owl habitat at the site, the City of Concord shall require project proponents to agree to maintain buffers free from new disturbance around active owl burrows during the breeding season; have a qualified biologist conduct pre-construction surveys, relocate burrowing owls from burrows that are to be disturbed by construction during the nonbreeding season, and conduct comprehensive breeding-season and nonbreeding-season surveys to determine owl use of the individual project site prior to construction; mitigate permanent impacts to burrowing owl habitat at a minimum ratio of 6.5 acres of mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs on-site and of 9.75-19.5 acres of mitigation habitat per pair (or per single owl, if unpaired) that will be displaced by development if mitigation occurs off-site; and provide the City with evidence of the purchase of burrowing owl habitat credits in a mitigation bank, or with a Habitat Mitigation and Monitoring Plan for the enhancement and preservation of burrowing owl habitat coupled with proof that the mitigation site will be preserved in perpetuity and that an endowment has been established to fund the long-term management and monitoring of the mitigation site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting burrowing owls and their habitat to mitigate those impacts as described under Mitigation Measure Biological Resources 10 (for the Preferred Alternative) above.

Implementation of pre-construction surveys, buffers around burrows during the breeding season, and relocation of owls from burrows that are located within construction areas will avoid the loss of individual owls, including eggs and young, as a result of construction activities. Comprehensive surveys to determine site occupancy and preservation, enhancement, and management of suitable mitigation habitat will compensate for impacts to occupied burrowing owl habitat. Collectively, these measures will reduce impacts to burrowing owls to a less than significant level.

Impact Biological Resources 34: The Concentration and Conservation Alternative could result in a potential impact to special-status songbirds such as loggerhead

shrikes, San Francisco common yellowthroats, and tricolored blackbirds. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact nesting loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds by the same means described for Impact Biological Resources 11 (for the Preferred Alternative) above. These impacts are potentially significant.

The extent of proposed development is greater for the Preferred Alternative (2,811 acres) than for the Concentration and Conservation Alternative (2,170 acres). The primary areas proposed for development under the Preferred Alternative, but not under the Concentration and Conservation Alternative, are the majority of Bunker City and grasslands in the northeastern part of the site, which provide potential nesting habitat for shrikes. Thus, the Preferred Alternative may result in greater impacts to nesting loggerhead shrikes. Because the areas within the development footprint that could potentially serve as breeding habitat for San Francisco common yellowthroats and tricolored blackbirds would be subject to development under both alternatives, impacts to these species would not differ by alternative.

> **Mitigation Measure Biological Resources 34: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting nesting loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds to mitigate those impacts as described under Mitigation Measure Biological Resources 11 (for the Preferred Alternative) above.

Minimization of impacts to potential nesting habitat during the breeding season, implementation of pre-construction surveys for active nests, and maintenance of buffers around active nests free from new construction-related disturbance will reduce impacts to loggerhead shrikes, San Francisco common yellowthroats, and tricolored blackbirds to a less than significant level.

Impact Biological Resources 35: The Concentration and Conservation Alternative could result in a potential impact to nesting white-tailed kites and northern harriers. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact nesting white-tailed kites and northern harriers by the same means described for Impact Biological Resources 12 (for the Preferred Alternative) above. These impacts are potentially significant.

The most likely nesting area for harriers in the project site is in the wetlands and taller grassland near the old airfield; thus, both reuse alternatives have the same potential for

impacting a nest of this species. The Preferred Alternative may impact one or two more nesting pairs of white-tailed kites than the Concentration and Conservation Alternative since the Preferred Alternative would entail development in and near orchard and eucalyptus plantations in southern Bunker City that could support a kite nest, and that would not be developed by the Concentration and Conservation Alternative. The Concentration and Conservation Alternative would support fewer new residents than the Preferred Alternative and thus could potentially result in less human disturbance of nesting kites by recreational users of the open space areas.

> **Mitigation Measure Biological Resources 35: Prior to approving construction in or near potential white-tailed kite and northern harrier habitat on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for these species to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of these species. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting nesting white-tailed kites and northern harriers to mitigate those impacts as described under Mitigation Measure Biological Resources 12 (for the Preferred Alternative) above.

Minimization of impacts to potential nesting habitat during the breeding season, implementation of pre-construction surveys for active nests, and maintenance of buffers around active nests free from new construction-related disturbance will reduce impacts to white-tailed kites and northern harriers to a less than significant level.

Impact Biological Resources 36: The Concentration and Conservation Alternative could result in a potential impact to substantial numbers of nesting birds from development-related construction disturbance and direct removal of nests during the breeding season. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact nesting birds by the same means described for Impact Biological Resources 13 (for the Preferred Alternative) above. These impacts are potentially significant.

The extent of proposed development is greater for the Preferred Alternative (2,811 acres) than for the Concentration and Conservation Alternative (2,170 acres), and thus the Preferred Alternative would have greater potential to impact nesting birds.

> **Mitigation Measure Biological Resources 36: Prior to approving construction on the site, the City of Concord shall require project proponents to agree to initiate new grading and construction activities during the nonbreeding season for nesting birds to the extent practicable; to have a qualified biologist conduct pre-construction surveys for active nests of native birds prior to disturbance of potential nesting habitat during the breeding season; and to maintain buffers free from new construction-related disturbance around active nests of native birds. With implementation of this measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting nesting birds to mitigate those impacts as described under Mitigation Measure Biological Resources 13 (for the Preferred Alternative) above.

Minimization of impacts to potential nesting habitat during the breeding season, implementation of pre-construction surveys for active nests, and maintenance of buffers around active nests free from new construction-related disturbance will reduce impacts to nesting native birds to a less than significant level.

Impact Biological Resources 37: The Concentration and Conservation Alternative could result in a potential impact to bat roosts, including those of special-status bat species. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact bat roosts by the same means described for Impact Biological Resources 14 (for the Preferred Alternative) above. These impacts are potentially significant.

The extent of proposed development is greater for the Preferred Alternative (2,811 acres) than for the Concentration and Conservation Alternative (2,170 acres). The primary areas proposed for development under the Preferred Alternative, but not under the Concentration and Conservation Alternative, are the majority of Bunker City and grasslands in the northeastern part of the site. The buildings, bunkers, and trees within the "additional" development footprint under the Preferred Alternative could support bat roosts, and thus this alternative may result in greater impacts to roosting bats.

> **Mitigation Measure Biological Resources 37: Prior to approving any construction in or near potential bat roosting habitat on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct a pre-construction/pre-demolition survey for roosting bats; to maintain buffers free from new construction-related disturbance around active bat roosts during the maternity season and around roosts that do not have to be removed; to have a qualified biologist evict bats from roosts that must be disturbed or removed (during the non-maternity season); and to provide alternative roost sites (designed by a qualified biologist) if roosts of pallid bats or Townsend's big-eared bats are removed. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting roosting bats to mitigate those impacts as described under Mitigation Measure Biological Resources 14 (for the Preferred Alternative) above.

Implementation of pre-construction surveys for bat roosts, maintenance of buffers around active roosts during the maternity season, and relocation of bats from roosts that are located within proposed construction areas will avoid the loss of individual bats as a result of construction activities. Creation of alternative roost sites will compensate for the loss of any active roosts of rare species such as pallid bats and Townsend's big-eared bats. Collectively, these measures will reduce impacts to roosting bats to a less than significant level.

Impact Biological Resources 38: The Concentration and Conservation Alternative could result in a potential impact to individual American badgers. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact American badgers by the same means described for Impact Biological Resources 15 (for the Preferred Alternative) above. These impacts are potentially significant.

The Concentration and Conservation Alternative would result in less impact to California annual grassland habitat (~~1,593~~1,583 acres) that provides potential habitat for American badgers than the Preferred Alternative (~~2,045~~2,002 acres). Also, the Concentration and Conservation Alternative would support fewer new residents than the Preferred Alternative, and thus could potentially result in less human disturbance of badgers by recreational users of the open space areas.

> **Mitigation Measure Biological Resources 38: Prior to approving any construction in or near California annual grassland on the site, the City of Concord shall require project proponents to agree to have a qualified biologist conduct pre-construction surveys for badger dens prior to initiation of grading; to maintain buffers free from new construction-related disturbance around active maternity dens; ~~and~~ to have a qualified biologist relocate badgers from dens located within proposed construction areas during the non-maternity season; and to have a qualified biologist resurvey the impact areas immediately prior to construction if badgers are relocated. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting American badgers to mitigate those impacts as described under Mitigation Measure Biological Resources 15 (for the Preferred Alternative) above.

Implementation of pre-construction surveys for active badger dens, maintenance of buffers around active dens during the maternity season, and relocation of badgers from dens that are located within proposed construction areas will avoid the loss of individual badgers as a result of construction activities, reducing impacts to badgers to a less than significant level.

Impact Biological Resources 39: Although no special-status plant species have been identified on the site, the Concentration and Conservation Alternative could result in potential disturbance or loss of the big tarplant and round-leaved filaree and their habitat if they are identified within the development footprint in the future. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact special-status plants by the same means described for Impact Biological Resources 16 (for the Preferred Alternative) above. These impacts are potentially significant.

The extent of proposed development is greater for the Preferred Alternative (2,811 acres) than for the Concentration and Conservation Alternative (2,170 acres). In particular, the Preferred Alternative would result in impacts to more California annual grassland habitat (~~2,045~~2,002 acres) potentially supporting the big tarplant and round-leaved filaree than the Concentration and Conservation Alternative (~~1,593~~1,583 acres).

Mitigation Measure Biological Resources 39: Prior to approving any construction within California annual grassland on the site, the City of Concord shall require project proponents to have a qualified biologist conduct surveys for the big tarplant and round-leaved filaree; to avoid impacts to these species to the extent practicable if they are detected on site; and to mitigate permanent impacts to populations of these species by managing appropriate portions of the on-site open space to provide suitable conditions for these species. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting special-status plants such as the big tarplant and round-leaved filaree to mitigate those impacts as described under Mitigation Measure Biological Resources 16 (for the Preferred Alternative) above.

Implementation of additional surveys for the big tarplant and round-leaved filaree and avoidance of impacts to on-site populations to the extent practicable would avoid impacts to these species. Management of habitat in the on-site open space areas for conditions suitable for these species would compensate for any unavoidable impacts. Collectively, these measures will reduce impacts to the big tarplant and round-leaved filaree to a less than significant level.

Impact Biological Resources 40: The Concentration and Conservation Alternative could result in a potential impact to heritage trees. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact heritage trees by the same means described for Impact Biological Resources 17 (for the Preferred Alternative) above. These impacts are potentially significant.

The vast majority of trees on the site that may fit the criteria established for the Heritage Tree Ordinance occur within areas mapped as either oak woodland/savannah or riparian woodland, as shown on Figure 8-1. Both of the reuse alternatives could potentially impact up to the entirety of the on-site reach of Mt. Diablo Creek by implementing flood control or creek restoration, and they thus have the same potential to impact heritage trees in riparian areas. Also, both reuse alternatives would preserve areas of the Los Medanos Hills above a 30 percent grade, which includes much of the oak woodland/savannah habitat, especially south of Bailey Road. However, the Preferred Alternative would potentially impact 90 more acres of orchards and plantations than the Concentration and Conservation Alternative, and thus there is greater potential for impacts to heritage trees under the Preferred Alternative.

Mitigation Measure Biological Resources 40: Prior to approving any construction on the site, the City of Concord shall require project proponents to ensure compliance with all of the requirements of the City of Concord's Heritage Tree Ordinance. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting heritage trees to mitigate those impacts as

described under Mitigation Measure Biological Resources 17 (for the Preferred Alternative) above.

Implementation of measures in compliance with the City of Concord's Heritage Tree Ordinance will reduce potential impacts to heritage trees to a less than significant level.

Impact Biological Resources 41: The Concentration and Conservation Alternative could result in a potential impact to oak woodland/savannah. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could impact oak woodland and savannah habitat by the same means described for Impact Biological Resources 18 (for the Preferred Alternative) above. These impacts are potentially significant.

Most of the oak woodland and savannah habitat on the site is located in areas that are to remain open space in the southeastern part of the site. The few small patches of this habitat type present within the development footprint occur in the footprint of both reuse alternatives, and thus the Preferred Alternative and Concentration and Conservation Alternative do not differ with respect to this impact.

> **Mitigation Measure Biological Resources 41: Prior to approving any construction on a parcel that contains oak woodland/savannah habitat, the City of Concord shall require project proponents to demonstrate avoidance of impacts to oak woodland/savannah to the extent practicable; agree to have a qualified arborist prepare an Oak Protection Plan describing measures to protect trees to be saved; and mitigate unavoidable impacts to oak-dominated habitats through the replacement of impacted oaks, as described in a Tree Replacement and Planting Plan. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Under the Concentration and Conservation Alternative, the City shall require proponents of future development projects potentially impacting oak woodland/savannah to mitigate those impacts as described under Mitigation Measure Biological Resources 18 (for the Preferred Alternative) above.

Avoidance of impacts to oak woodland/savannah to the extent practicable and implementation of a plan to protect oak trees to be saved will avoid and minimize impacts to oaks. Mitigation of unavoidable impacts to oak-dominated habitats through the replacement of impacted oaks will compensate for the loss of any oaks as a result of development on the site. Collectively, these measures will reduce impacts to oak-dominated habitats to a less than significant level.

Impact Biological Resources 42: The Concentration and Conservation Alternative could result in a potential impact from the spread or introduction of invasive plant and animal species. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative could result in an impact from the spread or introduction of invasive plant and animal species by the same means described for Impact Biological Resources 19 (for the Preferred Alternative) above. These impacts are potentially significant.

The magnitude of this impact is related primarily to the extent of development, which influences the number of lawns, landscaped areas, and ornamental plantings that could serve as the source of invasive plants, and the number of people present within the area of new development who might introduce non-native plants and animals to open space areas. As a result, the Preferred Alternative, which has greater developed area and would support more new residents than the Concentration and Conservation Alternative, has a greater potential for resulting in impacts from the spread or introduction of invasive species.

Mitigation Measure Biological Resources 42: Prior to approving any construction on the site, the City of Concord shall prepare an Invasive Species Control Plan and require project proponents to ~~develop and~~ agree to implement the Plan ~~an Invasive Species Control Plan~~. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Under the Concentration and Conservation Alternative, the City shall prepare a comprehensive Invasive Species Control Plan as described under Mitigation Measure Biological Resources 19 (for the Preferred Alternative) above.

Preparation and implementation of an Invasive Species Control Plan will prevent invasive species from colonizing and/or spreading on the site, thus reducing potential impacts from the introduction or spread of invasive species to a less than significant level.

8.3.3.2 Biological Resources Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Biological Resources 43: The Concentration and Conservation Alternative would result in impacts to regionally abundant land use and vegetation types, including California annual grassland, developed areas, coyote brush/coastal sage scrub, golf course/recreational areas, orchards, or tree plantations, or the common wildlife species associated with these habitats. However, this impact is considered to be less than significant.

The Concentration and Conservation Alternative could result in impacts to regionally abundant land use and vegetation types, such as California annual grassland, developed areas, coyote brush/coastal sage scrub, golf course/recreational areas, orchards, or tree plantations, and the common wildlife species associated with these habitats, by the same means described for Impact Biological Resources 20 (for the Preferred Alternative) above. These impacts are less than significant.

As indicated in Table 8-6, the Preferred Alternative would result in greater impacts to annual grassland, developed areas, and orchards/tree plantations than the Concentration and Conservation Alternative; impacts to coyote brush/coastal sage scrub and golf course/recreational areas would be equivalent under the two reuse alternatives.

Mitigation Measure Biological Resources 43: None required.

Impact Biological Resources 44: The Concentration and Conservation Alternative could result in a potential impact to special-status wildlife species that occur on the site only as occasional nonbreeding visitors, foragers, or migrants. However, this impact is considered to be less than significant.

The Concentration and Conservation Alternative could result in impacts to special-status wildlife by the same means described for Impact Biological Resources 21 (for the Preferred Alternative) above. The extent of proposed development is greater for the Preferred Alternative (2,811 acres) than for the Concentration and Conservation Alternative (2,170 acres), and thus there is somewhat greater potential for impacts to nonbreeding special-status wildlife species on the site. Nevertheless, these impacts are less than significant, as described for Impact Biological Resources 21.

Mitigation Measure Biological Resources 44: None required.

Impact Biological Resources 45: The Concentration and Conservation Alternative would result in potential impacts to wildlife movement. However, this impact is considered to be less than significant.

The Concentration and Conservation Alternative could result in impacts to wildlife movement by the same means described for Impact Biological Resources 22 (for the Preferred Alternative) above. Slight differences between these two reuse alternatives, such as a greater number of bridge crossings of Mt. Diablo Creek under the Preferred Alternative, will have minor differences in the magnitude of impacts of these alternatives to wildlife movement. However, for reasons discussed for Impact Biological Resources 22, these impacts are less than significant.

Mitigation Measure Biological Resources 45: None required.

Impact Biological Resources 46: The Concentration and Conservation Alternative would not result in an impact to the San Joaquin kit fox. This impact is considered to be less than significant.

As described for Impact Biological Resources 23 (for the Preferred Alternative) above, no impacts to the San Joaquin kit fox are expected to occur under either reuse alternative. Therefore, impacts to this species will be less than significant.

Mitigation Measure Biological Resources 46: None required.

8.3.4 Biological Resources Impacts of the No Project Alternative

Under the No Project Alternative, reuse of the site as proposed in the Preferred Alternative and Concentration and Conservation Alternative would not occur, and the site would not change from its existing condition in the foreseeable future. Effects of the proposed reuse alternatives, both adverse and beneficial, on habitats and species of the project site would not occur.

Existing plant and wildlife populations would remain subject to the existing land uses, including cattle grazing and its associated effects, as well as continued degradation of Mt. Diablo Creek from grazing and stream incision and potentially the continued spread of invasive plants. Existing barriers to wildlife movement, such as the fencing that surrounds the site and culverts within Mt. Diablo Creek that provide poor connectivity for aquatic life, would remain in place. Existing wetlands and waters would not be directly or indirectly affected by development. If separate future development proposals were to occur, open space or riparian buffer areas would not necessarily be proposed to the extent they are under the reuse alternatives, and preserve areas would not be identified.

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Concord
Community Reuse Plan

9. Cultural Resources

9 Cultural Resources

This chapter includes a description of the cultural setting in the general site vicinity, describes the cultural resources that occur at the reuse site, identifies impacts to the known cultural resources at the reuse site, and recommends mitigation measures to reduce or eliminate significant impacts. Cultural resources within the Inland Area of the Concord Naval Weapons Station (CNWS) include archaeological sites, isolated finds, and built environment resources older than 50 years. The information in this chapter is derived from two recent source documents prepared for the U.S. Navy: the Final Report for the Concord Inland BRAC Disposal Archaeological Survey (Garcia-Herbst and Hale, 2008) and the Update Report–Historic Building Inventory and Evaluation (JRP Historical Consulting Services [JRP], 2009). It also draws on the Naval Weapons Station Seal Beach Detachment Concord Integrated Cultural Resources Management Plan for Years 2002–2007 (Navy, 2002). With the Navy's permission, the final report by Garcia-Herbst and Hale (2008) on the archaeological resources is provided as supporting documentation (Appendix 9A), as is the companion report by JRP (2009) (Appendix 9B) on built environment resources.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and the August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design the two alternatives so as to avoid or minimize the potential effects of the two alternatives on cultural resources. This has resulted in the cultural resources impacts of both alternatives being substantially less than they would have been had cultural resources impacts not been taken into account during all stages of the planning and environmental analysis process.

9.1 Existing Conditions

9.1.1 Regulatory Setting

9.1.1.1 Federal

Cultural resources that may be present in the project area could include some or all of the following, which would be subject to applicable regulations:

- Historic properties
- Native American cultural items
- Native American sacred sites
- Archaeological sites
- Other cultural resources

Archaeological and architectural resources (buildings and structures) are protected through the National Historic Preservation Act (NHPA) of 1966 (16 United States Code [USC] 470f) and its implementing regulation, Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), and the Archaeological Resources Protection Act (ARPA) of

1974 and of 1979. Section 106 of the NHPA requires federal agencies, prior to implementing an undertaking (e.g., issuing a federal permit), to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (NRHP). Section 101(d)(6)(A) of the NHPA allows properties of traditional religious and cultural importance to a Native American tribe to be determined eligible for inclusion in the NRHP. Under the NHPA, a find is significant if it meets the NRHP criteria listed in Title 36 CFR 60.4, enumerated below.

Prior to transfer of the Inland Area of the CNWS, the Navy is responsible for compliance with these federal laws and with relevant executive orders, as listed in Table 9-1. The NHPA establishes the federal government policy on historic preservation and the programs, including the NRHP, through which this policy is implemented. Under the NHPA, historic properties include "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" (16 USC 470w [5]).

Table 9–1: Relevant Cultural Resources Federal Laws and Executive Orders

Federal Laws	Executive Orders
– National Historic Preservation Act of 1966, as amended in 2000 – National Environmental Policy Act of 1969, as amended in 1994 – Archaeological and Historic Preservation Act, 1974 – American Indian Religious Freedom Act, 1978 – Archaeological Resource Protection Act, 1979 – The Native American Graves Protection and Repatriation Act, 1990	– Executive Order 11593, Protection and Enhancement of the Cultural Environment, 1971 – Executive Order 13007, Indian Sacred Sites – Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, 2000 – White House Memorandum on Government-to-Government Relations with Native American Tribal Governments (April 29, 1994)

Source: SWCA, 2009

The NHPA authorizes the maintenance of the NRHP, which facilitates the preservation of historic properties possessing integrity and meets at least one of the following four criteria delineated at 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 that:

(~~1~~a) ~~are~~ Are associated with events that have made a significant contribution to the broad patterns of our history;
(~~2~~b) ~~are~~ Are associated with the lives of persons significant in our past;
(~~3~~c) ~~embody~~ Embody the distinctive characteristics of a type, period, or method of construction~~; (4),~~ 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
(~~5~~d) ~~have~~ Have yielded, or may be likely to yield, information important in prehistory or history.

Ordinarily, buildings and structures less than 50 years old are not considered eligible for listing on the NRHP. Under Criterion G, however, a property achieving significance within

the past 50 years is eligible for NRHP inclusion if it is of "exceptional" importance (36 CFR 60.4).

9.1.1.2 State

The California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations [CCR] Section 15064.5) establish criteria for determining the significance of impacts to historical resources. A project that may cause a "substantial adverse change in the significance of an historical resource" is considered to have a significant environmental effect. The term "historical resource" includes, but is not limited to:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] Section 5024.1; 14 CCR Section 4852)
- A resource included in a local register of historical resources (as defined by PRC Section 5020.1[k]), or identified in an historical resource survey meeting the requirements of PRC Section 5024.1(g) (presumption of historical significance), and:
  - 1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
  - 2. Is associated with the lives of persons important in our past;
  - 3. Embodies the distinctive characteristics of a type, period, region, or method of installation, represents the work of an important creative individual, or possesses high artistic values; or
  - 4. Has yielded, or may be likely to yield, information important in prehistory or history.
- A resource that the lead agency otherwise determines is an historical resource as defined by PRC Sections 5020(j) or 5024.1.

As defined in PRC Sections 5097.9 and 5097.993, Native American historic, cultural, or sacred sites may be listed or eligible for listing in the CRHR pursuant to PRC Section 5024.1.

A "substantial adverse change in the significance of an historical resource" means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired. A lead agency, in this case the City of Concord, must identify potentially feasible, enforceable mitigation measures to mitigate these impacts. For archeological sites, preservation in place is the preferred mitigation approach (14 CCR 15126.4[b] [3]).

Senate Bill 18 (California Government Code sections 65352.3, 65352.4) requires that prior to the adoption or amendment of a general plan proposed on or after March 1, 2005, a city or county must consult with Native American tribes with respect to the possible preservation of, or the mitigation of impacts to, specified Native American places, features, and objects located within that jurisdiction. While the proposed project does not include an amendment to the City of Concord General Plan, such an amendment is anticipated as part of future planning efforts required to implement the Reuse Plan.

9.1.1.3 Local

Table 9-2 identifies the requirements in the Concord 2030 Urban Area General Plan (General Plan) that address protection of cultural resources.

Table 9–2: City of Concord General Plan Principles and Policies for Cultural Resources

	Description
Principle POS-4.1	Protect the City's historic sites and structures and prehistoric cultural resources.
Policy POS-4.1.1	Preserve all City-, State-, and federally designated historic sites and structures to the maximum extent feasible.
Policy POS-4.1.2	Consult with the State Office of Historic Preservation with respect to managing impacts of development and land use on historic and archaeological resources.
Policy POS-4.1.3	Preserve important historic and archaeological sites during new development, reuse, and intensification.
Policy POS-4.1.4	In identified sensitive areas, require archaeological studies as part of the development review process.

Source: Concord 2030 Urban Area General Plan, 2007

Historic preservation policies in Concord's Municipal Code declare as a matter of public policy that the "preservation, protection, perpetuation, and use of areas, places, sites, buildings, and structures of historical, community, or aesthetic interest or value is a public necessity and is required in the interest of the health, prosperity, safety, and welfare of the people" (Code 1965, §4320; Ord. No. 966) (Concord Municipal Code, 2002, Section 42-1). These policies provide a means to delay the sudden, arbitrary, impetuous, and capricious destruction, removal, or remodeling of historical landmarks when such action would have the effect of destroying or changing the historical significance of an historical landmark. They safeguard the heritage of the city by preserving and perpetuating locations, areas, places, sites, buildings, structures, monuments, works of art, and other objects or things that reflect elements of the city's cultural, historical, social, economic, political, agricultural, military, educational, or architectural history. The policies aim to promote the use and preservation of historic locations, places, sites, structures, objects, or things for the education and general welfare of the people of the city, and to take whatever steps are necessary to safeguard the property rights of the owners whose property is declared to be a landmark.

9.1.2 Environmental Setting

9.1.2.1 Prehistoric Context

Occupation by different prehistoric cultures in the greater project vicinity is estimated to have occurred as early as 8,000 to 12,000 years ago, but only a few archaeological sites have been identified that predate 5,000 years ago. Sea levels were some 50 to 60 feet lower 8,000 years ago than today; plus it is likely that Holocene alluvial deposits buried many prehistoric sites in the region. The earliest known archaeological sites in the Bay-Delta region derive from the Los Vaqueros Reservoir Area in East Contra Costa County. In the late 1990s, two Early Holocene age sites produced artifacts, a variety of faunal and plant remains, and human burials dated between roughly 10,000 and 7,000 years ago (Meyer and Rosenthal, 1997 and 1998). The cultural deposits at the archaeological sites

were discovered between 6.5 and 13 feet below the surface within an alluvial fan near Kellogg Creek that drains into Discovery Bay in East Contra Costa County.

By 4,500 years ago, dietary remains from interior archaeological sites in the region attest to the importance of freshwater fish, shellfish, and terrestrial mammals in the prehistoric diet, while a variety of marine resources such as fish, sea mammals, and shellfish have been recovered from archaeological sites situated along the bay shore. In the Bay Area, many villages were established between 4,000 and 2,500 years ago. Villages were commonly located near streams, adjacent to resource-rich bay shore and marsh habitats, and often had deep stratified deposits of shellfish and other organic remains (middens) from repeated occupations over time. These large middens also contained human burials with rich artifact assemblages that included bone tools, shell beads, and abalone pendants.

Beginning around 1,700 years ago, there was an increasing complexity in artifact assemblages that seems to reflect an intensified hunting, gathering, and fishing adaptation. The introduction of the bow and arrow and harpoon, and the use of clam disk beads as currency for trade are just a few indications that populations were larger and more densely settled (Moratto, 2004). To add to the variety of tools used to process natural resources, such as portable mortars and pestles, the archaeological record indicates that bedrock mortar milling stations first appeared in the Bay Area around 1,300 years ago (Meyer and Rosenthal, 1997).

9.1.2.2 Ethnographic Context

At the time of European contact in the 1700s, the area of the future CNWS was home to the Chupcan, a group of 300 to 400 people who inhabited the lower Diablo Valley, including the areas of the present cities of Concord, Clayton, and Walnut Creek, and perhaps eastward to the Bay Point south area (Milliken, 1995 and 1997). The Chupcan were one of several linguistically related groups known collectively as the Bay Miwok (Bennyhoff, 1977; Levy, 1978). Along with their Costonoan (Ohlone) neighbors to the south, the Miwok are members of the Utian, or Miwok-Costonoan, language family.

Together with the Plains Miwok and Sierra Miwok, the Bay Miwok are a subgroup of the Eastern Miwok. The Bay Miwok had an estimated population of 1,700 at contact and inhabited the area extending from East Contra Costa County eastward to the Sacramento–San Joaquin Delta. The population of the Plains Miwok, who historically occupied the lower Mokelumne River, Cosumnes River, and the Sacramento River from Rio Vista to Freeport, is estimated at 11,000. The Sierra Miwok occupied the foothills and mountains from the Cosumnes River south to the upper drainages of the Fresno River. Together, the pre-contact population density of the Eastern Miwok—estimated at 19,500—is considered one of the highest in California (Levy, 1978).

The Chupcan and other groups in the area were organized as “tribelets”—political units structured by similarities in language and ethnicity (Kroeber, 1925; Levy, 1978). Each local tribelet had one to five semipermanent villages and numerous temporary camping spots within a fixed territory some 6 to 10 miles in diameter. Seasonal resources included fish, shellfish, mammals, waterfowl, acorns, seeds, fruits, and greens, and the area that is the current project site and the nearby bay shore marshland were probably important natural resource areas (Navy, 2002). Miwok groups used a wide variety of tools, implements, and enclosures for fishing, hunting, collecting, or processing resources (e.g., reed or log rafts,

bows and arrows, traps, nets, seed beaters, burden baskets, digging sticks, anvils, knives, mortars and pestles, bedrock mortars, and woven baskets).

The Chupcan probably built two types of dwellings: semi-subterranean pit houses used in the winter months and pole-framed houses thatched with tule or other brushy plants (Levy, 1978). Acorn granaries and sweat houses would have also been constructed in the permanent villages. Large semi-subterranean ceremonial houses were common in villages located to the north and east of Contra Costa County, but none have been documented in the areas in or around the Inland Area of the CNWS (Navy, 2002).

Several Spanish expeditions arrived at or passed through the area beginning in 1772. After establishment of Mission San Francisco de Asís and Mission San José in 1776 and 1797, many of the Chupcan either moved to the missions or north across Suisun Bay to avoid the Spanish. Between 1810 and the 1830s, Chupcans at the missions intermarried with other Bay Miwok and Patwin-speaking groups. The population of those who lived in the missions was decimated because of the introduction of European diseases for which the Chupcan had no immunity. No present-day Native Americans can trace their ancestry to the Chupcan people. Descendants of other Bay Miwok groups and adjacent Patwin and Ohlone groups, who resided at the Missions San Francisco and San José during the Spanish period, are their closest living genetic relatives (Navy, 2002).

9.1.2.3 Historic Context

During the Spanish period, Mission San José may have used land near or within the CNWS for cattle grazing. Although the majority of CNWS lands were part of two Mexican period land grants, Rancho Los Medanos and Rancho Monte Del Diablo, there are no buildings or archaeological sites dating from the earlier Spanish or later Mexican periods (Navy, 2002). Settlement within Contra Costa County during the succeeding American period mainly focused on the agriculture and cattle industries, although the discovery of coal in 1848 near Mt. Diablo created a land rush and precipitated the construction of railroads, towns, lumber mills, and more permanent settlements (including the military) in the vicinity of the CNWS, thus broadening the economic base of the area. The Inland Area of the CNWS was also previously used extensively for agricultural production, with most of the lower hills and flatland altered by farming practices between the late 1800s and the 1940s, including the planting and cultivation of orchards.

The waterfront area, of which the northern Tidal Area of the CNWS on the southern edge of Suisun Bay is a part, was originally called Sea Bluff and was ideal for the development of the shipping industry, which was facilitated by the construction of the Southern Pacific Railroad in the 1870s, and the Atchison, Topeka, and Santa Fe Railroad (Santa Fe) at the turn of the century (JRP, ~~2008~~2009). Two additional rail lines were constructed in the early 20th century in the Inland Area, the Bay Point & Clayton Railroad and the Sacramento Northern Railroad, making the area ideal for the establishment of a military facility. The Navy constructed its own rail system during World War II to link its port in the Tidal Area of the CNWS to the magazine facilities in the discontiguous southern Inland Area of the CNWS with the Santa Fe and Southern Pacific Railroads (Navy, 2002).

Prior to its purchase by the Navy, use of the Tidal Area in the early 20th century included construction of a copper smelter and a lumber mill (Navy, 2002). The Copper King Smelting Company operation at Sea Bluff Landing went bankrupt, but the C.A. Smith Lumber Mill

operated for nearly 30 years until its closure in 1932 after a disastrous fire. The adjacent company community laid out by the mill was called Bay Point, and was renamed Port Chicago in 1931. The Navy commissioned 10 ships from the Pacific Coast Shipbuilding Company in 1918 for use during World War I. To build the ships, the company constructed yards at Bay Point and built the town of Clyde to house the workers and their families. After the attack on Pearl Harbor in December 1941, the Navy purchased acreage in the Tidal Area for ammunition storage, and began building docks, railroad sidings, administrative buildings, and housing. The new bayside depot expedited the loading of ammunition on ships heading to the Pacific front during World War II.

An explosion on July 17, 1944 at the Tidal Area's Port Chicago killed 320 sailors, injured an additional 390 civilians and military personnel, and destroyed ships, barges, warehouses, and other naval facilities (Navy, 2002; JRP, ~~2008~~2009). Those killed, most of whom were African-American stevedores and longshoremen, had been assigned the dangerous duty of loading explosives on the ships bound for the Pacific front. In the subsequent incident commonly called the "Port Chicago Mutiny," a group of 50 African-American sailors refused to continue loading munitions out of fear for their lives. These men were court-martialed, and this action became a key development in the history of the African-American civil rights movement. Today, the Port Chicago Naval Magazine National Memorial, administered by the National Park Service (NPS) and the Navy, and located within the Army's Military Ocean Terminal Concord base (formerly the Tidal Area of the CNWS), commemorates this homefront disaster of World War II.

As a result of the explosion and the concern for military security, in 1944 and 1945, the Navy purchased the land that would become the Inland Area of the CNWS (Navy, 2002). The Inland Area was used for storing high-explosives and supplies, and for military housing. During World War II, the Navy also built a rail system and a small airfield within the Inland Area. In 1963, the facility was officially named U.S. Naval Weapons Station Concord, and included the Inland Area, Port Chicago, and Mare Island (JRP, ~~2008~~2009). More recently, it has been designated as a detachment to the Naval Weapons Station, Seal Beach.

During the early years of the Cold War (1946–1963), the CNWS served as a weapons storage facility; providing support to the naval fleet (JRP, 1998 and 2009). The nondestructive materials inspection and testing facility established in the Inland Area of the CNWS near the end of World War II (Quality Evaluation Laboratory; later renamed the Weapons Quality Engineering Center) was expanded during this period to include the development of testing equipment and procedures for the surveillance of nuclear weapons systems (NAVSEA, 2009). During the Vietnam War years (1964–1972), the ~~facility~~ CNWS continued to provide support for military efforts in Southeast Asia and for monitoring the quality of naval ammunition throughout the world. From 1973 to the end of the Cold War in 1989, the facility continued its mission of supplying ammunition, loading and unloading ships, re-arming ships, nondestructive materials evaluating and testing, ~~and~~ maintaining and assembling missiles, and storing and handling of special (nonconventional) weapons as part of its radiological operations (JRP, 1998 and 2009; NAVSEA, 2009).

Not all portions of the Inland Area of the CNWS are equally developed. Most of the Navy's former administration buildings are north of State Route (SR) 4. The remainder of the developed portion of the site is primarily populated with storage bunkers (magazines), railroad tracks, and roads (see Chapter 3, Land Use). Extensive fencing exists along the

perimeter of the reuse site, and the site is regularly patrolled to maintain security. Of the 5,028 site acres, up to 1,200 acres are potentially contaminated from former military activities (see Chapter 10, Hazardous Materials).

Construction of the Contra Costa Canal, which runs partially through the Inland Area of the CNWS and is owned by the U.S. Bureau of Reclamation (Bureau of Reclamation), but operated by the Contra Costa Water District (CCWD), was part of the massive Central Valley Project authorized by the federal government beginning in 1935 to deliver water to seven California counties, including Contra Costa, to control salinity in the Sacramento–San Joaquin Delta, improve river navigation, and provide flood control (Stene, 1994). Delayed by World War II, construction of the Contra Costa Canal was not completed until November 8, 1948, and full operation of its contractual deliveries was not achieved until 1951. The Clayton Canal, which also partially runs through the Inland Area of the CNWS, is one of two branches of the Contra Costa Canal, and was likewise completed on November 8, 1948. Compared with the Contra Costa Canal, which is 47.7 miles long and extends from the Delta to the Martinez Dam and Reservoir, the Clayton Canal is relatively short, with a length of 4.8 miles. No longer in service, the Clayton Canal functioned prior to 1982 as a relatively shallow conduit to provide water to the orchards and agricultural fields in the Clayton Valley. The Ygnacio Canal, the second branch of the Contra Costa Canal, is 5 miles long and located in Walnut Creek.

The Inland Area of the CNWS has been highly disturbed by previous activities, including military use for ammunition handling and storage, rail line and canal construction, cattle grazing resulting in soil erosion near water bodies, and ranching activities that involved extensive soil disturbance for mining and agricultural use (also see Chapter 3, Land Use). The network of roads, rail lines, and munitions bunkers developed by the Navy has substantially altered runoff, drainage, and vegetation patterns in the watershed (see Chapter 7, Hydrology and Water Quality), and portions of the site are contaminated by hazardous materials (see Chapter 10, Hazardous Materials). Although the Inland Area has been extensively disturbed, portions of the site with Holocene age alluvial fan and floodplain deposits, such as along Mt. Diablo Creek and around the former airfield, are considered highly sensitive for the discovery of subsurface prehistoric cultural material, deposits, or features. Figure 9-1 illustrates the reuse site and the potential for the presence of subsurface archaeological resources.

9.1.3 Known Cultural Resources within the Site

Known cultural resources within the Inland Area of the CNWS include ~~21~~ 22 archaeological sites, 4 isolated finds, and 419 buildings and structures~~; the boundaries of one additional archaeological site may extend into the Inland Area of the CNWS.~~. As detailed below, of these resources, 1 built structure is listed on the NRHP and CRHR, and ~~10~~ 11 archaeological sites are ~~eligible or~~ considered potentially eligible for listing. Other than these ~~11~~ 12 resources, there are no other known cultural resources that could be affected by the proposed project that meet any of the criteria for a CEQA “historical resource” under the CEQA Guidelines (14 CCR Section 15064.5).

The research potential of the remaining archaeological sites and built environment resources has been exhausted. These resources are not included in, nor do they meet the eligibility criteria for the NRHP and CRHR. Further, the four isolated finds do not qualify for

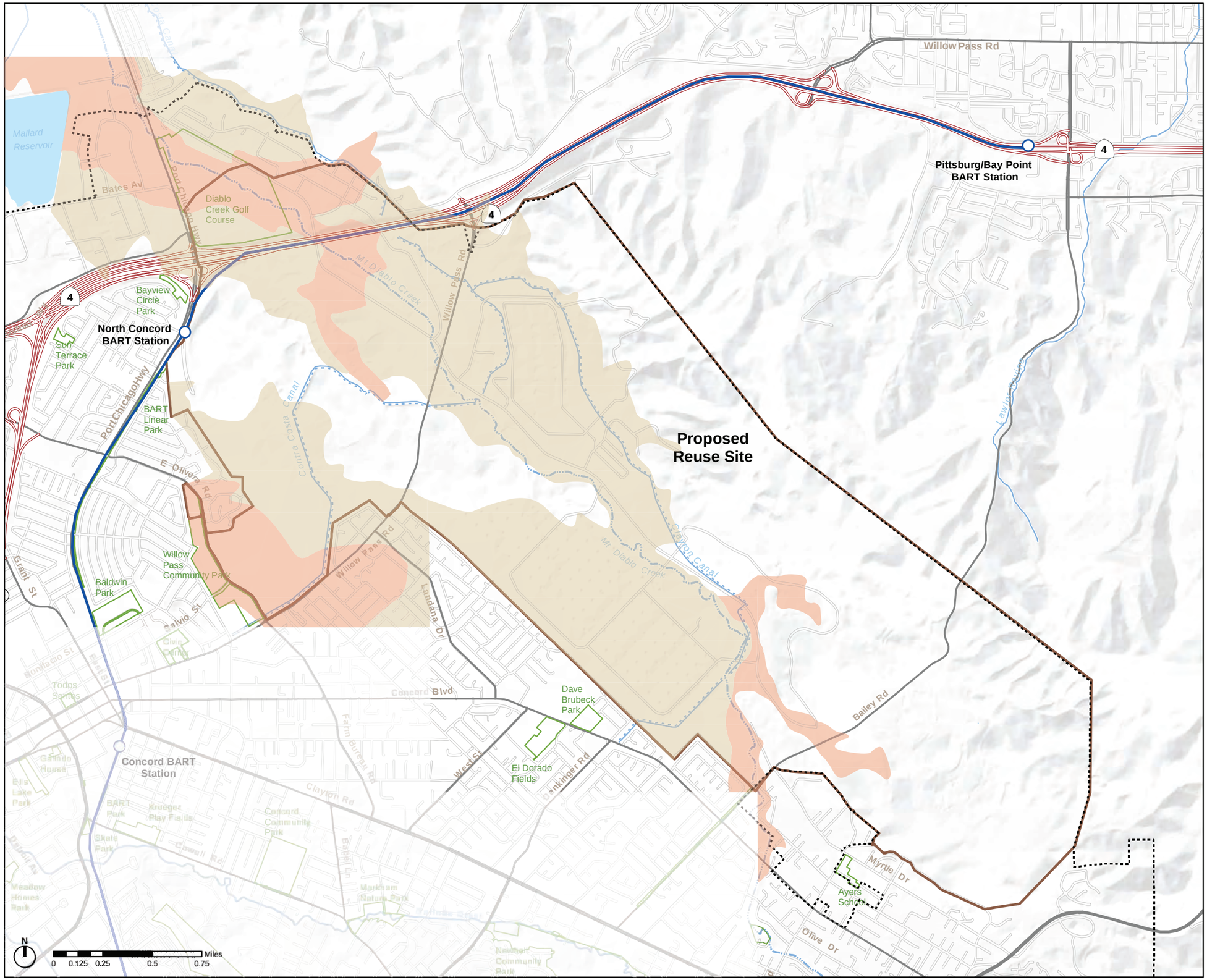
listing on either the NRHP or CRHR. In addition, they are not included in a local register, nor do they qualify as defined in Public Resources Code Sections 1520.1(j) or 5024.1. Therefore, any effect of the project to these resources would be less than significant and they are not addressed further in this chapter.

9.1.3.1 Archaeological Resources

A total of 20 cultural resources surveys have been conducted within the Inland Area of the CNWS between 1984 and 2007. The most recent intensive-level survey was accomplished in 2007 (Garcia-Herbst and Hale, 2008) in support of the transfer of the deactivated federal surplus property under the Base Realignment and Closure (BRAC) process to ensure compliance with Section 106 of the NHPA, as well as the National Environmental Policy Act ~~(~~(NEPA) and CEQA as it pertains to historical resources. During that survey 4,158 acres were intensively surveyed; a mixed survey strategy was employed for the remaining 1,039 acres within the steeply sloped upland region, focusing on ridges, mid-slope terraces, and watercourses.

As a result of the surveys, a total of ~~25~~ 26 archaeological resources (the ~~21~~ 22 sites and 4 isolated finds referenced previously) have been identified within the Inland Area of the CNWS (Tables 9-~~2~~ 3 and 9-~~3~~4). The Navy has recently confirmed that CA-CCO-788H, one of the 22 archaeological sites, is located within the Inland Area of the CNWS; the position of this site was unclear during the recent survey (Garcia-Herbst and Hale, 2008). The ~~25~~ 26 archaeological resources include 3 prehistoric archaeological sites, ~~18~~ 19 historic archaeological sites, 3 prehistoric isolated finds, and 1 historic isolated find. Of these, 11 historic archaeological sites do not qualify as historic properties and ~~have been recommended as~~are considered not eligible for listing on the NRHP (Table 9-3) (see Garcia-Herbst and Hale, 2008). These 11 historic archaeological sites also do not qualify as historical resources and are considered not eligible for listing on the CRHR. The four isolated finds do not qualify for listing on either the NRHP or CRHR.

A total of 11 of the archaeological sites (3 prehistoric and 8 historic) within the Inland Area of the CNWS are considered potentially eligible for listing on the NRHP (Table 9-4). For purposes of this Final Environmental Impact Report (EIR), each of these 11 archaeological sites is also considered potentially eligible for listing on the CRHR. Evaluation of these 11 resources under the Section 106 process is ~~A total of 10 of the archaeological sites (3 prehistoric and 7 historic) within the Inland Area of the CNWS have been recommended eligible for listing on the NRHP or are currently considered potentially eligible (Table 9-4). For purposes of this Environmental Impact Report (EIR), each of these 10 archaeological sites is also considered potentially eligible for listing on the CRHR. Evaluation of these 10 resources under the Section 106 process is~~ currently underway by the Navy as part of the BRAC process and the Navy's preparation of an Environmental Impact Statement (EIS). If the 11 archaeological sites are determined eligible for listing on the NRHP by the SHPO, they are automatically listed on the CRHR. However, a determination that the sites are not eligible for NRHP listing does not automatically preclude their eligibility for the CRHR.



Legend

Subsurface Archeological Potential

- Holocene Age Alluvial Fan and Flood Plain Deposits: High Potential
- Pleistocene Age Alluvial Fan Deposits: Low Potential
- Non-Alluvial Soils: Low Potential

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Source: Naval Weapons Station Seal Beach Detachment Concord Integrated Cultural Resources Management Plan for Years 2002–2007.

Concord
Community Reuse Plan

Revised August 20, 2009

Figure 9-1
Area of Subsurface Archeological Potential

Table 9–3: Archaeological Resources within the Site Not Recommended NRHP or CRHR Eligible

Archaeological Resource Designation	Brief Description	Potential NRHP/CRHR Eligibility	Preferred Alternative	Concentration and Conservation Alternative	Mitigation
CA-CCO-778H	Historic/submodern well covered by wood box	No	Open Space	Open Space	Not required
CA-CCO-779H	Historic residence foundation, concrete pads, water trough, culvert	No	Open Space	Open Space	Not required
CA-CCO-782H	Historic concrete foundation and debris	No	Commercial Office	Educational Campus	Not required
CA-CCO-783H	Historic concrete foundation and debris	No	Commercial Office	Educational Campus	Not required
CA-CCO-784H	Historic debris scatter	No	Educational Campus	Educational Campus	Not required
CA-CCO-789H	Historic concrete pad, industrial structure	No	Parks and Recreation	Open Space	Not required
CA-CCO-792H	Historic debris scatter (extends outside Reuse Plan Area)	No	Open Space	Open Space	Not required
CA-CCO-793H	Historic debris scatter, cobble pillars	No	Community Facilities	Community Facilities	Not required
CA-CCO-794H	Historic stone quarry	No	Open Space	Open Space	Not required
P-07-000485	Historic corral	No	Parks and Recreation	Parks and Recreation	Not required
P-07-002683	Historic coal mine shaft; broken windmill nearby	No	Open Space	Open Space	Not required
Ai-1	Prehistoric isolate: basalt flake	No	Open Space	Open Space	Not required
Ai-2	Historic isolate: axe head	No	Flex Commercial	Commercial Office	Not required
Ai-3	Prehistoric isolate: basalt flake	No	Open Space	Open Space	Not required
Ai-4	Prehistoric isolate: biface	No	Parks and Recreation	Active Recreation	Not required

None of these resources are on a local register of historic places.

Table 9–4: Archaeological Resources within the Site Potentially NRHP and CRHR Eligible

~~**Table 9–4: Archaeological Resources within the Site Recommended or Potentially NRHP and CRHR Eligible**~~

Archaeological Site Designation	Brief Description	Potential NRHP/CRHR Eligibility	Preferred Alternative	Concentration and Conservation Alternative	Mitigation *
CA-CCO-680	Prehistoric artifact scatter, midden deposits	Yes	Parks and Recreation	Parks and Recreation	Cap with layer of sterile soil; Treatment Plan
CA-CCO-777H	Historic residence and outbuilding foundations, orchard	Yes	Open Space	Open Space	Avoid; control public access
CA-CCO-780H	Historic residence/ranch foundations	Yes	Transit-Oriented Development	Transit-Oriented Development	Treatment Plan; Data recovery
CA-CCO-781H	Historic concrete foundations, orchard, windmill debris	Yes	Transit-Oriented Development	Transit-Oriented Development	Treatment Plan; Data recovery
CA-CCO-785H	Historic residence/ranch remains	Yes	Commercial Office	Residential Low Density	Treatment Plan; Data recovery
CA-CCO-786	Prehistoric ground and flaked stone scatter	Yes	Community Facilities	Residential Medium-Low Density	Treatment Plan; Data recovery
CA-CCO-787H	Historic series of concrete pads and debris	Yes	Open Space	Open Space	Avoid; control public access
CA-CCO-788H **	Historic outhouse, water tank foundation, debris; modern water trough, fence, sprinkler system	Yes	Residential Low Density	Residential Low Density	Treatment Plan; Data recovery
CA-CCO-791H	Historic debris scatter and foundation	Yes	Open Space	Open Space	Avoid; control public access
P-07-000860	Historic stone cistern, debris scatter, windmill, and pond	Yes	Open Space	Open Space	Avoid; control public access
P-07-000861	Prehistoric bedrock milling features and rock art panel	Yes	Open Space	Open Space	Avoid; control public access

* Specific requirements for preservation or treatment of archaeological sites that have been determined eligible for NRHP or CRHR listing may be stipulated in a Programmatic Agreement (PA) or Memorandum of Agreement (MOA) entered into by the Navy, SHPO, ACHP, and City of Concord prior to conveyance of the Inland Area of the CNWS. See section 9.3.1.

** The location of CA-CCO-788H within the Inland Area of the CNWS was recently confirmed by the Navy; the position of this site was unclear in the survey report (Garcia-Herbst and Hale, 2008).

As indicated in Table 9-4, ~~four~~ five of the archaeological sites (one prehistoric and ~~three~~ four historic) potentially eligible for listing on the NRHP and CRHR are within portions of the reuse site proposed for development under the Preferred Alternative and the Concentration and Conservation Alternative. These archaeological sites include a prehistoric processing locale (CA-CCO-786), the remains of two historic residences or ranches (CA-CCO-780H and CA-CCO-785H), ~~and~~ historic foundations associated with an orchard and windmill debris (CA-CCO-781H), and a historic outhouse and water tank foundation (CA-CCO-788H).

Six of the archaeological sites (two prehistoric and four historic) ~~recommended or~~ considered potentially eligible for listing on the NRHP and CRHR are within areas planned for Parks and Recreation or Open Space (Table 9-4). These include a prehistoric habitation site (CA-CCO-680), a prehistoric bedrock milling site (P-07-000861), the remains of a historic residence and outbuildings (CA-CCO-777H), a series of historic concrete pads and debris possibly associated with dairy farming (CA-CCO-787H), a historic foundation and debris scatter (CA-CCO-791H), and a historic stone cistern with an associated debris scatter and windmill (P-07-000860). By itself, the stone cistern has been recommended not eligible for listing on the NRHP or CRHR (JRP, ~~2008~~2009), but the Navy is conducting additional research to evaluate the combination of historic features.

It has been suggested that some cultural deposits from the Maltby site (CA-CCO-250), which is located outside the Inland Area of the CNWS, may have been redeposited at CA-CCO-680, which is within the reuse site. Initially recorded in 1949, the Maltby site (CA-CCO-250) yielded 40 prehistoric burials and a diversity of artifacts.

Prehistoric site CA-CCO-680 within the Inland Area comprises a sparse deposit of artifacts (i.e., mortars and pestles, antler wedge, and chipped stone tools and flakes) and dietary remains (i.e., mammal bone, marine and freshwater shellfish), as well as a possible hearth feature and several pieces of fragmented human bone. All the cultural material (including the human bone) identified during test excavations in 1996, which indicate the cultural deposit has a maximum depth of 20 inches below the present surface, was reburied within the boundaries of CA-CCO-680 (Busby et al., 1996).

The Navy is in the process of evaluating the ~~10~~ 11 archaeological sites within the Inland Area of the CNWS for eligibility for listing on the NRHP and CRHR~~that have been recommended eligible for listing on the NRHP or are currently considered potentially eligible (Table 9-4)~~, and is completing Section 106 consultation with the SHPO and ACHP. This~~If a formal evaluation by the Navy of these 11 resources determination is received~~was not determined within ~~in~~ the timeframe for preparing ~~the~~ this Final EIR. For purposes of this Final EIR, these 11 archaeological sites are considered potentially eligible for listing on the NRHP and CRHR (Table 9-4)~~, and if the findings differ (i.e., it is determined that none of the archaeological sites are eligible for listing on the NRHP and CRHR), the updated information will be considered in the future EIR assessment~~.

9.1.3.2 Native American Cultural Resources

No sites of traditional Native American religious or cultural significance, including sacred sites, contemporary use areas, or traditional cultural properties (TCPs), have been identified in the Inland Area of the CNWS through formal processes (Navy, 2002). The ongoing

evaluation of known cultural resources and consultation by the Navy with Native American tribes may, however, result in the identification of previously unknown ethnographic properties or TCPs. If identified, properties of traditional religious and cultural importance to a Native American tribe may be eligible for inclusion in the NRHP or CRHR.

9.1.3.3 Built Environment Resources

A number of inventories of built environment resources within both the Inland and Tidal Areas of the CNWS have been conducted between 1980 and 2009. The most recent inventory of the Inland Area was completed in ~~2009~~ 2008 (JRP, 2009) in support of the transfer under the BRAC process to ensure compliance with Section 106 of the NHPA, as well as NEPA and CEQA as it pertains to historical resources. As a result of that inventory, ~~418~~ 422 built environment resources within the Inland Area of the CNWS were evaluated for NRHP and CRHR eligibility. These resources have been recommended not eligible for listing on the NRHP and CRHR and were recorded under 23 categories, either singly or in groups according to classifications of structural type or function. Primarily naval buildings and structures, the categories of extant built resources are further divided in Table 9-6 by construction during World War II or the Cold War. Several small structures (telephone sheds, boiler house, service station) had been demolished since an earlier survey in 1993 and are not included in the table. The extant built resources include earth-covered storage bunkers (also known as magazines), ordnance handling facilities, unused warehouses, administrative buildings, barracks, other military-related buildings, the system of rail lines, and the abandoned airfield. Many of the Cold War era buildings and structures were built less than 50 years ago. Part of the naval rail system in the Inland Area includes the former alignment of two commercial railroads, the Sacramento Northern Railroad and the Bay Point & Clayton Railroad, from periods prior to naval occupation of the site (pre-1942), but none of the older systems' equipment remains in use or is evident since the Navy rehabilitated the rail system by 1960.

Two of the categories in the JRP (2009) report describe two archaeological resources, the standing stone cistern (P-07-000860) and mine adit (P-07-002683), that are covered above in Section 9.2.3.1.

One additional built environment resource—the Contra Costa Canal and its branch, the Clayton Canal, owned by the Bureau of Reclamation, not the Navy—runs partially through the Inland Area of the CNWS. The Contra Costa Canal, including its branch, the Clayton Canal, was listed on the NRHP on March 9, 2005; this historic property (P-07-002695) is automatically listed on the CRHR (Table 9-5). The canal is significant under NRHP/CRHR Criterion A/1 for its association with the construction and operation of the Central Valley Project, as well as its association with the economic development of East Contra Costa County at a local level. Of nine extant public roadway bridges built over the canal by the Bureau of Reclamation between 1937 and 1951, all of which are outside the Inland Area of the CNWS, three retain historic integrity and are contributing elements to the significance of the canal under Criterion A/1. Within the Inland Area of the CNWS, the extant roadway and railroad bridges spanning the Contra Costa and Clayton canals are not considered NRHP or CRHR eligible as contributing elements (JRP, 2009).

Table 9–5: Built Environment Resources within the Site Listed on the NRHP and CRHR

Name	Function	Year(s) Built	Significance	Resource Number	NRHP/CRHR Eligibility
Contra Costa Canal*	Canal	1937–1951	Original and integral unit of Central Valley Project	P-07-002695	Listed on NRHP and CRHR on March 9, 2005

* Includes two branch canals: Clayton Canal and Ygnacio Canal.

The base chapel, located in the Administrative Area north of SR 4, does have a feature of interest. The north end of the chapel has a series of stained glass windows that memorialize the victims of the Port Chicago disaster. The Navy, the City of Concord, the Concord Historical Society, the Friends of Port Chicago, and the NPS are discussing actions to preserve the stained glass features, but there has been no resolution to date. Suggestions include incorporation of the windows as part of a Visitor and Interpretive Center proposed by the East Bay Regional Park District (EBRPD) within the Inland Area of the CNWS, as part of the existing memorial at Port Chicago developed and managed by the NPS, or to be displayed by the Concord Historical Society at an off-base museum. The stained glass windows are the property of the NPS and are currently in storage awaiting a decision on appropriate reinstallation.

With the exception of the NRHP/CRHR-listed Contra Costa Canal (including its branch, the Clayton Canal), none of the buildings and structures in the Inland Area of the CNWS has been recommended eligible for listing on the NRHP or CRHR. Except for the canal system, which is listed on the NRHP and CRHR, the SHPO has not yet concurred with this assessment; the Navy is in the process of completing Section 106 consultation with the SHPO. No determination was received in the timeframe for preparing this Final EIR and for the purpose of this Final EIR, with the exception of the two canals, buildings and structures in the Inland Area of the CNWS are not considered significant historic resources.

9.1.3.1 Paleontological Resources

Although more than 2,400 fossil localities occur within Contra Costa County, none are located within the Inland Area of the CNWS (University of California Museum of Paleontology, 2009) and none are referenced in the Naval Weapons Station Seal Beach Detachment Concord~~CNWS's~~ Integrated Cultural Resources Management Plan (Navy, 2002). Within the site, the Clayton Valley portion is underlain by Holocene- and Pleistocene-age alluvial fan and fluvial deposits, Holocene floodplain deposits, Holocene stream channel deposits, and undifferentiated Pliocene/Pleistocene continental gravels; Tertiary and Cretaceous age sandstone, shale, and mudstone bedrock units are present in the upland areas along the Los Medanos Hills (see Chapter 6, Earth Resources). Most of the fossils identified in the county are Tertiary in age, with comparatively fewer Pleistocene and Holocene localities.

Table 9–6: Built Environment Resources within the Site Not Recommended NRHP or CRHR Eligible

Category	Function	Year(s) Built	Building Numbers or Other Designation	Potential NRHP/CRHR Eligibility
World War II Era (Inland Area of the CNWS)				
Administration Buildings	Administration building	1945	IA1	No
Administration Buildings	Personnel offices	1945	IA8	No
Administration Buildings	Offices/storage	1945	IA11	No
Administration Buildings	Safety and training building	1945	E98	No
Airport (CA-CCO-706H)	Naval airport	ca. 1944	2 intersecting runways	No
Airport Rail Spur (CA-CCO-707H)	Naval rail system	ca. 1944	Near IA56	No
Buildings and Facilities	Warehouse/supply department	1945	IA5	No
Buildings and Facilities	Inland firehouse	1945	IA7	No
Buildings and Facilities	Heavy equipment repair	1945	IA12	No
Buildings and Facilities	Water distribution facility	1945	IA13	No
Buildings and Facilities	Public works shop	1945	IA15, IA16	No
Buildings and Facilities	Boiler house	1945	IA19	No
Buildings and Facilities	Battery charging building	1945	IA24, A, B	No
Buildings and Facilities	Car blocking shop/storage	1945	IA27	No
Buildings and Facilities	Water tank, service station, generator, substation, water tanks	1945	IT1, IT2, IT3	No

Table 9–6: Built Environment Resources within the Site Not Recommended NRHP or CRHR Eligible

Category	Function	Year(s) Built	Building Numbers or Other Designation	Potential NRHP/CRHR Eligibility
Magazine	Fuse and detonator magazine	1945	3FT1–3FT10	No
Magazine	Black powder magazine	1945	BP1–BP5	No
Magazine	Magazines	1945	GA1–GA93	No
Magazine	High-explosives magazines	1945	HE1–HE60	No
Morale and Recreational Buildings	Parade grounds	1945	161	No
Naval Hospital	Base hospital	1945	IA18, A, B, C, D	No
Ordnance Handling	Railroad barricaded sidings	1945	RBS1–RBS32, RBS59–RBS95	No
Ordnance Handling	Inert storehouse building, storehouse building, guided missile maintenance facility, guided missile container storage	1945	IS1, IS2, IS3, IS4	No
Ordnance Handling	Guided missile building	1945	IS5	No
Ordnance Handling	Ammunitions rework building	1945 (demolished and replaced in 1993)	IA25	No
Railroad System	Naval rail system (completely replaced by 1960)	1945 (now 1960)	C3, C3A, tracks RBS1–RBS95	No
Residential Buildings	Barracks	1945	IA10	No

Table 9–6: Built Environment Resources within the Site Not Recommended NRHP or CRHR Eligible

Category	Function	Year(s) Built	Building Numbers or Other Designation	Potential NRHP/CRHR Eligibility
Cold War Era (Inland Area of the CNWS)				
Bunker City	Missile magazine west, missile magazine east, ordnance operations, hazardous waste storage, smokeless powder magazines, inert material storage	1953, 1954, 1980, 1983, 1987	291, 292, 422, 428, 441, 442, GA94–GA116, IA55, IS10–IS14	No
Former Airport Area	Pumphouse, storage building	1954	IA45, IA56	No
Magazines	Fuse and detonator magazine	1953	FD11–FD13	No
Magazines	High-explosive magazine, fuse and detonator magazine	1954, 1959	61–79, FD14	No
Morale and Recreational Buildings	Pistol range, baseball field	1946, 1957	IA5, IA60	No
Morale and Recreational Buildings	Gymnasium, enlisted men's club, auto hobby shop, warehouse, storage, special service center, chapel, racquetball courts addition	1966, 1971, 1972, 1973, 1974, 1980, 1989	152, 159, 193, 252-254, 256, 264, 265, 409, 435	No
Ordnance Handling	Ammunition transfer facility	1953	IA50	No
Ordnance Handling	Weapons maintenance building complex	1959	81-86	No
Ordnance Handling	Inert storage building, storage shed, pump house	1959	87-89	No
Ordnance Handling	Ammunition rework	1974	263	No

Table 9–6: Built Environment Resources within the Site Not Recommended NRHP or CRHR Eligible

Category	Function	Year(s) Built	Building Numbers or Other Designation	Potential NRHP/CRHR Eligibility
Ordnance Handling	Field toilet, operational storage	1946, 1954	112, 113	No
Ordnance Handling	Warhead assembly building, boiler and sentry house, guided missile facility	1960, 1963	97, 98, 151	No
Ordnance Handling	Guidance checkout facility complex, harpoon test facility, surface missile test facility, storage sheds	1960, 1987, 1990	93–96, 420, 421, 429	No
Public Works Buildings	Public works shop, public works maintenance storage, ordnance disposal, auto maintenance facility, compressor house	1946, 1947, 1951, 1952, 1953, 1963, 1984	116,150, 423, IA37, IA38, IA43, IA46, IA48, IA49, IA51, IA52	No
Railroad System	Locomotive steam cleaner	1975	269	No
Residential	Bachelor Enlisted quarters, administration, lounge, dining facility	1981	395-398	No
Residential	Bachelor enlisted quarters, administration building, storage, gazebo	1972, 1976	185–187, 271	No
Road System	Tunnels	ca. 1975		No
Security and Safety Buildings	Fire station outbuilding, sentry house	1946, 1976	114, 416, 275	No
Utilities/Services Buildings	Water tank, service station, generator, electrical substation, water tanks	1959, 1960, 1969, 1988	131, 132, 178, IA4, IA53, IA54	No
Weapons Quality Evaluation Laboratory/Weapons Quality Evaluation Center	Weapons quality evaluation library	1945	IA22	No

Table 9–6: Built Environment Resources within the Site Not Recommended NRHP or CRHR Eligible

Category	Function	Year(s) Built	Building Numbers or Other Designation	Potential NRHP/CRHR Eligibility
Weapons Quality Evaluation Laboratory/Weapons Quality Evaluation Center	Computer/analysis laboratory, guided missile laboratory, administrative storage, computer/analysis laboratory, utility shed, hazardous waste storage, materials laboratory, physical/non-destructive testing, ammunition/explosives, utility building	1945, 1946, 1947, 1952, 1953, 1957, 1967, 1970, 1971, 1973, 1976, 1980, 1987	168, 261, 270, 276, 277, 282, 293, 294, 296, 297, 405, 406, 430, IA20-IA23, IA36, IA58, RS-1–RS-6, SD-1	No

None of these resources are on a local register of historic places.

9.2 Standards of Significance

Adverse impacts to cultural resources would be considered significant if the project would:

- Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5 of the CEQA Guidelines
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines
- Directly or indirectly destroy a unique paleontological resource or site
- Disturb any human remains, including those interred outside of formal cemeteries

9.3 Potential Cultural Resources Impacts

9.3.1 Methodology and Assumptions about Potential Cultural Resources Impacts

The environmental setting description is based on the following: literature searches by the Northwest Information Center at Sonoma State University, Rohnert Park; Sacred Lands file search by the Native American Heritage Commission and related communication by the Navy and SWCA Environmental Consultants (SWCA) with local Native American groups and individuals; communication by the Navy with the Concord Historical Society; pedestrian survey for archaeological resources in 2007, involving transect spacing dependent on slope and vegetation density (Garcia-Herbst and Hale, 2008); and an inventory of built environment resources in ~~2009~~ 2008 (JRP, 2009). The impact analysis is based on the cultural resources inventories of built environment resources (JRP, 2009) and archaeological resources (Garcia-Herbst and Hale, 2008) and relevant regulations. As noted previously, the Navy is responsible for ensuring compliance with NEPA and Section 106 in its consideration of the effects of the BRAC process on historic properties owned by the Navy within the Inland Area of the CNWS.

For this EIR, the City of Concord has analyzed impacts at a program level, with the recognition that in the future the General Plan will be amended to establish allowable uses within the site. Only after transfer of the land from the Navy to public or private uses and approval of proposed uses by the City of Concord will development occur on the site. Each future development action proposed for the site will be reviewed for conformance with the General Plan and for compliance with CEQA.

Therefore, upon transfer of property from the Navy, the future property owners will be responsible for compliance with and implementation of the cultural resources measures required by the General Plan, as set forth in Table 9-2, and the Concord Municipal Code prior to undertaking any development. When property designated as commercial and residential space is transferred to one or more developers, or property is transferred to the City of Concord (e.g., Parks and Recreation areas, Riparian Corridor), the City will require future property owners to comply with and implement the cultural resources measures required by the General Plan and the Municipal Code prior to issuing any entitlements for development. The City will also require similar compliance with and implementation of required cultural resources measures when, under either alternative, property is transferred to public ownership of areas designated as public benefit conveyances (e.g., sheriff and fire

training facilities north of SR 4), ownership of the area designated as Open Space is transferred to an appropriate local agency (e.g., EBRPD), property designated as commercial and residential space is transferred to one or more developers, or property designated as the Education Campus is transferred to an academic institution.

Because the Contra Costa and Clayton Canals are owned by the Bureau of Reclamation, that federal agency will be responsible for review and approval, including compliance with environmental regulations, of any public- or private-sponsored action that would change the canals. Implementation of either of the alternatives, as they are described in Chapter 2, would not result in any changes to either canal. Therefore, impacts to these two features are not addressed further in this chapter.

In all other cases, after transfer of property from the Navy, the City of Concord will assure compliance and implementation of the cultural resources protection measures required by the General Plan and the Municipal Code. To ensure all applicable measures are implemented during construction and earth-disturbing activities, including habitat restoration activities, such measures will be included in all transfer of ownership documents, or other legally binding agreements with future property owners.

The two alternatives were analyzed in terms of their potential to impact ~~to~~ the ~~10~~ 11 potentially NRHP- and CRHR-eligible archaeological sites, as well as undocumented and potentially significant cultural resources, including buried human remains, within the Reuse Plan area. An evaluation of these ~~10~~ 11 potentially NRHP- and CRHR-eligible archaeological sites has not yet been submitted by the Navy to the SHPO for review; thus, the findings presented in this section are considered preliminary until verified by the SHPO. Likewise, since the Navy has not yet completed Section 106 consultation with the SHPO on the built environment resources within the Inland Area of the CNWS, if the SHPO does not concur with the recommendations that none of the buildings and structures that comprise the built environment currently owned by the Navy qualify as historic properties or historical resources, then the findings presented in this section are considered preliminary until verified by the SHPO. ~~If~~ Since a formal determination ~~is~~ has not been received in the timeframe for preparing ~~the~~ this Final EIR, ~~and~~ if the findings by the SHPO differ, then the updated information will be considered in ~~the Final EIR, as well as~~ any future CEQA documents prepared for discretionary approvals of the proposed project.

If a cultural resource is determined eligible for listing on the NRHP or CRHR by the SHPO, specific requirements for the preservation or treatment of the resource will be established. These requirements may be established through a Programmatic Agreement (PA) or Memorandum of Agreement (MOA) entered into by the Navy, SHPO, ACHP, and City of Concord prior to conveyance of the Inland Area of the CNWS. The analysis in this EIR is based on available information regarding the significance of cultural resources within the Inland Area of the CNWS. The City of Concord recognizes that the Navy is engaged in further investigation of these resources. As a result of those investigations, the Navy may identify specific measures to be included in a PA or MOA. The conclusions in this Final EIR do not preclude the Navy from performing further investigations of these resources or proposing additional terms to be included in a PA or MOA. It is also possible that the Navy will reach different conclusions regarding the significance of these resources, or the measures necessary to avoid or substantially lessen impacts to them. The mitigation

measures set forth in this EIR do not preclude the Navy from imposing additional requirements with respect to addressing impacts to these resources. Mitigation measures for each historic property/historical resource will then comply with the stipulations contained in the relevant PA or MOA. Any future CEQA documents prepared for discretionary approvals of the proposed project and future land transfers will include the PA or MOA stipulations for each relevant historic property/historical resource.

9.3.2 Cultural Resources Impacts of the Preferred Alternative

9.3.2.1 Potentially Significant Cultural Resources Impacts of the Preferred Alternative

Impact Cultural Resources 1: The Preferred Alternative could result in a potential change to ~~5~~ 6 of ~~10~~ 11 archaeological resources at the site that are ~~recommended for or~~ potentially eligible for listing on the NRHP and CRHR as historic properties/historical resources. This impact is considered to be potentially significant.

With the Preferred Alternative, construction or habitat restoration activities within the proposed commercial and residential development areas, including the community facilities, and within the designated Parks and Recreation area, would materially alter ~~five~~ six archaeological resources (CA-CCO-680, CA-CCO-780H, CA-CCO-781H, CA-CCO-785H, ~~and~~ CA-CCO-786, and CA-CCO-788H) that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR as historic properties/historical resources (Table 9-~~34~~). The preferred action to prevent or reduce impacts to historic properties/historical resources of an archaeological nature is preservation in place, achieved by avoidance, incorporation within open space, capping beneath a layer of sterile soil, or similar measures (see PRC Sections 21083.2 and 21084.1). Although the Preferred Alternative will minimize impacts to cultural resources, the Preferred Alternative would not avoid these ~~five~~ six potentially NRHP- and CRHR-eligible archaeological resources, resulting in significant impacts. Reasons why these ~~five~~ six archaeological resources will not be avoided are listed in Table 9-7.

Construction or habitat restoration activities, including bicycle and/or pedestrian trails, within the area designated for Open Space with the Preferred Alternative, would not materially alter the five additional archaeological resources (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, P-07-000860, and P-07-000861) that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR as historic properties/historical resources, as shown in Table 9-7. Direct impacts to these five archaeological resources will be avoided by project design, by placing bicycle and/or pedestrian trails a minimum of 200 feet outside the boundaries of the five archaeological resources.

> **<u>Mitigation Measure Cultural Resources 1</u>: Prior to approving any specific public or private development that would impact any of the ~~five~~ six sites, the City of Concord shall require the implementation of measures for preservation in place or for adequate data recovery, curation, and documentation of historic properties/historical resources prior to earth-disturbing activities. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to initiating any earth-disturbing activities. With**

implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

In compliance with Section 106 of the NHPA and PRC Section 21083.2, as a condition to future land transfers, the future property owner(s) (e.g., private developer, public conveyance owner, City of Concord, or other local agency) ~~will~~ shall retain a qualified professional archaeologist or historian to prepare a mitigation plan for each of the ~~five~~ six archaeological resources to be adversely affected by the project (CA-CCO-680, CA-CCO-780H, CA-CCO-781H, CA-CCO-785H, CA-CCO-786, and CA-CCO-788H) if the sites are ultimately determined by the SHPO to be eligible for NRHP or CRHR inclusion as historic properties/historical resources; such measures set forth in the plan ~~will~~ shall be reviewed and approved by the City of Concord and the SHPO prior to project implementation. Such measures shall include the specific requirements relevant to each resource, as stipulated in PAs or MOAs, if any, entered into by the Navy, SHPO, ACHP, and City of Concord prior to conveyance of the Inland Area of the CNWS. Such measures may include preparation of a treatment plan and research design, data recovery program, technical report requirements, and protocols for curation of recovered material. The plan shall include resource avoidance ~~will ensure,~~ as ~~a~~ the preferred performance standard, ~~that the resource is avoided,~~ or if avoidance is infeasible, that the resource is recovered and preserved.

Because of the reinterment in 1996 of human skeletal remains within the boundaries of prehistoric site CA-CCO-680, this resource ~~will~~ shall be preserved in place according to a treatment plan to be developed by a qualified professional archaeologist retained by the City of Concord. At a minimum, the treatment plan for CA-CCO-680 will describe capping with geofabric atop at least a 4-foot layer of sterile soil prior to habitat restoration within the area designated for Parks and Recreation adjacent to existing park space in the City. Specific designs for any recreation facilities within the Parks and Recreation area atop the capped prehistoric site must be submitted to the City of Concord and the SHPO (and any other relevant regulatory agency) to ensure minimization of impacts. If the specific requirements stipulated for preservation or treatment of CA-CCO-680 in a PA or MOA entered into by the Navy, SHPO, ACHP, and City of Concord prior to conveyance of the Inland Area of the CNWS differs, then the mitigation plan for this prehistoric site shall comply with the stipulations contained in the PA or MOA, and be reviewed and approved by the City of Concord and the SHPO prior to project implementation.

All final documentation describing methods and results of the agreed mitigation measures ~~will~~ shall be reviewed and approved by the City of Concord as the lead agency, the SHPO, and any other relevant regulatory agency prior to the initiation of any earth-disturbing activities, including habitat restoration and construction of bicycle and/or pedestrian trails, within 200 feet of the boundaries of the ~~five~~ six archaeological resources (CA-CCO-680, CA-CCO-780H, CA-CCO-781H, CA-CCO-785H, ~~and~~ CA-CCO-786, and CA-CCO-788H). Following approval, the final documentation ~~will~~ shall be filed with the Northwest Information Center and any relevant regulatory agency.

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Impact Cultural Resources 2: The Preferred Alternative could cause indirect impacts to five archaeological resources that are ~~recommended or~~ potentially eligible for

listing on the NRHP and CRHR. This impact is considered to be potentially significant.

The Preferred Alternative would include bicycle and/or pedestrian trails and promote recreational activities in the areas designated for Open Space and for Parks and Recreation. These activities could result in indirect impacts to five archaeological resources (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, P-07-000860, and P-07-000861) that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR. Such impacts could include vandalism, destruction of resources, theft, and other actions that would adversely affect the resources. The public would be educated about cultural resources in the Inland Area of the CNWS through interpretive information, signs, brochures, and other activities offered within the recreation and open space areas. The public would be informed that artifact collection is prohibited. Although public education would likely reduce the potential for impacts to occur, indirect impacts to the five resources would potentially be significant.

> **Mitigation Measure Cultural Resources 2: Prior to approving any restoration or development in the Open Space and Parks and Recreation areas where the five resources are located, the City of Concord shall require the implementation of cultural resources protection measures to control public access. The sponsor of the proposed actions within these areas shall be responsible of the implementation of the required measures prior to initiating any earth-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The future property owner(s) for the designated Open Space and Parks and Recreation areas (e.g., public conveyance owner, EBRPD, City of Concord, or other local agency) shall be required to implement cultural resources protection measures including, but not limited to, designing bicycle and/or pedestrian trails, signs, and other recreation facilities to avoid direct impacts to cultural resources; and preserving or avoiding certain resources within the Open Space and Parks and Recreation areas (see Impact Cultural Resources 1). Such measures ~~will~~ shall be reviewed and approved by the City of Concord.

Trails and signs shall be designed and vegetation employed within the Open Space and Parks and Recreation areas to minimize indirect effects, including avoiding archaeological sites that could be vandalized, such as remaining artifact scatters, bedrock milling features, the rock art panel, foundations and concrete pads, the windmill, and the stone cistern.

Specific designs for any recreation facilities within 200 feet of the boundaries of the five archaeological resources (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, P-07-000860, and P-07-000861) that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR and located within the area designated for Open Space in the Preferred Alternative shall be submitted by the future property owner(s) to the City of Concord acting as the lead agency and the SHPO (and any other relevant regulatory agency) to ensure minimization of impacts.

If specific requirements for the preservation or treatment of any of these five archaeological resources stipulated in a PA or MOA entered into by the Navy, SHPO, ACHP, and City of Concord prior to conveyance of the Inland Area of the CNWS differ, then mitigation for

these resources (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, P-07-000860, and P-07-000861) shall comply with the stipulations contained in the PA or MOA, and be reviewed and approved by the City of Concord and the SHPO prior to project implementation.

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Impact Cultural Resources 3: Ground disturbance as a result of implementing the Preferred Alternative could affect undocumented cultural resources, including human remains. This impact is considered to be potentially significant.

Portions of the site with Holocene age alluvial fan and floodplain deposits, such as along Mt. Diablo Creek north and south of SR 4 and north of Bailey Road, and around the former airfield, are considered highly sensitive for the discovery of subsurface prehistoric material or features, as shown on Figure 9-1. It is thus possible that undocumented cultural resources, including human remains, may be affected during construction, habitat restoration, or other ground-disturbing activities, particularly during trenching for underground utility infrastructure, including any underground siphons placed to avoid the Contra Costa Canal and Clayton Canal branch, and for foundations for bridges over the canals for the planned proposed trails.

Prehistoric or ethnohistoric materials might include chipped stone, stone milling tools, and soil darkened by cultural activities (midden); examples of significant discoveries would include villages or burials. Historic materials might include metal, glass, or ceramic artifacts; examples of significant discoveries might include former privies or refuse pits. Due to the possible presence of undocumented cultural resources within the site, construction-related impacts on cultural resources would potentially be significant.

> **Mitigation Measure Cultural Resources 3: Prior to approving any specific development at the site, the City of Concord shall require the implementation of inadvertent discovery measures for the protection of cultural resources, including human remains. The public or private sponsor of the proposed development shall be responsible for establishing and implementing the inadvertent discovery measures prior to initiating any ground-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Inadvertent discovery measures during all construction and habitat restoration activities within the site ~~will~~ shall include (1) a worker education course for all construction personnel; (2) on-site monitoring by a qualified professional archeologist of all earth-disturbing activities during each project phase within the boundaries of the ~~five~~ six archaeological resources (CA-CCO-680, CA-CCO-780H, CA-CCO-781H, CA-CCO-785H, ~~and~~ CA-CCO-786, and CA-CCO-788H) referenced in Impact Cultural Resources 1 that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR as historic properties/historical resources and a radius of 200 feet around each of the ~~five~~ six sites;

Table 9-7:
Direct Impacts within the Site to Archaeological Resources Considered NRHP and CRHR Eligible

Archaeological Site Designation	Brief Description	Preferred Alternative	Concentration and Conservation Alternative	Direct Impacts Significant?	Is Avoidance Possible?	Why Is Avoidance Not Possible?
CA-CCO-680	Prehistoric artifact scatter, midden deposits	Parks and Recreation	Parks and Recreation	Yes	No	Because this resource will be preserved in place by capping and then incorporating into the Parks and Recreation area adjacent to existing parks in the City of Concord, direct impacts will be significantly less than those of other resources.
CA-CCO-777H	Historic residence and outbuilding foundations, orchard	Open Space	Open Space	No	Yes	~~n/a~~Not applicable
CA-CCO-780H	Historic residence/ranch foundations	Transit-Oriented Development	Transit-Oriented Development	Yes	No	This area is better suited for development due to its adjacency to the North Concord/Martinez BART Station and SR 4.
CA-CCO-781H	Historic concrete foundations, orchard, windmill debris	Transit-Oriented Development	Transit-Oriented Development	Yes	No	This area is better suited for development due to its adjacency to the North Concord/Martinez BART Station and SR 4.
CA-CCO-785H	Historic residence/ranch remains	Commercial Office	Residential Low Density	Yes	No	This area is better suited for development due to its adjacency to Willow Pass Road.
CA-CCO-786	Prehistoric ground and flaked stone scatter	Community Facilities	Residential Medium-Low Density	Yes	No	This area is better suited for development due to its adjacency to Willow Pass Road.

Archaeological Site Designation	Brief Description	Preferred Alternative	Concentration and Conservation Alternative	Direct Impacts Significant?	Is Avoidance Possible?	Why Is Avoidance Not Possible?
CA-CCO-787H	Historic series of concrete pads and debris	Open Space	Open Space	No	Yes	Not applicable~~n/a~~
CA-CCO-788H	Historic outhouse, water tank foundation, debris	Residential Low Density	Residential Low Density	Yes	No	This area is better suited for development due to its adjacency to SR 4 and Willow Pass Road.
CA-CCO-791H	Historic debris scatter and foundation	Open Space	Open Space	No	Yes	~~n/a~~Not applicable
P-07-000860	Historic stone cistern, debris scatter, windmill, and pond	Open Space	Open Space	No	Yes	Not applicable~~n/a~~
P-07-000861	Prehistoric bedrock milling features and rock art panel	Open Space	Open Space	No	Yes	Not applicable~~n/a~~

~~n/a = not applicable~~

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(3) on-site monitoring by a qualified professional archeologist of all earth-disturbing activities within native soils/sediments during each project phase within areas highly sensitive for buried archaeological resources, as identified on Figure 9-1; and (4) procedures for discovery of cultural resources, including human remains, during construction or earth-disturbing activities if an archaeological monitor is not present. Further, inadvertent discovery measures shall comply with specific requirements stipulated for preservation or treatment of cultural resources within the Inland Area of the CNWS in PAs or MOAs entered into by the Navy, SHPO, ACHP, and City of Concord prior to transfer of the land from the Navy.

A worker education course for all construction personnel ~~will~~ shall be conducted immediately prior to initiation of earth-disturbing activities for each project phase. The course ~~will~~ shall explain the importance of, and legal basis for, the protection of significant archaeological resources. Each worker will also learn the proper procedures to follow in the event cultural resources or human remains/burials are uncovered during construction activities, including work curtailment or redirection, and to immediately contact their supervisor and the archaeological monitor. The worker education session ~~will~~ shall include guidelines for recognizing ~~visuals of~~ artifacts (prehistoric and historic) that might be found in the project vicinity, and may include handouts.

The qualified professional archeological monitor ~~will~~ shall be retained by the future property owner(s) (e.g., developer, public conveyance owner, EBRPD, City of Concord, or other local agency) for each phase of earth-disturbing activity within native soils/sediments. If an unknown cultural resource were discovered, earth-disturbing activities ~~would~~ shall stop within 150 feet of the discovery until the City of Concord acting as the lead agency and any relevant regulatory agency(s) are notified, the resource is evaluated by a qualified professional archeologist, and applicable mitigation measures for significant resources are completed (e.g., preservation in place or a data recovery program pursuant to PRC Section 21083.2[i]). If a data recovery plan is prepared, it shall be prepared and submitted by a qualified professional archaeologist for approval, prior to the start of any archaeological excavation, by the City of Concord acting as the lead agency and any relevant regulatory agencies. At the conclusion of archaeological monitoring under each future property owner(s) or for each phase of development, a monitoring report ~~will~~ shall be prepared and submitted to the Northwest Information Center, the City of Concord, and any other relevant regulatory agency.

In the event an archaeological monitor is not present when cultural resources, including human remains, are discovered during construction or earth-disturbing activities, all activities within 150 feet of the find ~~will~~ shall be halted until a qualified professional archaeologist, retained by the future property owner(s) (e.g., developer, public conveyance owner, EBRPD, City of Concord, or other local agency), can evaluate the find. The archaeologist ~~will~~ shall examine the findings, assess their significance, and recommend appropriate procedures to either further investigate or mitigate adverse impacts (e.g., adverse effect on a significant historical resource) to the resources encountered in conformance with the protocols set forth in PRC Section 21083.2. Any human remains encountered during construction or earth-disturbing activities ~~will~~ shall be treated in accordance with the California Health and Safety Code Section 7050.5, as well as PRC Section 5097.98 if the remains are thought to be Native American.

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

9.3.2.2 Cultural Resources Impacts of the Preferred Alternative That Are Less Than Significant

None identified.

9.3.3 Cultural Resources Impacts of the Concentration and Conservation Alternative

9.3.3.1 Potentially Significant Cultural Resources Impacts of the Concentration and Conservation Alternative

Impact Cultural Resources 4: The Concentration and Conservation Alternative could result in a change to ~~5~~ 6 of ~~10~~ 11 archaeological resources that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR as historic properties/historical resources. This impact is considered to be potentially significant.

The analysis of Impact Cultural Resources 4 is the same as that discussed with respect to Impact Cultural Resources 1 for the Preferred Alternative.

> **Mitigation Measure Cultural Resources 4: Prior to approving any specific public or private development that would impact any of the ~~five~~ six sites, the City of Concord shall require the implementation of measures for preservation in place or for adequate data recovery, curation, and documentation of historic properties/historical resources prior to any earth-disturbing activities. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to initiating and earth-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Mitigation Measure Cultural Resources 4 is the same as Mitigation Measure Cultural Resources 1 for the Preferred Alternative.

Impact Cultural Resources 5: The Concentration and Conservation Alternative could cause indirect impacts to five archaeological resources that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR. This impact is considered to be potentially significant.

The Concentration and Conservation Alternative would include bicycle and/or pedestrian trails and promote recreational activities in the areas designated for Open Space and for Parks and Recreation. These activities could result in indirect impacts to five archaeological resources (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, P-07-000860, and P-07-000861) that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR. Such impacts could include vandalism, destruction of resources, theft, and other actions that would adversely affect the resources. The public would be educated about cultural resources in the Inland Area of the CNWS through interpretive information, signs, brochures, and other activities offered within the recreation and open space areas. The public would be informed that artifact collection is prohibited. Although public education would likely reduce the potential for impacts to occur, indirect impacts to the five resources would potentially be significant.

> **Mitigation Measure Cultural Resources 5: Prior to approving any restoration or development in the Open Space and Parks and Recreation areas where the five resources are located, the City of Concord shall require the implementation of cultural resources protection measures to control public**

access. The sponsor of the proposed actions within these areas shall be responsible of the implementation of the required measures prior to initiating any earth-disturbing activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

The future property owner(s) for the designated Open Space and Parks and Recreation areas (e.g., public conveyance owner, EBRPD, City of Concord, or other local agency) shall be required to implement cultural resources protection measures including, but not limited to, designing bicycle and/or pedestrian trails, signs, and other recreation facilities to avoid direct impacts to cultural resources; and preserving or avoiding certain resources within the Open Space and Parks and Recreation areas (see Impact Cultural Resources 4). Such measures ~~will~~ shall be reviewed and approved by the City of Concord.

Trails and signs shall be designed and vegetation employed within the Open Space and Parks and Recreation areas to minimize indirect effects, including avoiding archaeological sites that could be vandalized, such as remaining artifact scatters, bedrock milling features, the rock art panel, foundations and concrete pads, the windmill, and the stone cistern.

Specific designs for any recreation facilities within 200 feet of the boundaries of the five archaeological resources (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, P-07-000860, and P-07-000861) that are ~~recommended or~~ potentially eligible for listing on the NRHP and CRHR and located within the area designated for Open Space in the Concentration and Conservation Alternative shall be submitted by the future property owner(s) to the City of Concord acting as the lead agency and the SHPO (and any other relevant regulatory agency) to ensure minimization of impacts.

If specific requirements for the preservation or treatment of any of these five archaeological resources stipulated in a PA or MOA entered into by the Navy, SHPO, ACHP, and City of Concord prior to conveyance of the Inland Area of the CNWS differ, then mitigation for these resources (CA-CCO-777H, CA-CCO-787H, CA-CCO-791H, P-07-000860, and P-07-000861) shall comply with the stipulations contained in the PA or MOA, and be reviewed and approved by the City of Concord and the SHPO prior to project implementation.

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Impact Cultural Resources 6: Ground disturbance as a result of implementing the Concentration and Conservation Alternative could affect undocumented cultural resources, including human remains. This impact is considered to be potentially significant.

The analysis of Impact Cultural Resources 6 is the same as that discussed with respect to Impact Cultural Resources 3 ~~with~~ for the Preferred Alternative.

Mitigation Measure Cultural Resources 6: Prior to approving any specific development at the site, the City of Concord shall require the implementation of inadvertent discovery measures for the protection of cultural resources, including human remains. The public or private sponsor of the proposed development shall be responsible for establishing and implementing the inadvertent discovery measures prior to initiating any ground-disturbing

activities. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Mitigation Measure Cultural Resources 6 is the same as Mitigation Measure Cultural Resources 3 ~~with~~ for the Preferred Alternative.

9.3.3.2 Cultural Resources Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

None identified.

9.3.4. Cultural Resources Impacts of the No Project Alternative

9.3.4.1 Potentially Significant Cultural Resources Impacts of the No Project Alternative

None identified.

9.3.4.2 Cultural Resources Impacts of the No Project Alternative That Are Less Than Significant

None identified.

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10.
Hazardous Materials

10 Hazardous Materials

This chapter presents an evaluation of potential environmental impacts resulting from construction and occupancy of the alternatives as they relate to soil and groundwater contamination identified at the project site.[1] This evaluation also addresses potential hazards associated with hazardous building materials (e.g., lead-based paint, asbestos) that could be disturbed during demolition or renovation of buildings at the site, and routine hazardous substances use and transport during construction and occupancy of either of the alternatives. This chapter also includes proposed mitigation measures that will reduce the identified impacts to the extent feasible.

This analysis is a qualitative assessment at a programmatic level of potential hazardous substances impacts as they relate to development and occupancy of a site with known and unknown contamination. The assessment is based on a review of readily available technical reports that have been prepared by the U.S. Navy and document the results of soil and groundwater characterization and remediation activities at the site, and online sources of information regarding applicable laws and regulations. The technical reports and online sources from which information was compiled for this analysis are referenced in Section 10.4. The technical reports are available to the public at the Concord Public Library.

~~This chapter of the Draft Revised Environmental Impact Report (EIR) incorporates information to address, as appropriate, comments by the public and agencies received on the May 2008 Draft EIR.~~

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on hazardous materials. This has resulted in the hazardous materials impacts of both alternatives being substantially less than they would have been had hazardous materials impacts not been taken into account during all stages of the planning and environmental analysis process.

10.1 Existing Conditions

This section presents an overview of the existing conditions of the site relative to soil and groundwater contamination and hazardous building materials, including a description of prior and current hazardous substances usage at the site, an overview of the current regulatory setting related to these materials, a summary of the current status of site characterization and remediation efforts by the Navy, and description of property transfer and remediation responsibilities.

[1] The site is located in the Inland Area of the CNWS, but does not include the Administration Area that was transferred to the Army.

10.1.1 Definitions

Hazardous materials are generally defined as substances with certain chemical and physical properties that could pose a substantial hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are categorized on the basis of the following properties: toxicity, ignitibility, corrosivity, and reactivity, as regulated by Title 22 of the California Code of Regulations (Division 45, Chapter 11, Article 3). Hazardous materials are commonly used in commercial, agricultural, and industrial applications and, to a limited extent, in residential areas (City of Concord, 2007). For purposes of this Draft Revised EIR, hazardous materials include munitions and explosives of concern.

Hazardous waste is generally defined as any hazardous material that is discarded, abandoned, or is to be recycled. The criteria that determine if a material is hazardous also apply to the definition of hazardous waste (California Health and Safety Code, Section 25151). Hazardous materials and wastes can result in public health hazards if released to the soil, groundwater, or air (City of Concord, 2007).

10.1.2 Site Use History

The Navy acquired the Inland Area of the Concord Naval Weapons Station (CNWS) in 1943, and the area was used primarily for ammunition storage, most of which occurred in five magazine groups and two groups of barricaded railroad sidings (Department of the Navy, 2006a). Industrial operations at the site have been associated primarily with munitions storage, maintenance, support, supply, public works, and administrative facilities (PRC Environmental Management Inc., 1993). The Navy also used portions of the site to destroy and burn munitions and explosives (Malcolm Pirnie, 2007). On-site structures, some of which have been demolished, included administrative buildings, residential areas, military barracks, storage magazines, and maintenance facilities for weapons.

Operation and handling of radiation sources was extremely limited at the site (Ecology and Environment, Inc., 1983). X-ray facilities were located at the medical and dental centers and an industrial X-ray facility at Building IA58 until 1958. The X-ray facilities were electrically generated and did not produce any radiological wastes (Ecology and Environment, Inc., 1983). Some low-level radiological materials were handled at the materials testing lab, Building IA21 (Navy, 2006a). The Navy recently completed a draft Historical Radiological Assessment of the site. (NAVSEA, August 2009). It concluded that there is low potential for residual radioactive contamination at the site. However, as part of its on-going Radiological Assessment, the Navy has contracted for scoping surveys of all 48 sites identified by their studies as potentially impacted.

The primary uses of the site were discontinued on October 1, 1997, resulting in a reduction in staff and reduced operations at the site. After the reduction in operations, the Inland Area, part of which is the site, was scheduled for closure under the Base Realignment and Closure (BRAC) Program (November 9, 2005), except to retain the property and facilities necessary to support operations in the Tidal Area that were transferred to the Army (Navy, 2009).

10.1.3 Regulatory Setting

A number of federal and State laws have been enacted to regulate the management of hazardous materials and wastes. Implementation of these laws and the management of hazardous materials are regulated independently of the CEQA process through programs administered by various agencies. Current and future characterization and remediation activities must comply with applicable federal and State hazardous substances laws and regulations. At any time during construction or occupancy, the property owner(s) and their agents are responsible for knowledge of and complying with applicable laws and regulations.

Currently, the Base Realignment and Closure (BRAC) Program Management Office is the Navy agency responsible for managing cleanup at the project site. ~~Currently, the Navy is characterizing and remediating the site under the BRAC Program.~~

10.1.3.1 Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authorizes the U.S. Environmental Protection Agency (EPA) to respond directly to releases of hazardous substances that could endanger public health or the environment. CERCLA directs the EPA to list national priorities among the known "releases or threatened releases" of hazardous substances. Thus, the purpose of the National Priority List (NPL) is merely to identify releases of hazardous substances that are priorities for further evaluation. The EPA is the lead regulatory agency for sites on the NPL (also referred to as Superfund).

On December 16, 1994, the entire CNWS, which includes both the Inland Area and Tidal Area, was added to the NPL (Navy, 2006a). The site was added to the NPL because the EPA determined that the entire site, but primarily the Tidal Area, warranted further investigation. Once on the NPL, the investigation and cleanup process under CERCLA includes the following steps (EPA, 2009a):

- Preliminary Assessment/Site Inspection (PA/SI): The PA/SI determines whether there is sufficient evidence of contamination to warrant more detailed investigations based on an analysis of site history and preliminary sampling in prospective locations.
- Remedial Investigation/Feasibility Study (RI/FS): The RI/FS determines the nature and extent of contamination, assesses treatability of site contamination, and evaluates the potential performance and cost of treatment technologies.
- Record of Decision (ROD): The ROD is the decision document describing the selected cleanup alternative.
- Remedial Design/Remedial Action (RD/RA): The RD/RA includes preparation and implementation of plans and specifications for applying site remedies. The bulk of the cleanup usually occurs during this phase.
- Construction completion: Construction completion identifies completion of physical cleanup construction, although this does not necessarily indicate whether final cleanup levels have been achieved.

- Post-construction completion: Post-construction completion ensures that Superfund response actions provide for the long-term protection of human health and the environment. Included here are Long-Term Response Actions (LTRAs), Operation and Maintenance, Institutional Controls, Five-Year Reviews, and Remedy Optimization.
- NPL list deletion: Removes a site from the NPL once all response actions are complete and all cleanup goals have been achieved.

The NPL does not describe releases in precise geographical terms, which is consistent with the limited purpose of the NPL as a mere identification of releases. Therefore, listing on the NPL, especially for large sites like the CNWS, does not necessarily mean that the entire property has known or threatened releases of hazardous substances. For example, the Tidal and Inland Areas and each of the particular portions within each area with known contamination are considered one site on the NPL, but a ROD may identify contamination and remedies for only certain portions of the site. This information may be useful to a landowner seeking to develop or sell a portion of the property, but would result in no formal change in the fact that the site as a whole is included on the NPL (EPA, 2009b).

The EPA may delete a site from the NPL if it determines that no further response is required to protect human health or the environment. Under Section 300.425(e) of the National Contingency Plan (55 FR 8845, 1990), a site may be deleted where no further response is appropriate if the EPA determines that one of the following criteria has been met (EPA, 2009c):

- The EPA, in conjunction with the State, has determined that the responsible party has implemented all appropriate response action required.
- The EPA, in consultation with the State, has determined that all appropriate Superfund-financed responses under CERCLA have been implemented and that no further response by responsible parties is appropriate.
- An RI/FS has shown that the release poses no significant threat to public health or the environment and, therefore, remedial measures are not appropriate.

Partial deletion of sites listed on the NPL is also possible, if particular areas of the site qualify for deletion. The EPA's policies for the partial delisting of Superfund sites are set forth in its partial deletion policy (OERR Directive 9320.2-11). Sites, or portions of sites, that meet the standards for deletion (i.e., no further response is appropriate) may be the subject of entire or partial deletion. The EPA expects that this action will help to promote the economic redevelopment of Superfund sites, and will better communicate the completion of successful partial cleanups (Notice of Policy Change for Partial Deletion from the NPL [EPA, 2009d]).

The EPA must also secure the State's concurrence that the site meets the criteria for delisting as demonstrated by the Department of Toxic Substances Control's (DTSC) concurrence and the signature of the Governor of California. After the State has issued a letter of concurrence, the EPA must prepare and publish a Notice of Intent to Delete (NOID). The NOID, which initiates a 30-day public comment period, must be published in the *Federal Register* and in a newspaper of general circulation in the relevant community. After

the comment period is over, the EPA must publish detailed responses to any comments received in a Responsiveness Summary. If, based on the response document, the EPA determines that deletion from Superfund is appropriate, it will file a Notice of Deletion in the *Federal Register* stating that all cleanup actions have been implemented and that no further response actions are necessary or appropriate for the portion of the site being deleted from the NPL.

10.1.3.2 Lead Agency Under CERCLA

Under Executive Order 12580, signed in 1987, the lead agency cleanup authority under CERCLA for federal facilities is the federal agency conducting the cleanup actions on the facility. In the case of the CNWS, the lead agency is the Navy. However, at federal facility NPL sites, the EPA retains the final decision authority over the selection of the remedial action. More specifically, CERCLA Section 120(e) (4) specifies that an interagency agreement must include the review of remedial action alternatives, with the selection of the remedial action by the head of the federal agency and the EPA. The Administrator of the EPA makes the final remedy selection if an agreement is not reached.

10.1.3.3 Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) established a regulatory system to track hazardous wastes from the time of generation to final disposal, also known as “cradle to grave.” The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous wastes. RCRA’s provisions give state regulatory agencies authority to regulate solid and hazardous wastes. In California, the DTSC is authorized to implement the RCRA in lieu of the EPA (DTSC, 2005).

The RCRA requires permits for certain hazardous waste management activities. The RCRA permits that govern these activities must be closed out at the end of the waste storage or disposal period. RCRA requires that permit holders go through a specified closure process that includes a public comment period. Any change in ownership of a property with an RCRA permit requires a permit modification because RCRA liability can transfer to the new owners if the new owner chooses to continue the permitted hazardous waste activity. When the facility no longer is used for permitted hazardous waste activities, the facility and permit closure process begins, which can include termination of corrective action (DTSC, 2005). The site previously operated under an RCRA permit as a hazardous waste facility. On June 27, 2003, the DTSC closed the permitted hazardous waste facilities at the site and certified them as clean.

The site is currently operating in a small quantity generator status, with one waste accumulation site, Building 433, and one satellite accumulation area, Building IA8, in the Administrative Area (Navy, 2006a). The waste generated is minimal and comprises basic maintenance items, including the following: rags, waste oil, fluorescent light ballasts and tubes, waste batteries, mineral spirits, waste antifreeze, waste boiler chemicals, waste adhesives, waste wood/creosote, waste solvents, waste paints, and waste cleaning compounds (Navy, 2006a).

10.1.4 Status of Characterization and Remediation Efforts

In 1983, the Navy initiated an Installation Restoration Program (IRP) at the site. The objective of the IRP was to evaluate the effects of past operations resulting in soil and groundwater contamination that could pose a potential hazard to human health and the environment. The Navy issued an Initial Assessment Study (IAS) in 1983 (Ecology and the Environment, Inc., 1983), followed by a Site Investigation (SI) study in 1993 (PRC Environmental Management, Inc. 1993).

As indicated above, in 1994, the entire CNWS, which includes both the Inland Area and Tidal Area, was added to the NPL (Navy, 2006a). Since listing on the NPL, the Navy has been following a cleanup process within the Inland Area under the IRP. Other ongoing Navy cleanup programs, discussed below, include ~~closure of Solid Waste Management Units (SWMUs);~~ the Military Munitions Response Program (MMRP) to address munitions and explosives of concern; closure of storage tanks under local and state regulations; and other miscellaneous programs to address polychlorinated biphenyls (PCBs) in oil-filled transformers and hazardous building materials including asbestos, lead-based paint, and PCBs in fluorescent light ballasts.

10.1.4.1 Installation Restoration Program

Characterization and remediation of soil and groundwater contamination for most sites in the Inland Area are conducted in accordance with the Department of Defense's (DOD's) IRP. The Navy uses this program to identify, investigate, and remediate contamination from hazardous substances, pollutants, and contaminants at active or operating Navy installations (Navy, 2006b).

The Navy's investigations identified 13 Installation Restoration (IR) sites within the Inland Area. The status as of March 2009 for each IR site, as identified on Figure 10-1, is summarized in Appendix 10A, including a site description, status, the approximate acreage of the land area affected, and the constituents of concern. In addition to these known sites, currently unknown contamination may be identified and investigated in the future.

One site of particular concern, Site 22, the Magazine Area, is contaminated with arsenic. In 1945, 91 magazines were built in this area to store ammunition and explosives. In 1953, an additional 53 magazines were built around the perimeter. Site 22 was in use until 2000. While in use, herbicides containing arsenic were applied to the surface soils to control weeds and reduce fire hazards. Elevated arsenic levels have since been discovered in the surface soils of Site 22. The distribution of arsenic in soil indicates that the areas with elevated concentrations are the Magazine Area and associated buildings constructed in the 1940s. The elevated levels are primarily in the upper 6 inches of soil (Tetra Tech, 2007).

The available data from nearby off-site wells and on-site investigations by the Navy suggest that there is no off-site migration of chemicals in groundwater. ~~However, if in the future, evidence of off-site migration is found, the Navy would be responsible for addressing it.~~

10.1.4.2 Solid Waste Management Units

SWMUs, or solid waste disposal areas, are locations where hazardous substances may have been released. The DTSC identified 33 solid waste areas in the Inland Area and

recommended that 14 of these required no further action (DTSC, 1992; Navy, 2006a). The Navy recommended no further action for an additional 15 solid waste disposal areas based on the findings of a facility assessment (PRC, 1997) and other relevant assessments (CH2M HILL, 1997). Regulatory agencies have not yet concurred with the Navy's recommendations of no further action for those 15 locations (Navy, 2006a). The solid waste disposal areas are shown on Figure 10-2. The status of each area as of March 2009 is summarized in Appendix 10A, including the acreage of affected areas and the constituents of concern.

10.1.4.3 Military Munitions Response Program

Munitions and explosives of concern are managed as part of the DOD's MMRP to address areas where munitions and explosives might be present in the environment, including the physical remains of ammunition and potentially explosive materials and residual material of munitions, such as chemical components, that have leached into the soil. The DOD and the Navy are currently establishing new policy and guidance for the MMRP; however, key elements of the program include following the National Contingency Plan (NCP) as authorized by CERCLA, and using the traditional IR cleanup process. ~~The Navy has not yet developed cleanup goals for munitions and explosives of concern at the CNWS, but the goals will likely be consistent with the current property use (i.e., commercial/industrial).~~ The Navy has identified nine areas potentially containing munitions and explosives of concern (Malcolm Pirnie, 2007). Figure 10-3 shows each of these locations. The status of each of the munitions and explosives areas as of March 2009 is summarized in Appendix 10A, including a description, acreage affected, munitions or residual explosive materials involved, and detail on the current cleanup process and status.

10.1.4.4 Storage Tanks

A total of 64 storage tanks (42 underground and 22 aboveground) were located in the Inland Area of the CNWS. Only five underground tanks (each of which is 12,000-gallon capacity) remain in the Inland Area. These tanks have been cleaned and are temporarily closed. Three of the remaining aboveground tanks are in use and all contain propane (Navy, 2006a). Appendix 10A includes a description of the history, use, and status of all the storage tanks at the site.

10.1.4.5 Polychlorinated Biphenyls

All transformers and electrical equipment, including pole-mounted transformers, within the Inland Area have PCB concentrations less than 50 parts per million (Navy, 2006a). According to federal regulations, these transformers and electrical equipment are classified as non-PCB equipment. However, under State regulations, the equipment contains amounts of PCBs that could be considered hazardous waste (Navy, 2006a). More specifically, DTSC classifies PCB liquids as hazardous if the total PCB concentration in the liquid is greater than 5 ppm (CCR, Title 22, Section 66261.24).

Fluorescent light ballasts manufactured before 1979 often contained small capacitors with PCB-impregnated solid insulation. Because some of the buildings in the Inland Area were built prior to 1979, some light ballasts in these areas may still contain PCBs (Navy, 2006a).

PCBs are present in soil at Site 27. In October 2008, based on the results of ecological risk screening, the Navy conducted a Time-Critical Removal Action (TCRA) at Site 27 to protect wildlife by removing PCBs (Aroclor 1248 and 1254), lead, and mercury. Further contaminant delineation and excavation is on-going. Completion of the TCRA as the final remedy will support closure of Site 27.

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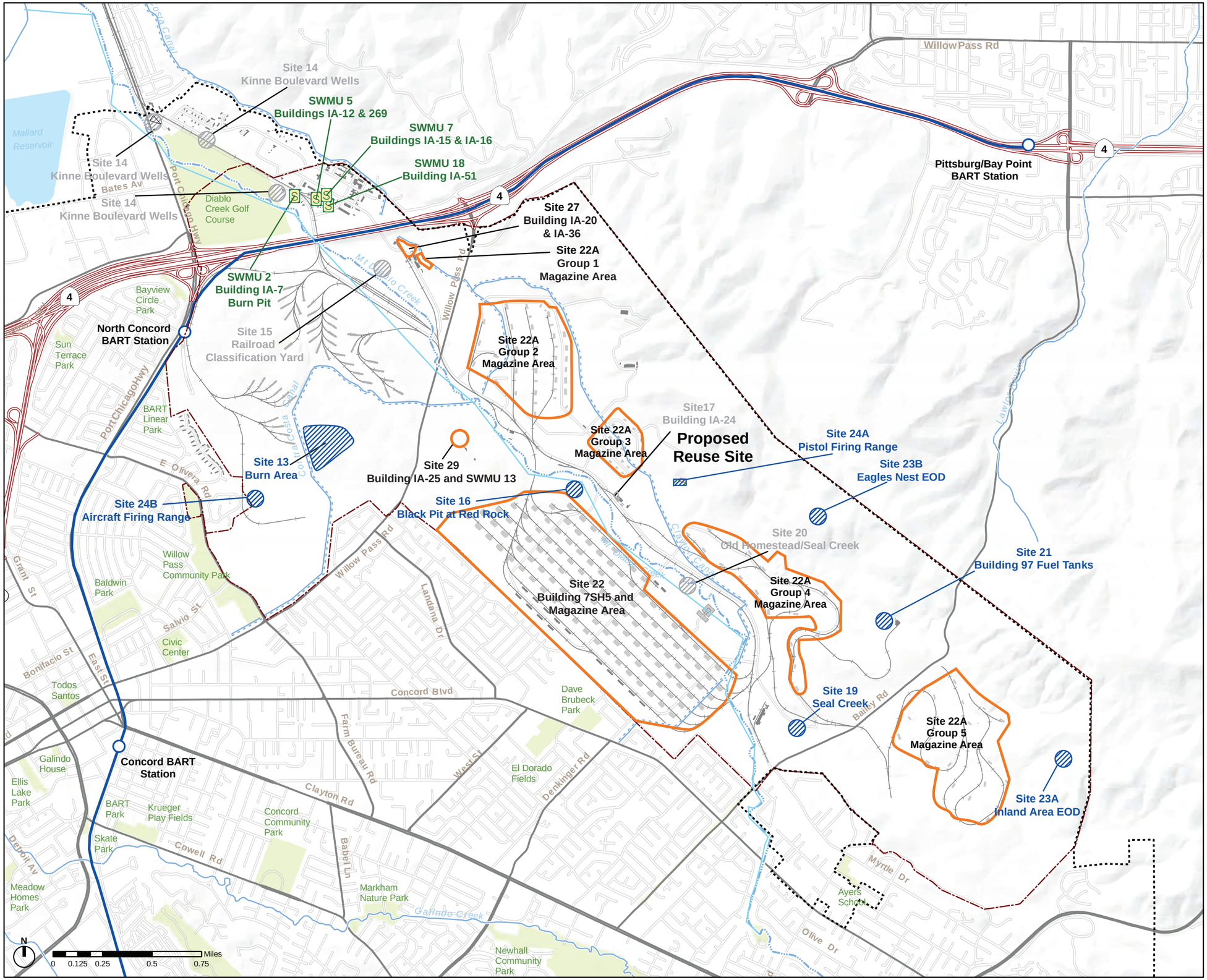
10.1.4.6 Lead-Based Paint

Lead was a major ingredient in paint used throughout the U.S. for many years and can be found on interior and exterior surfaces of housing units and other buildings. Lead-based paint is defined as any paint or surface coating that contains more than 0.5 percent lead by weight, and it is a hazardous material because it can slough off as dust or chips that can be easily inhaled or ingested. In 1978, the 0.06 percent maximum lead content of newly applied dry paint was set by the Consumer Product Safety Commission. The use of lead-based paint was discontinued entirely in 1980 (EPA, 2009).

The EPA and the Occupational Safety and Health Administration (OSHA) are responsible for implementing federal laws related to lead and lead-based paint under Title X of the Toxic Substances Control Act. The DTSC and California OSHA (Cal-OSHA) are responsible for implementing State laws and protections related to lead and lead-based paint through the California Health and Safety Code.

Because structures at the site were built before 1978, lead-based paint is a concern. Lead may be also detected in near-surface soil around the perimeter of buildings with lead-based paint. The Navy conducted limited surveys for lead-based paint at the site in 1996, 1997, and 2002. Many areas were excluded from these surveys because they were considered non-residential buildings (Navy, 2006a). The Navy surveyed Building 245 A-D and found lead-based paint. All other buildings at the site have either been demolished by the Navy or have not been surveyed (Navy, 2006a).

Lead has been detected in surface soils at IR Site 29. The ultimate source of lead at IR Site 29 is uncertain. The potential sources are lead-based paint associated with Building IA-25 and lead associated with ordinance primers. Two organic lead salts are known to have been present in munitions components (ordinance primers) processed in Building IA-25. Additional sampling has been conducted by the Navy to determine the source of the lead in soil, i.e., lead-based paint or ordinance primers, in order to determine appropriate disposal strategies under the lead-based paint program or under CERCLA. The associated analytical work and data interpretation are on-going.



Legend

- Solid Waste Management Units (SWMUs) in the Installation Restoration Program
- Active Installation Restoration Sites
- Closed or No Further Action Sites
- Installation Restoration Sites Moved to other programs (MMRP or UST)

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Building
- Magazine
- Appurtenance
- Blast Protection Berm
- Railroad
- Bay Area Rapid Transit Line
- BART Station

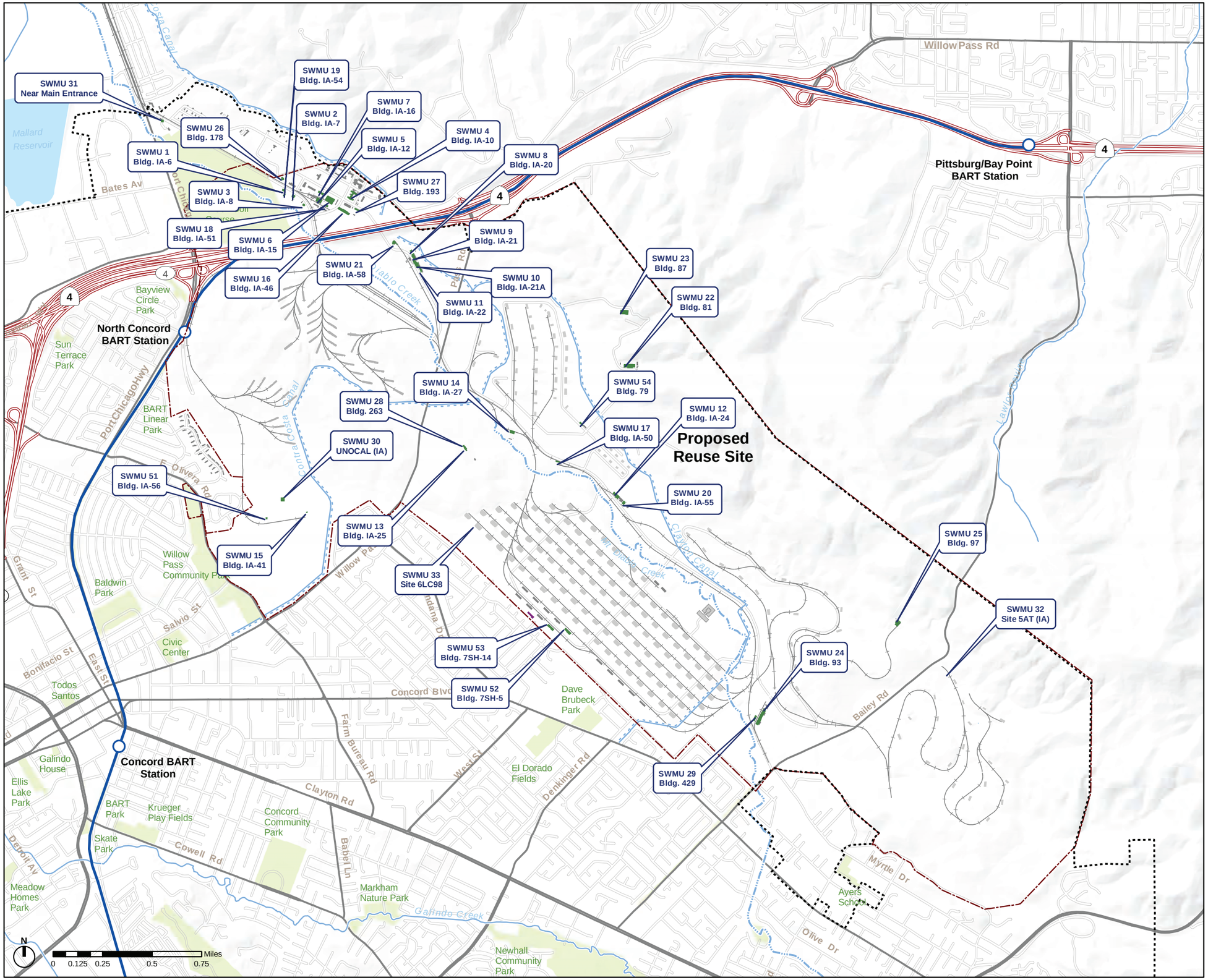
Notes & Sources

Data Sources: NAVWPNSTA Seal Beach Det Concord GIS
Department of the Navy
Base Realignment and Closure Program Management Office,
Final Environmental Condition of Property Report
April 28, 2006.

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Figure 10-1
Installation Restoration Sites



Legend

- Solid Waste Management Units (SWMUs)

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Building
- Magazine
- Appurtenance
- Blast Protection Berm
- Railroad
- Bay Area Rapid Transit Line
- BART Station

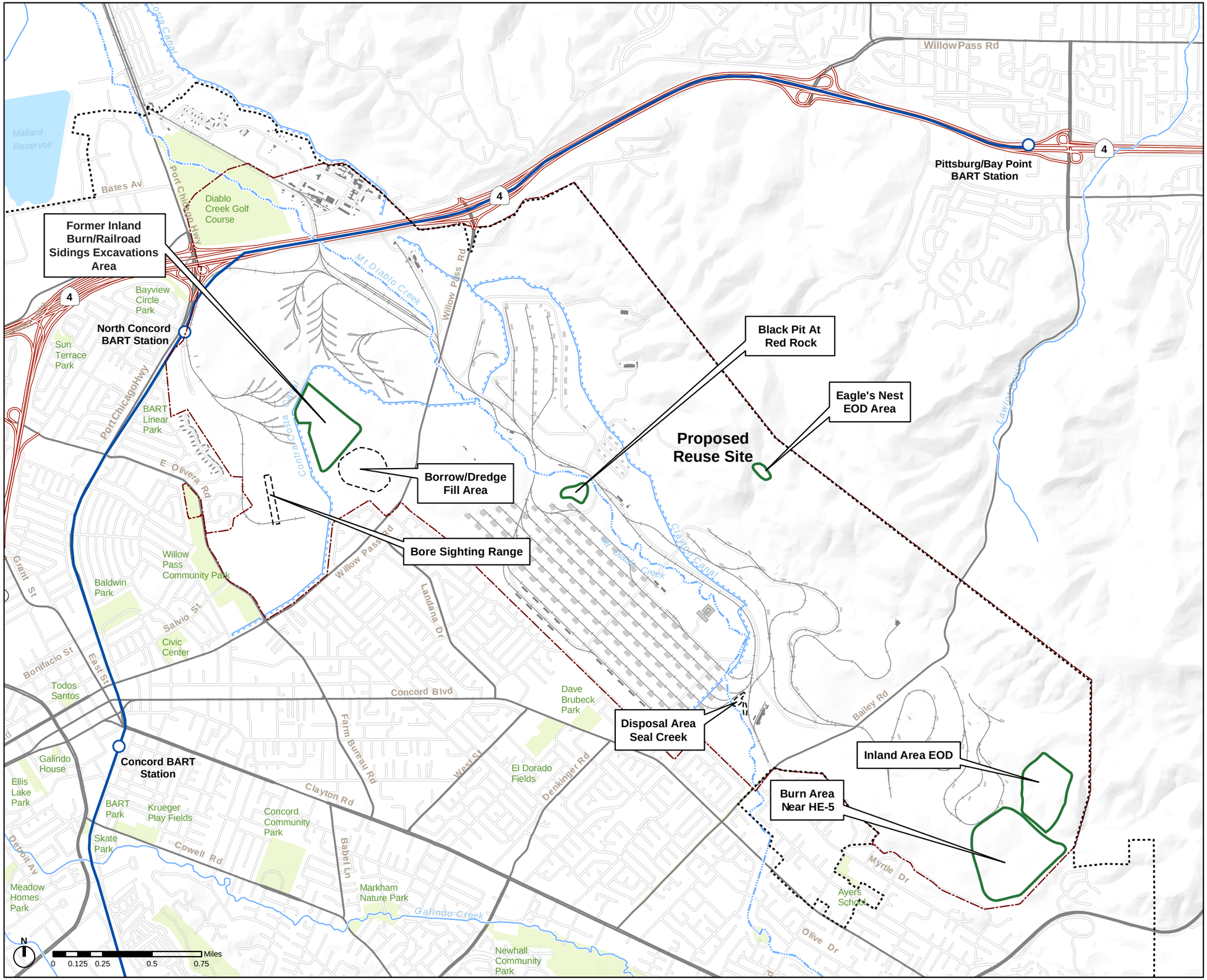
Notes & Sources

Coordinate System: Stateplane, California III NAD 83, feet
Data Sources: NAVWPNSTA Seal Beach Det Concord GIS ESRI (StreetMap)
Department of the Navy
Base Realignment and Closure Program Management Office,
Final Environmental Condition of Property Report, April 28, 2006.

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Figure 10-2
Solid Waste Management Units



Legend

- Potential Areas with Munitions and Explosives of Concern
- No Further Action for Areas with Munitions and Explosives of Concern

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Building
- Magazine
- Appurtenance
- Blast Protection Berm
- Railroad
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Data Sources: AVWPNSTA Seal Beach Det Concord Department of the Navy Base Realignment and Closure Program Management Office, Final Environmental Condition of Property Report, April 28, 2006

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Figure 10-3
Potential Areas with Munitions and Explosives of Concern

10.1.4.7 Asbestos

Similar to lead-based paint, asbestos is a common building material found in buildings constructed prior to 1980. If structural components containing asbestos, such as insulation, floor or ceiling tiles, and certain piping materials, are not maintained, asbestos may become airborne (OSHA, 2002). Asbestos abatement is federally regulated under the Toxic Substances Control

Act, Title II, Asbestos Hazard Emergency Response. Asbestos is also regulated at the State level by Cal-OSHA and at the local level by the Bay Area Air Quality Management District (BAAQMD).

The Navy conducted surveys to identify asbestos-containing materials (ACMs) in 1988, 1999, and 2000 at the site. ACMs include friable materials (e.g., spray-on acoustical plaster, thermal systems, and boiler insulation) and non-friable materials (e.g., floor tiles and roofing). Of the 49 remaining buildings (i.e., those that have not been demolished), 40 were found to contain asbestos materials (Navy, 2006a). Appendix 10A provides a detailed summary of the findings of the surveys.

10.1.5 Property Transfer Responsibilities

10.1.5.1 Responsibility for Remediation

Federal agencies are responsible for characterization and remediation of contamination at installations they either own or operate or where they have contributed to site contamination (Matrix, 2005), and are responsible for complying with all laws and regulations pertaining to the cleanup of hazardous substances and petroleum products. According to the DOD's Base Redevelopment and Realignment Manual:

> The DOD must ensure that appropriate response or corrective actions related to petroleum products or their constituents and hazardous substances have been taken, or will be taken, to protect human health and the environment on property that is to be transferred. (DOD, 2006)

Before the property is conveyed in the future, as introduced in Chapter 1, Introduction, the Navy must make a Finding of Suitability to Transfer (FOST). The primary purpose of a FOST is to document that the property is environmentally suitable for transfer by deed under CERCLA and DOD FOST guidance ~~This process is intended to determine whether property is environmentally suitable for its intended use~~ and whether there should be any restricted use of the property (i.e., institutional controls). Institutional controls are structural or legal mechanisms used to limit access to, or restrict the use of, property (DOD, 1997). A FOST must demonstrate that either the property is uncontaminated or that all necessary remediation has been completed or is in place and operating properly and successfully. These demonstrations are necessary to support the deed covenant required by CERCLA that all remedial action necessary to protect human health and the environment has been taken. In addition, under CERCLA a deed to transfer property by the United States must contain (1) notice of the type and quantity of hazardous substances, (2) notice of the time at which such hazardous substance storage, release, or disposal took place, and (3) a description of any remedial action taken.

The NPL itself does not assign liability to any party or to the owner of any specific property. However, for the CNWS, the liability for cleanup remains with the Navy (DTSC, 2005). For

example, if in the future, evidence of off-site migration is found, the Navy would be responsible for addressing it.

10.1.5.2 Cleanup Standards

For the CNWS, the Navy is proceeding with developing a cleanup strategy (remedy) in accordance with the requirements of CERLA and RCRA, as discussed in Section 10.2.3 and in accordance with DOD guidance (DOD, 2006), to address environmental issues prior to transfer. The Navy is currently in the RI/FS stage for most of the contaminated sites, and future use cleanup standards have not yet been developed. The FS could result in a finding that the cleanup would be conducted to one or a combination of the following standards:

- Unrestricted use: Unrestricted use means that hospitals, daycare centers, residences, schools, and other "sensitive uses" can be built on the property without danger to future users. Cleanup to unrestricted use involves removing contaminants to either non-detectable levels or levels that are safe for humans and environmental receptors (DTSC, 2005).
- Commercial/industrial use: Commercial/Industrial use means that the site would need to be cleaned to a level that is commensurate with future commercial or industrial use of the site. This could involve use of pavement or impervious material to cover contamination (DTSC, 2005).
- Institutional controls: If a site cannot or will not be cleaned to the use standards for the proposed land use, some sort of institutional controls must be in place to protect public health and the environment. In general, the term "institutional controls" is used to describe a suite of both engineering and administrative controls placed on a site to prevent contact with contaminants by future users: Engineering controls are any physical barrier preventing contact with contaminants or migration of contaminants off-site. Administrative controls are non-engineering mechanisms that restrict activities on the site to prevent exposure to contaminants by property users. These can include deed restrictions, land use ~~covenants~~controls, public notices, and warning signs (DTSC, 2005).
- Land use ~~covenants~~controls: Land use ~~covenants~~controls (LUCs) are an important part of the remedy selection at former military sites, and are required by California law for any site with remaining contamination after the remedy is implemented. Assurances must be made that the remedy will continue to protect human health and the environment into the future. LUCs consist of both institutional controls and engineering controls and are essentially requirements placed on all successive property owners that land use restrictions will continue to apply into the future (DTSC, 2005).

The Navy is evaluating remedial alternatives for the CNWS. Although the Navy could approve cleanup of the site to unrestricted use levels, the DOD's property transfer guidance states that the DOD "prefers that Military Department cleanup decisions be based on the current use of the property" (DOD 2006). The DOD guidance states that selection of a remedy based on current or historic uses (and not future proposed uses) expedites cleanup of contaminated sites. The existing land use at the CNWS is considered by the Navy to be commercial/industrial.

The guidance further states that if a future property owner proposes more restrictive uses of a property (e.g., residential versus commercial/industrial), the cleanup costs "may be borne by the new owner as part of redevelopment of the property for new uses" (DOD, 2006).

10.1.5.3 Transfer Process at CNWS

The DOD may dispose of BRAC property to private parties or public agencies via a range of conveyance methods. Several of the conveyance methods allow for transfer at full discount of market value for the land (no cost)—e.g., a public benefit conveyance. No cost transfer may cause the new property owner to clean up to standards beyond those set for commercial/industrial use. Disposal of property through public auction has been one method of conveyance utilized by DOD in the recent past. ~~Disposal of large parcels of the property through public auction has been a popular method of conveyance over the last 6 to 8 years, from the DOD perspective.~~ The public auction process requires public advertising for bids under such terms and conditions as to permit "full and free competition consistent with the value and nature of the property involved" (CRS Report for Congress, 2005).

The City understands that the Navy currently prefers to dispose of the Inland Area of the CNWS through a public auction process. One effect of the public auction process is that the potential buyers of the property are likely to perform environmental due diligence to ensure that the fair market value includes a discount for cleanup costs that may be required to meet intended land uses.

10.2 Standards of Significance

For purposes of this EIR, an alternative is considered to have a significant hazardous materials impact if it would:

- Result in a conflict of the land uses proposed under the alternative and the remediation performed by the Navy
- Substantially increase the risk of exposure of construction workers or site visitors to hazardous substances in soil or groundwater during site development
- Substantially increase the risk of exposure of off-site residents or schools within 1/4 mile of the site to hazardous substances in fugitive dust generated during site development
- Expose future occupants to hazardous substances in soil or groundwater
- Expose construction workers, future occupants, or site visitors to hazardous substances in buildings that would be renovated, restored, or demolished
- Substantially increase the risk of exposure of the public to inadvertent or accidental releases of hazard substances to the environment from non-residential uses or transportation during project occupancy
- Interfere with ongoing soil and groundwater remediation efforts by the Navy by precluding access to remediation or monitoring systems during site development or project occupancy, or conflict in any other way with adopted RODs for cleanup
- Result in safety hazards near a public or public-use airport or private airstrip

- Impair implementation of an adopted emergency response or evacuation plan

10.3 Potential Hazardous Materials Impacts

This section presents an analysis of potential hazardous substances impacts as they relate to the two alternatives. The analysis is based on a review of information contained in existing technical reports prepared by the Navy, agency correspondence, and applicable regulatory requirements.

10.3.1 Assumptions about Potential Hazardous Materials Impacts

For purposes of this analysis, the following assumptions were applied:

- Although the Navy could approve cleanup of the site to unrestricted use levels, it is assumed that the Navy will remediate the site to meet the existing uses (i.e., commercial/industrial land use).
- The Navy will dispose of parcels of property through a competitive public auction process or through a public benefit conveyance. Under an auction process, the fair market value of the parcels would be discounted by potential buyers to account for additional cleanup costs and schedule constraints that may be required to meet the planned land uses. The new landowner would then be responsible for cleanup needed to meet the planned land uses. The Navy will transfer parcels through a public benefit conveyance only if the parcels are remediated to a standard that meets the planned land use (e.g., open space).
- The City has performed an independent programmatic-level cost and schedule analysis related to remediation of hazardous materials (including munitions and explosives), based on the currently available information from the Navy. The City's analysis indicates that at a programmatic level, implementation of additional response actions to address hazardous materials and meet the proposed land uses is not prohibitive in terms of cost or schedule, in the context of other project costs and economic benefits of the project.
- The Navy's MMRP will clean up munitions and explosives of concern to a commercial/industrial standard. The cost for additional response actions to address munitions and explosives of concern to a standard consistent with proposed land uses will be the responsibility of the new landowner(s).
- Implementation of either alternative concept would require an amendment to Concord's General Plan. At that time, the following General Plan Policies would be in effect, as they relate to hazardous materials: Policy S-5.1.1, Policy S-5.1.3, Policy S-5.1.4, and Policy S-5.1.5 (unless specifically modified to reflect conditions at the site).

10.3.2 Hazardous Materials Impacts of the Preferred Alternative

Figures 10-4 through 10-6 overlay the Preferred Alternative on the IR sites, SWMUs, and potential areas with munitions and explosives of concern.

10.3.2.1 Potentially Significant Hazardous Materials Impacts of the Preferred Alternative

Impact Hazardous Materials 1: The Preferred Alternative could result in a conflict of the proposed land use and remediation performed by the Navy. This impact is considered to be potentially significant.

The Preferred Alternative includes proposed land uses that would conflict with the assumed commercial/industrial cleanup standard to be used by the Navy. For example, residential use is not compatible with a commercial/industrial cleanup standard in known contaminated areas (e.g., Sites 13, 22, 22A, and 29). Additional response actions consistent with the proposed land use will be required in certain areas to protect human health and the environment. Given the currently known information about the types and distributions of contaminants at the site, the City has determined that at a programmatic level, such response actions are generally feasible. Furthermore, under an auction process, the fair market value of the parcels would be discounted by potential buyers to account for response action costs and schedule constraints that may be required to meet the planned land uses. However, the compatibility of such response action costs with a specific development project in terms of cost and schedule cannot be determined at this time. Without response action planning by the landowner in consultation with the City and the appropriate regulatory agencies, the costs and timing issues may be potentially significant for a specific development project.

> **Mitigation Measure Hazardous Materials 1: Prior to approving any specific development plan, the City shall require, at a minimum, the new property owners to have a remediation plan that has been approved by applicable environmental regulatory agencies and developed in consultation with the City. The remediation planning and implementation could occur prior to City approval of the development plan or, alternatively, as part of development activities. ~~Prior to approving any specific development project at the site, the City shall require that new property owners plan and implement response actions in consultation with the City and with the approval of applicable environmental regulatory agencies that is consistent with the proposed land uses for the specific development project.~~ Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the applicable regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant. This mitigation measure will enable the landowner, City, and regulatory agencies such as the EPA and the DTSC to engage in a planning process as part of specific development project planning, when more information is available about the specific development and about the nature and extent of residual hazardous material impacts. The cost and timing analysis for response actions as part of development

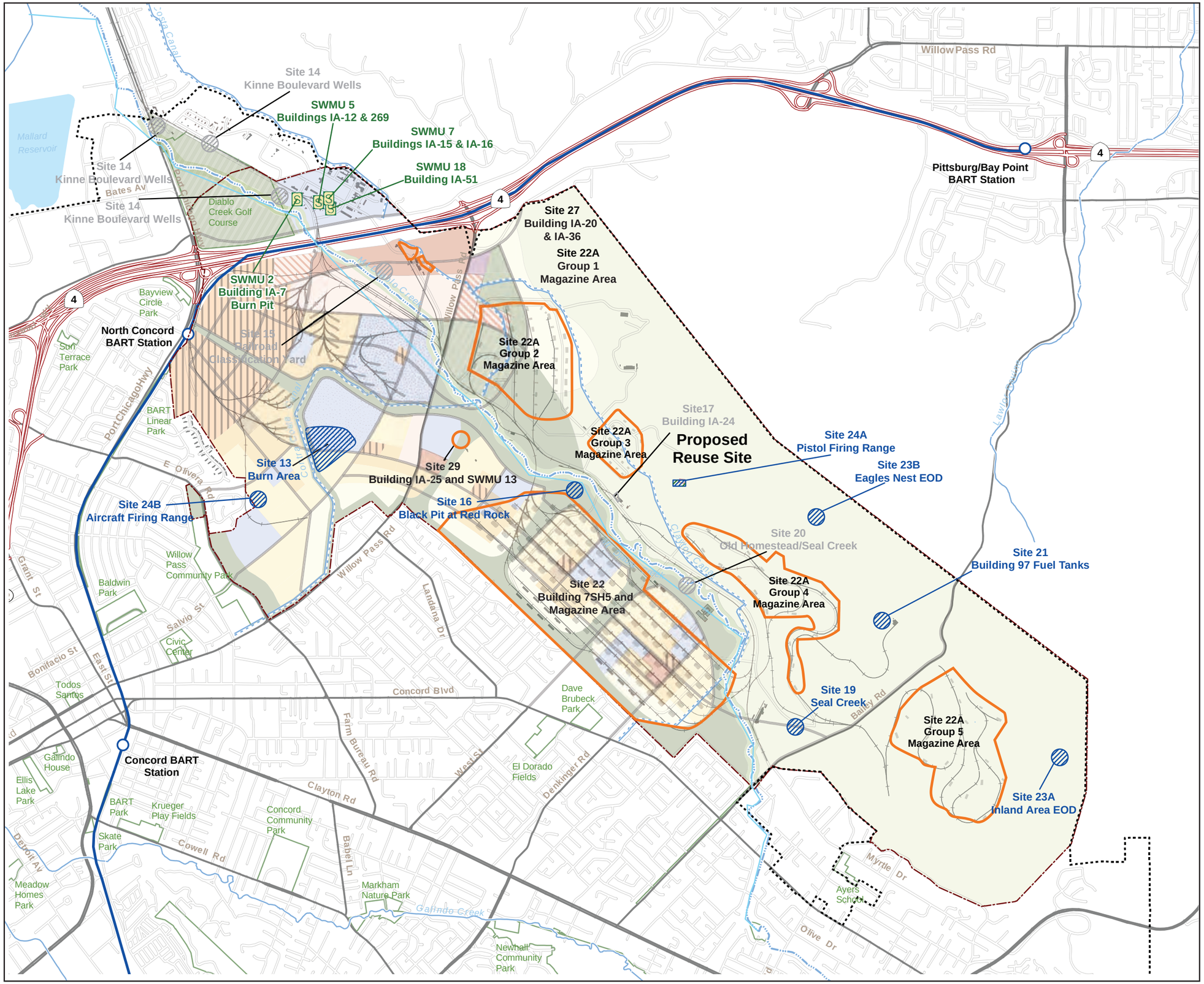
projects should consider not only the direct cost and time constraints of any additional characterization or remediation, but also administrative costs and timing, such as engineering and design, regulatory agency reimbursement, compliance with soil management or other protocols and mitigation measures, communication and reporting to regulatory agencies and the community, and long-term monitoring and reporting. Response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. This potential impact will be reduced to a level that is less than significant by requiring the developer to couple its response action planning with the specific development project planning and helping to ensure that the proposed land uses are consistent with final response actions. Thus, the conflict of the proposed land use and remediation performed by the Navy will be reduced to a level that is less than significant.

Impact Hazardous Materials 2: Site development activities associated with the Preferred Alternative could substantially increase the risk of exposure of construction workers or site visitors to known and unknown hazardous substances in soil or groundwater. This impact is considered to be potentially significant.

Site development activities could include preparation, grading, installation of underground utilities, foundation excavations, soil and groundwater remediation, and other soil and groundwater disturbance activities. These activities may occur in areas with known residual contaminated soil and groundwater, and possibly in areas of currently unknown contamination. Such activities could expose construction workers and site visitors to hazardous materials in excess of appropriate risk-based standards, resulting in adverse short-term and long-term health or environmental effects. Therefore, this impact is potentially significant.

> **Mitigation Measure Hazardous Materials 2: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare Site Management Plans to cover all site development activities. The Site Management Plans will include requirements for worker health and safety plans and soil management plans, approved by applicable environmental regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The Site Management Plans will include OSHA requirements for worker health and safety plans and soil management plans, approved by applicable environmental regulatory agencies. Pursuant to State and federal worker safety laws, the health and safety plans may require the use of personal protective equipment, air quality monitoring, and other precautions to minimize exposure to hazardous substances. The soil management plans will provide protocols for detecting, investigating, remediating, and managing previously unknown contaminated soil or groundwater under regulatory agency oversight. Implementation of the worker health and safety plans and soil management plans will reduce this impact to a level that is less than significant.



Legend

- Solid Waste Management Units (SWMUs) in the Installation Restoration Program
- Active Installation Restoration Sites
- Closed or No Further Action Sites
- Installation Restoration Sites Moved to other programs (MMRP or UST)

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

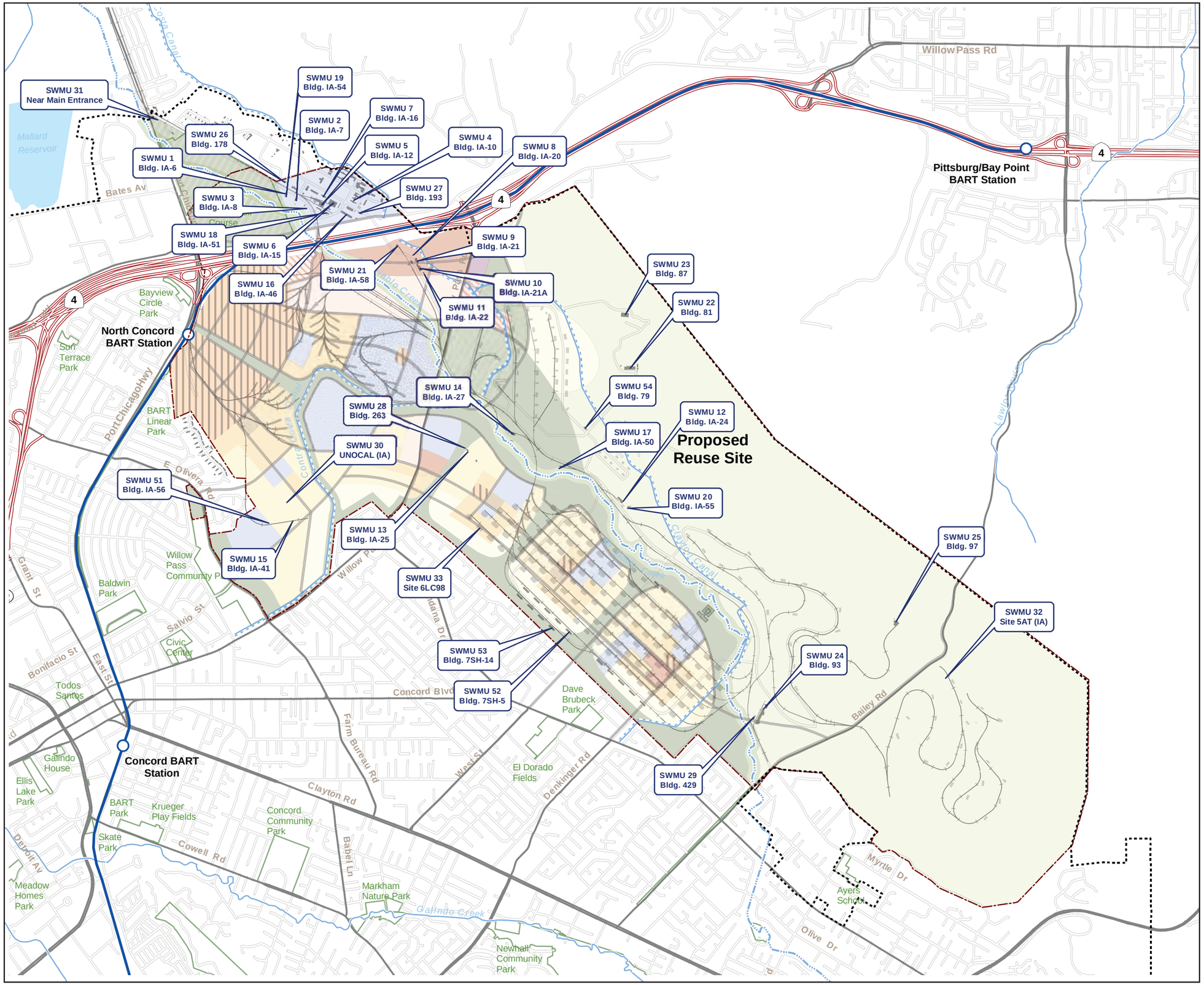
Notes & Sources

Data Sources: NAVWPNSTA Seal Beach Det Concord GIS
Department of the Navy
Base Realignment and Closure Program Management Office,
Final Environmental Condition of Property Report
April 28, 2006.

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Figure 10-4
Preferred Alternative Overlay on Installation Restoration Sites



Legend

Solid Waste Management Units (SWMUs)

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Building
- Magazine
- Appurtenance
- Blast Protection Berm
- Railroad
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

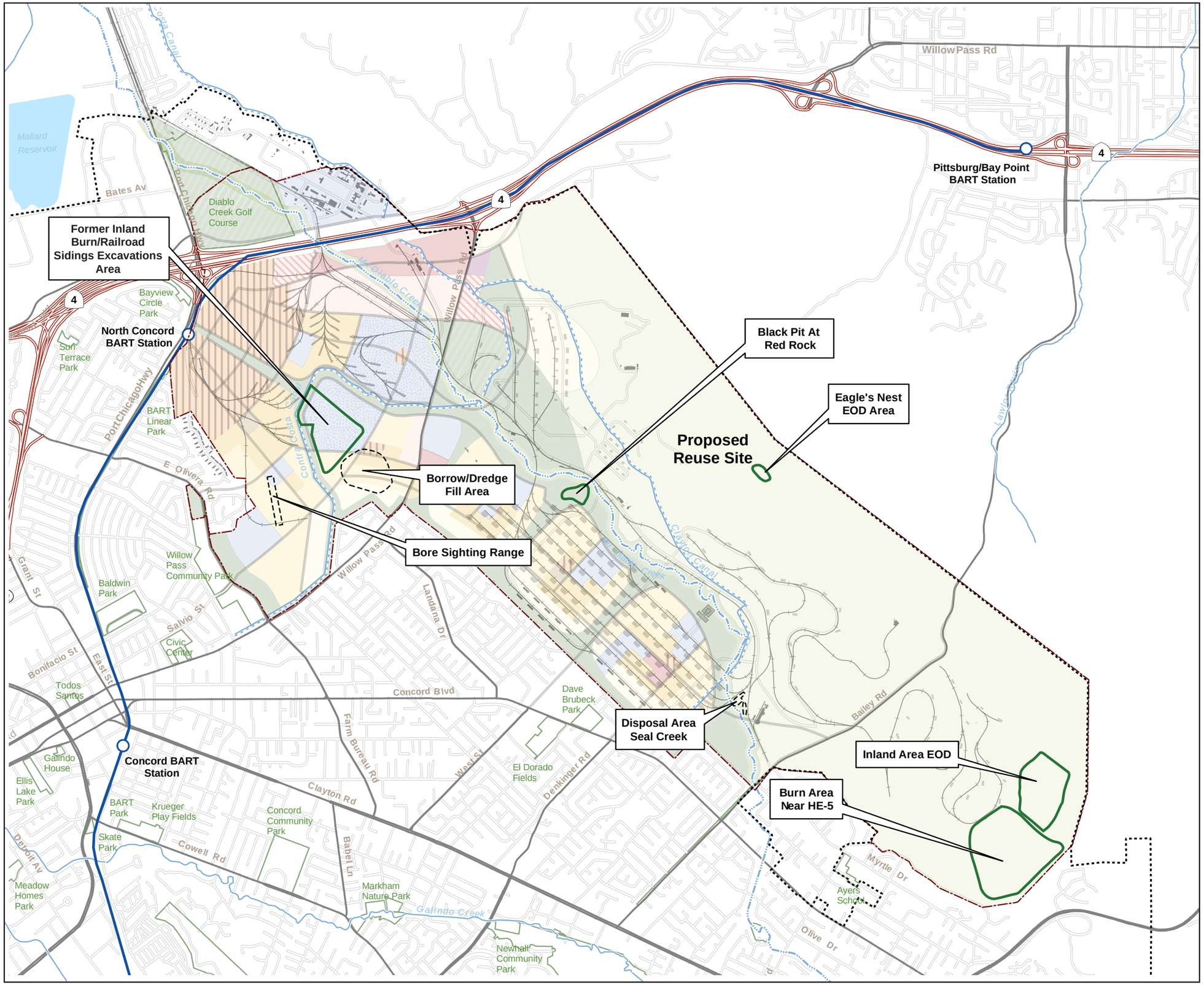
Notes & Sources

Coordinate System: Stateplane, California III NAD 83, feet
Data Sources: NAVWPNSTA Seal Beach Det Concord GIS ESRI (StreetMap)
Department of the Navy
Base Realignment and Closure Program Management Office,
Final Environmental Condition of Property Report, April 28, 2006.

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Revised August 20, 2009

Figure 10-5
Preferred Alternative Overlay on Solid Waste Management Units



Legend

- Potential Areas with Munitions and Explosives of Concern
- No Further Action for Areas with Munitions and Explosives of Concern

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Data Sources: AVWPNSTA Seal Beach Det Concord Department of the Navy Base Realignment and Closure Program Management Office, Final Environmental Condition of Property Report, April 28, 2006

Concord Community Reuse Plan

Revised December 15, 2009

Figure 10-6
Preferred Alternative Overlay on Potential Areas with Munitions and Explosives of Concern

Impact Hazardous Materials 3: Site development activities associated with the Preferred Alternative could substantially increase the risk of exposure of off-site residents or schools within 1/4 of the site to hazardous substances in wind-blown fugitive dust. This impact is considered to be potentially significant.

The following schools are within 1/4 mile of the site, as shown on Figure 10-7: Sun Terrace Elementary School, Holbrook Elementary School, Wren Avenue Elementary School, Monte Gardens Elementary School, Concord High School, Tabernacle Baptist Elementary School, and Ayers Elementary School. Furthermore, Shadelands and Sunrise Schools, while not technically within 1/4 mile of the site, serve special-needs students. All of these schools plus residential areas are adjacent to the western boundary of the site and Site 22. Site 22 (Building 7SH5 and the Magazine Area) abuts this boundary and is known to contain arsenic in the surface soil from historic pesticide application. Redevelopment activities such as site grading and remediation activities could generate wind-blown fugitive dust containing arsenic or other hazardous substances. The proximity of existing schools and residential neighborhoods to contaminated soil creates a potentially significant impact during soil disturbance activities in these areas.

> **Mitigation Measure Hazardous Materials 3: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare a Site Management Plan to cover all site development activities. The Site Management Plan will include requirements for dust control plans and perimeter air monitoring plans, approved and monitored by applicable environmental regulatory agencies such as the DTSC and the EPA. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The Site Management Plan will include requirements for dust control plans and perimeter air monitoring plans, approved and monitored by applicable environmental regulatory agencies such as the DTSC and the EPA. Implementation of these plans will require that wind-blown fugitive dust generation is controlled, monitored, and corrected, if necessary. The regulatory agencies would have the authority to shut down the project if the dust control measures were not effective, thus reducing this impact to a level that is less than significant. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Impact Hazardous Materials 4: Land uses associated with the Preferred Alternative could substantially increase the risk of exposure of future occupants to residual hazardous substances in soil or groundwater. This impact is considered to be potentially significant.

The Preferred Alternative could potentially expose future project occupants, including sensitive populations, to residual hazardous substances in areas with known soil or groundwater contamination that are remediated by the Navy to an commercial/industrial standard, or possibly in areas with currently unknown contamination. Therefore, this impact in considered to be potentially significant.

> **Mitigation Measure Hazardous Materials 4: Prior to approving any specific development plan, the City shall require, at a minimum, the new property owners to have a remediation plan that has been approved by applicable environmental regulatory agencies and developed in consultation with the City. The**

remediation planning and implementation could occur prior to City approval of the development plan or, alternatively, as part of development activities. ~~Prior to approving any specific development projects at the site, the City shall require that new property owners implement response actions that are consistent with proposed land uses, with the approval of applicable environmental regulatory agencies.~~ Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the applicable regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

This mitigation measure will require that appropriate response actions be taken prior to or as part of development to address potential exposure of future project occupants and sensitive populations to residual and unknown contamination. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. These response actions would minimize exposure and protect human health and the environment. The impact would therefore be reduced to a level that is less than significant.

Impact Hazardous Materials 5: Building demolition or renovation activities associated with the Preferred Alternative could expose construction workers, future occupants, or site visitors to hazardous building materials. This impact is considered to be potentially significant.

Demolition or renovation of buildings or structures could create a substantial exposure of construction workers, future occupants, or site visitors to lead-based paint, asbestos, or other hazardous building materials, resulting in a potentially significant impact.

Mitigation Measure Hazardous Materials 5: The City shall require that new property owners demolish or renovate buildings in accordance with appropriate federal, State, and local regulations addressing abatement of lead-based paint, asbestos, or other hazardous building materials. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

The City shall require that property owners survey all buildings for hazardous building materials~~, unless already surveyed,~~ prior to demolition or renovation. To minimize exposure to workers and site visitors, the City shall require that property owners abate all buildings with hazardous materials in accordance with appropriate federal, State, and local regulations. Conducting surveys and abating hazardous building materials in accordance with appropriate regulations would reduce this impact to a level that is less than significant.

Impact Hazardous Materials 6: The Preferred Alternative could substantially increase the risk of exposure of the public to inadvertent or accidental releases of hazardous

substances to the environment from non-residential uses or transportation activities during project occupancy. This impact is considered to be potentially significant.

Future site occupants and businesses may use or handle hazardous materials as part of their regular operations. The use or handling of hazardous materials may result in an accidental release of these materials to the environment, resulting in a potentially significant impact.

> **Mitigation Measure Hazardous Materials 6: Prior to approving any occupancy permits, the City shall require the new property owners to prepare and update a Hazardous Materials Management Plan in accordance with local agency requirements. The plan shall detail the types and quantities of chemicals stored at a given location, the storage location and types of storage containers, and the emergency response equipment available at the property (i.e., location of fire hydrants and extinguishers), and provide a map showing the location of all of these items as well as major utilities. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The Hazardous Materials Management Plans will be prepared in accordance with the Contra Costa County Department of Health Services (CCCDHS) Certified Unified Program Agency (CUPA). The business plan shall apply to businesses that use hazardous materials within 1/4 mile of an existing or proposed school. The plan shall detail the types and quantities of chemicals stored at a given location, the storage location and types of storage containers, and the emergency response equipment available at the property (i.e., location of fire hydrants and extinguishers). The plan will also provide a map showing the location of all of these items as well as major utilities. This documentation would fulfill federal and State requirements, if applicable, and would also assist the County in its emergency response and planning efforts, reducing this impact to a level that is less than significant.

Impact Hazardous Materials 7: Site development activities associated with the Preferred Alternative could interfere with ongoing soil and groundwater remediation efforts by the Navy. This impact is considered to be potentially significant.

Site development of portions of the site could occur simultaneously with site cleanup or long-term monitoring activities that are being implemented by the Navy. Soil disturbance activities as part of site development could encounter site remediation systems such as pumps, piping, extraction and monitoring wells, and treatment systems. Unless site development is planned and coordinated with site remediation activities, there could be a risk of damaging or interfering with remediation systems, causing delays or compromising the effectiveness of remediation systems.

> **Mitigation Measure Hazardous Materials 7: Site owners shall coordinate with the City, Navy, and appropriate regulatory agencies, as appropriate, to ensure that development activities do not interfere with any adjacent or on-site remediation system or activity, or unduly delay remediation activities. Specific responsibilities and requirements regarding protection of remediation systems and coordination of activities can be included in the property transfer documents. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Implementation of this mitigation measure will reduce this impact to a level that is less than significant by requiring that site owners and their contractors are aware of timing, locations, and types of remediation activities so that development activities do not inadvertently or adversely affect site cleanup efforts by the Navy.

10.3.2.2 Hazardous Materials Impacts of the Preferred Alternative That Are Less Than Significant

Impact Hazardous Materials 8: The Preferred Alternative could result in safety hazards near a public or public-use airport or private airstrip. This impact is considered to be less than significant.

The site is located within the influence area of Buchanan Field Airport. The site is located outside of the safety zones for the airfield. The Contra Costa County Airport Land Use Commission (ALUC) would review the compatibility of future site-specific development proposals with the airport's approved and planned use.

Mitigation Measure Hazardous Materials 8: None required.

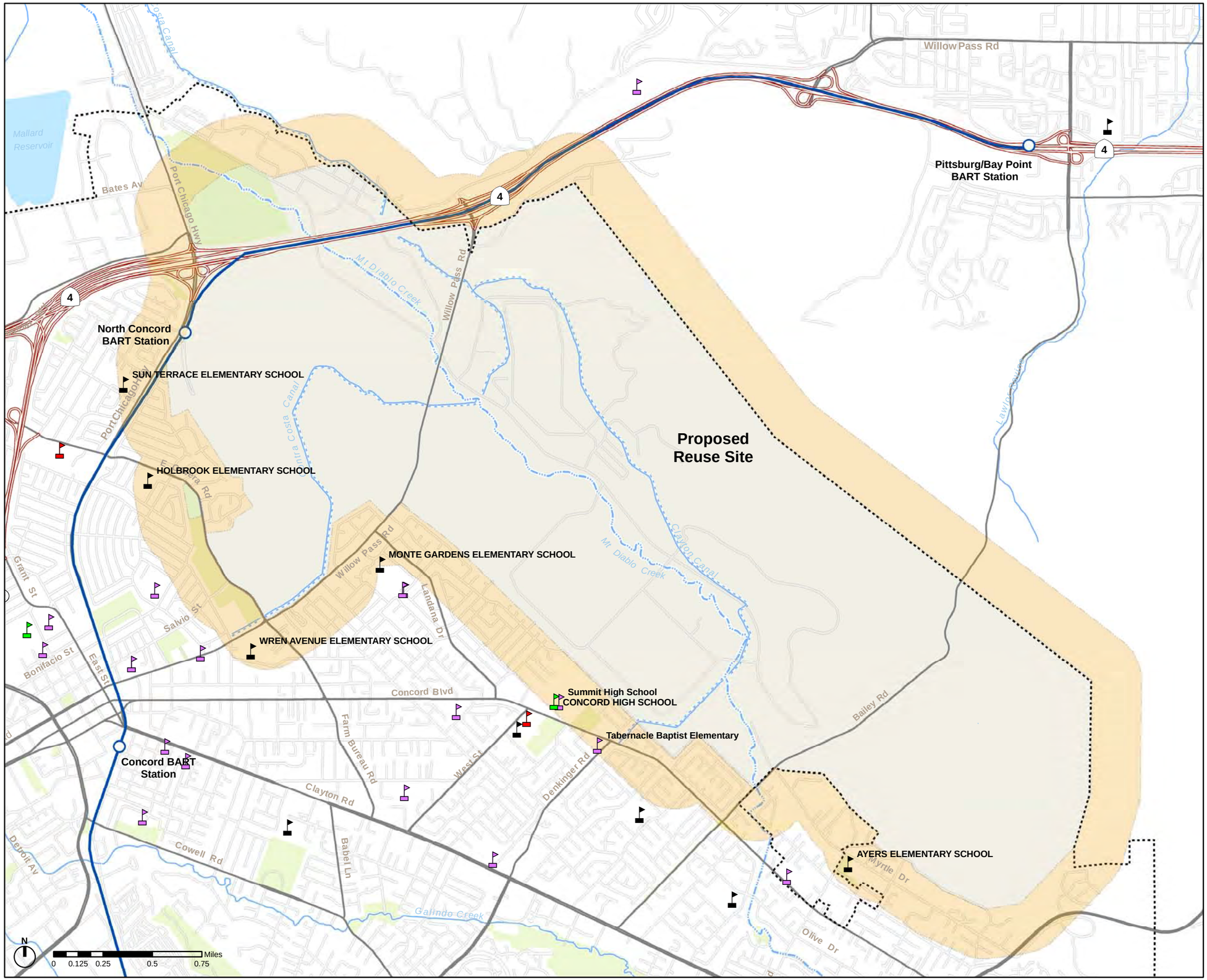
Impact Hazardous Materials 9: The Preferred Alternative could impair implementation of an adopted emergency response or evacuation plan. This impact is considered to be less than significant.

The specific development or use for the Preferred Alternative is designed and would be implemented so as not to interfere with or impair the implementation of an adopted emergency response or evacuation plan. Emergency response issues are addressed by the Contra Costa County Fire Protection District (CCCFPD), which requires adequate access roads and building markings to facilitate emergency response. The County does not have a formal evacuation plan.

Mitigation Measure Hazardous Materials 9: None required.

10.3.3 Hazardous Materials Impacts of the Concentration and Conservation Alternative

Figures 10-8 through 10-10 on the following pages overlay the Concentration and Conservation Alternative on the IR sites, SWMUs, and potential munitions and explosives of concern areas, respectively.



Legend

- Area Within 1/4 Mile of the Site
- Public High Schools
- Private High Schools
- Public Junior High Schools
- Public Elementary Schools
- Private Schools

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials
- Local Streets
- Bay Area Rapid Transit
- BART Stations

Notes & Sources

Contra Costa County, 2007

Concord Community Reuse Plan

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Figure 10-7
Schools within 1/4 Mile of the Site

10.3.3.1 Potentially Significant Hazardous Materials Impacts of the Concentration and Conservation Alternative

Impact Hazardous Materials 10: The Concentration and Conservation Alternative could result in a conflict of the proposed land use and remediation performed by the Navy. This impact is considered to be potentially significant.

The analysis of Impact Hazardous Materials 10 for the Concentration and Conservation Alternative is similar to Impact Hazardous Materials 1 for the Preferred Alternative. However, under the Concentration and Conservation Alternative, the overall acreage where proposed land use may conflict with remediation performed by the Navy is less. For example, the majority of Site 22 is planned open space under the Concentration and Conservation Alternative.

> **Mitigation Measure Hazardous Materials 10: Prior to approving any specific development project at the site, the City shall require that new property owners plan and implement response actions in consultation with the City and with the approval of applicable environmental regulatory agencies that is consistent with the proposed land uses for the specific development project. Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the regulatory agency. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The analysis of Mitigation Measure Hazardous Materials 10 for the Concentration and Conservation Alternative is the same as Mitigation Measure Hazardous Materials 1 for the Preferred Alternative.

Impact Hazardous Materials 11: Site development activities associated with the Concentration and Conservation Alternative could substantially increase the risk of exposure of construction workers or site visitors to known and unknown hazardous substances in soil or groundwater. This impact is considered to be potentially significant.

The analysis of Impact Hazardous Materials 11 for the Concentration and Conservation Alternative is similar to Impact Hazardous Materials 2 for the Preferred Alternative. However, under the Concentration and Conservation Alternative, the overall acreage where site development activities could expose construction workers and site visitors to hazardous materials is less. For example, the majority of Site 22 is planned open space under the Concentration and Conservation Alternative.

> **Mitigation Measure Hazardous Materials 11: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare Site Management Plans to cover all site development activities. The Site Management Plans will include requirements for worker health and safety plans and soil management plans, approved by applicable environmental regulatory**

agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

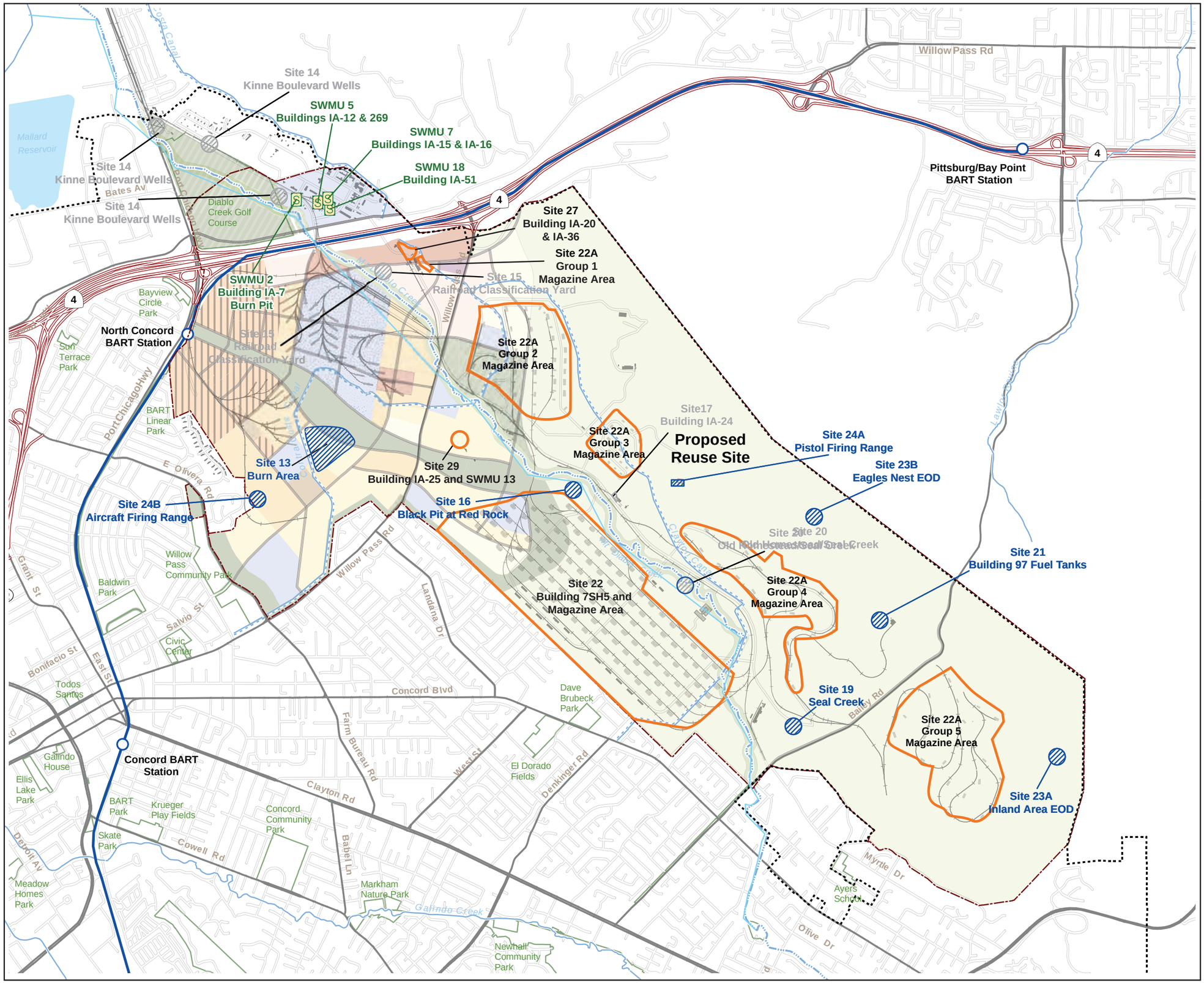
The analysis of Mitigation Measure Hazardous Materials 11 for the Concentration and Conservation Alternative is the same as Mitigation Measure Hazardous Materials 2 for the Preferred Alternative.

Impact Hazardous Materials 12: Site development activities associated with the Concentration and Conservation Alternative could substantially increase the risk of exposure of off-site residents or schools within 1/4 mile of the site to hazardous substances in wind-blown fugitive dust. This impact is considered to be potentially significant.

The analysis of Impact Hazardous Materials 12 for the Concentration and Conservation Alternative is similar to Impact Hazardous Materials 3 for the Preferred Alternative. However, under the Concentration and Conservation Alternative, the overall acreage where site development activities could generate wind-blown fugitive dust is much less. For example, the majority of Site 22 is planned open space under the Concentration and Conservation Alternative.

Mitigation Measure Hazardous Materials 12: Prior to approving any specific development projects at the site, the City shall require that new property owners prepare a Site Management Plan to cover all site development activities. The Site Management Plan will include requirements for dust control plans and perimeter air monitoring plans, approved and monitored by applicable environmental regulatory agencies such as the DTSC and the EPA. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

The analysis of Mitigation Measure Hazardous Materials 12 for the Concentration and Conservation Alternative is the same as Mitigation Measure Hazardous Materials 3 for the Preferred Alternative.



Legend

- Solid Waste Management Units (SWMUs) in the Installation Restoration Program
- Active Installation Restoration Sites
- Closed or No Further Action Sites
- Installation Restoration Sites Moved to other programs (MMRP or UST)

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

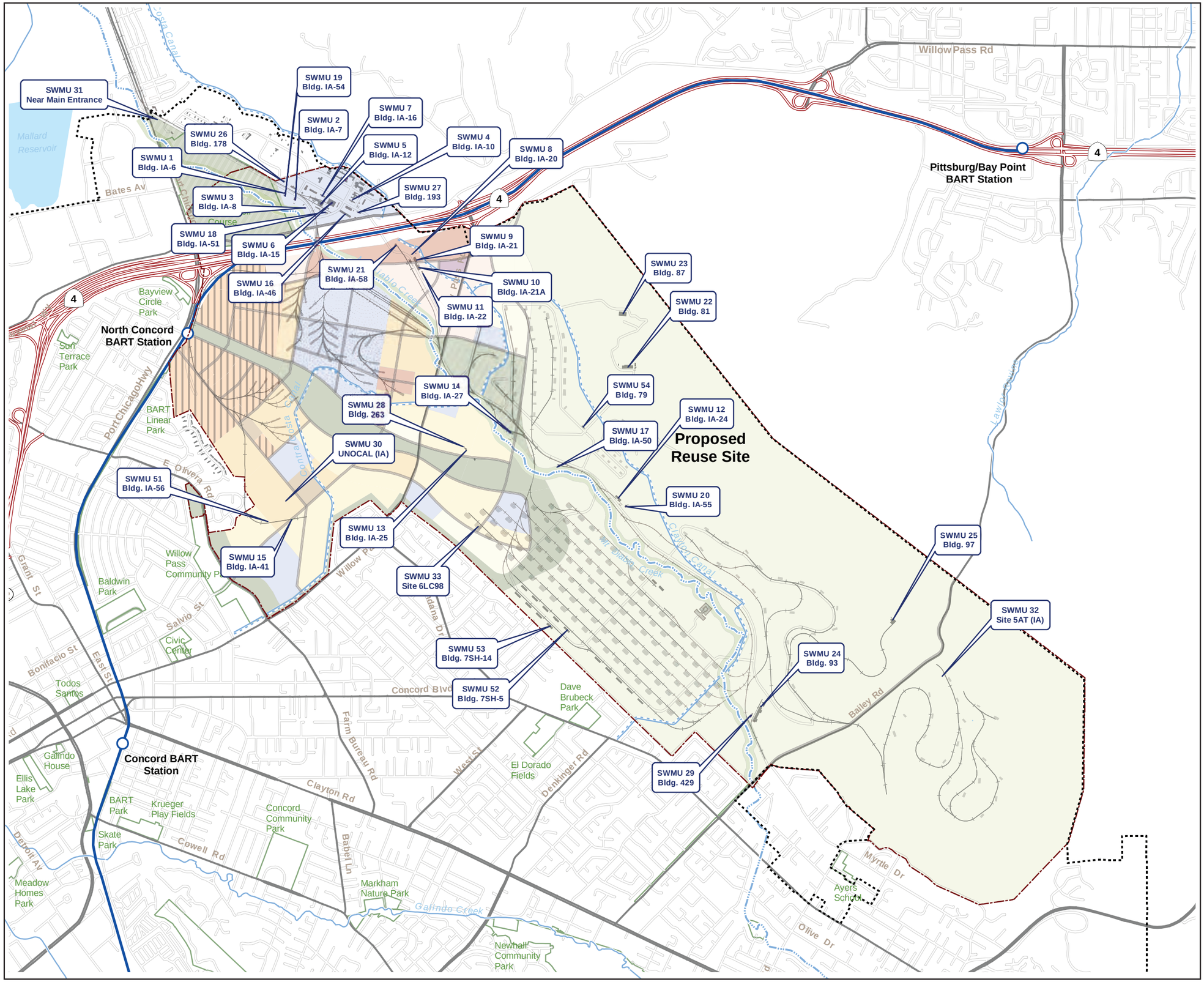
Notes & Sources

Data Sources: NAVWPNSTA Seal Beach Det Concord GIS
Department of the Navy
Base Realignment and Closure Program Management Office,
Final Environmental Condition of Property Report, April 28, 2006.

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Figure 10-8
Conservation and Concentration Alternative Overlay on Installation Restoration Sites



Legend

Solid Waste Management Units (SWMUs)

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Building
- Magazine
- Appurtenance
- Blast Protection Berm
- Railroad
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

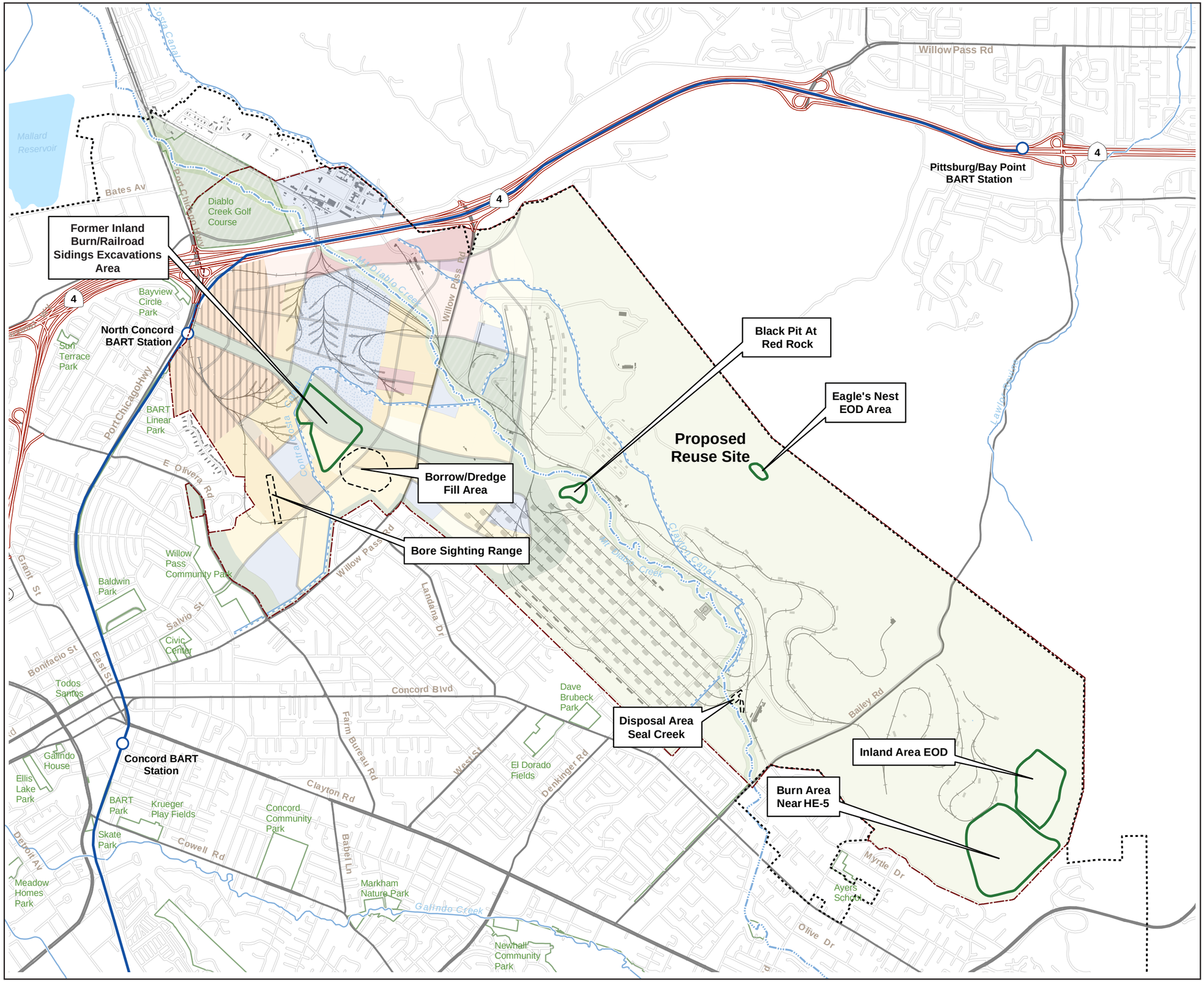
Notes & Sources

Coordinate System: Stateplane, California III NAD 83, feet
Data Sources: NAVWPNSTA Seal Beach Det Concord GIS ESRI (StreetMap)
Department of the Navy
Base Realignment and Closure Program Management Office,
Final Environmental Condition of Property Report, April 28, 2006.

Concord
Community Reuse Plan

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Figure 10-9
Conservation and Concentration Alternative Overlay on Solid Waste Management Units



Legend

- Potential Areas with Munitions and Explosives of Concern
- No Further Action for Areas with Munitions and Explosives of Concern

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Data Sources: AVWPNSTA Seal Beach Det Concord Department of the Navy Base Realignment and Closure Program Management Office, Final Environmental Condition of Property Report, April 28, 2006

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Figure 10-10
Conservation and Concentration Alternative Overlay on Potential Areas with Munitions and Explosives of Concern

Impact Hazardous Materials 13: Land uses associated with the Concentration and Conservation Alternative could substantially increase the risk of exposure of future occupants to residual hazardous substances in soil or groundwater. This impact is considered to be potentially significant.

The analysis of Impact Hazardous Materials 13 for the Concentration and Conservation Alternative is substantially the same as Impact Hazardous Materials 4 for the Preferred Alternative. However, under the Concentration and Conservation Alternative, the overall acreage where land uses could increase the risk of exposure of future occupants to residual substances in soil or groundwater is less. For example, the majority of Site 22 is planned open space under the Concentration and Conservation Alternative.

> **Mitigation Measure Hazardous Materials 13: Prior to approving any specific development project at the site, the City shall require that new property owners plan and implement response actions in consultation with the City and with the approval of applicable environmental regulatory agencies that is consistent with the proposed land uses for the specific development project. ~~Prior to approving any specific development projects at the site, the City shall require that new property owners implement response actions that are consistent with proposed land uses, with the approval of applicable environmental regulatory agencies.~~ Such response actions could include remediation to a risk-based standard consistent with the proposed land use, or engineering or administrative controls that provide physical barriers or legal mechanisms that restrict activities at the site to prevent exposure. The City will not issue a certificate of occupancy until the implementation of the remediation has been approved by the applicable regulatory agencies. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The analysis of Mitigation Measure Hazardous Materials 13 for the Concentration and Conservation Alternative is the same as Mitigation Measure Hazardous Materials 4 for the Preferred Alternative.

Impact Hazardous Materials 14: Building demolition or renovation activities associated with the Concentration and Conservation Alternative could expose construction workers, future occupants, or site visitors to hazardous building materials. This impact is considered to be potentially significant.

The analysis of Impact Hazardous Materials 14 for the Concentration and Conservation Alternative is the same as for Impact Hazardous Materials 5 for the Preferred Alternative.

> **Mitigation Measure Hazardous Materials 14: The City shall require that new property owners demolish or renovate buildings in accordance with appropriate federal, State, and local regulations addressing abatement of lead-based paint, asbestos, or other hazardous building materials. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The analysis of Mitigation Measure Hazardous Materials 14 for the Concentration and Conservation Alternative is the same as Mitigation Measure Hazardous Materials 5 for the Preferred Alternative.

Impact 10-15: The Concentration and Conservation Alternative could substantially increase the risk of exposure of the public to inadvertent or accidental releases of hazardous substances to the environment from non-residential uses or transportation activities during project occupancy. This impact is considered to be potentially significant.

The analysis of Impact Hazardous Materials 15 for the Concentration and Conservation Alternative is the same as Impact Hazardous Materials 6 for the Preferred Alternative.

> **Mitigation Measure Hazardous Materials 15: Prior to approving any occupancy permits, the City shall require the new property owners to prepare and update a Hazardous Materials Management Plan in accordance with local agency requirements. The plan shall detail the types and quantities of chemicals stored at a given location, the storage location and types of storage containers, and the emergency response equipment available at the property (i.e., location of fire hydrants and extinguishers), and provide a map showing the location of all of these items as well as major utilities. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The analysis of Mitigation Measure Hazardous Materials 15 for the Concentration and Conservation Alternative is the same as Mitigation Measure Hazardous Materials 6 for the Preferred Alternative.

Impact Hazardous Materials 16: Site development activities associated with the Concentration and Conservation Alternative could interfere with ongoing soil and groundwater remediation efforts by the Navy. This impact is considered to be potentially significant.

The analysis of Impact Hazardous Materials 16 for the Concentration and Conservation Alternative is the same as Impact Hazardous Materials 7 for the Preferred Alternative.

> **Mitigation Measure Hazardous Materials 16: Site owners shall coordinate with the City, Navy, and appropriate regulatory agencies, as appropriate, to ensure that development activities do not interfere with any adjacent or on-site remediation system or activity, or unduly delay remediation activities. Specific responsibilities and requirements regarding protection of remediation systems and coordination of activities can be included in the property transfer documents. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The analysis of Mitigation Measure Hazardous Materials 16 for the Concentration and Conservation Alternative is the same as Mitigation Measure Hazardous Materials 7 for the Preferred Alternative.

10.3.3.2 Hazardous Materials Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Hazardous Materials 17: The Concentration and Conservation Alternative could result in safety hazards near a public or public-use airport or private airstrip. This impact is considered to be less than significant.

The analysis of Impact Hazardous Materials 17 for the Concentration and Conservation Alternative is the same as Impact Hazardous Materials 8 for the Preferred Alternative.

Mitigation Measure Hazardous Materials 17: None required.

Impact Hazardous Materials 18: The Concentration and Conservation Alternative could impair implementation of an adopted emergency response or evacuation plan. This impact is considered to be less than significant.

The analysis of Impact Hazardous Materials 18 for the Concentration and Conservation Alternative is substantially the same as Impact Hazardous Materials 9 for the Preferred Alternative.

Mitigation Measure Hazardous Materials 18: None required.

10.3.4 Hazardous Materials Impacts of the No Project Alternative

10.3.4.1 Potentially Significant Hazardous Materials Impacts of the No Project Alternative

None identified.

10.3.4.2 Hazardous Materials Impacts of the No Project Alternative That Are Less Than Significant

Impact Hazardous Materials 19: Under the No Project Alternative, the Navy would continue to remediate areas of concern to a standard consistent with the current land use; thus, there would be no conflict in land use and the remediation performed by the Navy.

Mitigation Measure Hazardous Materials 19: None required.

Impact Hazardous Materials 20: Under the No Project Alternative, no site development activities would occur. Therefore, there would be no increase in the risk of exposure to construction workers or site visitors from site development. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 20: None required.

Impact Hazardous Materials 21: Under the No Project Alternative, no site development activities would occur. Therefore, there would be no substantial increase in the risk of exposure of off-site residents or schools within 1/4 mile of the site to hazardous substances in fugitive dust generated during site development. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 21: None required.

Impact Hazardous Materials 22: Under the No Project Alternative, there would be no future occupants at the site. Therefore, there would be no exposure of occupants to hazardous substances in soil or groundwater. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 22: None required.

Impact Hazardous Materials 23: Under the No Project Alternative, there would be no building demolition or renovations at the site. Therefore, there would be no exposure of construction workers, future occupants, or site visitors to hazardous substances in buildings. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 23: None required.

Impact Hazardous Materials 24: Under the No Project Alternative, there would be no transportation of hazardous substances during site occupancy. Therefore, there would be no substantial increase in the risk of exposure of the public to inadvertent or accidental releases of hazardous substances. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 24: None required.

Impact Hazardous Materials 25: Under the No Project Alternative, there would be no site development activities. Therefore, there would be no interference with remediation efforts by the Navy. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 25: None required.

Impact Hazardous Materials 26: Under the No Project Alternative, there would be no site development activities that would result in safety hazards near a public or public-use airport or private airstrip. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 26: None required.

Impact Hazardous Materials 27: Under the No Project Alternative, there would be no site development activities that would impair implementation of an adopted emergency response or evacuation plan. This impact is considered to be less than significant.

Mitigation Measure Hazardous Materials 27: None required.

10.4 References

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12.

Noise and Vibration

12 Noise and Vibration

This chapter considers the effects of changes in noise on the areas surrounding the site that would result from implementation of either of the project alternatives. Initial noise impacts would arise from demolition and construction, although these effects would be temporary. Permanent changes to the noise climate could result from the land use development component of either of the project alternatives. In addition, because of the proximity of the site to the Bay Area Rapid Transit (BART) District rail lines and the State Route (SR) 4 corridors and other major roads, this chapter also addresses vibration and the potential impacts to the different land uses provided by either of the alternative concepts. Table 12-1 provides an explanation of the acoustical terminology used within this chapter.

Table 12–1: Acoustical Terminology

Term	Definition	
Decibels on the A scale (dB(A))	The unit generally used for measuring environmental, traffic, or industrial noise is the A-weighted sound pressure level in decibels, denoted dB(A). An A-weighting network can be built into a sound level measuring instrument so that sound levels in dB(A) can be read directly from a meter. The weighting is based on the frequency response of the human ear and has been found to correlate well with human subjective reactions to various sounds. It is worth noting that an increase or decrease of approximately 10 dB corresponds to a subjective doubling or halving of the loudness of a noise, and a change of 2 to 3 dB is subjectively barely perceptible.	
Equivalent continuous sound level (L_{eq})	An index for assessment for overall noise exposure is the equivalent continuous sound level, L_{eq}. This is a notional steady level that would, over a given period of time, deliver the same sound energy as the actual time-varying sound over the same period. Hence, fluctuating levels can be described in terms of a single figure level.	
Day-night average sound level (L_{dn})	The day-night average sound level, L_{dn}, describes a receptor's cumulative noise exposure from all events over a full 24 hours, with events between 10 p.m. and 7 a.m. increased by 10 dB to account for greater nighttime sensitivity to noise.	
Community noise equivalent level (CNEL)	The community noise equivalent level, CNEL, describes a receptor's cumulative noise exposure from all events over a full 24 hours, with events between 7 p.m. and 10 p.m. increased by 5 dB, and 10 p.m. and 7 a.m. increased by 10 dB, to account for greater nighttime sensitivity to noise.	
Typical noise levels	**Noise Level dB(A)**	**Example**
	130	Threshold of pain
	120	Jet aircraft takeoff at 300 feet
	110	Chainsaw at 3 feet
	100	Inside disco
	90	Heavy trucks at 15 feet
	80	Sidewalk of busy street
	70	Loud radio (in typical residential unit)
	60	Office or restaurant
	50	Residential unit heater at 3 feet
	40	Living room
	30	Theatre
	20	Remote countryside on still night
	10	Sound insulated test chamber
	0	Threshold of hearing

Term	Definition
Vibration	Vibration may be expressed in terms of displacement, velocity, and acceleration. Velocity and acceleration are most commonly used when assessing structure-borne noise or human comfort issues, respectively. Vibration amplitude may be quantified as a peak value, or as a root mean squared (rms) value. Vibration amplitude can be expressed as an engineering unit, peak particle velocity (PPV), or as a ratio on a logarithmic scale. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration signal. PPV is often used in monitoring of blasting and building construction vibration since it is related to the stresses that are experienced by buildings.

Some land uses are more sensitive to noise than others. These "sensitive receptors" generally include residences, hospitals, community parks, churches, libraries, schools, and retirement homes. Noise-sensitive land uses are typically given special attention because activities at these locations are susceptible to disturbance from noise.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR) , the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on noise and vibration. This has resulted in the noise and vibration impacts of both alternatives being substantially less than they would have been had noise and vibration impacts not been taken into account during all stages of the planning and environmental analysis process.

12.1 Existing Conditions

12.1.1 Concord General Plan Policy Applicable to Noise and Vibration

The Noise Element of the Concord General Plan contains compatibility guidelines for community noise environments, and also states applicable goals and polices that should be met. The relevant applicable clauses are set forth in Table 12-2.

Table 12–2: City of Concord General Plan Principles and Policies for Noise

	Description
Principle S-2.1	Encourage land use compatibility for community noise environments
Policy S-2.1.1	Use the community noise level exposure standards, shown on Figure 7-8 (this refers to a figure in the General Plan, which is reproduced in Table 12-6 of this chapter) as review criteria for new land uses.
Policy S-2.1.2	Require a noise study and mitigation measures for all projects that have noise exposure greater than "normally acceptable" levels.

	Description
Policy S-2.1.3	Consider an increase of four or more dB(A) to be "significant" if the resulting noise level would exceed that described as "normally acceptable" on Figure 7-8 (this refers to a figure in the General Plan, which is reproduced in Table 12-6 of this chapter).
Principle S-2.2	Mitigate noise sources
Policy S-2.1.4	Promote the use of noise attenuation measures to improve the acoustic environment inside residences where existing single-family residential development is located on an arterial street.
Policy S-2.2.1	Provide for the mitigation of noise exposure in areas of the City exposed to noise levels in excess of the "normally acceptable" standards to the extent feasible.
Policy S-2.2.2	Reduce noise intrusion generated by miscellaneous noise sources through conditions of approval to control noise-generating activities.
Policy S-2.2.3	Use the Buchanan Field Airport Noise Contour Map for evaluation of noise impacts around Buchanan Field Airport.
Policy S-2.2.4	Require new noise sources to use best available control technology (BACT) to minimize noise emissions.
Policy S-2.2.5	Require developers to reduce the noise impacts of new development on adjacent properties through appropriate means.

Source: Concord 2030 Urban Area General Plan, 2007

12.1.2 Environmental Setting

The project site is surrounded by urban land uses. Residential use exists along the City of Concord boundary, as well as to the east in Pittsburg on the other side of the Los Medanos Hills. Commercial and industrial land use exists to the northwest of the site, and the Diablo Creek Golf Course is situated to the north. A number of parks within the City of Concord also may be affected by noise as a result of the project.

The major sources of noise around the site are road traffic noise and rail noise from BART. The main traffic routes are SR 4, SR 242, Port Chicago Highway, Olivera Road, Farm Bureau Road, Willow Pass Road, Concord Boulevard, Clayton Road, and Bailey Road. Kinne Boulevard is a paved road that runs through the middle of the site from the main entrance at the north to Bailey Road at the south. This road is not open to public use and has minimal traffic.

The BART corridor passes north to south through the City of Concord, and then follows SR 4 across the site toward Pittsburg. The potential development may affect the noise climate of the area as a consequence of altering traffic patterns on the identified routes, increasing the schedule of BART trains, initiating new transportation routes and infrastructure within the site, and introducing various other noise sources associated with the construction and operation phases of the alternatives.

The BART and SR 4 corridors produce the major source of groundborne vibration at the site. The BART corridor passes the site to the west and north. The portion of the corridor to the west of the site is at grade; the portion of the corridor to the north of the site is raised, and is situated in the median of SR 4.

12.1.3 Airborne Noise

Noise measurements were made to determine the existing noise environment in and around the site. These noise measurements consisted of attended spot measurements and long-term monitoring. The attended spot measurements were made over 15-minute sampling periods between 7:00 a.m. and 7:00 p.m. to capture peak and off-peak noise conditions. The long-term noise monitors were on site for 7 days, and were configured to log a noise measurement after every 15 minutes of sampling. Figure 12-1 shows the noise measurement locations. Appendix 12A details the results of the noise survey. Appendix 12B provides a list of instruments used during the noise survey. Appendix 12C provides explanation of the acoustical terminology used in this report.

The 24-hour day-night average sound level (L_{dn}) has been calculated for the long-term monitoring locations, and the results from the spot noise measurements are given in terms of equivalent continuous noise level ($L_{Aeq,15min}$). The results are provided in Tables 12-3 and 12-4.

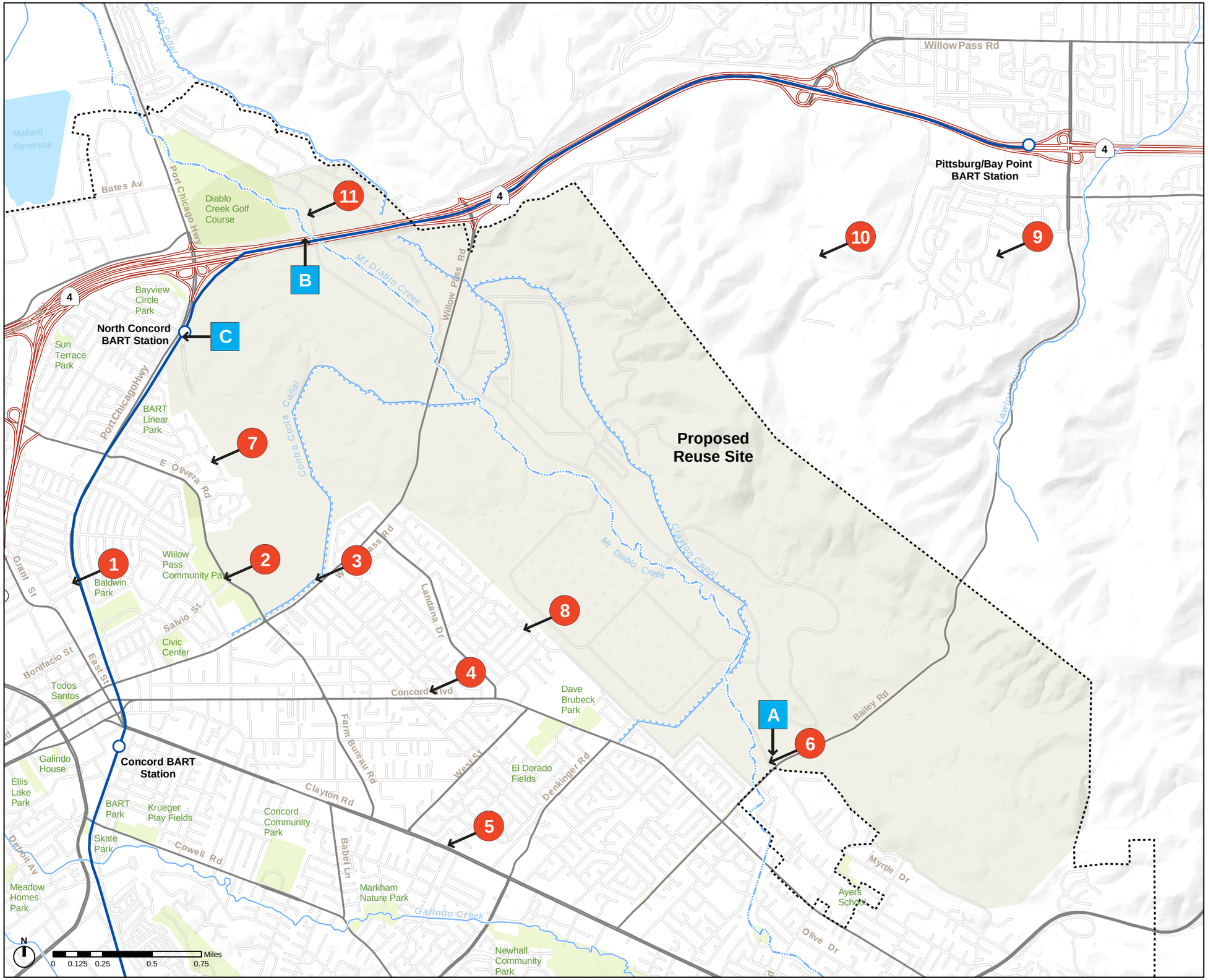
Table 12–3: 24-Hour Day-Night Average Sound Level Results

Long-Term Noise Monitor	Description of Location	24-Hour Day-Night Average Sound Level (dBL_{dn})
A	At the southeast boundary of the site, approximately 1,000 feet from the center of Bailey Road and 1,130 feet from the boundary of the site. 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 site, 360 feet southeast of eastbound BART track and 1,300 feet south of eastbound SR 4 traffic.	69

Source: Arup, 2007

Generally, the noise climate in and around the site is dominated by traffic noise, with the exception of the northwestern boundary where noise from the BART corridor is clearly audible above the ambient noise. The noisiest locations are close to the major roadways that run through Concord (as well as some through the site): SR 4, Port Chicago Highway, East Olivera Road, Willow Pass Road, Concord Boulevard, Clayton Road, and Bailey Road.

The noise contours of Buchanan Field Airport are described in the Concord 2030 Urban Area General Plan (General Plan) (City of Concord, 2007). The proposed site lies outside the 55 dBL_{dn} contour of Buchanan Field Airport, which is less than the State of California Title 24 requirement of 60 dBL_{dn} for residential land uses requiring an acoustical analysis. Therefore, the site is not exposed to excessive noise from Buchanan Field Airport.



Legend

Long Term Noise Monitor Location

A B C

Spot Noise Monitor Location

1. Port Chicago Highway and High School Avenue
2. East Olivera Road and Salvio Street
3. Willow Pass Road and Granada Drive
4. Concord Boulevard and Granada Drive
5. Clayton Road and Mendocino Drive
6. Bailey Road and Myrtle Drive
7. 2731 Hamilton Avenue
8. 4012 Majestic Drive and Lynwood Drive
9. 249 Havenwood Circle
10. 1844 Rosa Blanca Drive
11. SR 4 and Kinne Boulevard

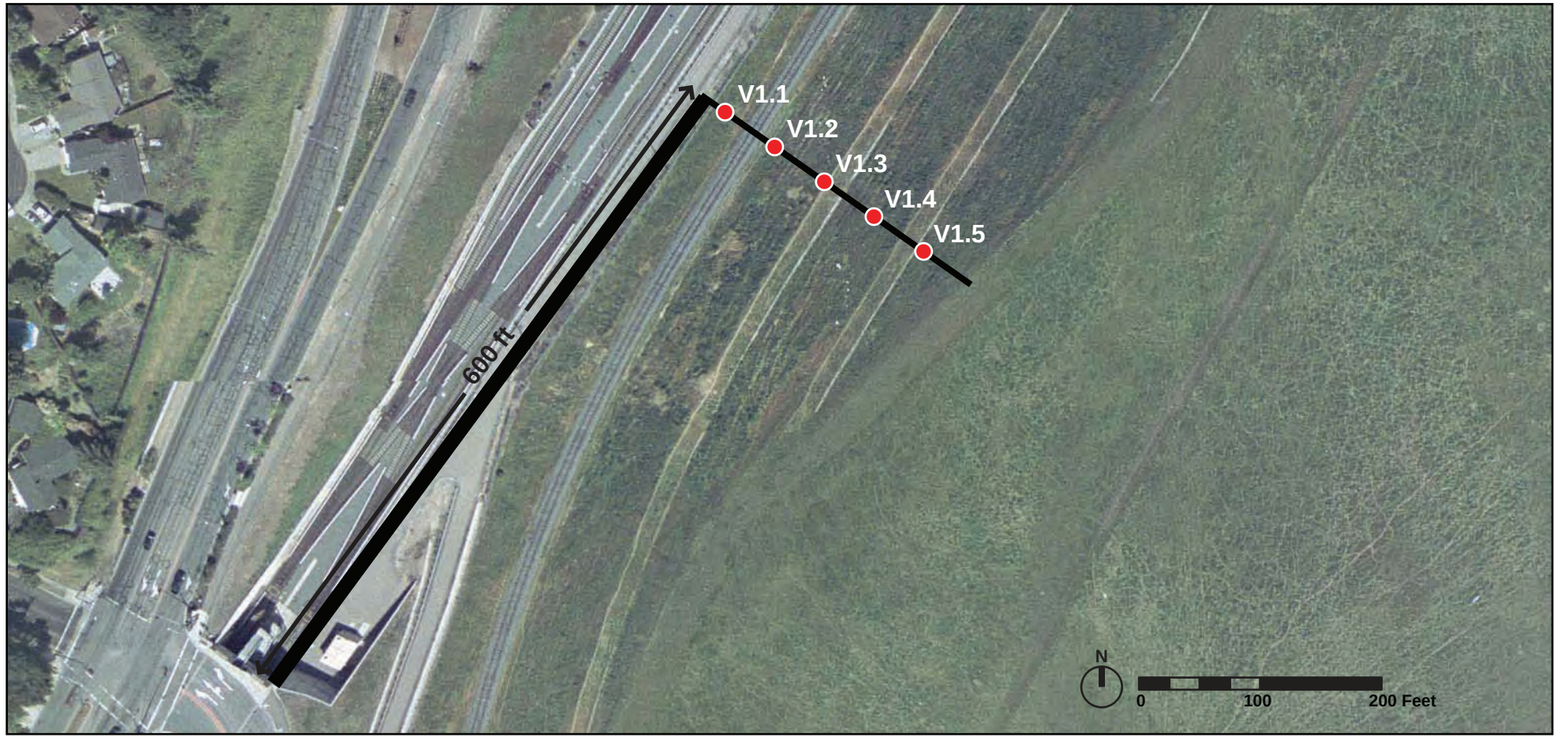
Base Map

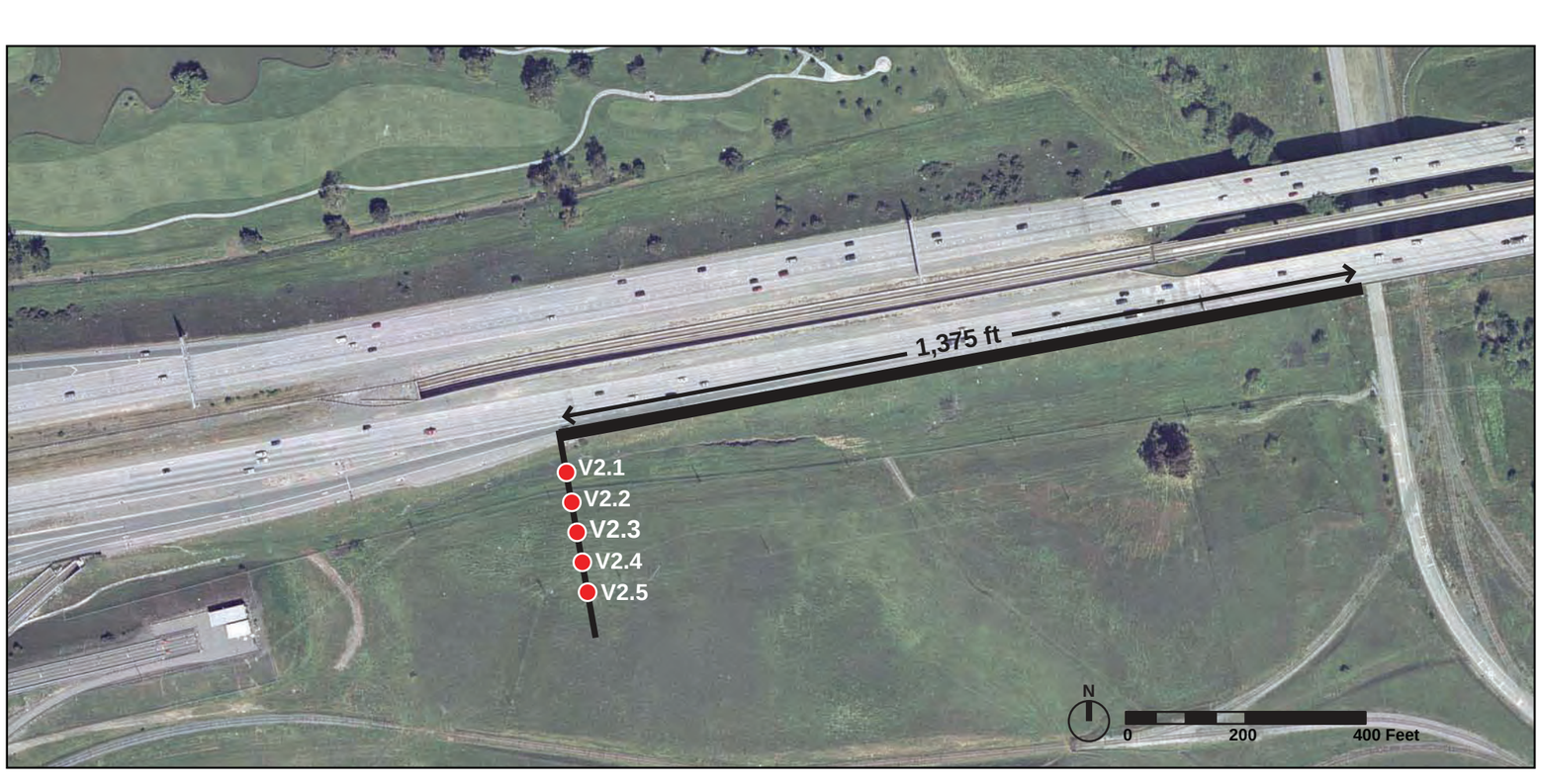
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- BART Station

Concord Community Reuse Plan

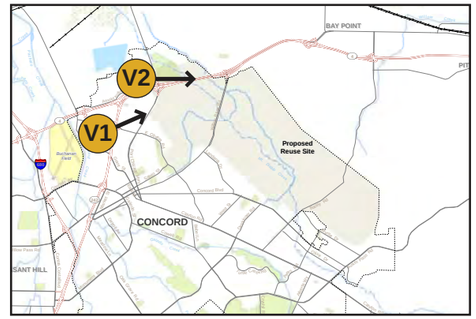
Revised May 12, 2009

Figure 12-1
Airborne Noise Measurement Location Plan





Legend



Concord
Community Reuse Plan

Revised May 12, 2009

Figure 12-2
Vibration Measurement Locations

Table 12–4: Measured Noise Level at Selected Locations

Field Spot Measurement Location	Field Measurement of Location	Dominant Sources of Noise	$dBL_{Aeq, 15min}$
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 site	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 site	Bailey Road	71
7	At the playground behind 2731 Hamilton Avenue on western boundary of site	BART, SR 4	50
8	On sidewalk outside 4014 Majestic Drive, at Lynwood Drive, approximately 50 feet from western boundary of site	Lynwood Drive	49
9	On sidewalk outside 249 Havenwood Circle in Pittsburg, northeast of site	SR 4	44
10	On sidewalk outside 1844 Rosa Blanca Drive, in Pittsburg, northeast of site	SR 4	47
11	Along SR 4 at Kinne Boulevard on site, approximately 75 feet north of center of SR 4	BART, SR 4	67

Source: Arup, 2007

12.1.4 Groundborne Vibration

A groundborne vibration study was carried out to quantify existing levels of groundborne vibration from the BART and SR 4 corridors. Measurements of groundborne vibration were made at perpendicular setback distances from both corridors to determine the attenuation of groundborne vibration across the site. The measurement locations nearest to both corridors are shown on Figure 12-2, and the results are provided in Table 12-5. Appendix 12A includes detailed results from the vibration survey. The equipment used to ascertain the groundborne vibration levels is listed in Appendix 12B.

Vibration monitoring of BART train pass-bys at Location 1 were carried out over time periods sufficient for a train to arrive at and depart from the station. Vibration monitoring of SR 4 includes contributions from BART train pass-bys and vehicle traffic.

Table 12–5: Measured Groundborne Vibration Levels

Location	Description of Location	Measured Range of Groundborne Vibration Level (rms VdB 1 micro-inch/sec)
V1.1	20 feet from eastbound railway track, located 250 feet north of the North Concord/Martinez BART Station	32–64
V1.2	70 feet from eastbound railway track, located 250 feet north of the North Concord/Martinez BART Station	33–46
V1.3	120 feet from eastbound railway track, located 250 feet north of the North Concord/Martinez BART Station	33–35
V1.4	170 feet from eastbound railway track, located 250 feet north of the North Concord/Martinez BART Station	32–43
V1.5	220 feet from eastbound railway track, located 250 feet north of the North Concord/Martinez BART Station	36–42
V2.1	50 feet from eastbound traffic, located 1,000 feet southwest of SR 4 and Kinne Boulevard	38–42
V2.2	100 feet from eastbound traffic, located 1,000 feet southwest of SR 4 and Kinne Boulevard	40–42
V2.3	150 feet from eastbound traffic, located 1,000 feet southwest of SR 4 and Kinne Boulevard	38–41
V2.4	200 feet from eastbound traffic, located 1,000 feet southwest of SR 4 and Kinne Boulevard	31–34
V2.5	250 feet from eastbound traffic, located 1,000 feet southwest of SR 4 and Kinne Boulevard	30–32

rms = root mean square; VdB = vibration velocity level, in decibels; sec = second

Source: Arup, 2007

12.1.5 Regulatory Setting

12.1.5.1 City of Concord

Table 12-6 provides the City requirements set forth in the General Plan with respect to noise.

Table 12–6: Guidelines for Community Noise Exposure

Land Use Compatibility for Community Noise Environments				
Day-Night External Sound Level (dBL_{dn})				
Land Use Category	**Normally Acceptable[1]**	**Conditionally Acceptable[2]**	**Normally Unacceptable[3]**	**Clearly Unacceptable[4]**
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 & 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 Arena, 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	--

[1]Normally Acceptable: Specified land use is satisfactory, based on the assumption that any buildings are of conventional construction, without any special noise insulation requirements.

[2]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.

[3]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.

[4]Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: City of Concord, 2007

The City of Concord Municipal Code does not provide noise ordinances to monitor or regulate noise. However, in accordance with the California Environmental Quality Act (CEQA) Standards of Significance, construction activities should have limited time periods.

12.1.5.2 Contra Costa County

As set forth in Chapter 3, Land Use, the site is within the Buchannan Field Airport Influence Area with respect to potential height of structures. However, the site is not within the noise control zone addressed within the Airport Land Use Compatibility Plan.

12.1.5.3 State of California

The following regulations from the California Building Standards Code (California Code of Regulations [CCR] Title 24, Part 2, Chapter 12) form the basis of the acoustical criteria and goals for the project:

- 1208A.8.2 Allowable Interior Noise: Interior noise levels attributable to exterior sources shall not exceed 45 dB (decibels) in any habitable room. The noise metric shall be either the L_{dn} or the community noise equivalent level (CNEL), consistent with the Noise Element of the local General Plan.[1]

  Note: L_{dn} is the preferred metric for implementing these standards.

- 1208A.8.4 Other Noise Source: Residential structures to be located where the L_{dn} or CNEL exceeds 60 dB shall require an acoustical analysis showing that the proposed design would limit exterior noise to the prescribed allowable interior level. The Noise Element of the local General Plan shall be used to the greatest extent possible to identify sites with noise levels potentially greater that 60 dB.

- 1208A.8.5 Compliance: If interior allowable noise levels are met by requiring that windows be unopenable or closed, the design for the structure must also specify a ventilation or air-conditioning system to provide a habitable interior environment. The ventilation system must not compromise the dwelling unit or guest room noise reduction.

12.1.5.4 Federal Transit Administration

There are no State or City criteria for acceptable levels of vibration in buildings that result from external sources of groundborne vibration. The next appropriate source of acoustical criteria is the Federal Transit Administration (FTA). The FTA provides vibration targets based on land use type and daily frequency of train events (FTA, 2006). The targets that apply to the project are provided in Table 12-7.

[1] L_{dn} and CNEL are stated in dB(A).

Table 12–7: Federal Transit Administration Vibration Impact Criteria

Groundborne Vibration and Groundborne Noise Impact Criteria for General Assessment		
	Groundborne Vibration Impact Levels (VdB 1 micro-inch/sec)	Groundborne Noise Impact Levels (dB 20 micro-Pascal)
Land Use Category	Frequent Events [1]	Frequent Events [1]
Category 1: Buildings where vibration would interfere with interior operations (e.g., buildings for the performing arts, laboratories that house equipment sensitive to vibration)	65 VdB	n/a
Category 2: Residences and buildings where people normally sleep	72 VdB	35 dB(A)
Category 3: Institutional land uses with primarily daytime use	75 VdB	40 dB(A)

"Frequent events" are defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall in this category.

Source: Transit Noise and Vibration Impact Assessment (FTA, 2006)

Based on the current BART schedule, the site would be classified as exposed to "frequent events" because more than 70 trains are scheduled to pass there each day.

12.2 Standards of Significance

Criteria for determining the significant impacts associated with noise and vibration have been developed based on Appendix G of the CEQA Guidelines and any relevant agency thresholds. For purposes of this Environmental Impact Report (EIR), either of the alternatives may have significant impact on noise and vibration if it would cause:

- Exterior noise levels at the site that are above the upper value of normally acceptable category for various land uses, according to the Concord General Plan Noise Element
- Noise levels in habitable rooms of 45 dBL_{dn} or higher
- Increases in exterior noise levels at existing residences of more than 4 dB above existing levels
- Vibration from transit systems and road traffic in the vicinity of the site that is in excess of FTA groundborne vibration criteria

12.3 Potential Noise and Vibration Impacts

This section begins with a description of the methodology that has been incorporated in the analysis of potential noise and vibration impacts. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure.

Impacts that are less than significant that result from either of the two alternatives are included at the end of each Noise and Vibration Impacts section.

12.3.1 Methodology

12.3.1.1 Operational Groundborne Vibration

Guidance from the Transit Noise and Vibration Impact Assessment (FTA, 2006) was used in the assessment of groundborne vibration to sensitive receptors at the site. The FTA guidance sets out methods for vibration impact assessment and impact significance criteria. The criteria are provided in terms of vibration velocity level, in decibels (VdB), referenced to 1 micro-inch per second (considered to be the threshold of human perception to vibration). The guidance includes three different levels of detail for groundborne vibration assessment:

- Screening assessment: A standard table of impact distances is used to determine if groundborne vibration from the project would affect sensitive land uses. More detailed analysis would be required if any sensitive land uses were within the screening distances.
- General assessment: This level of assessment builds on the screening assessment, adjusting for factors such as distance from track and structural properties of the sensitive receptor. The general level deals only with the overall VdB and dB(A). It does not consider the frequency spectrum of the vibration or noise.
- Detailed assessment: This is the most complex assessment method, and is generally required only if vibration is considered to be a significant issue at the site.

Screening distances depend on land use and the source of vibration. The FTA guidance used for screening distances associated with five different sources of transport-related vibration is shown in Table 12-8.

A general assessment of groundborne vibration was used, because the northwest boundary line of the site is within 200 feet of the BART alignment, and because either of the two alternatives would include residential dwellings.

Table 12–8: Federal Transit Administration Screening Distances for Vibration Assessment

Type of Project	Critical Distance for Land Use Categories* (Distance from Right-of-Way or Property Line)		
	Category 1	Category 2	Category 3
Conventional commuter railroad	600	200	120
Rail rapid transit [BART]	600	200	120
Light-rail transit	450	150	100
Intermediate-capacity transit	200	100	50
Bus projects	100	50	--

*Category 1: Performing arts buildings; buildings that house vibration-sensitive equipment (such as laboratories, hospitals, and institutions)

Category 2: Residential, hotels, and hospitals

Category 3: Schools, churches, and institutions that do not house vibration-sensitive equipment

Source: Transit Noise and Vibration Impact Assessment (FTA, 2006)

12.3.1.2 Construction Noise

Construction noise impacts have been evaluated using Federal Highway Administration (FHWA) reference noise levels for various construction equipment and activities (FHWA, 2006). Construction noise and vibration impacts have been determined using the guidance in the Transit Noise and Vibration Impact Assessment (FTA, 2006).

12.3.1.3 Traffic Noise

The analysis of existing and future traffic noise levels is based on noise measurements at the site and on traffic noise predictions following the methodology in the Department of Housing and Urban Development (HUD) Noise Assessment Guidelines (HUD, 1991). Traffic volume data used for the noise analysis were provided by the Contra Costa Transportation Authority Decennial Model (Dowling Associates, 2009).

12.3.1.4 Rail Noise

Noise level estimates of the BART alignment are based on field measurements taken near the railway alignments, and on the predicted increase in ridership determined as part of the BART Extension to Silicon Valley project (Connetics, 2007).

12.3.2 Noise and Vibration Impacts of the Preferred Alternative

12.3.2.1 Potentially Significant Noise and Vibration Impacts of the Preferred Alternative

Impact Noise and Vibration 1: Development of the Preferred Alternative would contribute to increases in traffic noise levels on West Street and Denkinger Road. This impact is considered to be potentially significant.

Traffic noise predictions have been made for the Preferred Alternative based on traffic flow volumes provided by Dowling Associates (Dowling, 2009). Figure 12-3 shows the locations of the traffic noise predictions. Table 12-9 shows cumulative traffic noise levels with and without the preferred alternative at the identified sensitive receptors, and Table 12-10 shows the change in noise levels due to the alternative concepts.

Implementation of the Preferred Alternative would result in West Street being extended adjacent to Concord High School to connect to the site, as well as increased traffic volumes on Denkinger Road.

Extending West Street to connect to the site would expose Concord High School and other local noise-sensitive receptors to an increase in traffic noise. Using noise monitoring Location 8 (shown on Figure 12-1; measured value provided in Table 12-4 as a basis for assessment, it is possible that the 24-hour noise level could increase by 19 dBL_{dn}. The traffic noise predictions indicate that traffic noise levels along Denkinger Road at the site boundary would increase by 7 dBL_{dn}.

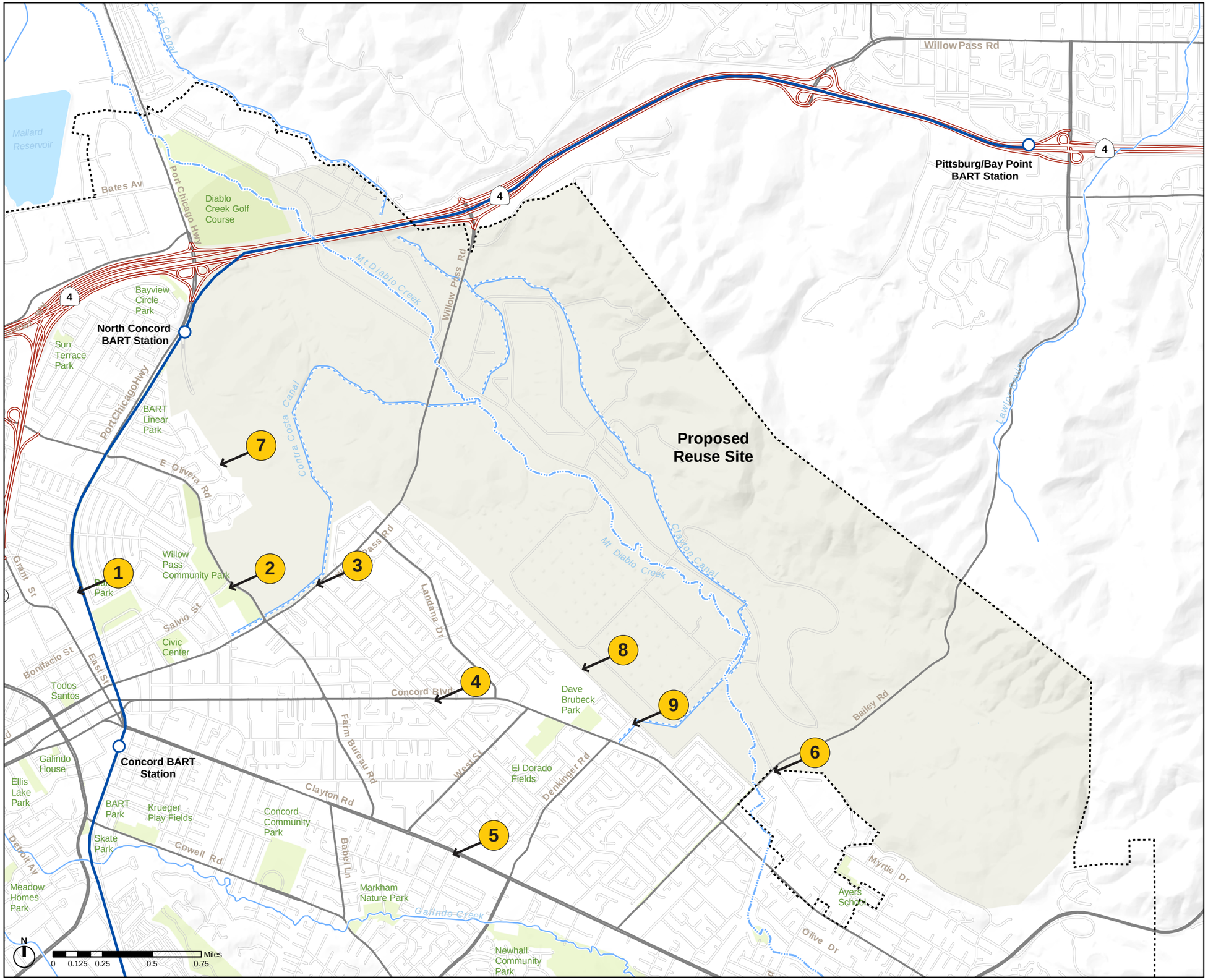
According to the General Plan, an increase of existing noise levels of more than 4 dB is considered a significant impact. Therefore, the Preferred Alternative would result in increased noise levels along West Street and Denkinger Road that would cause a significant impact.

Table 12–9: Predicted Traffic Noise Levels

	Predicted Day-Night Noise Level (dBL_{dn})				
Receptor	**Roadway Segment(s)**	**Existing Conditions**	**Future 2030 with the No Project Alternative**	**Future with the Preferred Alternative**	**Future with the Concentration and Conservation Alternative**
Prediction Location 1	20 feet from Port Chicago Highway	74	75	77	76
Prediction Location 2	25 feet from East Olivera Road and 25 feet from Salvio Street	72	74	73	73
Prediction Location 3	25 feet from Willow Pass Road	74	77	76	76
Prediction Location 4	25 feet from Concord Boulevard	76	77	78	78
Prediction Location 5	25 feet from Clayton Road and 1,000 feet from West Street	79	80	80	80
Prediction Location 6	25 feet from Bailey Road and 25 feet from Myrtle Road	73	75	74	75
Prediction Location 7	1,000 feet from East Olivera Road, 2,000 feet from Port Chicago Highway, and 5,000 feet from SR 4	52	52	54	54
Prediction Location 8*	25 feet from West Street at the site boundary	--	--	68	--
Prediction Location 9	25 feet from Denkinger Road at the site boundary	61	61	68	61

* Traffic noise prediction only carried out for Prediction Location 8 when West Street is extended to connect to the site.

Source: Arup, 2009



Legend

Traffic Noise Prediction Location

1. Port Chicago Highway and High School Avenue
2. East Olivera Road and Salvio Street
3. Willow Pass Road and Granada Drive
4. Concord Boulevard and Granada Drive
5. Clayton Road and Mendocino Drive
6. Bailey Road and Myrtle Road
7. East Olivera Road, Port Chicago Hwy and SR 4
8. West Street at Boundary with Proposed Site
9. Denkinger Street at Boundary with Proposed Site

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Concord Community Reuse Plan

Revised May 12, 2009

Figure 12-3
Traffic Noise Prediction Locations

Table 12–10: Change in Future Noise Levels in Comparison to 2030 No Project Alternative

	Change in Day-Night Noise Level (dBL_{dn}) in Comparison to Existing Conditions	
Receptor	**Future with the Preferred Alternative**	**Future with the Concentration and Conservation Alternative**
Prediction Location 1	3	2
Prediction Location 2	1	1
Prediction Location 3	2	2
Prediction Location 4	2	2
Prediction Location 5	1	1
Prediction Location 6	1	2
Prediction Location 7	2	2
Prediction Location 8[1]	--	--
Prediction Location 9	7	0

Prediction locations are identified in Table 12-9 and on Figure 12-3.

The change in noise level is calculated by subtracting the Existing Conditions traffic noise level from the future alternatives' noise levels.

[1] Traffic noise prediction only carried out for Prediction Location 8 when West Street is extended to connect to the site.

Source: Arup, 2009

Mitigation Measure Noise and Vibration 1: The City shall require that new extensions of West Street and Denkinger Road shall be constructed using low-noise road surfaces, and to incorporate grading measures such as berms or other barriers to screen noise. The City will also require developers to fund grants that will allow noise-sensitive receptors to install acoustical insulation. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.

It will not be possible to mitigate the increase in road traffic noise to below the City's standard because the source of the noise is the result of an increase in vehicular traffic. It would be possible to minimize the impact of traffic noise by using low-noise road surfaces and grading practices and barriers to screen noise, and by providing grants to noise-sensitive receptors to install acoustic insulation. However, even with these mitigation measures, the increase in traffic noise would remain significant. Therefore, this impact is considered to be significant and unavoidable.

Impact Noise and Vibration 2: Traffic and rail noise associated with the Preferred Alternative would result in significant increases in exterior noise levels. This impact is considered to be potentially significant.

The development of the Preferred Alternative would result in exposure of noise-sensitive receptors to existing and future noise levels from traffic and the BART trains. The

development at the Preferred Alternative would also result in new land uses that would expose sensitive receptors to new sources of noise.

The exterior noise standard established in the Concord General Plan is 60 dBL_{dn} for low-density residential land use and 64 dBL_{dn}, for multi-family and mixed-use high-density residential uses. The existing 24-hour noise levels measured at approximately 100 feet from SR 4 and 360 feet from the BART corridor are 75 dBL_{dn} and 69 dBL_{dn}, respectively.

Short-term noise monitoring was also conducted along Willow Pass Road and Bailey Road to determine rush hour noise levels. These locations are identified on Figure 12-1 as Location 3 and Location 6, respectively. The noise level was 73 $dBL_{Aeq, 15min}$ on Willow Pass Road and 71 $dBL_{Aeq, 15min}$ on Bailey Road.

The Preferred Alternative includes the following residential land uses: residential low-density, residential moderate-density, and transit-oriented development that includes high-density residential land use. These residential land uses would be subjected to noise levels above the City's General Plan noise standard.

The exterior noise standard established in the Concord General Plan for commercial and community land use is 69 dBL_{dn}. Commercial and community properties located within approximately 600 feet of the SR 4 corridor, 360 feet of the BART corridor, and 150 feet of Willow Pass Road would also be subjected to noise levels above the City's General Plan noise standard.

The exterior noise standard established in the Concord General Plan for public parks is 69 dBL_{dn}. Public parks located within 150 feet of Willow Pass Road and 75 feet of Bailey Road would be subjected to noise levels above the City's General Plan noise standard.

The exterior noise standard established in the Concord General Plan for schools is 69 dBL_{dn}. Schools located within 150 feet of Willow Pass Road would be subjected to noise levels above the City's General Plan noise standard.

Mitigation Measure Noise and Vibration 2a: Before the City of Concord grants approval for any residential uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the City. New residential development must demonstrate that the City's "normally acceptable" noise standard can be achieved in exterior living spaces.

Mitigation Measure Noise and Vibration 2b: Before the City of Concord grants approval for any commercial uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the City. Construction of buildings for commercial use on land that is exposed to noise levels above the City's noise standard shall include only be undertaken after a detailed analysis of the noise reduction and noise insulation features needed to comply with City standards.

Mitigation Measure Noise and Vibration 2c: Before the City of Concord grants approval for any public parks on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require an acoustical analysis demonstrating city standards for conditionally acceptable noise levels would be achieved and that the analysis be submitted to and accepted by the City. Public parks shall use grading measures and setbacks to mitigate traffic noise from adjacent roads.

Mitigation Measure Noise and Vibration 2d: Before the City of Concord grants approval for any schools on parcels of land along Willow Pass Road, the City shall require an acoustical analysis demonstrating city standards for conditionally acceptable noise levels would be achieved and that the analysis be submitted to and accepted by the City. Schools shall use grading measures and setbacks to mitigate traffic noise from adjacent roads.

With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

Residential land uses within 600 feet of SR 4 that would result from the Preferred Alternative shall be limited to multi-family and mixed-use high-density housing. To minimize the exposure of residences to high noise levels, intervening structures and barriers shall be used to screen exterior living spaces, such as gardens or balconies, from traffic noise. Residential land uses within 360 feet of the BART corridor, and within 150 feet of Willow Pass Road shall also use intervening structures to screen exterior living spaces from BART and traffic noise. The acoustical analysis required by Mitigation Measures Noise and Vibration 2a through 2d shall include consideration of these methods. Based on these considerations, it has been determined that the impact would be mitigated to a level that is less than significant.

Impact Noise and Vibration 3: Traffic noise associated with the Preferred Alternative would result in significant interior noise levels for buildings along the BART and SR 4 corridors and along Willow Pass Road. This impact is considered to be potentially significant.

The California Building Standards Code requires that interior noise levels attributable to exterior sources shall not exceed 45 dBL_{dn} in any residential unit or hotel guest room. The Code also requires that an acoustical analysis be carried out that shows that the maximum interior limit is achieved where exterior noise levels are above 60 dBL_{dn}. Because the noise measurements indicate that exterior noise levels would regularly be above 60 dBL_{dn} as a result of the implementation of the Preferred Alternative, This impact is considered to be potentially significant.

Mitigation Measure Noise and Vibration 3: Before the City of Concord grants approval for any buildings that include habitable rooms on parcels of land along the BART and SR 4 corridors and along Willow Pass Road, the City shall require developers to conduct an acoustical analysis and that it be

submitted to and accepted by the City demonstrating that the 45 dBL_{dn} standard is achieved. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Achieving the 45 dBL_{dn} interior noise standard for habitable rooms would require consideration of the acoustical design of buildings. Parcels of land identified for residential or hotel land use adjacent to the BART and SR 4 corridors and along Willow Pass Road would require acoustically insulating construction to mitigate external noise. Examples of acoustically insulating construction are masonry façade constructions, double-glazed windows, and doors fitted with acoustical seals.

The 45 dBL_{dn} interior noise requirement must be achieved when rooms are ventilated. It would not be possible to naturally ventilate all residential units or hotel guest rooms using operable windows where exterior noise levels exceed 55 dBL_{dn}. Suggested ventilation options to meet the internal noise requirement are provided in Table 12-11.

Table 12–11: Suggested Residential Ventilation Methods

External Noise Level (dBL_{dn})	Suggested Ventilation Method
Greater than 65	Sealed façade and mechanical ventilation
55 to 65	Sound attenuating passive ventilators
Less than 55	Openable windows

Source: Arup, 2009

The acoustical analysis required by Noise and Vibration Mitigation Measure 3 shall include consideration of these methods. Based on these considerations, it has been determined that the implementation of the required mitigation would reduce this potential impact to a level that is less than significant.

Impact Noise and Vibration 4: On-site stationary noise sources associated with the Preferred Alternative could expose sensitive noise receptors to exterior noise levels that are unacceptable. This impact is considered to be potentially significant.

Implementation of the Preferred Alternative would introduce new stationary sources such as heating, ventilation, and air conditioning (HVAC) equipment and utility transformers to the site. HVAC systems would be installed to service the various proposed building types. Noise generated by HVAC systems can vary significantly depending on the type and size of equipment. The potential for noise impacts from such equipment would depend on its proximity to noise-sensitive uses, noise spectrum, the equipment type and size, and whether the equipment would be contained in noise-abating enclosures.

Utility transformers would also be installed to provide electricity within the site. Utility transformers can generate noise levels in excess of 70 dBL_{Aeq}, with tonal characteristics, so there is a potential for noise impacts from such equipment.

Concord General Plan Policy S-2.2.4 requires that noise from stationary sources be acoustically controlled to prevent disturbance to noise-sensitive land uses.

Mitigation Measure Noise and Vibration 4: The City of Concord shall require any new development of the site to include noise control measures at stationary sources to reduce impacts to noise-sensitive receptors. Prior to the issuance of building permits, the City shall require developers to submit engineering and acoustical specifications for project mechanical HVAC and utility transformers (including generators) to the Planning Department or other appropriate department, demonstrating that the equipment design (types, location, enclosure, specifications) could control noise from the equipment to at least 10 dB(A) below existing ambient noise levels at nearby residential and other noise-sensitive land uses. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Examples of noise mitigation that may be required for stationary sources are noise-attenuating enclosures, noise-attenuating barriers, and attenuators fitted to air conditioning equipment. The City may also control hours of operation to reduce noise impacts during more noise-sensitive times of the day and night. With implementation of this mitigation, this potentially significant impact would be reduced to a level that is less than significant.

Impact Noise and Vibration 5: The construction associated with implementation of the Preferred Alternative would result in short-term construction noise and vibration. This impact is considered to be potentially significant.

During construction, noise would be produced by the operation of heavy-duty equipment and various other construction activities. Similar to other projects in the area, pile driving could be used in conjunction with drilling for foundations of the buildings. Construction noise levels were estimated using FTA guidance (FTA, 2006), which provides a method for calculating noise levels from multiple pieces of equipment operating at multiple locations using reference noise levels for individual pieces of equipment. The noise levels associated with equipment that may be used during the various project construction phases are shown in Table 12-12.

The construction phase of the Preferred Alternative could also temporarily increase levels of existing groundborne vibration. Groundborne vibration levels from construction equipment that could be used to develop the site are shown in Table 12-13.

As discussed in Section 12.1.1, sensitive receptors surround the site—in particular residential land uses along the western boundary. Construction noise and vibration would affect surrounding uses to varying degrees throughout the construction phase of implementation of the Preferred Alternative, including impacts from demolition (including removal of any contaminated waste), site grading, excavation for infrastructure and building foundations, pile driving, building construction, and paving and landscaping installation.

Pile driving noise and vibration could be audible within buildings on and near the site. It is possible that during the day some local residences will be occupied, and occupants of commercial offices, schools, and medical facilities could be affected by pile driving activities.

Table 12–12: Estimated Construction Noise Levels

Estimated Construction Noise Levels (in dB(A))			
Construction Equipment	8-hour L_{eq}		
	25 feet	50 feet	100 feet
Demolition			
Track hoe	96	90	84
Crane	94	88	82
Excavator	91	85	79
Water truck	94	88	82
Site Work			
Crawler tractor	91	85	79
Grader	91	85	79
Loader	91	85	79
Compactor	88	82	76
Water truck	94	88	82
Pile driver	107	101	95
Foundation			
Backhoe	86	80	74
Loader	91	85	79
Forklift	85	79	73
Water truck	94	88	82
Utilities			
Back Hoe	86	80	74
Water truck	94	88	82
Forklift	85	79	73
Slab on Grade			
Skip loader	88	82	76
Bobcat tractor	90	84	78
Forklift	85	79	73
Steel Erection			
Crane	94	88	82
Air compressor	87	81	75
Generator	87	81	75
Forklift	85	79	73
Decking/Slabs			
Generator	87	81	75
Forklift	85	79	73
Concrete pump	88	82	76
Completion			
Forklift	85	79	73

L_{eq} = equivalent continuous noise level

Noise levels calculated with equations from Transit Noise and Vibration Impact Assessment (FTA, 2006)

Source: Arup, 2009

Table 12–13: Vibration Source Levels for Construction Equipment

Construction Equipment		PPV at 25 feet (in/sec)	Approximate VdB at 25 feet
Pile driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

PPV = peak particle velocity

Source: Transit Noise and Vibration Impact Assessment (FTA, 2006)

The Preferred Alternative would be developed in phases. Residents moving into the site after each phase would be exposed to construction noise from subsequent phases because they would be in the vicinity of construction activities.

The Preferred Alternative includes development on the parcels of land bounded by SR 4, Willow Pass Road, and Port Chicago Highway. Noise-sensitive receptors along the Port Chicago Highway boundary and Willow Pass Road are likely to be exposed to a temporary increase in noise and vibration due to construction activities.

Mitigation Measure Noise and Vibration 5: Concord General Plan Policy S-2.2.5 requires developers to reduce noise impacts of new developments on adjacent properties through appropriate means. Prior to approving a permit for development at the site to ensure that the City's policy is achieved, the City shall require developers to demonstrate compliance with the following guidelines:

- **Whenever construction occurs adjacent to occupied residences (on or off site), temporary barriers shall be constructed around the construction sites to shield the ground floor from the noise-sensitive uses. These barriers shall be of 3/4-inch medium-density plywood sheeting, or equivalent, and shall achieve a Sound Transmission Class of 30 or greater, based on certified sound transmission loss data taken according to American Society for Testing and Materials Test Method E90, or as approved by the City of Concord Building Department.**

- **Construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and 12:00 p.m. to 4:00 p.m. on Sundays and holidays, or at such other hours as may be authorized or restricted by the permit, if they meet at least one of the following noise limitations:**

  No individual piece of equipment shall produce a noise level exceeding 90 dBL_{Aeq} at a distance of 25 feet. If the device is housed within a structure or trailer on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible.

  The noise level at any point outside the site boundary shall not exceed 90 dBL_{Aeq}.

- **Construction equipment staging areas shall be located as far as feasible from residential areas while still serving the needs of construction contractors.**
- **Quieter "sonic" pile drivers shall be used, unless engineering studies are submitted to the City showing this is not feasible and cost-effective, based on geotechnical considerations.**
- **Groundborne vibration impacts from construction activities shall be considered in the construction programs to minimize the disturbance to noise-sensitive receptors.**
- **Routes for heavy construction site vehicles shall be identified and contractors shall be required to use them exclusively to minimize noise and vibration impact to residences and noise-sensitive receptors.**
- **Activities that generate high noise levels—such as pile driving and the use of jackhammers, drills, and impact wrenches—shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday.**

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Limiting the hours when construction can take place, incorporating measures to reduce noise from the construction site, and requiring the use of equipment that does not exceed the prescribed limit will ensure that this potential impact is reduced to a level that is less than significant.

Impact Noise and Vibration 6: Noise from operation of the Tournament Sports Facility component of the Preferred Alternative would result in increases to exterior noise levels. This impact is considered to be potentially significant.

The exact use and layout of the parcel of land identified as the Tournament Sports Facility will be defined at a project level. However, it is likely the facility will include locations with tiered spectator seating, and possibly sound reinforcement and public address systems.

City Policy S-2.1.3 considers an increase of 4 or more dB(A) to be "significant" if the resulting noise level would exceed that described as "normally acceptable" in Table 12-6.

It is currently proposed to locate residential and open space land uses adjacent to the Tournament Sports Facility. During operation of the facility, the normally acceptable community noise limits for residential and open space land uses could be exceeded by more than 4 dB. Therefore, this impact is considered to be potentially significant.

Mitigation Measure Noise and Vibration 6: Before the City of Concord grants approval for the Tournament Sports Facility, a noise analysis shall be carried out to determine the likely increase to exterior noise levels at noise-sensitive receptors during sporting events. Where applicable, the noise analysis should do the following:

- **Set forth the hours of operation of the Tournament Sports Facility that have been agreed upon with the City of Concord Planning Department.**
- **Set forth the noise targets and noise-sensitive receptors agreed upon with the City of Concord Planning Department.**
- **Establish the predicted noise levels from the Tournament Sports Facility at noise-sensitive receptors.**
- **Demonstrate the mitigation measures that have been used to achieve the noise targets agreed upon with the City. Possible mitigation measures are constructing earth berms and increasing the distance between spectator seating and noise-sensitive receptors.**
- **If sound reinforcement and public address systems are to be provided, include electroacoustic computer model noise maps showing the noise level at the noise-sensitive receptors. The report should demonstrate that the orientation and directionality of loudspeakers has been considered in the design. Cutsheets for the proposed loudspeakers should be provided in the report appendices.**

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

12.3.2.2 Noise and Vibration Impacts of the Preferred Alternative That Are Less Than Significant

Impact Noise and Vibration 7: Noise from BART trains will be heard by residents, workers, and visitors that would be present at the site as the result of the implementation of the Preferred Alternative. This impact is considered to be less than significant.

Noise levels from trains along the BART corridor are not expected to significantly increase by the year 2030. BART schedule estimates for 2030 were obtained from the ridership analysis conducted for the BART Extension to Silicon Valley project (Connetics, 2007). The predictions show that the number of BART trips is not expected to significantly increase in the year 2030. Table 12-14 shows the existing and predicted 2030 peak hour schedules.

Table 12–14: Hourly Schedule of BART Trains for 2008 and 2030

Time	Direction	Number of Trains Per Hour	
		2008	2030
AM peak hour	Westbound	6	6
	Eastbound	4	5
PM peak hour	Westbound	4	5
	Eastbound	10	6*
Midday	Westbound	4	5
	Eastbound	4	5

* The number of eastbound trains is scheduled to decrease because some BART trains will be terminating at Pleasant Hill Station.

Source: Connetics, 2007

With the exception of the prediction for PM peak hour eastbound, the increase in the number of trains per hour is marginal. The predicted increase in trains would result in a 1 dB increase in the day-night noise level, which the City considers less than significant. A reduction in PM peak hour eastbound trains is predicted because more trains are expected to terminate at Pleasant Hill Station in 2030 due to low numbers of ridership between the Concord Station and Pittsburg/Bay Point Station. This would be a beneficial impact to adjacent residences because noise exposure from BART trains would decrease.

Mitigation Measure Impact Noise and Vibration 7: None required.

Impact Noise and Vibration 8: Groundborne vibration from BART and vehicular roads that would result from the Preferred Alternative would result in increased interior noise levels. This impact is considered to be less than significant.

The FTA guidance (FTA, 2006) categorizes groundborne vibration criteria based on the sensitivity of the proposed land use to vibration. Table 12-7 presents these criteria.

The maximum recorded groundborne vibration level measured at 20 feet from the BART alignment to the northwest of the site was 64 VdB; 42 VdB was measured at 100 feet from SR 4 (Figure 12-2 shows the measurement locations). The maximum measured groundborne vibration level at 20 feet from BART is 1 VdB less than the criterion for Category 1 land uses and 8 VdB less than Category 2 land uses, as shown in Table 12-7. The maximum measured groundborne vibration level at 100 feet from SR 4 is 23 VdB less than the criterion for Category 1 land uses and 30 VdB less than Category 2 land uses, as shown in Table 12-7.

The FTA general assessment method for predicting groundborne noise levels inside buildings adjusts for the transmission of vibration through a building. Based on the FTA general assessment method, and because the ground on the site is soil and not rock, the FTA criteria are not exceeded for Category 1 land uses along the BART and SR 4 corridors. Therefore, this impact is considered to be less than significant.

Mitigation Measure Noise and Vibration 8: None required.

12.3.3 Noise and Vibration Impacts of the Concentration and Conservation Alternative

12.3.3.1 Potentially Significant Noise and Vibration Impacts of the Concentration and Conservation Alternative

Impact Noise and Vibration 9: Traffic and rail noise associated with the Concentration and Conservation Alternative would result in significant increases in exterior noise levels. This impact is considered to be potentially significant.

The impact analysis carried out for Impact Noise and Vibration 2 that would result from implementation of the Preferred Alternative is similar to the condition that would occur with the Concentration and Conservation Alternative.

Mitigation Measure Noise and Vibration 9a: Before the City of Concord grants approval for any residential uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. New residential development must demonstrate that the City's "normally acceptable" noise standard can be achieved in exterior living spaces.

Mitigation Measure Noise and Vibration 9b: Before the City of Concord grants approval for any commercial uses on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. Construction of buildings for commercial use on land that is exposed to noise levels above the City's noise standard shall only be undertaken after a detailed analysis of the noise reduction requirement is made and noise insulation features needed to comply with City standards are included in the design.

Mitigation Measure Noise and Vibration 9c: Before the City of Concord grants approval for any public parks on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road and Bailey Road, the City shall require an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. Public parks shall use grading measures and setbacks to mitigate traffic noise from adjacent roads.

Mitigation Measure Noise and Vibration 9d: Before the City of Concord grants approval for any schools on parcels of land along Willow Pass Road, the City shall require an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City. Schools shall use grading measures and setbacks to mitigate traffic noise from adjacent roads.

With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

Residential land uses within 600 feet of SR 4 that would result from the Concentration and Conservation Alternative shall be limited to multi-family and mixed-use high-density housing. To minimize the exposure of residences to high noise levels, intervening structures and barriers shall be used to screen exterior living spaces, such as gardens or balconies, from traffic noise. Residential land use within 360 feet of the BART corridor, and within 150 feet of Willow Pass Road and 75 feet of Bailey Road, shall also use intervening structures to screen exterior living spaces from BART and traffic noise. The acoustical analysis required by Mitigation Measures Noise and Vibration 9a through 9d shall include consideration of these methods. Based on these considerations, it has been determined that the impact would be mitigated to a level that is less than significant.

Impact Noise and Vibration 10: Traffic and rail noise associated with the Concentration and Conservation Alternative would result in significant interior noise levels for buildings along the BART and SR 4 corridors and along Willow Pass Road. This impact is considered to be potentially significant.

The impact analysis carried out for Impact Noise and Vibration 3 that would result from implementation of the Preferred Alternative is similar to the condition that would occur with the Concentration and Conservation Alternative.

Mitigation Measure Noise and Vibration 10: Before the City of Concord grants approval for any buildings that include habitable rooms on parcels of land along the BART and SR 4 corridors, and along Willow Pass Road, the City shall require developers to conduct an acoustical analysis and that it be submitted to and accepted by the Planning Department or other appropriate department in the City demonstrating that the 45 dBL_{dn} standard is achieved. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Achieving the 45 dBL_{dn} interior noise standard for habitable rooms would require consideration of the acoustical design of buildings. Parcels of land identified for residential or hotel land use adjacent to the BART and SR 4 corridors and along Willow Pass Road would require acoustically insulating construction to mitigate external noise. Examples of acoustically insulating construction are masonry façade constructions, double-glazed windows, and doors fitted with acoustical seals.

The 45 dBL_{dn} interior noise requirement must be achieved when rooms are ventilated. It would not be possible to naturally ventilate all residential units or hotel guest rooms using operable windows where exterior noise levels exceed 55 dBL_{dn}. Suggested ventilation options to meet the internal noise requirement are provided in Table 12-11.

The acoustical analysis required by Mitigation Measure Noise and Vibration 10 shall include consideration of these methods. Based on these considerations, it has been determined that the implementation of the required mitigation would reduce this potential impact to a level that is less than significant.

Impact Noise and Vibration 11: On-site stationary noise sources associated with the Concentration and Conservation Alternative could expose sensitive noise receptors to exterior noise levels that are unacceptable. This impact is considered to be potentially significant.

The impact analysis carried out for Impact Noise and Vibration 4 that would result from implementation of the Preferred Alternative is similar to the condition that would occur with the Concentration and Conservation Alternative.

> **Mitigation Measure Noise and Vibration 11: The City of Concord shall require any new development of the site to include noise control measures at stationary sources to reduce impacts to noise-sensitive receptors. Prior to the issuance of building permits, the City shall require developers to submit engineering and acoustical specifications for project mechanical HVAC and utility transformers (including generators) to the Planning Department or other appropriate department, demonstrating that the equipment design (types, location, enclosure, specifications) could control noise from the equipment to at least 10 dB(A) below existing ambient noise levels at nearby residential and other noise-sensitive land uses. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Examples of noise mitigation that may be required for stationary sources are noise-attenuating enclosures, noise-attenuating barriers, and attenuators fitted to air conditioning equipment. The City may also control hours of operation to reduce noise impacts during more noise-sensitive times of the day and night. With implementation of this mitigation, this potentially significant impact would be reduced to a level that is less than significant.

Impact Noise and Vibration 12: The construction associated with implementation of the Concentration and Conservation Alternative would result in short-term construction noise and vibration. This impact is considered to be potentially significant.

The impact analysis carried out for Impact Noise and Vibration 5 that would result from implementation of the Preferred Alternative is similar to the condition that would occur with the Concentration and Conservation Alternative.

> **Mitigation Measure Noise and Vibration 12: Concord General Plan Policy S-2.2.5 requires developers to reduce noise impacts of new developments on adjacent properties through appropriate means. Prior to approving a permit for development at the site to ensure that the City's policy is achieved, the City shall require developers to demonstrate compliance with the following guidelines:**
>
> - **Whenever construction occurs adjacent to occupied residences (on or off site), temporary barriers shall be constructed around the construction sites to shield the ground floor from the noise-sensitive uses. These barriers shall be of 3/4-inch medium-density plywood sheeting, or equivalent, and shall achieve a Sound Transmission Class**

of 30 or greater, based on certified sound transmission loss data taken according to American Society for Testing and Materials Test Method E90, or as approved by the City of Concord Building Department.

- **Construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and 12:00 p.m. to 4:00 p.m. on Sundays and holidays, or at such other hours as may be authorized or restricted by the permit, if they meet at least one of the following noise limitations:**

  No individual piece of equipment shall produce a noise level exceeding 90 dBL_{Aeq} at a distance of 25 feet. If the device is housed within a structure or trailer on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible.

  The noise level at any point outside the site boundary shall not exceed 90 dBL_{Aeq}.

- **Construction equipment staging areas shall be located as far as feasible from residential areas while still serving the needs of construction contractors.**
- **Quieter "sonic" pile drivers shall be used, unless engineering studies are submitted to the City showing this is not feasible and cost-effective, based on geotechnical considerations.**
- **Groundborne vibration impacts from construction activities shall be considered in the construction programs to minimize the disturbance to noise-sensitive receptors.**
- **Routes for heavy construction site vehicles shall be identified, and contractors shall be required to use them exclusively to minimize noise and vibration impact to residences and noise-sensitive receptors.**
- **Activities that generate high noise levels—such as pile driving and the use of jackhammers, drills, and impact wrenches—shall be restricted to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday.**

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Limiting the hours when construction can take place, incorporating measures to reduce noise from the construction site, and requiring the use of equipment that does not exceed the prescribed limit will ensure that this potential impact is reduced to a level that is less than significant.

Impact Noise and Vibration 13: Noise from operation of the Tournament Sports Facility would result in increases to exterior noise levels. This impact is considered to be potentially significant.

The impact analysis carried out for Impact Noise and Vibration 6 that would result from implementation of the Preferred Alternative is similar to the condition that would occur with the Concentration and Conservation Alternative.

Mitigation Measure Noise and Vibration 13: Before the City of Concord grants planning approval for the Tournament Sports Facility, a noise analysis shall be carried out to determine the likely increase to exterior noise levels at noise-sensitive receptors during sporting events. Where applicable, the noise analysis should do the following:

- **Set forth the hours of operation of the Tournament Sports Facility that has been agreed upon with the City.**
- **Set forth the noise targets and noise-sensitive receptors agreed upon with the City.**
- **Establish the predicted noise levels from the Tournament Sports Facility at the noise-sensitive receptors.**
- **Demonstrate the mitigation measures that have been used to achieve the noise targets agreed upon with the City. Possible mitigation measures are constructing earth berms and increasing the distance between spectator seating and noise-sensitive receptors.**
- **If sound reinforcement and public address systems are to be provided, the noise analysis report should include electroacoustic computer model noise maps showing the noise level at the noise-sensitive receptors. The report should demonstrate that the orientation and directionality of loudspeakers has been considered in the design. Cutsheets for the proposed loudspeakers should be provided in the report appendices.**

With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

12.3.3.2 Noise and Vibration Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Noise and Vibration 14: Development of the Concentration and Conservation Alternative would contribute to increases in traffic noise levels. This impact is considered to be less than significant.

Traffic noise predictions have been made for the Concentration and Conservation Alternative based on traffic flow volumes provided by Dowling Associates (Dowling, 2009). Figure 12-3 shows the locations of the traffic noise predictions. Table 12-9 shows cumulative traffic noise levels with and without the Concentration and Conservation Alternative at the identified sensitive receptors. Table 12-10 shows the increase in noise levels due to the alternative concepts. (Tables 12-9 and 12-10 follow Figure 12-3.)

Implementation of the Concentration and Conservation Alternative will result in increases in traffic flow volumes on Port Chicago Highway and Concord Boulevard. Traffic noise predictions indicate that traffic noise levels in some locations would be increased by 1 to 2 $dBL_{dn.}$

According to the General Plan, an increase of existing noise levels of more than 4 dB is considered a significant impact. Therefore, the Conservation and Concentration Alternative would result in increased traffic noise that would cause a less-than-significant impact.

Mitigation Measure Noise and Vibration 14: None required.

Impact Noise and Vibration 15: Development of the Concentration and Conservation Alternative would contribute to increases in rail noise levels. This impact is considered to be less than significant.

The impact analysis carried out for Impact Noise and Vibration 7 that would result from implementation of the Preferred Alternative is similar to the condition that would occur with the Concentration and Conservation Alternative.

Mitigation Measure Noise and Vibration 15: None required.

Impact Noise and Vibration 16: Groundborne vibration from BART and vehicular roads of the Concentration and Conservation Alternative would result in increased interior noise levels. This impact is considered to be less than significant.

The impact analysis carried out for Impact Noise and Vibration 8 that would result from implementation of the Preferred Alternative is similar to the condition that would occur with the Concentration and Conservation Alternative.

Mitigation Measure Noise and Vibration 16: None required.

12.3.4 Noise and Vibration Impacts of the No Project Alternative

12.3.4.1 Potentially Significant Noise and Vibration Impacts of the No Project Alternative

None identified.

12.3.4.2 Noise and Vibration Impacts of the No Project Alternative That Are Less Than Significant

None identified.

12.4 References

California Code of Regulations, 2001. CCR Title 24, Part 2.

City of Concord, 2007. Concord 2030 Urban Area General Plan, Chapter 7.

Connetics Transport Group, August 2007. BART Extension to Silicon Valley Summary of Operating and Assumptions, and Ridership for 2015 and 2030.

Dowling Associates, April 2009. CCTA Decennial Model.

Federal Transit Administration, May 2006. Transit Noise and Vibration Impact Assessment. Chapter 7 (Vibration) and Chapter 12 (Construction Noise).

U.S. Department of Housing and Urban Development, 1991. The Noise Guidebook, Chapter 5.

U.S. Department of Transportation, Federal Highway Administration, 2006. Highway Construction Handbook.

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11.
Air Quality

11 Air Quality

This chapter summarizes the effects on air quality that would result from the implementation of either of the two alternative concepts. This chapter also includes proposed mitigation measures that will reduce the identified impacts to the extent feasible.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on air quality. This has resulted in the air quality impacts of both alternatives being substantially less than they would have been had air quality impacts not been taken into account during all stages of the planning and environmental analysis process.

11.1 Existing Conditions

11.1.1 Physical Setting

The physical landscape of an area, coupled with atmospheric and climatic conditions, dictate the dispersal of air pollutants. These include the six criteria air pollutants identified under the federal Clean Air Act (CAA) and other toxic air contaminants (TACs). The dispersal of air pollutants within a region has direct implications for the regional air quality.

11.1.1.1 Climate and Meteorology

The Bay Area has a Mediterranean-type climate, with dry, warm summers and mild, wet winters. The high-pressure system over the eastern Pacific Ocean, off the West Coast, also dictates the air flow in the region. The Coast Range to the west of the site blocks marine air, wind, and rain from entering the Diablo Valley. This area experiences low wind speeds (annual average wind speed is 4.7 miles per hour [mph]) and averages 25.1 inches of rainfall per year. Although the area rarely has fog in the summer months, it does experience what is known as “tule fog” in the winter. A regional phenomenon, tule fog forms a fog layer above ground after a rainstorm, when the ground is moist and cool and wind speeds are low.

The topography of the landscape affects the regional climate. The area of the site to the west of Mt. Diablo Creek is relatively flat, with the lowest point at 14 feet above sea level. The area to the northeast is hilly and rises over 1,300 feet above sea level at the highest point of the ridge line. Low wind speeds and limited air flow make it easy for air pollutants to remain in the ambient air surrounding the site.

11.1.1.2 Sensitive Receptors

Sensitive receptors refer to individuals and places that are more sensitive to poor air quality than the general population. This includes children, senior citizens, and individuals who suffer from asthma or other respiratory ailments. Schools, child daycare centers, convalescent homes, and hospitals all represent land uses that constitute sensitive

receptors. People who conduct arduous labor or exercise frequently represent other populations that are more susceptible to poor air quality. Because people generally spend longer periods of time at home, residential areas are considered more sensitive to poor air quality conditions than commercial and industrial areas. Lastly, recreational areas are sensitive receptors because air pollution affects both the aesthetic value and the ambient air quality of the recreation spot.

Figure 11-1 displays the locations of select existing sensitive receptors in the vicinity of the project area. Sensitive receptors such as residential zones, parks, and schools are depicted on the figure, relative to the project site.

11.1.2 Regulatory Setting

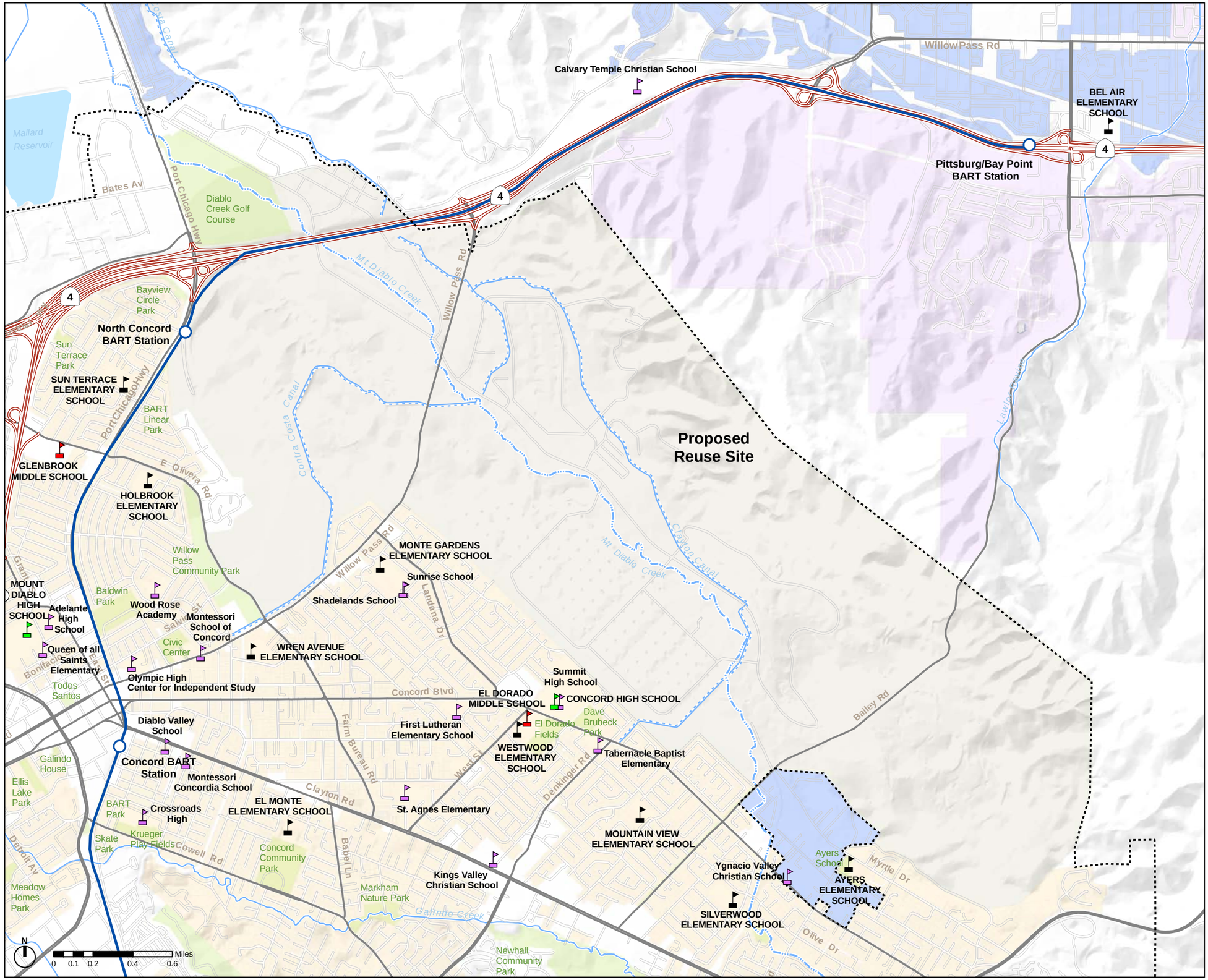
In the U.S., air quality is regulated at federal, state, and regional levels. The U.S. Environmental Protection Agency (EPA) holds the principal authority to set and enforce air quality standards under the federal CAA. Originally passed in 1963, the CAA underwent significant amendments in 1970, 1977, and 1990. Under the federal CAA amendments of 1970, the EPA became responsible for establishing the national ambient air quality standards, and identified the following six criteria air pollutants:

- Ozone
- Carbon monoxide
- Nitrogen dioxide
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Sulfur dioxide
- Lead

Under the 1977 amendments, regional air districts were required to monitor air quality and ensure compliance with the federal act. Air quality plans written by individual states to comply with the federal standards are known as State Implementation Plans (SIPs). These plans dictate how both stationary and mobile sources can be controlled to meet the CAA requirements and the federal ambient air quality standards. In addition to approving and overseeing every SIP, the EPA is responsible for monitoring 188 TACs.

At the state level, the California Air Resources Board (ARB) establishes the State ambient air quality standards for criteria pollutants, develops the California SIP, identifies TACs, and ensures the EPA's approval of the California SIP. Furthermore, the ARB has the authority to regulate air emissions from mobile sources, as well as to provide guidance to the work carried out by regional air quality management districts that monitor air quality at the regional level.

In 1988, the California Clean Air Act began to require regional agencies to create plans to ensure that air quality in areas designated as being in "non-attainment" is improved to attain and maintain State standards (this applies to areas designated as non-attainment for all pollutants with the exception of the State particulate matter standard).



Legend

- Public High Schools
- Private High Schools
- Public Junior High Schools
- Public Elementary Schools
- Private Schools
- Parcels in Pittsburg
- Residential Land Uses in Contra Costa County
- Residential Zones in Concord

Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials
- Local Streets
- Bay Area Rapid Transit
- BART Stations

Notes & Sources

This map displays schools and residential areas, which are considered sensitive receptors to poor air quality.

Notes about Residential Areas:
Parcels in Pittsburg: Because of data limitations, all parcels including non-residential parcels within the Pittsburg city limits are shown.

Residential Land Uses in Contra Costa County: Based on Contra Costa County General Plan land use designations.

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Figure 11-1
Location of Sensitive Receptors in the Vicinity of the Site

In addition to having more stringent standards for criteria pollutants than the federal requirements, the State of California closely monitors toxic air emissions. Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act, was passed in 1983 with the intent to identify and control TACs in California. The ARB prioritizes which air toxics are regulated and controlled based on the amount of health risk they pose to communities. More specifically, the ARB prioritizes contaminants based on "the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community" (Health and Safety Code section 39666(f)). The objective behind AB 1807 is to identify the risks posed by TACs and manage those risks by controlling TAC emissions. AB 2588, a supplement to AB 1807 passed in 1987, created the air toxics "Hot Spot" program. AB 2588 requires facilities that typically emit TACs, or hot spots, to track and report toxic emissions and gauge the risks posed to human health.

The regional air quality regulatory body for the site is the Bay Area Air Quality Management District (BAAQMD). The jurisdiction of the BAAQMD encompasses nine counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara, as well as portions of Sonoma and Solano counties. The BAAQMD is the regional agency responsible for generating plans and programs that have the intention of monitoring and reducing air pollution from both stationary and mobile sources in the nine Bay Area counties.

11.1.3 Background on Air Pollutants

11.1.3.1 Criteria Pollutants

Ozone

Ground-level ozone forms when sunlight causes a reaction between volatile organic compounds and oxides of nitrogen (NOx). Both volatile organic compounds and oxides of nitrogen come from vehicle exhaust, industrial processes, electric utilities, and chemical solvents. While ozone serves a protective function high in the atmosphere, it poses a serious health threat when it lies within close proximity to land. Sunlight and heat create a combination that allows ozone to flourish at the ground level. This explains why ground-level ozone (smog) is most abundant during the summer months. Ozone causes severe respiratory problems in humans and, along with particulate matter, is the most threatening criteria pollutant to human health. In addition to the impacts it causes to human health, ozone is also a greenhouse gas (GHG)[1] and contributes to climate change.

Carbon Monoxide

Vehicle exhaust (both on- and off-road vehicles), fires, fuel combustion, and industrial processes represent the main sources of carbon monoxide emissions. Levels of carbon monoxide in the atmosphere generally increase during November through January. During colder months, a higher-pressure system builds up, creating a temperature inversion that traps pollutants close to the ground. At high concentrations, carbon monoxide is considered poisonous, and thus poses a serious health risk. In addition to affecting the central nervous system, carbon monoxide also slows the transfer of oxygen to the body's organs.

[1] As designated by the Kyoto Protocol.

Nitrogen Dioxide

Oxides of nitrogen are very reactive chemicals. While a small amount of nitrogen oxides occur naturally in the atmosphere, combustion processes are generally responsible for the majority of oxides of nitrogen in the atmosphere. Oxides of nitrogen are released as a part of industrial and commercial processes, as well as from motor vehicle exhaust, utility plant emissions, and gasoline vapors. Contra Costa County is classified as being in attainment with the National Ambient Air Quality Standard for the form of oxides of nitrogen for which these standards have been set, nitrogen dioxide. However, emissions of nitrogen dioxide contribute to ozone levels (which are in non-attainment). Furthermore, another form of oxides of nitrogen, nitrous oxide, qualifies as a GHG, and oxides of nitrogen also contribute to acid rain.

Particulate Matter

PM_{10}: Known by the EPA as "inhalable coarse particles," PM_{10} refers to both liquid and solid particles that are between 10 and 2.5 micrometers in diameter. According to the ARB, the main sources of PM_{10} in the western U.S. come from motor vehicle exhaust; residential wood burning; dust related to construction activities, landfills, and agriculture; wildfires; industrial processes; and windblown dust.

$PM_{2.5}$: Referred to as "fine particles" by the EPA, $PM_{2.5}$ encompasses liquid and solid particles that are less than 2.5 micrometers in diameter. Smoke and haze from fires, smokestacks, construction sites, and other combustion activities produce $PM_{2.5}$.

Both PM_{10} and $PM_{2.5}$ pose health risks to human respiratory systems because, when particles are inhaled, they infiltrate and affect the lungs. Smaller particles pose greater health risks because of their ability to migrate deeply into the lungs and to sometimes infiltrate the human blood stream.

Sulfur Dioxide

Sulfur dioxide results from industrial combustion processes and electrical utility combustion (primarily coal-burning power plants). Sulfur dioxide impacts the respiratory health of various age groups, predominantly children and the elderly, and also contributes to acid rain. Sulfur dioxide is considered a universal pollutant, which means it can travel far from the source, and the location of the pollution source may differ from the region experiencing the negative health impacts of sulfur dioxide.

Lead

Formerly, vehicle exhaust was the greatest contributor of lead pollution; however, since leaded gasoline was phased out in the 1970s and 1980s, the main contributor of lead is metal processing plants. Lead pollution therefore concentrates in built-up areas, where metal processing and lead smelters are generally located. Lead can be ingested or inhaled by humans and other animals. If inhalation or ingestion occurs, lead has the capacity to affect the brain and nerves, blood, and other organs. Children are most sensitive to lead pollution.

11.1.3.2 Toxic Air Contaminants

Similar to the State standards that regulate the ambient air quality with regard to the six criteria pollutants, the State of California also monitors TACs that pose health threats to

humans. There is a lengthy list of TACs monitored by the State (benzene, carbon tetrachloride, butadiene, formaldehyde, chromium, and acetaldehyde represent a small sample). Sources of TACs range from industrial processes and manufacturing plants, to commercial enterprises (such as gas stations and dry cleaners), to second-hand smoke, to vehicle exhaust. To facilitate the reduction of emissions from mobile sources, the California Environmental Protection Agency has implemented programs that require reformulated gasoline and limit tailpipe emissions. These programs have successfully reduced benzene and toluene emissions, as well as other toxics released by mobile sources. Young children and senior citizens, along with people who suffer from asthma and other respiratory ailments, comprise the sensitive receptors for TACs. TAC limits are based on the health risk posed to humans. While California environmental laws refer to “toxic air contaminants,” federal environmental laws refer to “hazardous air pollutants.” However, for all intents and purposes, these terms are interchangeable.

The BAAQMD exercises authority in limiting the amount of toxic emissions through its various programs, such as the new source review program for new sources and the AB 2588 Hot Spots program for existing sources. For all new projects and developments, it is important to ascertain whether TAC sources will be located near residential areas and existing sensitive receptors, or if new residences or sensitive receptors will be located near an existing TAC-emitting facility.

11.1.3.3 Odors and Nuisances

Odor dispersal depends on the proximity and sensitivity to the odor source, weather, and wind conditions. Unlike TACs, odors do not cause severe health problems. However, odors do create a nuisance to the public, making areas unpleasant or uncomfortable. For this reason, it is important for new projects to evaluate odor impacts. This includes evaluating whether the location of new odor sources is next to existing sensitive receptors, or if sensitive receptors are being located near existing odor sources. The BAAQMD California Environmental Quality Act (CEQA) Guidelines (BAAQMD, 1999) identify several different operations as potential odor sources. These sources include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing, fiberglass manufacturing, painting and coating operations (such as automotive repair shops), rendering plants, and coffee roasters. The BAAQMD recommends a project screening distance between odor sources and sensitive receptors of 1 mile, with the exception of petroleum refineries, which should have a project screening distance of 2 miles.

11.1.4 Air Quality Standards

Table 11-1, taken from the ARB, shows both State and National Ambient Air Quality Standards for each criteria pollutant and some TACs regulated in the State of California. For each pollutant, Table 11-1 shows the acceptable concentration thresholds and the averaging times for assessing air quality against the concentration threshold.

Table 11-2 is specific to the site. It shows the attainment status of all criteria pollutants for Contra Costa County. All pollutants that have exceeded the acceptable concentration levels on at least one occasion are generally considered to be in non-attainment, except as specified in notes 1 and 2 in Table 11-1.

In 2005, the EPA modified the previous 1-hour national standard for ozone levels to an 8-hour standard. This new standard was implemented on the basis of health, because it intends to protect the health of humans exposed to ozone for a prolonged period of time. The EPA modified the 8-hour ozone standard on March 27, 2008 to 0.075 parts per million (ppm) (EPA, 2008).

Table 11–1: State and National Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15.0 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	–
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m³)		—		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		—	—	—
Lead[8]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[9]	—		0.15 µg/m³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[8]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (11/17/08)

Table 11-1 (continued)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calender year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

9. National lead standard, rolling 3-month average: final rule signed October 15, 2008.

For more information please call ARB PIO at (916) 322 2990 **California Air Resources Board (11/17/08)**

Source: California Air Resources Board (http://www.arb.ca.gov/html/ds.htm), Current Air Quality Standards, aaqs2[1].pdf

Table 11–2: Contra Costa County Attainment Status for State and National Ambient Air Quality Standards

Pollutant	Averaging Time	Attainment Status	
		State Standards	National Standards
Ozone	8 hours	Non-attainment	Non-attainment
	1 hour	Non-attainment	--
PM_{10}	Annual arithmetic mean	Non-attainment	--
	24 hours	Non-attainment	Unclassified
$PM_{2.5}$	Annual arithmetic mean	Non-attainment	Attainment
	24 hours	--	Non-attainment
Carbon monoxide	8 hours	Attainment	Attainment
	1 hour	Attainment	Attainment
Sulfur dioxide	Annual average	--	Attainment
	24 hours	Attainment	Attainment
	1 hour	Attainment	--
Nitrogen dioxide	Annual average	--	Attainment
	1 hour	Attainment	--
Lead	Calendar quarter	--	Attainment
	30-day average	Attainment	--

-- signifies no data.

Source: Bay Area Air Quality Management District, 2008 (http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm)

11.1.5 Existing Air Quality

11.1.5.1 Criteria Air Pollutants

As mentioned in the previous section, the BAAQMD is responsible for ensuring that the portions of the nine counties within the district meet the attainment criteria of each pollutant. Various monitoring stations are located throughout the region to measure and monitor criteria pollutant emission levels. The nearest monitoring station to the site, approximately 3.5 miles away, is located at 2975 Treat Boulevard in Concord. This monitoring station maintains air quality records most pertinent to the project site. The Treat Boulevard Station monitors for the six criteria air pollutants (ozone, particulate matter [PM_{10} and $PM_{2.5}$], carbon monoxide, nitrogen dioxide, and sulfur dioxide). Table 11-3 lists these monitored pollutants, individual annual highs, and the number of days the pollutant exceeded the regulatory standards.

According to reports from the past 5 years on record (2004–2008), ozone and PM_{10} generate the greatest concern because both pollutants have exceeded the established State or national emission standards. Ozone levels have exceeded both the 1-hour State standard and the 8-hour State standard a combined total of 48 times over the past 5 years on record, and the 2008 national 8-hour ozone standard a total of 21 times. PM_{10} has exceeded the State standard a total of 7 times over the past 5 years on record.

Table 11–3: Existing Air Quality - Highest Annual Records and Number of Exceedances

Concord Monitoring Station - 2975 Treat Blvd	2004	2005	2006	2007	2008
Ozone 1-Hour Maximum					
Highest 1-hour daily maximum (measured in ppm)	0.097	0.098	0.117	0.105	0.119
Days over national standard	0	0	n/a	n/a	n/a
Days over State standard	1	1	8	1	3
Ozone 8-Hour Maximum					
Highest 8-hour daily maximum (measured in ppm)	0.083	0.081	0.093	0.81	0.089
Days over State standard	6	2	14	4	8
Days over 2008 national standard	3	2	9	1	6
Particulate Matter - 10					
Maximum national high (micrograms per cubic meter)	48.3	40.3	83.6	49.4	49.4
Days over national standard	0	0	0	0	0
Maximum State high (micrograms per cubic meter)	50.7	42.2	80.5	52.4	50.5
Days over State standard	1	0	3	2	1
Particulate Matter - 2.5					
Maximum national high (micrograms per cubic meter)	--	40.9	16	--	--
Days above national standard	--	1	0	--	--
Carbon Monoxide					
Maximum national and State high (measured in ppm)	2	1.51	1.3	1.41	1.04
Days above national standard	0	0	0	0	0
Days above State standard	0	0	0	0	0
Nitrogen Dioxide					
Highest daily maximum (measured in ppm)	0.065	0.055	0.047	0.49	0.5
Days above State standard	0	0	0	0	0
Sulfur Dioxide					
Highest daily maximum (measured in ppm)	0.01	0.008	0.006	0.005	0.005
Days above national standard	0	0	0	0	0
Days above State standard	0	0	0	0	0
Hydrogen Sulfide (no data)					

-- signifies no data; ppm = parts per million; µg/m3 = micrograms per cubic meter; n/a = not applicable

Source: Bay Area Air Quality Management District, 2009

Although the Treat Boulevard Station lacks records on $PM_{2.5}$ for several of the past years, during the 2 years for which data records exist, levels did not exceed the national standards. To provide a comparative frame of reference, records from the nearby 10th Street Monitoring Station in Pittsburg were also referenced. The two stations are less than 20 miles apart. The same patterns emerge when the air quality data from the Treat Boulevard Station is compared to the air quality data from the Pittsburg 10th Street Monitoring Station, with ozone and PM_{10} as the pollutants of greatest concern.

The EPA and the ARB have administered several changes to the national and State ozone standards over the last few years. In 2005, the EPA revoked the national 1-hour ozone standard. In 2008, the EPA lowered the national 8-hour ozone standard from 0.80 to 0.75 ppm. Additionally, in 2005, the ARB approved the 8-hour State ozone standard, which became effective in 2006.

Despite exceedances in the past 5 years, the records from 2004, 2005, and 2007 show fewer number of days that exceed the State and national standards. The records from 2006 and 2008 exhibit a higher frequency of exceedances. The BAAQMD attributes the decrease in ozone levels to the programs that have been implemented by the ARB, the BAAQMD, the Metropolitan Transportation Commission (MTC), and other State and federal agencies such as the EPA. However, the number of daily exceedances subsequently increased from 2007 to 2008. This is a significant reversal to the previous progress.

11.1.6 Air Quality Plans

The BAAQMD collaborates with the MTC and the Association of Bay Area Governments (ABAG) to prepare air quality plans that will help maintain Bay Area air quality at healthy levels. The plans rely on existing air quality data from monitoring stations, and employs computer models of future emission projections (from vehicles, industry, commercial processes, etc.). The combination of existing data and future projections makes it possible for the BAAQMD to determine appropriate target emissions levels in the air quality plans. The overall goal of the air quality plans is to reduce air pollution to a level that reduces the risk of adverse affects on human health to an acceptable level.

Three air quality plans currently exist in the Bay Area:

- Ozone Attainment Plan (BAAQMD/MTC/ABAG, 2001), which responds to the 1-hour standards stipulated in the federal CAA
- Bay Area Ozone Strategy (BAAQMD/MTC/ABAG, 2005), which responds to the California Clean Air Act and State 1-hour standards
- Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas (ARB, 1996)

11.1.6.1 The 2001 Ozone Attainment Plan

In April 2004, the EPA recognized that Bay Area air quality had made significant improvements in ozone pollution reduction since the passage of the Ozone Attainment Plan, which the ARB submitted in November 2001 to the EPA as a revision to the California State Implementation Plan. The EPA has classified the area as in attainment with the federal air quality criteria standards for the 1-hour ozone standards; however, this redesignation is not formally recognized by the EPA. In order for the Bay Area to be classified as in attainment

of the federal 1-hour ozone standard, the ARB must submit a 10-year maintenance plan to the EPA outlining how the standard will be upheld (EPA, 2004). Thus, the Bay Area is still officially considered to be in non-attainment for ozone. The EPA also requires that the ARB submit a plan outlining how the clean air plan will be maintained for the next decade.

11.1.6.2 The 2005 Bay Area Ozone Strategy

The Bay Area is classified by the ARB as a "serious non-attainment" area for ozone. The designation of "serious" requires the submittal of various plans and transportation performance standards. One requirement that results from being classified as "serious" by the ARB is an updated Clean Air Plan for ozone every 3 years in response to new inventory data and control measures. The most recent version of the Clean Air Plan addressing ozone is the Bay Area Ozone Strategy, which attempts to not only achieve compliance with the State 1-hour standard, but also to reduce the transport of ozone to neighboring basins. The Bay Area Ozone Strategy urges stationary source, mobile source, and transportation source control measures, each to be carried out by different programs.

In 2005, the ARB created a new State 8-hour ozone standard of 0.070 ppm. Table 11-2 includes the new area designation for the 2005 State 8-hour ozone standard. The State 1-hour standard still exists.

11.1.6.3 The 2009 Clean Air Plan

The BAAQMD is currently in the process of writing the 2009 Bay Area Clean Air Plan. The BAAQMD has engaged the public on the topic, by conducting public workshops and meetings.

The 2009 Clean Air Plan will:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone
- Consider the impacts of ozone control measures on particulate matter, air toxics, and GHGs in a single, integrated plan
- Review progress in improving air quality in recent years
- Establish emission control measures to be adopted or implemented in the 2009–2012 timeframe (BAAQMD, 2009)

11.1.6.4 The 1996 Carbon Monoxide Redesignation and Maintenance Plan for Ten Federal Planning Areas

In June 1998, the EPA approved a revision of the maintenance plan and formally redesignated 10 planning areas in California as in attainment. These 10 areas are the Bakersfield Metropolitan Area, Chico Urbanized Area, Fresno Urbanized Area, Lake Tahoe North Shore Area, Lake Tahoe South Shore Area, Modesto Urbanized Area, Sacramento Urbanized Area, San Diego Area, San Francisco-Oakland-San Jose Area, and Stockton Urbanized Area. On July 22, 2004, the ARB approved an update to the plan that outlined how the carbon monoxide air quality standard would be maintained through 2018. Aspects of the updated version include revised emissions projections and new emission budgets for on-road vehicles.

11.1.6.5 Odors and Nuisances

Part of the Tesoro Golden Eagle Refinery lies within the 2-mile screening level distance of part of the site. This includes the areas to the north of State Route (SR) 4 and areas within 0.5-mile radius of the North Concord/Martinez Bay Area Rapid Transit (BART) District Station, as shown on Figure 11-2.

11.2 Standards of Significance

Criteria for determining the significant impacts associated with air quality have been developed based on Appendix G of the CEQA Guidelines (CEQA, 1970) and any relevant agency thresholds. For purposes of this Environmental Impact Report (EIR), an alternative may have significant impact on air quality (BAAQMD, 1999) if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contributes substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any non-attainment pollutant (including releasing emissions that exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

Discussions with the BAAQMD indicate that a project also may have a significant effect on air quality if it would:

- Expose sensitive receptors to substantial pollutant concentrations, including TACs
- Result in a cumulatively considerable net increase of any pollutant that is currently in attainment, but in maintenance following a period of non-attainment (e.g., carbon monoxide)
- Result in a cumulatively considerable net increase of GHGs, as discussed in Chapter 17, Other CEQA Considerations

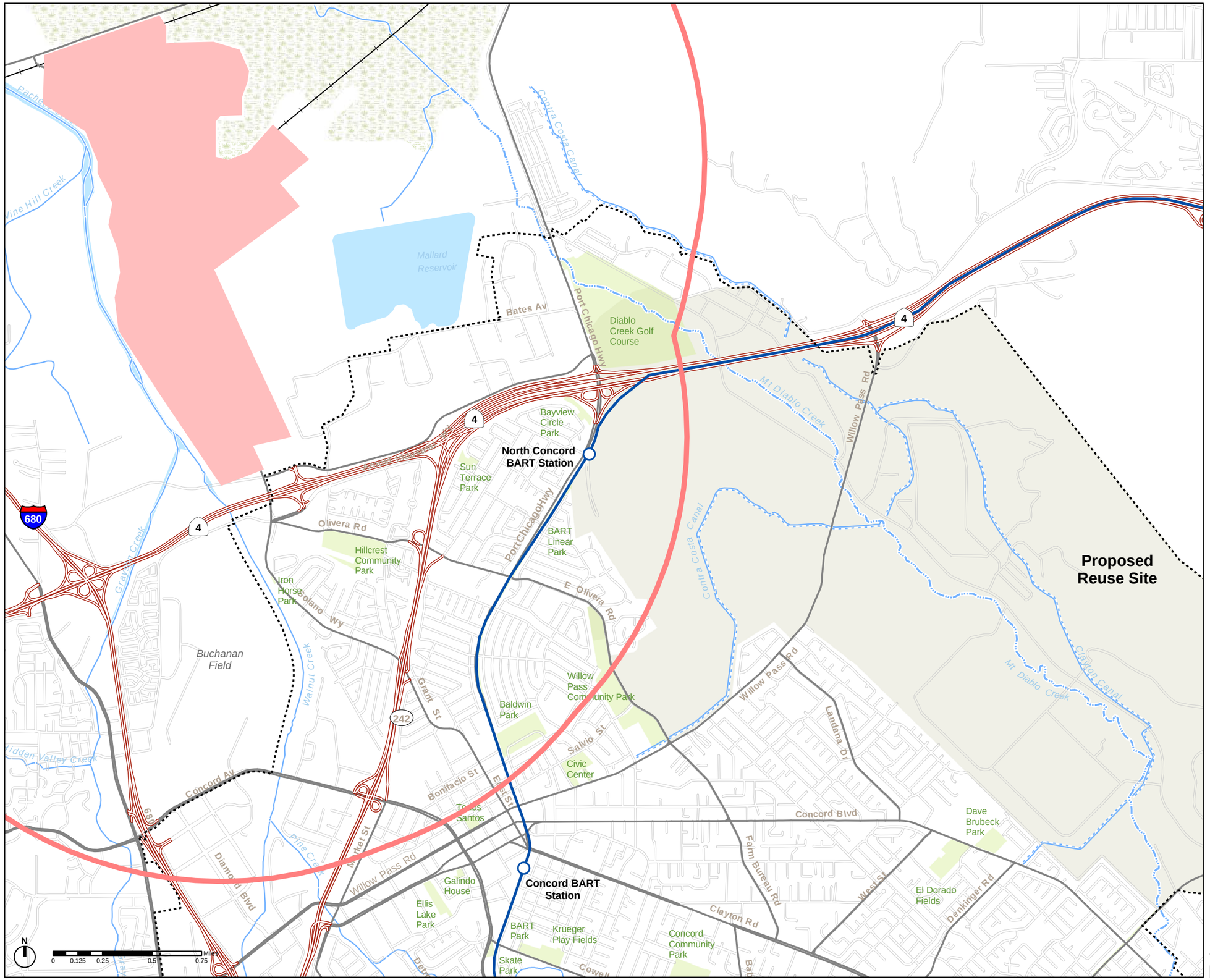
The BAAQMD specifies thresholds of significance and tests that can be used to determine whether a project would conflict with or obstruct implementation of the air quality plan, violate any air quality standard or contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations (BAAQMD, 1999). These thresholds are specified by project phase (construction, operation, and plans).

Operationally, it is recognized that the greatest source of pollutant emissions for the project is vehicular traffic. The following threshold values are indicated:

- A project is determined to be inconsistent with the most current clean air plan, and therefore to have a significant air quality impact, if it would do one of the following:
  - Result in population growth exceeding the values in the current air quality portion of the City of Concord 2030 Urban Area General Plan (General Plan) (City of Concord, 2007)

  - Cause the rate of increase in vehicle miles traveled (VMTs) to be greater than the rate of increase in population.

- Total vehicular emissions of reactive organic gases, oxides of nitrogen, and PM_{10} emissions from project operations exceed 80 pounds per day and/or 15 tons per year for the project. This threshold is the same for any development project, regardless of size.
- A project contributing to carbon monoxide concentrations exceeding the State ambient air quality standard (9 ppm averaged over 8 hours, and 20 ppm for 1 hour) may be considered to have a significant impact. These excessive localized carbon monoxide concentrations could be due to motor vehicle emissions of carbon monoxide that exceeds 550 pounds per day for the project; project traffic that impacts intersections or roadway links currently or projected to be at level of service (LOS) D, E, or F, or that causes LOS to decline to D, E, or F (hot spots); or project traffic that increases traffic volumes on nearby roadways by 10 percent or more (unless the traffic volume is less than 100 vehicles per hour).
- The BAAQMD Guidelines do not contain quantitative odor significance thresholds. However, the Guidelines include the "creation of objectionable odors" on a list of effects that are considered significant.
- Proposed development projects that have the potential to expose the public to TACs in excess of the following thresholds may be considered to have a significant air quality impact: probability of contracting cancer for the maximally exposed individual exceeds 10 in 1 million; or ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than 1 for the maximally exposed individual. These thresholds are based on the BAAQMD's Risk Management Policy. According to the ARB's Air Quality and Land Use Handbook (CARB, 2005) and CAPCOA's "Health Risk Assessments for Proposed Land Use Projects" (CAPCOA, 2009), urban roadways carrying over 100,000 vehicles per day, with typical diesel truck traffic of over 10,000 trucks per day, have been shown in numerous studies to cause an increase in respiratory health effects and increased cancer risks to sensitive receptors near the highways (within 300-500 feet). The significance threshold adapted in this EIR is location of sensitive receptors within 500 feet of major highways and refineries. Figure~~s~~ 11-~~-–~~3 and 11-4 identify the 500 foot (and 1,000 foot) distance relationship from such sources for the Preferred Alternative and the Concentration and Conservation Alternative, respectively
- The BAAQMD specifies that a project's contribution to cumulative impacts should be considered significant if the project individually causes significant impacts by exceeding the BAAQMD quantitative thresholds. If the project's individual air quality impacts are less than significant, the project's contribution to any cumulative impact would be considered less than significant if the project is consistent with the local General Plan and the local General Plan is consistent with the applicable regional air quality plans, as discussed in section 11.1.6.



Legend

- Tesoro Golden Eagle Refinery
- Two Mile Odor Screening Distance

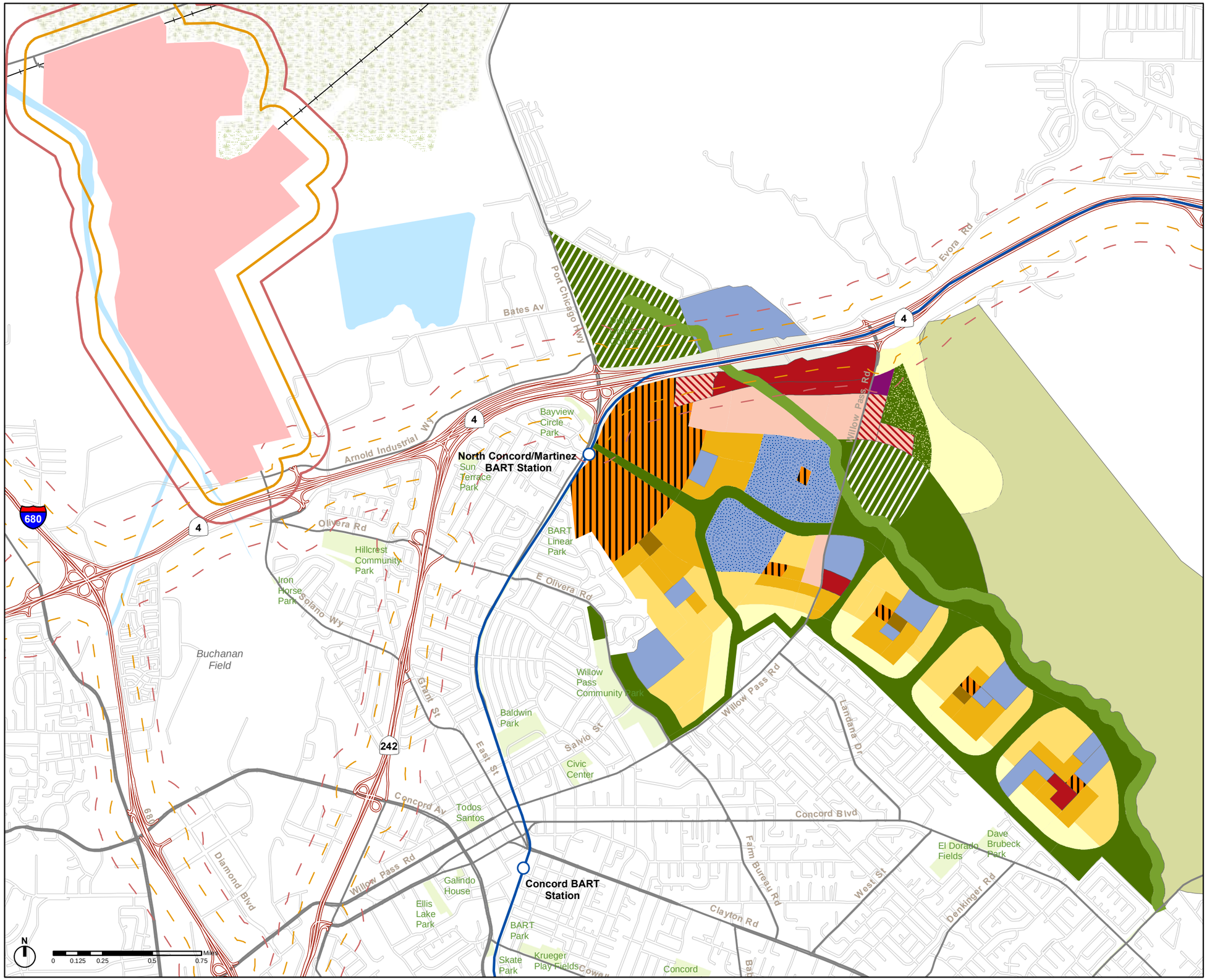
Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Swamp or Marsh
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Concord
Community Reuse Plan

Revised June 9, 2009

Figure 11-2
Screening Distance for Tesoro Golden Eagle Refinery Potential Odor Impacts



Legend

- Tesoro Golden Eagle Refinery
- 500' Tesoro Golden Eagle Refinery Buffer
- 1000' Tesoro Golden Eagle Refinery Buffer
- 500' Highway Buffer
- 1000' Highway Buffer

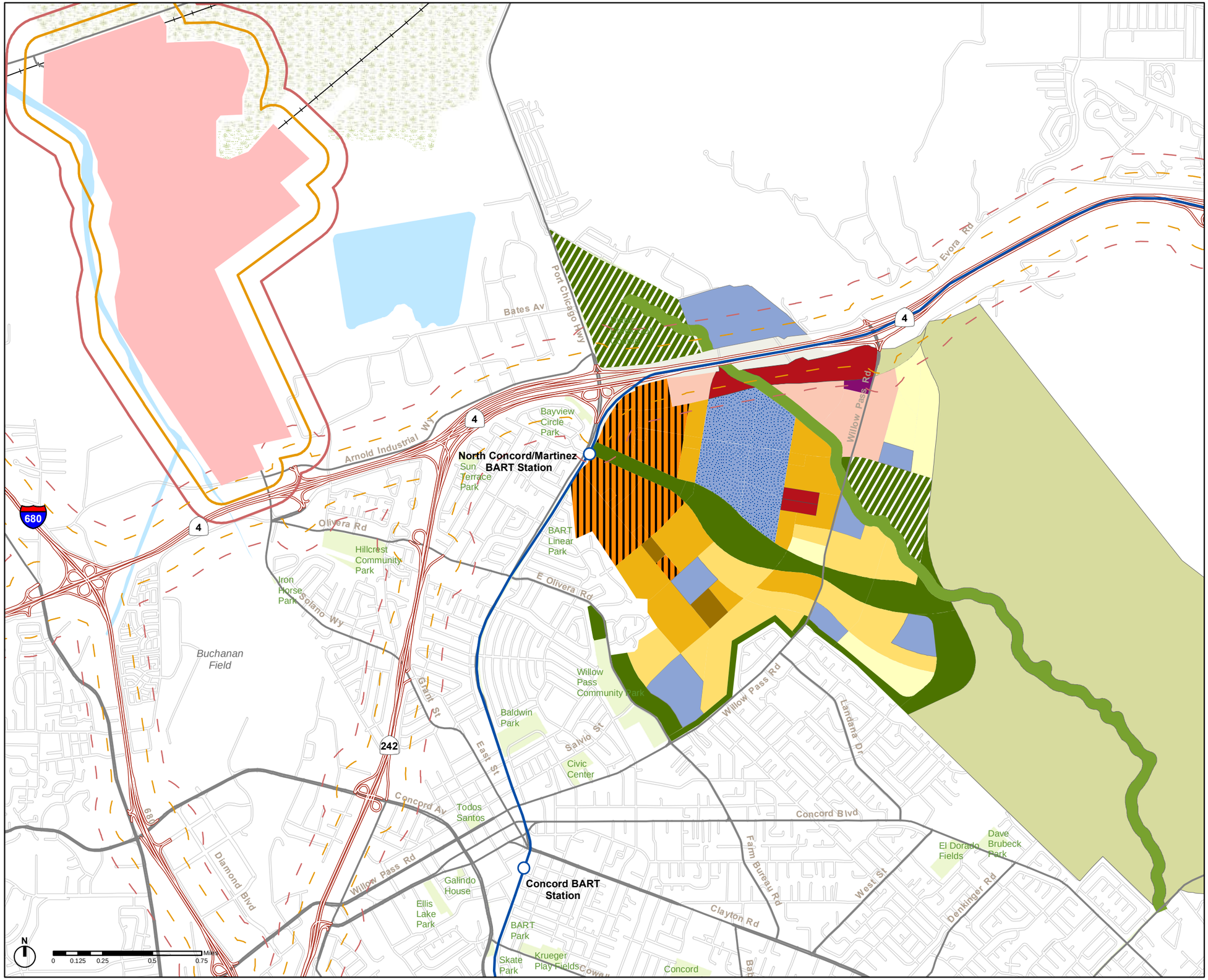
Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Swamp or Marsh
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Concord
Community Reuse Plan

Revised December 30, 2009

Figure 11-3
Distance of Sensitive Receptors from Major Highways and Refineries – Preferred Alternative



Legend

- Tesoro Golden Eagle Refinery
- 500' Tesoro Golden Eagle Refinery Buffer
- 1000' Tesoro Golden Eagle Refinery Buffer
- 500' Highway Buffer
- 1000' Highway Buffer

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Swamp or Marsh
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

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Figure 11-4
Distance of Sensitive Receptors from Major Highways and Refineries – Concentration and Conservation Alternative

11.3 Potential Air Quality Impacts

This section begins with a description of the methodology that was used in the analysis of potential air quality impacts. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented. Impacts specific to the Preferred Alternative are presented first, followed by impacts specific to the Concentration and Conservation Alternative. The section concludes with a description of the potential impacts of the No Project Alternative. It should be noted that the potential impacts related to GHG emissions are not discussed in this chapter, but in Chapter 17, Other CEQA Considerations, because they are treated as a potential cumulative impact.

11.3.1 Methodology

The level of significance for the project-related air quality impacts was determined as follows:

- Comparison of growth of population to growth of VMTs required two steps:
  1. For population growth, the population estimates for each of the alternatives were compared to the General Plan forecast population. The General Plan does not include the project, so the rate of population growth is calculated by comparing the population of each alternative to the General Plan forecast.
  2. The growth in VMTs was calculated by comparing the total daily VMTs from the project area to the total VMTs for Concord. Daily VMTs were obtained from the TransCAD model runs.
- The URBEMIS Version 9.2.4 model has been used to estimate total emissions of criteria pollutants from the proposed project area for both alternative reuse concepts.
- The carbon monoxide hot spot screening methodology based on the CALINE4 (BAAQMD, 1999) model specified in the BAAQMD Guidelines was used to estimate 1-hour and 8-hour concentrations of carbon monoxide at all intersections projected to be at LOS D, E, or F, and to compare the concentrations to the threshold levels. For this assessment, the distances from the intersection at which carbon monoxide concentrations were estimated were chosen to represent “worst-case” conditions. This means that any sensitive receptors in the vicinity would experience lower concentrations of carbon monoxide than those modeled. Traffic volumes, speeds, and LOS were obtained from the traffic analyses reported in Chapter 4, Transportation.
- Emission factors for both the URBEMIS and CALINE4 models were obtained using the EMFAC 2007[2] Version 2.3 model (CARB, 2006), using worst-case meteorological and

[2] EMFAC 2007 version 2.3, November 1, 2006, California Air Resources Board.

time-of-year conditions, and specifying Contra Costa County. Vehicle speeds were obtained from the traffic studies discussed in Chapter 4, Transportation.

- Diesel particulate matter emissions were used as a proxy for toxic pollutants emitted by road and construction vehicles. Diesel particulate matter is the BAAQMD's primary toxic pollutant of concern for vehicular traffic. Impacts were considered for sensitive receptors located within ~~53~~00 feet of SR 4, following ARB and CAPCOA guidance for land use and air quality impacts (CARB, 2005; CAPCOA, 2009).
- Baseline information on emissions for the City was obtained from the General Plan Air Quality assessment, which provides emissions information for the year 2003, although the analysis was done in 2006. This is the best information available regarding the environmental baseline, which is what existed in the General Plan area at the time the Notice of Preparation (NOP) for the General Plan EIR was published. Chapter 1, Introduction, identifies that the original NOP for this environmental analysis was published on May 1, 2007.
- With respect to odors, the methodology consisted of determining the presence of certain sources. These sources include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing, fiberglass manufacturing, painting and coating operations (such as automotive repair shops), rendering plants, and coffee roasters. Since there are no sources of odorous emissions proposed within either of the two alternatives, an analysis of potential odor impacts on existing receptors has not been undertaken. However, an analysis of the impact of nearby existing odor sources on new receptors located on the site as a result of the two alternatives has been undertaken by examining odor complaint records held by BAAQMD and wind direction data for the local area.

11.3.2 Air Quality Impacts of the Preferred Alternative

The impacts and mitigations are similar for both of the alternatives; they vary slightly in numerical results, but not in terms of significance. Wherever appropriate, tables give the numerical results for all significance criteria to allow comparison between alternatives.

11.3.2.1 Potentially Significant Impacts of the Preferred Alternative

Impact Air Quality 1: The Preferred Alternative would result in the total ~~vehicular~~ emissions of ozone precursors exceeding the BAAQMD quantitative thresholds. This impact is considered to be potentially significant.

As shown in Table 11-2, Contra Costa County is not in attainment with the ozone standard. As part of the effort to reach compliance with this standard, the BAAQMD has established numerical emissions thresholds for the ozone precursor's reactive organic gases and oxides of nitrogen. URBEMIS was used to estimate the total emissions of these contaminants that would result from this alternative; the results are shown in Table 11-4. Detailed printouts of the URBEMIS model runs are contained in Appendix 11A. This alternative would exceed the threshold value of 15 tons per year for reactive organic gases, oxides of nitrogen, and PM_{10}.

Table 11–4: URBEMIS Total Emissions of Criteria Pollutants

Pollutant	Preferred Alternative Total Emissions* (tons/year)	Concentration and Conservation Alternative Total Emissions* (tons/year)
No Mitigation		
Reactive organic gases (ROG**)	599.32	482.31
Oxides of nitrogen (NOx**)	476.17	379.07
Carbon monoxide	4,325.09	3,456.49
Sulfur dioxide	3.77	3.04
PM_{10}**	592.76	476.61
$PM_{2.5}$	146.71	118.75
With Feasible Mitigation		
ROG**	528.64	432.28
NOx**	384.95	313.42
Carbon monoxide	3,489.99	2,854.83
Sulfur dioxide	3.15	2.60
PM_{10}**	478.71	394.02
$PM_{2.5}$	124.81	102.88

* Total emissions in tons/year before and after applying mitigation reductions to project operational vehicular emissions.

** Threshold value is 15 tons/year.

Source: Arup, 2009.

Mitigation Measure Air Quality 1: Prior to approving development at the site, the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit and peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. To further reduce particulate matter emissions, wood-burning fireplaces will be banned within the CNWS or required to employ best available control technologies and households with such fireplaces must comply with all applicable Spare the Air Day restrictions. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.

The Preferred Alternative is designed to include measures that the URBEMIS model considers to be mitigations, and these have been included in Table 11-4 for operational emissions. Total emissions greatly exceed the threshold value of 15 tons per year for ozone precursors and PM_{10}, and no additional reductions are applicable without reducing the size

of the development. As mentioned earlier, this threshold is the same for all projects (regardless of size), and it is not normalized by area, population, employment, or any other factor. Because the project is large, the total emissions for the project would exceed the threshold for the Preferred Alternative. Therefore, according to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.

Impact Air Quality 2: As a result of implementing the Preferred Alternative, the total population of the City of Concord, including the project, would exceed the maximum population forecast in the General Plan that would be consistent with the current clean air plan. This impact is considered to be potentially significant.

As previously introduced, the BAAQMD CEQA Guidelines indicate that a project would be inconsistent with the applicable clean air plan if it would "result in population growth that would exceed the values included in the current air quality portion of the applicable General Plan." The Concord population is forecast to grow from implementation of the Preferred Alternative by 20.4 percent above the General Plan's projection of 142,210 residents in 2030.

The General Plan (City of Concord, 2007) states:

> The 2005 Bay Area Ozone Strategy is based on population assumptions in the 2003 ABAG Projections. Based on 2003 ABAG Projections, the population in Concord is projected to be 154,500 in 2030 with a rate of population growth of 0.85 percent per year between 2005 and 2030 (ABAG, 2003). Therefore, the population growth under the implementation of the proposed Concord General Plan and within the Urban Limit Line would be consistent with ABAG's 2003 population projections, which forms the basis of the 2005 Ozone Strategy.

Thus, to be consistent with the Clean Air Plan, the 2030 population of Concord should not exceed 154,500. Table 11-5 shows that the Preferred Alternative would exceed this maximum population level.

It should be noted here that the General Plan specifically does not address the CNWS development, and anticipates a future amendment to the plan whose population estimates would need to be approved by ABAG. In the introduction, the General Plan states:

> The Plan does not address potential development of the Concord Naval Weapons Station (CNWS) because the City, acting as the Local Reuse Authority, has initiated a separate base reuse planning program for the Inland Portion of the CNWS following approval of the base closure in November 2005. This means that when this separate planning effort is completed and a land use plan is approved by the City, the General Plan will be amended to incorporate the Naval Weapons Station reuse plan.

> **<u>Mitigation Measure Air Quality 2</u>: Prior to approving development at the site, the City of Concord shall request updated population projections from ABAG and the BAAQMD, and the City shall coordinate with these agencies to update the applicable clean air plans so that the projections of Concord's 2030 population are updated (increased) by ABAG to reflect the size and scope of the Preferred Alternative. The updated projections shall be such**

that the additional population due to the implementation of the Preferred Alternative will not exceed the revised 2030 Concord total population.

This updated population ceiling shall be incorporated into the applicable clean air plan. Unless ABAG and the BAAQMD revise Concord's 2030 population ceiling, and include it in the applicable clean air plan, this will remain a potential impact that is significant and unavoidable.

Table 11–5: Total 2030 Concord Population by Alternative

	Population in 2030			
Alternative Concept	**Concord (General Plan)**	**Projected Increase**	**Total**	**Significant Impact?**
No Project Alternative	142,210	0	142,210	No
Preferred Alternative	142,210	29,033	171,244	Yes
Concentration and Conservation Alternative	142,210	23,371	165,581	Yes

Projected population is based on the numbers used in the traffic model.

Source: Arup, 2009.

No mitigation is possible for this impact, short of significantly reducing the size of the project or increasing the 2030 population ceiling set by ABAG and BAAQMD for Concord. Moreover, unless there is a change in the ABAG 2030 projections for Concord, the project would preclude other new development from occurring in Concord without exceeding the population ceiling for Concord assumed in the clean air plan. Therefore, ABAG would be required to reestimate population, and then incorporate the revised estimates into a revised applicable clean air plan that would still meet the standards. While this mitigation measure would be successful in reducing the impact of Concord's population growth on the clean air plan, it would require actions by ABAG and the BAAQMD that are not under the control of the City of Concord.

Impact Air Quality 3: The Preferred Alternative could result in increased population and vehicle miles traveled at rates that would be inconsistent with the most current clean air plan. This impact is considered to be potentially significant.

The Preferred Alternative would result in an increase in population at the site. This population increase would result in additional VMTs at the site and in the vicinity. The threshold as discussed in Section 11.2., for this air quality impact significance criterion is shown to cause the rate of increase in VMTs to be greater than the rate of increase in population (BAAQMD, 1999). To test this, the population and VMT increases for both of the alternatives were compared, as shown in Table 11-6.

Table 11–6: Comparison of Growth in Population to Increases in VMTs

Alternative	Population			VMT			Significant Impact?
	Concord (CCTA model)	Projected Increase	% Increase	Concord (CCTA model)	Projected Increase	% Increase	
Growth of Alternative Population and VMT Compared to Existing (Year 2000) Population and VMT							
Year 2000	123,053	--	--	4,293,769	--	--	--
Preferred Alternative (year 2030)	197,468	74,415	60.5%	7,935,522	3,641,752	84.8%	Yes
Concentration and Conservation (year 2030)	191,806	68,753	55.9%	7,586,171	3,292,402	76.7%	Yes
Growth of Alternative Population and VMT Compared to Year 2030 No Project Population and VMT							
No Project (year 2030)	168,447	0	0%	6,134,072	0.00	0%	No
Preferred Alternative (year 2030)	197,468	29,033	17.2%	7,935,522	1,790,379	29.2%	Yes
Concentration and Conservation (year 2030)	191,806	23,371	13.9%	7,586,171	1,503,888	24.5%	Yes

For consistency, both population and VMT numbers in this table are from the Contra Costa Transportation Authority (CCTA) model. The model's "No Project (year 2030)" population for Concord includes some population from nearby areas; hence, this does not match the No Project population in the General Plan (Table 11-5).

As shown in Table 11-6, VMT is projected to increase at a rate greater than the growth in population, whether population and VMT are compared to current conditions or 2030 No Project conditions. Thus, this impact is considered to be potentially significant (BAAQMD, 1999).

> **Mitigation Measure Air Quality 3: Prior to approving development at the site, the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit and peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.**

In spite of these measures, total VMT growth for the project is projected to exceed population growth. Therefore, according to the BAAQMD guidelines, this will remain an impact that is considered to be significant and unavoidable.

Impact Air Quality 4: The Preferred Alternative could result in an increased risk of cancer and other negative health effects due to TACs in the vicinity of SR 4. This impact is considered to be potentially significant.

SR 4 is the only roadway within the project area that carries the volumes specified in CARB's Air Quality and Land Use Handbook (see Section 11.2, page 11-15). Most of the known health risks from motor vehicle traffic are due to diesel particulate matter from trucks, and benzene and 1~~-~~ ,3-butadiene from passenger vehicles. On these types of urban freeways, diesel particulate matter constitutes about 70 percent of the cancer risk from vehicular emissions. Diesel particulate matter also has been shown to increase the risk of premature mortality in individuals with cardiovascular disease. The cited studies indicate that these risks are greatly reduced 300 feet or farther from the freeway and the 2009 CAPCOA guidance stipulates 500 feet (CAPCOA, 2009)~~.~~

California State law prohibits the siting of schools within 500 feet of urban freeways or urban roads carrying over 100,000 vehicles per day. No restrictions apply to residential areas or other sensitive receptors such as daycare centers and medical facilities. The Preferred Alternative would abide by this regulatory restriction on school sitings; thus, no TAC impacts to school locations are expected. However, transit-oriented development (TOD), which would include residential areas, is programmed to be located near SR 4. If residential uses, daycare centers, medical facilities, and other sensitive receptors were located within 5~~3~~00 feet of SR 4, this would constitute a significant impact.

> **Mitigation Measure Air Quality 4: Prior to approving development, the City of Concord shall establish through zoning that residential uses, daycare centers, medical facilities, and other sensitive receptors are set back at least 500 feet from SR 4. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Impact Air Quality 5: The Preferred Alternative could result in increased emissions of PM_{10}, diesel particulate matter, and other pollutants during construction. This impact is considered to be potentially significant.

Activities contributing to particulate emissions during construction include:

- Demolition activities, especially for older buildings that may contain asbestos
- Earthwork activities, such as grading, excavation, and blasting
- Use of unpaved surfaces for travel by construction equipment resulting in reentrained dust
- Exhaust from construction equipment, generally diesels

Annual total emissions from construction activities, as computed using URBEMIS, are found in Appendix 11A. The BAAQMD emphasizes the application of control measures to reduce these impacts, rather than employing a quantitative threshold for these emissions. On a project of this magnitude, construction activities would be widespread and ongoing for a prolonged period until buildout. This would result in a significant impact unless all feasible control measures are applied.

Mitigation Measure Air Quality 5: Prior to approving development, the City of Concord shall require that all feasible construction activity control measures, as specified in Table 11-7, will be applied at the site. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Construction activities would vary in intensity and timing as individual projects are built as a result of the Preferred Alternative. The mitigation measures outlined in Table 11-7 would be applied as appropriate by contractors working on projects at the site.

Table 11–7: Required Construction Emission Control Measures

Basic Control Measures
The following controls shall~~ould~~ be implemented at all construction sites.
• Water all active construction areas at least twice daily. • Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least 2 feet of freeboard. • Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. • Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites. • Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
Enhanced Control Measures
The following measures shall~~ould~~ be implemented at construction sites greater than 4 acres in area.
• All "Basic" control measures listed above. • Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more). • Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.). • Limit traffic speeds on unpaved roads to 15 miles per hour. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible.
Additional ~~Optional~~ Control Measures
The following control measures are required~~strongly encouraged~~ at construction sites that are large in area, located near sensitive receptors, or which for any other reason may warrant additional emissions reductions.
• Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site. • Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas. • Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour. • Limit the area subject to excavation, grading, and other construction activity at any one time.
The following control measures are~~will be~~ required for all construction equipment.

- Comply with the latest CARB certification for off-road heavy duty diesel engines
- Maintain properly tuned engines;
- Minimize the idling time of diesel powered construction equipment to two minutes;
- Use alternative powered construction equipment (i.e., compressed natural gasCNG, biodiesel, electric) whenever possible;
- Use add-on control devices such as diesel oxidation catalysts or particulate filters, as appropriate;
- Limit the operating hours of heavy duty equipment.

Source: BAAQMD, 1999, 2008

11.3.2.2 Air Quality Impacts of the Preferred Alternative That Are Less Than Significant

Impact Air Quality 6: The Preferred Alternative could result in increased concentrations of carbon monoxide at congested intersections and along heavily traveled roadways, thus violating the State ambient air quality standard for carbon monoxide. This potential impact is considered to be less than significant.

The BAAQMD area has reached conformity with the carbon monoxide standards, and must now maintain this level. To determine whether the project would cause exceedances of the carbon monoxide standards, the traffic study identified 62 busy intersections in the Concord area that may be impacted by the project and that could be defined as hot spots. These air quality hot spots experience LOS D to F, indicating traffic congestion. Carbon monoxide concentrations were calculated using the CALINE4 screening techniques, as discussed in Section 11.3.1. Concentrations were computed conservatively at a distance of 25 feet from the edge of all roadways. Vehicle speeds were assumed to be 30 miles per hour for all roadways, in accordance with the BAAQMD screening guidance. The methodology also automatically incorporated worst-case meteorological conditions. Both 1-hour and 8-hour concentrations were calculated, as shown in Appendix 11B.

In addition to the intersections, the carbon monoxide concentrations in the vicinity of heavily traveled roadways were investigated, using the same technique. For the freeways, the distance for computing the carbon monoxide concentrations was 50 feet from the edge of the road, and the average speed was 45 miles per hour.

The results of the screening indicate that carbon monoxide concentrations near roadways and at all sensitive receptors will remain well below the carbon monoxide standards for the Preferred Alternative, as shown in Tables 11-8 and 11-9. Therefore, this impact is considered to be less than significant.

Mitigation Measure Air Quality 6: None required.

Impact Air Quality 7: The Preferred Alternative could result in objectionable odors affecting a substantial number of people. This potential impact is considered to be less than significant.

The Preferred Alternative will result in new receptors being located closer than the 2 mile screening level distance (BAAQMD, 1999) from an oil refinery, which is considered a potential odor source. Part of the Tesoro Golden Eagle Refinery lies within a 2-mile radius

of part of the site (the areas to the north of SR 4 and areas within 0.5-mile radius of the North Concord/Martinez BART Station), as shown on Figure 11-2.

The BAAQMD CEQA Guidelines state that a project should be identified as having a significant odor impact only if there has been more than one confirmed complaint per year averaged over a 3-year period, or three unconfirmed complaints per year averaged over a 3-year period. BAAQMD online records (BAAQMD, 2008) show that there have been no odor complaints relating to the Tesoro Golden Eagle Refinery in the past 3 years. Therefore, this potential impact is considered to be less than significant. However, informal records from the refinery itself indicate that some odor-related complaints have been received over the past 3 years, which generally originate from the community of Clyde.

Mitigation Measure Air Quality 7: None required.

Table 11–8: 8-Hour Carbon Monoxide Concentrations* in Parts per Million at Intersections

Intersections			Existing Conditions		No Project Alternative		Preferred Alternative		Concentration and Conservation Alternative	
Int. No.	Road 1 (N-S)	Road 2 (E-W)	LOS	8-hr CO	LOS	8-hr CO	LOS	8-hr CO	LOS	8-hr CO
1	Port Chicago Hwy	Arnold Industrial Wy	A	2.50	D	2.16	C	2.15	C	2.16
2	Port Chicago Hwy	Panoramic Dr	A	2.46	B	2.17	F	2.26	E	2.26
3	Port Chicago Hwy	Olivera Rd	D	2.43	E	2.11	F	2.18	F	2.19
4	Olivera Rd	Salvio St	A	2.22	C	2.07	A	2.06	A	2.07
5	Clayton Wy	Willow Pass Rd	A	2.45	B	2.17	B	2.16	B	2.17
6	Farm Bureau Rd/Olivera Rd	Willow Pass Rd	B	2.50	F	2.17	F	2.17	F	2.18
7	Diamond Bl	Willow Pass Rd	B	2.97	C	2.25	C	2.25	C	2.25
8	Market St/on-ramp	Concord Av	F	2.89	F	2.26	E	2.30	E	2.29
9	Oakland Av	Clayton Rd	B	2.82	C	2.21	B	2.17	B	2.16
10	Beechwood Dr	Landana Dr	B	2.19	C	2.06	D	2.06	F	2.07
11	West St	Concord Bl	A	2.65	B	2.19	D	2.21	C	2.21
12	West St/Laveta Wy	Clayton Rd	B	2.71	C	2.20	B	2.18	B	2.19
13	Denkinger Rd	Concord Bl	A	2.63	B	2.17	C	2.19	C	2.20
14	Treat Bl/Denkinger Rd	Clayton Rd	C	2.80	E	2.22	E	2.22	D	2.22
15	Treat Bl	Cowell Ln	D	2.78	E	2.20	E	2.20	E	2.20
16	Treat Bl	Oak Grove Rd	F	3.06	F	2.27	F	2.28	F	2.28
17	Oak Rd	Treat Bl	E	3.42	F	2.29	F	2.30	F	2.29
18	Bailey Rd	Myrtle Dr	A	2.28	A	2.09	A	2.07	A	2.10
19	Bailey Rd	Concord Bl	A	2.49	B	2.14	C	2.15	C	2.16
20	Bailey Rd	Clayton Rd	B	2.72	B	2.17	B	2.17	B	2.17
21	Kirker Pass Rd	Clearbrook Dr	A	2.45	B	2.15	C	2.19	B	2.15
22	Kirker Pass Rd	Concord Bl	B	2.51	E	2.19	E	2.20	E	2.20
23	Kirker Pass Rd	Clayton Rd	B	2.70	D	2.22	D	2.22	D	2.22

Intersections			Existing Conditions		No Project Alternative		Preferred Alternative		Concentration and Conservation Alternative	
Int. No.	Road 1 (N-S)	Road 2 (E-W)	LOS	8-hr CO	LOS	8-hr CO	LOS	8-hr CO	LOS	8-hr CO
24	Cowell Ln	Ygnacio Valley Rd	E	2.95	F	2.30	E	2.30	E	2.31
25	Oak Grove Rd	Ygnacio Valley Rd	D	2.85	F	2.23	F	2.24	F	2.24
26	Galindo St	Willow Pass Rd	C	2.66	E	2.18	E	2.18	D	2.18
27	Market St	Willow Pass Rd	B	2.91	B	2.20	C	2.24	C	2.23
28	I-680 NB ramps	Willow Pass Rd	C	3.19	D	2.30	D	2.29	D	2.29
29	I-680 SB ramps	Willow Pass Rd	A	3.00	B	2.27	A	2.27	A	2.27
30	Market St	Clayton Rd	B	2.57	F	2.17	E	2.17	E	2.16
31	SR 242 SB ramps	Concord Av	D	3.06	F	2.25	F	2.30	F	2.30
32	Diamond Bl	Concord Av	C	3.23	D	2.33	D	2.34	D	2.34
33	Oak Grove Rd	Monument Bl	A	2.68	C	2.20	C	2.21	C	2.21
34	Walnut Bl	Ygnacio Valley Rd	F	3.41	F	2.34	F	2.35	F	2.35
35	Bancroft Rd	Ygnacio Valley Rd	D	3.12	E	2.28	E	2.28	E	2.28
36	Alberta Wy	Ygnacio Valley Rd	D	2.77	E	2.25	D	2.24	E	2.25
37	Ayers Rd	Ygnacio Valley Rd	E	2.83	F	2.28	E	2.27	F	2.28
38	N Main St	Geary Rd	E	3.14	F	2.29	F	2.29	F	2.28
39	Port Chicago Hwy	Bates Av	C	2.52	C	2.15	C	2.15	C	2.15
40	Bancroft Rd	Treat Bl	D	3.05	F	2.30	F	2.32	F	2.32
41	Kirker Pass Rd	Myrtle Dr	A	2.44	C	2.19	C	2.19	C	2.20
42	Buskirk Av	Treat Bl	F	3.25	F	2.28	F	2.28	F	2.28
43	N Main St	Sunnyvale Av	E	2.90	F	2.26	F	2.28	F	2.28
44	I-680 NB ramps	Ygnacio Valley Rd	F	3.54	F	2.38	F	2.40	F	2.39
45	I-680 SB ramps	Ygnacio Valley Rd	B	2.90	C	2.25	B	2.26	C	2.25
46	Willow Pass Rd	Evora Rd (east) - SR 4 WB off-ramp [in Pittsburg]	A	2.53	F	2.19	F	2.20	F	2.21

Intersections			Existing Conditions		No Project Alternative		Preferred Alternative		Concentration and Conservation Alternative	
Int. No.	Road 1 (N-S)	Road 2 (E-W)	LOS	8-hr CO	LOS	8-hr CO	LOS	8-hr CO	LOS	8-hr CO
47	Willow Pass Rd	Evora Rd (west) [at project site]	A	2.30	F	2.15	F	2.17	F	2.16
48	Willow Pass Rd	Avila Rd	A	2.41	F	2.19	F	2.26	F	2.24
49	Bailey Rd	Willow Pass Rd	B	2.42	D	2.17	E	2.18	E	2.17
50	San Marco Bl	W Leland Rd	A	2.37	C	2.18	D	2.22	E	2.22
51	Bailey Rd	W Leland Rd	B	2.50	F	2.22	F	2.21	F	2.21
52	Railroad Av	W Leland Rd	E	2.90	F	2.26	F	2.26	F	2.26
53	Railroad Av	Buchanan Rd	C	2.69	C	2.18	C	2.18	C	2.18
54	Kirker Pass Rd	James Donlon Bl Ext [future extension of James Donlon Bl]	A	2.40	F	2.21	F	2.21	F	2.22
55	San Marco Bl	Willow Pass Rd/SR 4 EB off-ramp	A	2.44	C	2.18	E	2.24	E	2.24
56	Bailey Rd	SR 4 EB ramps - BART access	F	2.70	F	2.23	F	2.28	F	2.28
57	Bailey Rd	SR 4 WB on-ramp - Canal Rd	B	2.49	D	2.19	E	2.17	E	2.16
58	Railroad Av	SR 4 WB on-ramp - California Av	A	2.61	C	2.18	C	2.17	B	2.18
59	Railroad Av	SR 4 EB ramps	B	2.77	D	2.20	C	2.20	D	2.20
60	Willow Pass Rd	SR 4 WB ramps	C	2.36	F	2.18	F	2.18	F	2.17
61	Willow Pass Rd	SR 4 EB ramps	D	2.45	F	2.18	F	2.26	F	2.24
62	Port Chicago Hwy	SR 4 WB ramps	A	2.64	C	2.20	E	2.18	E	2.19

* Standard is 9 ppm

Source: Arup, 2009.

Table 11–9: 8-Hour Carbon Monoxide Concentrations* near Freeways

Freeway Segment	Existing Conditions (ppm)	No Project Alternative (ppm)	Preferred Alternative (ppm)	Concentration and Conservation Alternative (ppm)
I-680 south of Monument Bl	4.33	2.65	2.66	2.66
I-680 north of Monument Bl	4.30	2.66	2.67	2.67
I-680 north of SR 242	4.30	2.60	2.60	2.61
I-680 north of Willow Pass Rd	3.36	2.38	2.38	2.38
I-680 north of Concord Av	3.39	2.38	2.39	2.39
I-680 north of SR 4	3.21	2.35	2.34	2.34
Freeway Segment	**Existing Conditions (ppm)**	**No Project Alternative (ppm)**	**Preferred Alternative (ppm)**	**Concentration and Conservation Alternative (ppm)**
SR 242 north of I-680	3.15	2.32	2.33	2.32
SR 242 north of Willow Pass Rd	2.87	2.27	2.27	2.27
SR 242 north of Concord Av	3.24	2.33	2.33	2.33
SR 242 north of Solano Wy	3.18	2.32	2.34	2.33
SR 242 north of Olivera Rd	3.05	2.29	2.30	2.29
Freeway Segment	**Existing Conditions (ppm)**	**No Project Alternative (ppm)**	**Preferred Alternative (ppm)**	**Concentration and Conservation Alternative (ppm)**
SR 4 east of I-680	2.93	2.33	2.35	2.35
SR 4 east of Solano Wy	2.90	2.30	2.32	2.32
SR 4 east of SR 242	3.05	2.33	2.31	2.31
SR 4 east of Port Chicago Hwy	3.72	2.51	2.48	2.48
SR 4 east of Willow Pass Rd	3.71	2.49	2.56	2.55
SR 4 east of San Marco Bl	3.27	2.37	2.40	2.40
SR 4 east of Bailey Rd	3.08	2.34	2.34	2.35
SR 4 east of Railroad Av	2.85	2.29	2.29	2.30

* Standard is 9 ppm.
Source: Arup, 2009.

11.3.3 Air Quality Impacts of the Concentration and Conservation Alternative

11.3.3.1 Potentially Significant Impacts of the Concentration and Conservation Alternative

Impact Air Quality 8: The Concentration and Conservation Alternative would result in the total vehicular emissions of ozone precursors exceeding the BAAQMD quantitative thresholds. This impact is considered to be potentially significant.

Refer to the previous discussion of this impact for the Preferred Alternative (Impact Air Quality 1).

> **Mitigation Measure Air Quality 8: Prior to approving development at the site, the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit and peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. To further reduce particulate matter emissions, wood-burning fireplaces will be banned within the CNWS or required to employ best available control technologies and households with such fireplaces shall comply with Spare the Air Day restrictions. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.**

The Concentration and Conservation Alternative is designed to include measures that the URBEMIS model considers to be mitigations, and these have been included in Table 11-4 for operational emissions. Total emissions greatly exceed the threshold value of 15 tons per year for ozone precursors and PM10, and no additional reductions are applicable without reducing the size of the development. As mentioned earlier, this threshold is the same for all projects (regardless of size), and it is not normalized by area, population, employment, or any other factor. Because the project is large, the total emissions for the project would exceed the threshold for the Concentration and Conservation Alternative. Therefore, according to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.

Impact Air Quality 9: As a result of implementing the Concentration and Conservation Alternative, the total population of the City of Concord, including the project, would exceed the maximum population forecast in the General Plan that would be consistent with the current clean air plan. This impact is considered to be potentially significant.

Refer to the previous discussion of this impact for the Preferred Alternative (Impact Air Quality 2).

> **Mitigation Measure Air Quality 9: Prior to approving development at the site, the City of Concord the City shall request updated population projections from ABAG and the BAAQMD, and the City shall coordinate with these agencies to update the applicable clean air plans so that the projections of**

Concord's 2030 population are updated (increased) by ABAG to reflect the size and scope of the Concentration and Conservation Alternative. The updated projections shall be such that the additional population due to the implementation of the Concentration and Conservation Alternative will not exceed the revised 2030 Concord total population. This updated population ceiling shall be incorporated into the applicable clean air plan. Unless ABAG and the BAAQMD revise Concord's 2030 population ceiling, and include it in the applicable clean air plan, this will remain a potential impact that is significant and unavoidable.

No mitigation is possible for this impact, short of significantly reducing the size of the project or increasing the 2030 population ceiling set by ABAG and the BAAQMD for Concord. Moreover, unless there is a change in the ABAG 2030 projections for Concord, the project would preclude other new development from occurring in Concord without exceeding the population ceiling for Concord assumed in the clean air plan. Therefore, ABAG would be required to reestimate population, and then incorporate the revised estimates into a revised applicable clean air plan that would still meet the standards. It is anticipated that the 2011 update to the ABAG projections will include the project buildout. While this mitigation measure would be successful in reducing the impact of Concord's population growth on the clean air plan, it would require actions by ABAG and the BAAQMD that are not under the control of the City of Concord.

Impact Air Quality 10: The Concentration and Conservation Alternative could result in increased population and vehicle miles traveled at rates that would be inconsistent with the most current clean air plan. This impact is considered to be potentially significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Air Quality 3). As shown in Table 11-6, VMT for the Concentration and Conservation Alternative is projected to increase at a rate greater than the growth in population; thus, this impact is considered to be potentially significant (BAAQMD, 1999).

<u>Mitigation Measure Air Quality 10</u>: Prior to approving development at the site, the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit and peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.

In spite of these measures, total VMT growth for the project is projected to exceed population growth. Therefore, according to the BAAQMD Guidelines, this will remain an impact that is considered to be significant and unavoidable.

Impact Air Quality 11: The Concentration and Conservation Alternative could result in an increased risk of cancer and other negative health effects due to TACs in the vicinity of SR 4. This impact is considered to be potentially significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Air Quality 4).

> **Mitigation Measure Air Quality 11: Prior to approving development, the City of Concord shall establish, through zoning, that residential uses, daycare centers, medical facilities, and other sensitive receptors are set back at least 500 feet from SR 4. With implementation of this mitigation measure, this potential significant impact would be reduced to a level that is less than significant.**

Impact Air Quality 12: The Concentration and Conservation Alternative could result in increased emissions of PM_{10}, diesel particulate matter, and other pollutants during construction. This impact is considered to be potentially significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Air Quality 5).

> **Mitigation Measure Air Quality 12: Prior to approving development, the City of Concord shall require that all feasible construction activity control measures, as specified in Table 11-7, will be applied at the site. With implementation of this mitigation measure, this potential significant impact would be reduced to a level that is less than significant.**

Construction activities would vary in intensity and timing as individual projects are built as a result of the Concentration and Conservation Alternative. The mitigation measures previously outlined in Table 11-7 would be applied as appropriate by contractors working on projects at the site.

11.3.3.2 Air Quality Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Air Quality 13: The Concentration and Conservation Alternative could result in increased concentrations of carbon monoxide at congested intersections and along heavily traveled roadways, thus violating the State ambient air quality standard for carbon monoxide. This potential impact is considered to be less than significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Air Quality 6).

> **Mitigation Measure Air Quality 13: None required.**

Impact Air Quality 14: The Concentration and Conservation Alternative could result in objectionable odors affecting a substantial number of people. This potential impact is considered to be less than significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Air Quality 7).

> **Mitigation Measure Air Quality 14: None required.**

11.3.4 Air Quality Impacts of the No Project Alternative

11.3.4.1 11.3.3.1 Potentially Significant Air Quality Impacts of the No Project Alternative

None identified.

11.3.4.2 Air Quality Impacts of the No Project Alternative That Are Less Than Significant

None identified.

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Concord
Community Reuse Plan

13. Population, Housing, and Employment

13 Population, Housing, and Employment

This chapter describes existing conditions with respect to population, housing, and employment, and evaluates the impacts that would occur with implementation of either the Preferred Alternative or the Concentration and Conservation Alternative.

The population, housing, and employment data reported in this chapter was obtained from the American Community Survey documentation (U.S. Census Bureau, 2006); the American Community Survey is a service of the U.S. Census Bureau. Additional information was taken from the Association of Bay Area Governments' (ABAG's) Projections 2007 (ABAG, 2007) and Projections 2009 (ABAG, 2009), which contain projections of population, jobs, and housing statistics.[1] Some City-specific housing statistics were provided by the Concord Housing Element Update (City of Concord, 2009). Additional State- and County-level data used in the development of this chapter were provided by the California Department of Finance (DOF).

The ABAG and DOF data, along with the 2006 American Community Survey data (U.S. Census Bureau, 2006), have been combined to create the most accurate picture of current and projected population growth in the Bay Area. As the chief regional planning organization, ABAG uses population figures, migration, building permit data, local general plans, and other detailed information to project local population and housing growth to the year 2035.

The 2002 Economic Census (DOF, 2002) presently offers the most recent available employment data, and provides a snapshot of jobs within Contra Costa County and the City of Concord. The DOF data supplement the ABAG projections.

It is important to recognize that population levels, housing, and job supply and demand tend to fluctuate with the regional economy. These fluctuations can be perceived as either positive or negative, depending on individual and collective values and viewpoints. Therefore, this analysis will report the projected changes relative to the region and the site, and discuss the impacts of managing the changing population, housing needs, and employment requirements within the Bay Area.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on population, housing, and employment. This has resulted in the population, housing, and employment impacts of both alternatives being substantially less than they would have been had population, housing, and employment impacts not been taken into account during all stages of the planning and environmental analysis process.

[1] Data from Projections 2009 has been incorporated to the extent possible, but because the report document had not been released at the time of writing, we have also relied upon the information provided in Projections 2007.

13.1 Existing Conditions

13.1.1 Population in Concord

As shown in Table 13-1, the population of Concord in 2006 was 122,204. There were 43,015 households, the majority of which were families who owned homes, and the average household size was 2.79 people. In 2006, Concord was the largest city in Contra Costa County, followed by Richmond with a population of 103,022, and then Antioch with a population of 98,330.

As shown in Table 13-2, Concord is expected to grow by 28,100 persons between 2005 and 2035. Concord's population is ethnically diverse, as shown in Table 13-3, with approximately 45 percent belonging to racial minorities. Of this total, 29 percent are of Latino origin, and Asians constitute 11 percent of the local population.

Table 13-1: Population and Households, 2006

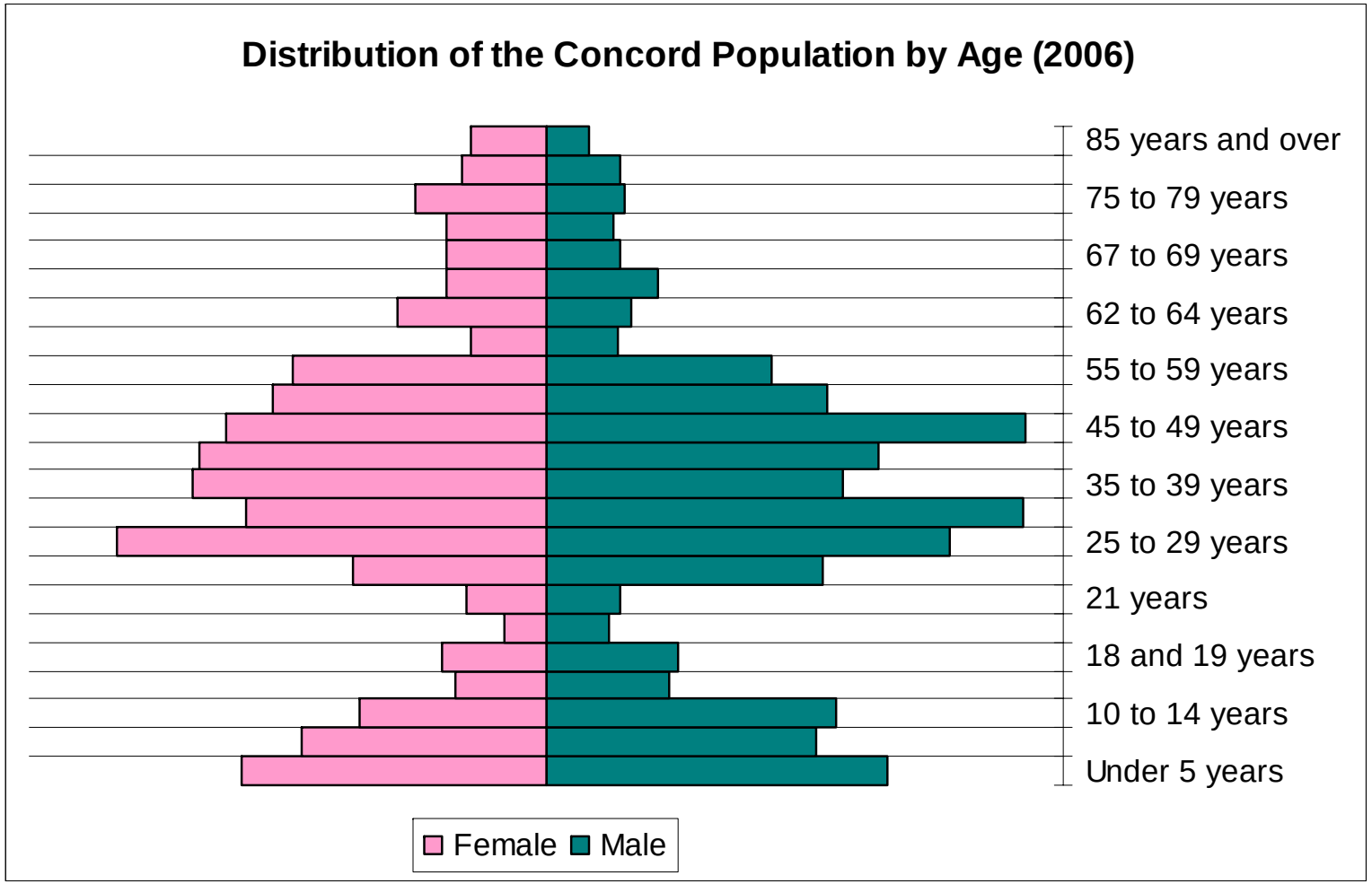
	City of Concord		Contra Costa County		Bay Area*	
Total persons		122,204		1,024,319		6,923,401
Total households		43,015		359,371		2,500,188
Household size		2.79		2.81		2.71
Household Type		**Percent**		**Percent**		**Percent**
Families	27,945	65.0%	251,755	70.1%	1,608,139	64.3%
Non-families	15,070	35.0%	107,616	29.9%	892,049	35.7%
Tenure						
Owner	26,479	61.6%	258,877	72.0%	1,495,802	59.8%
Renter	16,536	38.4%	100,494	28.0%	1,004,386	40.2%

* Includes the entire nine-county Bay Area
Source: U.S. Census Bureau, 2006

In the City of Concord, 48 percent of the population is between 25 and 55 years old, and 23 percent is under the age of 18, indicating that families represent the predominant segment of the population in Concord. Those above the age of 65 account for only 10 percent of the population.

As depicted on Figure 13-1, the relative share of population decreases for ages 18 through 21, which may indicate the departure of youth from Concord for college or diverse work opportunities.

Figure 13-1: Population Distribution



Source: U.S. Census Bureau, 2006

Table 13-2: Regional Population, Housing, and Job Projections, 2010 to 2035[1]

	2010	2015	2020	2025	2030	2035	Total Change 2010–2035	Percent Change 2010–2035
Concord								
Population	129,700	131,800	135,700	141,500	147,100	153,000	23,300	18.0
Households	46,860	47,760	49,250	51,450	53,780	56,220	9,360	20.0
Jobs	60,800	63,150	65,700	70,900	78,260	86,260	25,460	41.9
Jobs-to-housing ratio	1.30	1.32	1.33	1.38	1.46	1.53		
Contra Costa County								
Population	1,090,300	1,130,700	1,177,400	1,225,500	1,273,700	1,322,900	232,600	21.3
Households	392,680	407,250	424,340	442,330	461,330	480,480	87,800	22.4
Jobs	376,820	409,650	445,550	479,350	516,910	555,650	178,830	47.4
Jobs-to-housing ratio	0.96	1.01	1.05	1.08	1.12	1.16		
Bay Area[2]								
Population	7,341,700	7,677,500	8,018,000	8,364,900	8,719,300	9,073,700	1,732,000	23.6
Households	2,667,340	2,784,690	2,911,000	3,039,910	3,171,940	3,302,780	635,440	23.8
Jobs	3,475,840	3,734,590	4,040,690	4,379,900	4,738,730	5,107,390	1,631,550	46.9
Jobs-to-Housing Ratio	1.30	1.34	1.39	1.44	1.49	1.55		

[1] The ABAG projections do not precisely match the American Community Survey data.

[2] Includes the entire nine-county Bay Area.

Source: ABAG, 2009

Table 13-3: Race and Ethnicity in Concord (2006)

	City of Concord		Contra Costa County	
	Number	%	Number	%
Hispanic	35,618	29.3	224,134	21.9
Non-Hispanic				
White only	67,190	55.2	530,288	51.8
Black or African-American only	1,533	1.3	92,863	9.1
American Indian and Alaska Native only	221	0.2	2,720	0.3
Asian only	13,713	11.3	135,351	13.2
Native Hawaiian and other Pacific Islander only	342	0.3	4,316	0.4
Other race only	1,216	1.0	5,785	0.6
Two or more races	1,920	1.6	28,862	2.8
Total	121,753	100.0	1,024,319	100.0

Source: U.S. Census Bureau, 2006

13.1.2 Population in the Region

In 2006, the population of Contra Costa County was 1.02 million, and the County is projected to grow to 1.30 million by 2035. The county has similar household characteristics to Concord, with slightly more families and owned housing. While demographics are similar, Contra Costa County has a lower proportion of Latinos and a higher proportion of Asian and multi-racial populations. The County population as a whole is projected to increase by 21.3 percent by 2035, while the Bay Area as a whole is projected to increase by 23.6 percent. Future population growth in Concord is similar to that of the County, with a projected 18 percent increase between 2010 and 2035.

The rapid population growth of Contra Costa County reflects a general trend across California. Between 1990 and 2000, the population of the state increased 13.8 percent, from 29.76 million to 33.37 million. Counties such as San Benito, Placer, Madera, and Riverside grew at a rate of more than 30 percent. According to the DOF, Contra Costa County is among the 20 counties growing at the fastest rate in the California.

These growth trends are predicted to continue. Based on the projections of the DOF, the population of California and Contra Costa County will continue to grow substantially in the next few decades, as shown in Table 13-4. This growth in population is accompanied by associated increases in demand for new jobs and housing within the area. It should be noted that the Contra Costa population projections for 2020 and 2030 by the DOF shown in Table 13-4 differ from those of ABAG presented in Table 13-2.

Table 13-4: California and Contra Costa County Population Projections

	California	Contra Costa County
2010	39,135,676	1,075,931
2020	44,135,923	1,237,544
2030	49,240,891	1,422,840
2040	54,266,115	1,609,257
2050	59,507,876	1,812,242

Source: California Department of Finance, 2007

13.1.3 Housing in Concord

In 2007, a total of 47,857 housing units existed within Concord, 94.5 percent of which were occupied. Of the occupied housing units, 60.6 percent were owner occupied and 33.9 percent were renter occupied. The median home sale price in 2008 was $365,000 for single-family homes and $160,000 for townhomes and condominiums (City of Concord, 2009), and the median gross rent in 2007 was $1,142 per month (U.S. Census Bureau, 2007).

While the Concord Naval Weapons Station (CNWS) was active, the U.S. Navy provided housing for enlisted personnel with families at an area along Olivera Road. That land was transferred to the U.S. Coast Guard, and the housing units are now occupied by Bay Area Coast Guard personnel. There is no other housing at the site.

13.1.3.1 City of Concord Inclusionary Housing Ordinance

Concord has an Inclusionary Housing Ordinance to provide below-market-rate housing (both owned and rented) for all new residential development projects of five or more units. The ordinance requires developers to target specific income levels for rental or ownership development to achieve the provision of housing across varying income levels.

For rental projects, either 10 percent of the units are required to be affordable to households with incomes at 80 percent of the area median income, or 6 percent of the units are required to be affordable to households with incomes at 50 percent of the area median income. For ownership projects, either 10 percent of the units are required to be affordable to households with incomes at 120 percent of the area median, or 6 percent of the units are to be affordable to households with incomes at 80 percent of the area median (City of Concord, 2004).

13.1.3.2 Homeless Needs Assessment

As required by federal law, in 2007, the City of Concord screened properties as part of a regional analysis of homeless needs, and found that housing opportunities on the site are extremely limited because there is no “occupiable housing or facility infrastructure on the base” (City of Concord, 2007). The City conducted a needs assessment and documented a median homeless population of 1,527 around the study area. The assessment identified that the highest need was for multi-family transitional housing with support services such as childcare. The survey study area included the cities of Concord, Walnut Creek, Pittsburg,

Pleasant Hill, and Martinez, and adjacent unincorporated portions of central Contra Costa County. Potential approaches identified in the report titled Homelessness in the Concord Naval Weapons Station Study Area: An Assessment of Homeless Needs, Services, and Trends (City of Concord, 2007) for providing homeless assistance include:

- Creating or constructing dedicated buildings for homeless housing and services at the site
- Dedicating a percentage of all housing and other benefits created at the site for homeless persons
- Providing off-site housing and/or services to address identified unmet homeless needs
- Creating a fund for housing and services for homelessness that can be used on site or off site

13.1.4 Housing in the Region

Table 13-5 illustrates the U.S. Census Bureau housing estimates within Contra Costa County and the Bay Area. In 2006, there were 389,134 and 2,687,022 housing units, respectively. In each case, 92 to 93 percent of the units were occupied. The Bay Area as a whole had a slightly lower percentage of owned housing (60 percent) than did Contra Costa County (72 percent). The median home price was estimated at $690,800 in the Bay Area as compared to $641,900 in Contra Costa County.

Table 13-5: Housing, 2006

	2000		2006	
Concord	**Number**	**Percent**	**Number**	**Percent**
Total housing units	45,083	100.00	46,568	100.00
Occupied housing units	44,020	97.60	43,015	92.40
Owner-occupied housing units	27,542	62.60	26,479	61.60
Renter-occupied housing units	16,478	37.40	16,536	38.40
Vacant housing units	1,063	2.40	3,553	7.60
One-unit, detached housing	26,882	59.80	28,011	60.20
Median value owner occupied unit ($)	$233,700	n/a	$582,300	n/a
Median gross rent ($)	$880	n/a	$1,150	n/a
Contra Costa County	**Number**	**Percent**	**Number**	**Percent**
Total housing units	354,577	100.00	389,134	100.00
Occupied housing units	344,129	97.10	359,371	92.40
Owner-occupied housing units	238,449	69.30	258,877	72.00
Renter-occupied housing units	105,680	30.70	100,494	28.00
Vacant housing units	10,448	2.90	29,763	7.60
One-unit, detached housing	232,050	65.40	260,967	67.10
Median value owner occupied unit ($)	$267,800	n/a	$641,900	n/a
Median gross rent ($)	$898	n/a	$1,176	n/a
Bay Area*	**Number**	**Percent**	**Number**	**Percent**

	2000		2006	
Total housing units	2,552,402	100.00	2,687,022	100.00
Occupied housing units	2,466,019	96.60	2,500,188	93.00
Owner-occupied housing units	1,423,958	57.70	1,495,802	59.80
Renter-occupied housing units	1,042,061	42.30	1,004,386	40.20
Vacant housing units	86,383	3.40	186,834	7.00
One-unit, detached housing	1,376,911	53.90	1,460,443	54.40
Median value owner occupied unit ($)	$353,500	n/a	$690,800	n/a
Median gross rent ($)	$968	n/a	$1,180	n/a

n/a = not applicable.

* Includes the entire nine-county Bay Area.

Source: U.S. Census Bureau, 2006

13.1.4.1 ABAG Regional Housing Needs Allocation

On a regional policy level, ABAG sets growth strategies and footprints for the nine counties in the Bay Area. ABAG's Smart Growth Strategy sets out a plan to encourage "development that revitalizes central cities and older suburbs, supports and enhances public transit, promotes walking and bicycling, and preserves open spaces and agricultural lands" (ABAG, 2002). This document also states that "Smart growth seeks to revitalize the already-built environment and, to the extent necessary, to foster efficient development at the edges of the region, with the goal of creating more livable communities with sufficient housing for the region's workforce." This includes smarter suburbs "at higher densities than the current norm and with a better balance of jobs and housing than is typical of existing or planned new suburbs" (ABAG, 2002).

The goal for sufficient housing is set by the State of California, which requires each county to identify a sufficient amount of land for development to accommodate its "fair share" of affordable housing. To meet these requirements, ABAG gives each city and county a number representing the amount of housing needed for all income groups, based on the existing need and projected population growth. This Regional Housing Needs Allocation (RHNA) process requires each city or county to identify sufficient sites to meet Concord's share of regional housing needs of various income brackets. The California Department of Housing and Community Development (HCD) issues the Regional Housing Needs Allocation statewide for each region, and determined the four income categories as follows:

1. Very Low Income (less than 50 percent median family income [MFI])
2. Low Income (50 to 80 percent MFI)
3. Moderate Income (80 to 120 percent MFI)
4. Above Moderate Income (above 120 percent MFI)

Table 13-6 identifies the target housing needs for both the County and Concord from very low to above moderate income levels. These numbers are applicable for the duration of the current planning period that started in 2007 and ends in 2014.

Table 13-6: Regional Housing Needs Allocation for the 2007 to 2014 Planning Period

	Concord	Contra Costa County
Very Low (less than 50 percent of median income)	639	6,512
Low (less than 80 percent of median income)	426	4,325
Moderate (less than 120 percent of median income)	498	4,996
Above Moderate	1,480	11,239
Total	3,043	27,072

Source: ABAG, 2007

The housing element of a jurisdiction must ensure that the jurisdiction's zoning has enough housing units to allow for sufficient housing to be built per income category. For the Very Low Income and Low Income categories in particular, jurisdictions must provide higher-density zoning, often ranging between 20 to 30 dwelling units per acre, depending on the setting. However, the intent of Housing Element law is that a jurisdiction should not impede the construction of housing in any income category. A jurisdiction is responsible for providing the zoning for the four economic income categories noted above, but it is not responsible for construction of these units. This is because factors such as market considerations and construction costs are considered beyond a jurisdiction's control in determining whether or not housing units in each income category are actually constructed.

The 1999–2006 Concord Housing Element, as certified by HCD, identified sufficient land inventory and zoning of sites within the City of Concord to meet the RHNA goals, but Projections 2007 (ABAG, 2007) notes that during this time period, both Concord and Contra Costa County over-allocated permits for above-moderate-price housing and failed to meet their RHNA goals for lower incomes. Table 13-7 shows the percentage of the allocation permitted, issued by income bracket.

Table 13-7: Housing Units Produced in Concord and Contra Costa County for the 1999–2006 Planning Period[1]

	Concord	Contra Costa County
Very Low < 50%		
RHNA allocation	453	6,481
Permits issued or counted[2]	237.25	2,852
% of allocation	52%	44%
Low < 80%		
RHNA allocation	273	3,741
Permits issued or counted[2]	153.25	3,480
% of allocation	56%	93%
Moderate < 120%		

	Concord	Contra Costa County
RHNA allocation	606	8,551
Permits issued or counted[2]	76	7,076
% of allocation	13%	83%
Above Moderate		
RHNA allocation	987	15,937
Permits issued or counted[2]	2,216	34,548
% of allocation	225%	217%

[1] The RHNA allocation in this table is based on the 1999–2006 Regional Housing Allocation (ABAG, 2007).

[2] According to the Concord Housing Element, under State law, HCD can count a proportion of substantially rehabilitated units toward satisfying each income category of RHNA. The total number of units used to satisfy RHNA is shown in the Concord column, while available Contra Costa County data shows the number of permits issued in the 1999–2006 period.

Source: ABAG, 2007 (Contra Costa County data); City of Concord, 2009 (Concord data)

13.1.4.2 Housing Element of the General Plan

The Housing Element is an element of the City's General Plan required by State law. All cities and counties in the San Francisco Bay Area, including Concord, were required to update their Housing Element by June 30, 2009 for the 2007–2014 planning period. In accordance with this requirement, the City produced a draft Housing Element Update that was submitted to HCD and released to the public on March 27, 2009. In the Update, the City anticipates no development on the site in the current planning period (prior to June 30, 2014). All sites identified as part of the RHNA process for this period are located in the existing built area of Concord.

The Update also clarifies the City's responsibilities with respect to the RHNA numbers as a local jurisdiction, as follows:

> The primary goal of the RHNA numbers is to act as targets for jurisdictions to achieve during the planning period. Because local jurisdictions are rarely if ever involved in the actual construction of housing units, sometimes it is not possible for these targets to be met. The California Department of Housing and Community Development does not penalize jurisdictions for not meeting RHNA targets, as long as they have allocated enough land for the construction of units and have made a good effort through the implementation of housing policies and programs to help meet the RHNA targets. (Concord, 2009)

13.1.5 Employment in Concord

In the past decade, Concord has served as a regional employment center. ABAG projects that this trend will likely continue, with an estimated increase in jobs of 49 percent from 64,670 jobs in 2010 to 96,360 jobs in 2035. As shown in Table 13-2, the jobs-to-housing ratio for the City of Concord is projected to reach 1.67 by 2035. This signals a potential

need for increased housing to meet the needs of local workers. In 2007, Concord had 66,300 employed residents and an unemployment rate of 5.1 percent, which is slightly lower than the rate for California as a whole (5.4 percent), as shown in Table 13-8.

Table 13-8: Labor Force and Unemployment, 2007

	California	Contra Costa County	Concord
Employed residents	17,208,900	501,200	66,300
Total labor force*	18,188,100	526,100	69,900
Total unemployment	979,200	24,900	3,600
Unemployment rate	5.4%	4.7%	5.1%

* Annual average, not seasonally adjusted

Source: California Employment Development Department, 2007

13.1.6 Employment in the Region

Within the region, growth in the number of jobs in Contra Costa County is projected to increase by 46.8 percent (to 188,550 jobs) between 2010 and 2035. This projected increase, as shown in Table 13-2, is almost 5 percent more than that of the Bay Area as a whole, and is approximately equal to the job growth anticipated in the City of Concord (49 percent). The job composition in Contra Costa County, as shown in Table 13-9, is similar to that of Concord, with a relatively high percentage of employment in the professional, retail, and health care clusters.

13.1.7 Assembly Bill 32: California Global Warming Solutions Act of 2006

This section and the next discuss two pieces of legislation that change how urban form is planned in California.

Provisions under Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, relate to emissions and what is now known as the greenhouse gas (GHG) effect. This bill was added to Division 25.5 (Section 38500) of the California Health and Safety Code, relating to air pollution. The information here about AB 32 is provided in the context of jobs/housing balance, which will in the future be guided by AB 32.

Under State law, the State Air Resources Board (ARB), the State Energy Resources Conservation and Development Commission (Energy Commission), and the California Climate Action Registry all have responsibility related to the control of emissions of GHGs. In addition, the Secretary for Environmental Protection is required to coordinate emission reductions of GHGs and climate change activity in state government.

AB 32 required the ARB to adopt regulations that require the reporting and verification of statewide GHG emissions and to monitor and enforce compliance with this program. The bill requires the ARB to adopt statewide GHG emission limits equivalent to the statewide GHG emissions levels experienced in 1990, and this goal is to be achieved by 2020. The ARB is to attain this goal by adopting rules and regulations that achieve the maximum technologically feasible and cost-effective GHG reductions.

A more detailed discussion of AB 32 can be found in Chapter 3, Land Use, and Chapter 17, Other CEQA Considerations.

13.1.8 Senate Bill 375

Senate Bill (SB) 375, which has been described as the most sweeping revision of land use policies since CEQA, was signed into law in September 2008. SB 375 is regarded as the first of its kind to target GHG reductions through land use controls and transportation planning at a regional level. The legislation is designed to curb GHG emissions by controlling urban sprawl and by providing incentives for local governments and developers to follow discrete planned growth patterns. It affects the geographic distribution of jobs and housing, resulting in potentially different urban form.

SB 375 requires the ARB to develop regional GHG emission reduction targets to be achieved by automobiles and light trucks in the 2020–2035 time period. The law directs the ARB to work with California's 18 metropolitan planning organizations (MPOs) to align transportation, housing, and regional land use plans with GHG reduction targets. The MPOs are charged to prepare a "sustainable communities strategy" to reduce the amount of vehicle miles traveled (VMT) in their respective regions and to demonstrate the ability of the region to attain established ARB targets.

SB 375 provides emissions-reducing goals designed to integrate disjointed planning activities, and also provides incentives for local governments and builders to develop new conscientiously planned communities. SB 375 strengthens ARB's ability to reach AB 32 goals in that the ARB is tasked to determine if each region is on track to meet its targets.

A more detailed discussion of SB 375 can be found in Chapter 3, Land Use.

Based on the Economic Census (DOF, 2001), as shown in Table 13-9, retail and health care occupations constitute two of the main job clusters in Concord, at 18 and 15 percent, respectively. These occupations are followed by professional, scientific, and other services, which constitute a combined 13 percent of the labor force.

Table 13-9: Jobs by Sector, 2002

Industry Sector	Number of Businesses	Number of Jobs	Percent of Jobs
Concord			
Manufacturing	136	3,872	5
Wholesale trade	182	2,001	7
Retail trade	445	8,062	18
Information	110	3,039	4
Real estate and rental and leasing	159	1,250	6
Professional, scientific, and technical services	316	4,537	13
Administrative and support, and waste management and remediation service	196	4,650	8

Industry Sector	Number of Businesses	Number of Jobs	Percent of Jobs
Educational services	24	191	1
Health care and social assistance	389	4,810	15
Arts, entertainment, and recreation	36	1,184	1
Accommodation and food services	234	3,628	9
Other services (except public administration)	295	2,214	12
Total	2,522	34,901	100
Contra Costa County			
Manufacturing	677	20,685	4
Wholesale trade	1,114	13,218	7
Retail trade	2,701	44,011	16
Information	535	17,771	3
Real estate and rental and leasing	1,236	7,115	7
Professional, scientific, and technical services	3,280	26,086	19
Administrative and support, and waste management and remediation services	1,332	26,510	8
Educational services	196	1,681	1
Health care and social assistance	2,517	40,038	15
Arts, entertainment, and recreation	305	6,786	2
Accommodation and food services	1,608	24,450	9
Other services (except public administration)	1,544	9,745	9
Total	17,045	238,096	100

Source: DOF, 2001

13.2 Standards of Significance

Criteria for determining the significance of impacts on population, housing, and employment have been developed based on Appendix G of the California Environmental Quality Act (CEQA, 1970) Guidelines and relevant legal requirements and agency thresholds. For purposes of this Environmental Impact Report (EIR), an alternative may have a significant impact related to population, housing, and employment if it would:

- Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)
- Displace a substantial amount of existing housing, necessitating construction of replacement housing elsewhere

- Displace substantial numbers of people, necessitating construction of replacement housing elsewhere
- Fail to meet the requirements of the City's Inclusionary Housing Ordinance
- Induce sprawl either directly (e.g., by extending residential development onto pristine open space that lacks services) or indirectly (e.g., by necessitating the allocation of greenfield space to meet RHNA requirements)
- Impose a burden on the City to meet growth-related increases in RHNA numbers associated with the project in areas outside the project boundary

13.3 Potential Population, Housing, and Employment Impacts

This section begins with a description of assumptions that have been incorporated in the analysis of potential population, housing, and employment impacts. Then, impacts associated with each of the alternative reuse concepts are identified. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented. The section concludes with a description of the potential impacts of the No Project Alternative.

13.3.1 Assumptions about Potential Population, Housing, and Employment Impacts

Following are the assumptions that have been applied in the analysis of potential population, housing, and employment impacts of the two alternatives. The assumptions are based on information gathered during the planning process to develop the alternatives. This information has been incorporated into both alternatives as ways to avoid or minimize their environmental consequences.

- The population of California and the Bay Area is growing, and is projected to continue growing. It is assumed that both alternatives would provide housing for residents in Concord, and would meet requirements for affordable housing set in the City's Inclusionary Housing Ordinance; this will allow housing for all income levels to be built in proximity to the urban core, and thus close to jobs, infrastructure, and services.
- Both alternatives will be developed to comply with the intent of AB 32 and SB 375 to provide transit-oriented development (TOD) and other features related to population, housing, and employment.
- Both alternatives will assist in accommodating the projected increase in population in Concord, providing for at least 23,241 residents on the site (the Concentration and Conservation Alternative) and at most 28,800 residents on site (the Preferred Alternative).

- Neither of the alternatives would displace existing housing units, because there are no housing units at the site. In addition, neither of the alternatives would displace any people, so construction of replacement housing elsewhere would not be necessary.
- By federal law, either alternative is required to accommodate needs for the homeless; thus, it is assumed that there will be no impact on homeless populations and other minorities as a result of implementation of either of the alternatives.
- The alternatives address the environmental justice policies of the California Environmental Protection Agency (EPA) (www.calepa.ca.gov/EnvJustice/) by providing a mix of housing to accommodate workforce housing for low- and moderate-income residents in accordance with the City's Inclusionary Housing Ordinance.
- Both alternatives provide a jobs/housing balance.
- The City has identified sufficient sites within the existing built area of Concord to meet its share of regional housing needs as part of the RHNA process for the current planning period from 2007 to 2014; thus, neither alternative will have an effect on the current allocation or performance relative to the RHNA. It is anticipated that any growth resulting from development potentially occurring on the site would likely increase Concord's RHNA numbers proportionally in future planning periods. It is assumed for these periods that the City will identify sufficient sites within the project area to account for any such increase as part of future Housing Element Updates; thus, neither alternative would impact the existing urban area's ability to meet Concord's RHNA requirements.
- The adopted Reuse Plan will be incorporated into the City's General Plan via a General Plan Amendment that, by State law, must be consistent with the Housing Element of the General Plan, including consideration of the provisions of RHNA legislation. It is assumed that this process and any implications related to RHNA would be evaluated and included as part of the General Plan Amendment adoption process.
- ABAG's projections are updated every 2 years. Projections 2007 did not include any projections for growth on the site. Projections 2009 assumed some growth in future years on the site, but because the forecasts were generated around the time the alternatives were still being generated, they included only a partial amount compared to the growth proposed in either alternative. The next round of projections, Projections 2011, is assumed to incorporate the amount of growth approved by the City when the General Plan is itself amended to incorporate the adopted Reuse Plan for the site.

13.3.2 Population, Housing, and Employment Impacts of the Preferred Alternative

13.3.2.1 Potentially Significant Population, Housing, and Employment Impacts of the Preferred Alternative

None identified.

13.3.2.2 Population, Housing, and Employment Impacts of the Preferred Alternative That Are Less Than Significant

Impact Population, Housing, and Employment 1: The Preferred Alternative would result in an increase in housing, population, and employment. This impact is considered to be less than significant.

Concord is expected to grow by approximately 23,000 people (18 percent) between 2010 and 2035 in a region that is anticipated to grow at an even faster rate. ABAG documents the existing housing shortfall in Concord at close to 3,000 units and 30,000 units in Contra Costa County, and future increased population growth to 2035 would increase that amount by an additional 9,360 units in Concord.

The Preferred Alternative would accommodate projected population increases and help meet housing demands in Concord by providing 12,272 housing units with a potential increase in population of 28,800 residents. Development on the site would assist in meeting the existing and future housing needs of both Concord and Contra Costa County; thus, the Preferred Alternative is not growth inducing.

The increase in housing supply can also yield more housing units for low- to middle-income families. Based on Concord's Inclusionary Housing Ordinance, all new developments greater than five units in size will be required to meet the City's target of 10 percent affordable housing.

In addition, the site is located within existing urban service limits and is well connected to city and regional infrastructure. As a result, the Preferred Alternative would accommodate new growth in a sustainable manner consistent with ABAG's goal of providing development "at higher densities . . . with a better balance of jobs and housing," while creating no risk of site-associated displacement. This provision for planned, transit-oriented, mixed-use growth is consistent with the goals and policies of AB 32 and SB 375 regarding land use, housing, and transportation.

Based on these considerations, it has been determined that this impact is less than significant.

Mitigation Measure Population, Housing, and Employment 1: None required.

Impact Population, Housing, and Employment 2: The Preferred Alternative would result in a shift of the jobs/housing balance. This impact is considered to be less than significant.

The Preferred Alternative would increase the number of long-term and short-term (construction) jobs available to residents of Concord, allowing those who live in Concord to work in close proximity to employment opportunities. As shown in Table 13-2, ABAG projects that 25,460 more jobs will need to be accommodated in Concord between 2010 and 2035, for a total of 86,260 jobs. Coupled with a projected 56,220 future households, this represents a jobs-to-housing ratio goal of 1.53 jobs per household. The Preferred Alternative would provide space to accommodate 26,530 long-term jobs and 12,272 households, representing a jobs-to-housing ratio of 2.16 on the site, substantially higher than the existing ratio throughout Concord of 1.30. When added to the projected housing

and employment totals in Concord for the year 2010, the Preferred Alternative will raise Concord's overall jobs-to-housing ratio to 1.48. The higher jobs-to-housing ratio provided by the Preferred Alternative supports ABAG's Smart Growth Strategy as well as AB 32 and SB 375 in that the Preferred Alternative will allow a greater proportion of residents in Concord to work within their neighborhoods and immediate communities. Based on these considerations, it has been determined that this impact is less than significant.

Mitigation Measure Population, Housing, and Employment 2: None required.

Impact Population, Housing, and Employment 3: The Preferred Alternative would result in phased construction work. This impact is considered to be less than significant.

Development of the site would provide jobs for temporary construction wage workers, with phased construction assumed over a 30-year period. The development would be phased over a long period, causing no shortage of available labor throughout the region, and the housing built on the site would also be available for workers to inhabit on either a short- or long-term basis. The site already has strong transportation ties to regional networks for the skilled labor and specialized materials necessary to execute such projects; and individual developers would decide to employ union or non-union labor based on their own practices and local regulations. Based on these considerations, it has been determined that this impact is less than significant.

Mitigation Measure Population, Housing, and Employment 3: None required.

13.3.3 Population, Housing, and Employment Impacts of the Concentration and Conservation Alternative

13.3.3.1 Potentially Significant Population, Housing, and Employment Impacts of the Concentration and Conservation Alternative

None identified.

13.3.3.2 Population, Housing, and Employment Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Population, Housing, and Employment 4: The Concentration and Conservation Alternative would result in an increase in housing, population, and employment. This impact is considered to be less than significant.

Concord is expected to grow by approximately 23,000 people (18 percent) between 2010 and 2035 in a region that is anticipated to grow at an even faster rate. ABAG documents the existing housing shortfall in Concord at close to 3,000 units and 30,000 units in Contra Costa County, and future increased population growth to 2035 would increase that amount by an additional 9,360 units in Concord.

The Concentration and Conservation Alternative would accommodate projected population increases and help meet housing demands in Concord by providing 10,203 housing units with a potential increase in population of 23,241 residents. Development on the site would assist in meeting the existing and future housing needs of both Concord and Contra Costa County; thus, the Concentration and Conservation Alternative is not growth inducing.

The increase in housing supply can also yield more housing units for low- to middle-income families. Based on Concord's Inclusionary Housing Ordinance, all new developments greater than five units in size will be required to meet the City's target of 10 percent affordable housing.

In addition, the site is within existing urban service limits and is well connected to city and regional infrastructure. As a result, the Preferred Alternative would accommodate new growth in a sustainable manner consistent with ABAG's goal of providing development "at higher densities . . . with a better balance of jobs and housing," while creating no risk of site-associated displacement. This provision for planned, transit-oriented, mixed-use growth is consistent with the goals and policies of AB 32 and SB 375 regarding land use, housing, and transportation.

Based on these considerations, it has been determined that this impact is less than significant.

Mitigation Measure Population, Housing, and Employment 4: None required.

Impact Population, Housing, and Employment 5: The Concentration and Conservation Alternative would result in a shift of the jobs/housing balance. This impact is considered to be less than significant.

The Concentration and Conservation Alternative would increase the number of long-term and short-term (construction) jobs available to residents of Concord, allowing those who live in Concord to work in close proximity to employment opportunities. As shown in Table 13-2, ABAG projects that 25,460 more jobs will need to be accommodated in Concord between 2010 and 2035, for a total of 86,260 jobs. Coupled with a projected 56,220 future households, this represents a jobs-to-housing ratio goal of 1.53 jobs per household. The Concentration and Conservation Alternative would provide space to accommodate 21,257 long-term jobs and 10,203 households, representing a jobs-to-housing ratio of 2.08 on the site, substantially higher than the existing ratio throughout Concord of 1.30. When added to the projected housing and employment totals in Concord for the year 2010, the Concentration and Conservation Alternative will raise Concord's overall jobs-to-housing ratio to 1.44. The higher jobs-to-housing ratio provided by the Concentration and Conservation Alternative supports ABAG's Smart Growth Strategy as well as AB 32 and SB 375 in that the Preferred Alternative will allow a greater proportion of residents in Concord to work within their neighborhoods and immediate communities. Based on these considerations, it has been determined that this impact is less than significant.

Mitigation Measure Population, Housing, and Employment 5: None required.

Impact Population, Housing, and Employment 6: The Concentration and Conservation Alternative would result in phased construction work. This impact is considered to be less than significant.

Development of the site would provide jobs for temporary construction wage workers, with phased construction assumed over a 30-year period. The development would be phased over a long period, causing no shortage of available labor throughout the region, and the housing built on the site would also be available for workers to inhabit on either a short- or long-term basis. The site already has strong transportation ties to regional networks for the

skilled labor and specialized materials necessary to execute such projects; and individual developers would decide to employ union or non-union labor based on their own practices and local regulations. Based on these considerations, it has been determined that this impact is less than significant.

Mitigation Measure Population, Housing, and Employment 6: None required.

13.3.4 Population, Housing, and Employment Impacts of the No Project Alternative

13.3.4.1 Potentially Significant Population, Housing, and Employment Impacts of No Project Alternative

Impact Population, Housing, and Employment 7: The No Project Alternative would not result in any growth in population, housing, or employment. This impact is considered to be potentially significant.

The No Project Alternative would result in the continued dormancy of the site. No new housing or jobs would be provided, and the City and County would be required to evaluate other options to meet RHNA requirements, GHG reduction goals, and existing and future population growth demands. This alternative may be sprawl inducing, since additional housing and population growth may be accommodated on greenfield sites that potentially are beyond existing transit and infrastructure service limits. This impact is potentially significant.

Mitigation Measure Population, Housing, and Employment 7: None is identified at this time. This impact would be considered significant and unavoidable.

13.3.4.2 Population, Housing, and Employment Impacts of the No Project Alternative That Are Less Than Significant

None identified.

13.4 References

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Community Reuse Plan

14.
Public Services

14 Public Services

This chapter describes existing public services in the region of the site and summarizes the effects on public services that would result from implementation of either of the two alternatives.

As used in this Final Environmental Impact Report (EIR), public services include public, non-profit, and private community facilities. Public community facilities include police protection, fire and emergency response services, libraries, schools (K–12), community colleges and universities, and community/cultural centers. Non-profit and private community facilities include research and educational institutes, performing arts centers, museums, hospitals and clinics, and places of worship. Public parks and urban green space are discussed in Chapter 15, Recreation. Public utility systems, including water supply, wastewater, and stormwater management, are discussed in Chapter 16, Utilities.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on public services. This has resulted in the public services impacts of both alternatives being substantially less than they would have been had public services impacts not been taken into account during all stages of the planning and environmental analysis process.

14.1 Existing Conditions

14.1.1 Police Protection

14.1.1.1 On-Site Security

Safety and security on the site is the overall responsibility of the U.S. Navy until formal transfer of the site. This role is fulfilled by federal police, in agreement with the City of Concord Police Department, as defined by its 1993 Memorandum of Understanding (MOU, 1993). Within this agreement, the City of Concord Police Department has investigative authority and jurisdiction over the site with respect to criminal offenses. Federal police are primarily responsible for traffic control, enforcement of traffic regulations, and investigations of minor motor vehicle accidents. In addition, interference with military operations, including trespass onto the site, is enforced by the federal police. As such, federal police provide day-to-day security presence on the site, with any criminal offenses being referred to the City of Concord Police Department.

14.1.1.2 City of Concord Police Department

The Concord Police Department provides police services in Concord. These services are complemented by other agencies with jurisdiction over facilities and districts near the site, including the California Highway Patrol (CHP), the Contra Costa County Sheriff covering the unincorporated areas in Contra Costa County near the site, the Bay Area Rapid Transit

(BART) District Police at the two Concord BART stations, and the University Police at the Concord Campus of California State University (CSU) East Bay, as shown on Figure 14-1.

In 2008, the City of Concord Police Department consisted of 160 sworn officers, supported by 66 non-sworn, full-time employees, 48 part-time personnel, and approximately 65 volunteers (City of Concord Police Department, 2008). There are 1.3 officers per 1,000 residents; this service ratio meets the national standard of 1.25 officers per 1,000 residents, but falls slightly below the California standard, ranging from 1.4 to 1.7 per 1,000 residents (City of Concord, 2007). Financing for the operation and maintenance of the Concord Police Department comes from the City of Concord General Fund.

The Concord Police Department operates a 67,180 square-foot headquarters building and leases several small field offices, as shown in Table 14-1 and on Figure 14-1. The City of Concord has a philosophy of community-oriented government that works in conjunction with the Police Department's community-oriented policing (City of Concord Police Department, 2009).

One of the current Concord General Plan goals for growth management relates to development mitigation. Under this goal, Policy GM-2.1.1 establishes a performance standard for police facilities, at 200 square feet of station per 1,000 residents.

Table 14–1: Police Office Locations within the City of Concord

Police Office	Location within Concord
Headquarters	1350 Galindo St
Northern District Field Office*	2166 Solano Way
Valley District Field Office*	4467 Clayton Road
Southern District Field Office*	1500 Monument Blvd, #F17

* As part of the recent passage of the City's fiscal year 2009-2010 budget, these field office locations will be closed in November 2009.

Source: City of Concord Police Department, 2009

14.1.1.3 Other Regional Police

The CHP has jurisdiction over the federal interstate highway system and the California State highway system. Thus, the CHP is responsible for policing State Route (SR) 4, which passes through the site. The CHP regional Golden Gate Division is responsible for the Bay Area's nine counties, including Contra Costa County. The Contra Costa Area Office is located in Martinez at 5001 Blum Street (CHP, 2008).

The Contra Costa County Sheriff's Department provides police protection services for all unincorporated areas in the county (Contra Costa County, 2005) and has jurisdiction over the surrounding unincorporated areas such as the communities of Clyde and Bay Point, the

Keller Canyon Landfill, the County Island along Myrtle Drive, and other unincorporated areas adjacent to Kirker Pass Road between Concord and Pittsburg. The Contra Costa County Sheriff's office is located at 651 Pine Street, Martinez.

The BART Police Department is responsible for security and law enforcement on BART trains and at BART stations, rights-of-way, and other BART-owned properties (BART Police, 2008). The BART Police Patrol Bureau is decentralized into four geographical zones, each with its own headquarters and field offices. The site is situated within Zone 2; police facilities for this zone are at the El Cerrito del Norte BART station, and the closest field office to the site is at the North Concord/Martinez BART Station (BART, 2008).

The CSU East Bay Police Department has University Police based at the Concord Campus, located at 4700 Ygnacio Valley Road (CSU East Bay, 2008). University Police Officers are sworn Peace Officers and therefore may enforce federal, State, and local laws throughout the state. Their prime responsibility is for public safety at the Concord Campus and within 1 mile beyond its boundary. The CSU Police Office is located on the university campus in Concord at the Facilities Operation Building (CSU East Bay, 2008).

The East Bay Regional Park District (EBRPD) Police Department provides basic law enforcement services for District property, EBMUD properties under a Joint Powers Agreement, and San Francisco Water Department (SFWD) land operated by the District under long-term lease. Law enforcement services include criminal investigation, crime prevention, an Investigations Unit, a Helicopter Unit, and patrol teams. Should the District become a major land owner of space within the CNWS in the future it can be anticipated that the District will likely support the development of facilities to service District property on CNWS lands as well as other District facilities in the region.

14.1.2 Fire and Emergency Medical Services

14.1.2.1 Concord Naval Weapons Station Fire Department

There is a fire protection facility located on the site, which is under the control of the CNWS Fire Department. This facility was originally constructed in order to provide fire protection facilities to the Navy, and today is subject to a mutual aid agreement between the Navy and Contra Costa County Fire Protection District (CCCFPD) (Mutual Aid Agreement, 1998). This is a non-binding agreement for fire protection and emergency resources if any one fire protection agency's resources are depleted in the region. When the site is conveyed by the Navy, the existing fire station could be transferred from the Navy to a public agency such as the CCCFPD. Personnel and equipment presently associated with the station will move to a new fire station being constructed by the Army on land previously transferred by the Navy to the Army.

14.1.2.2 Contra Costa County

The CCCFPD provides fire and emergency medical services (EMS) to nine cities, including Concord, and the adjacent unincorporated areas within Contra Costa County. The CCCFPD currently serves a population of 600,000 with a total of 30 fire stations (CCCFPD, 2008). In addition to services provided by CCCPFD personnel, the District also maintains automatic mutual aid agreements with all fire agencies in Contra Costa County including the East

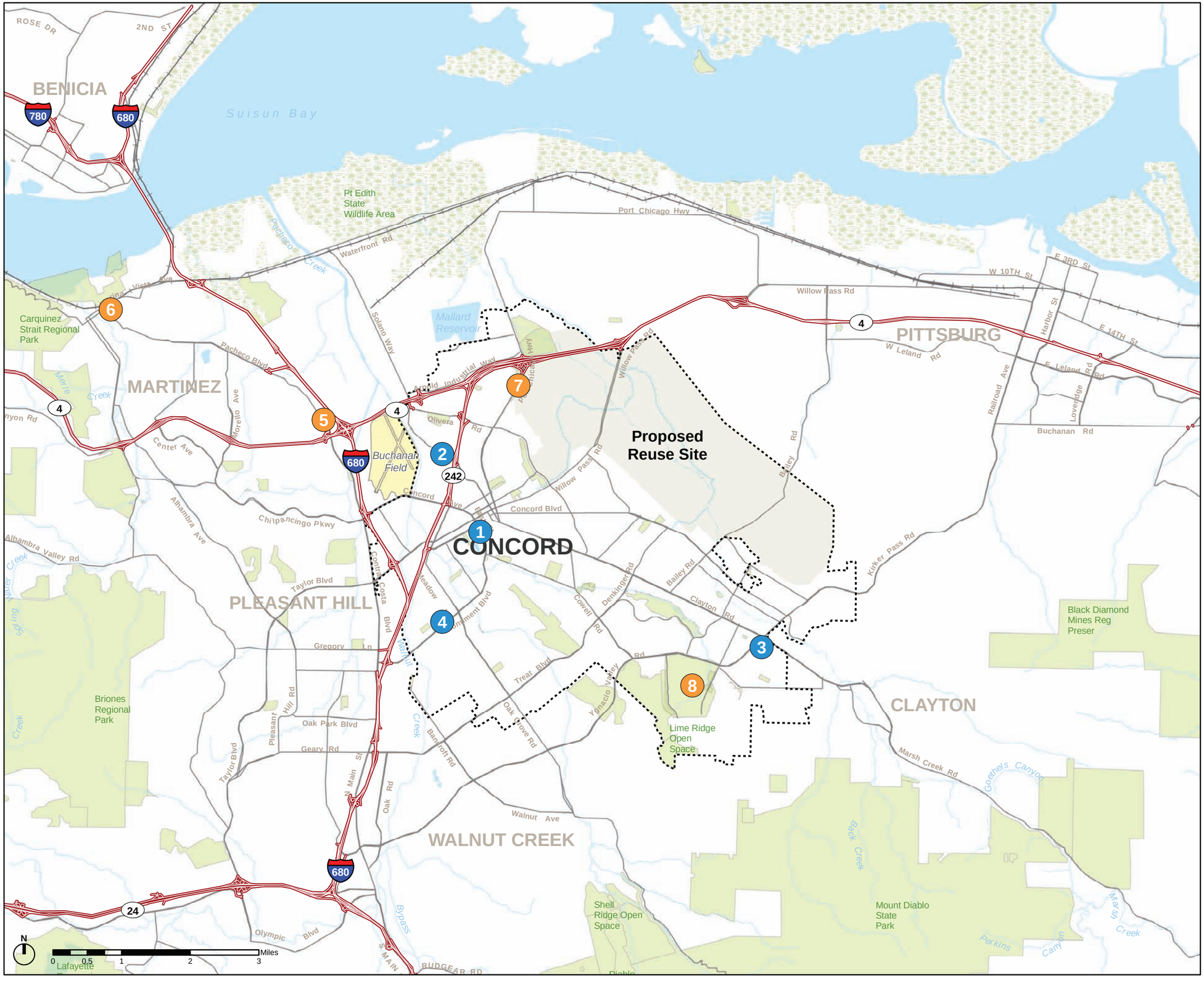
Contra Costa Fire Protection District (ECCFPD), the East Bay Regional Parks District (EBRPD), the California Department of Forestry and Fire Protection (CAL FIRE), and private industrial companies located within its jurisdiction. These agreements provide the CCCFPD with emergency response assistance on an as-needed basis (City of Concord, 2007). Figure 14-2 shows fire stations located in close proximity to the site.

The CCCFPD currently has 30 fire stations in the district, and these are shown in Table 14-2 (CCCFPD, 2008). These 30 stations serve an existing population of about 787,000; which is a ratio of one fire station per 26,300 in the service population. The dispatch time goal for the CCCFPD is to relay a dispatch within 90 seconds of receiving a call for service. Currently, the average time from call to dispatch is 103 seconds (City of Concord, 2007). The medium dispatch time for fire and EMS calls in the City of Concord in 2007 was approximately 72 seconds.

EMS is provided with every dispatch and administered via contract with American Medical Response (AMR). Each three-person firefighting crew includes a paramedic. All CCCFPD engines are equipped with advanced life support systems, and units work as teams with AMR and transfer patients to appropriate local hospitals as necessary.

The CCCFPD receives the majority of its revenues from property tax. A fire facilities impact fee is collected for new development throughout the District at the time of building permit issuance (CCCFPD, 2005). The Fire District collects fire facilities impact fees in the unincorporated areas of the service area as well as the cities of Antioch and Pittsburg. The Fire District does not currently collect a fire facilities impact fee in the City of Concord since such a fee has not been adopted by the City. To guide the widespread imposition of development impact fees, the State Legislature adopted the Mitigation Fee Act with Assembly Bill (AB) 1600 in 1988 and subsequent amendments. The act establishes requirements for the imposition and administration of impact fee programs.

The CCCFPD currently imposes a fire facilities impact fee of ~~$325~~ $591 per single-dwelling family unit, ~~$200~~ $285 per multi-family dwelling unit, and ~~$0.15~~ between $0.22 and $0.38 per square foot for all other commercial and industrial development (CCCFPD, ~~2005~~2009). The purpose of this fee is to provide a funding source from new development for fire protection capital improvements to serve that new development.



Legend

1. Concord Police Headquarters
2. Concord Police Northern Field Office*
3. Concord Police Valley Field Office*
4. Concord Police Southern Field Office*
5. California Highway Patrol - Contra Costa Office
6. Contra Costa County Sheriff Headquarters
7. BART Police - North Concord BART Station
8. CSU East Bay Univ. Police - Concord Campus

Base Map

- **Concord City Limit**
- Proposed Reuse Site
- **Park or Open Space**
- **Airport**
- **Railroad**
- **Swamp or Marsh**
- **Mt. Diablo Creek**
- **Canal**
- **Other Creek or Stream**
- Highway
- Arterial Street

Notes & Sources

* Due to FY09-10 budget cuts, these field offices will be closed as of November 2009.

Concord Community Reuse Plan

Revised August 21, 2009

Figure 14-1
Police Locations

Table 14–2: Contra Costa County Fire Protection District Stations

Station	Location
1	1330 Civic Dr, Walnut Creek
2	2012 Geary Rd, Pleasant Hill
3	1520 Rossmoor Pkwy, Walnut Creek
4	700 Hawthorne Dr, Walnut Creek
5	205 Boyd Rd, Pleasant Hill
6	2210 Willow Pass Rd, Concord
7	1050 Walnut Av, Walnut Creek
8	4647 Clayton Rd, Concord
9	209 Center Av, Pacheco
10	2955 Treat Blvd, Concord
11	6500 Center Av, Clayton
12	1240 Shell Av, Martinez
13	251 Church St, Martinez
14	521 Jones St, Martinez
15	3338 Mt. Diablo Blvd, Lafayette
16	4007 Los Arabis Dr, Lafayette
17	620 St. Mary's Rd, Lafayette
18	145 Sussex St, Clyde
19	1019 Garcia Ranch Rd, Martinez
22	5050 Crystal Ranch Pkwy, Concord
69	4640 Appian Way, El Sobrante
70	13928 San Pablo Av, San Pablo
81	315 W 10th St, Antioch
82	196 Bluerock Dr, Antioch
83	2717 Gentrytown Dr, Antioch
84	200 E 6th St, Pittsburg
85	2555 Harbor St, Pittsburg
86	3000 Willow Pass Rd, Bay Point
87	800 W Leland Rd, Pittsburg
88	4288 Folsom Dr, Antioch

Source: CCCFPD, 2008

14.1.2.1 Other Fire Services

The ECCFPD is the Fire Protection District located to the east of the CCCFPD, and serves the incorporated cities of Brentwood and Oakley, as well as the unincorporated communities of Bethel Island, Discovery Bay, Knightsen, Byron, Marsh Creek, and Morgan Territory. The ECCFPD operates eight fire stations (plus one CAL FIRE–contracted fire station) that are located strategically throughout the District to provide an average emergency driving response time of about six minutes (ECCFPD, 2008).The nearest ECCFPD station to the site is at 12040 Marsh Creek Road, Brentwood.

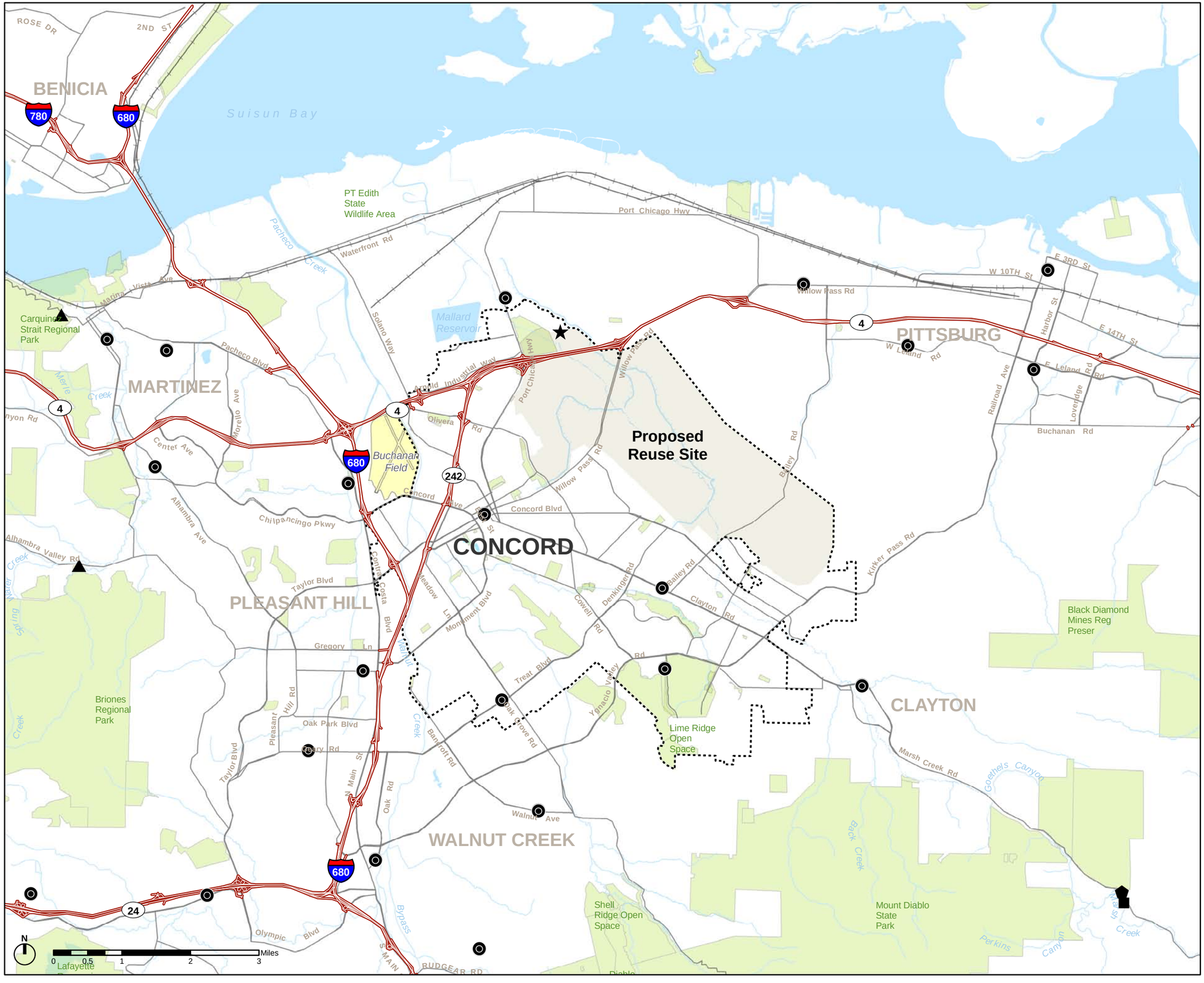
The EBRPD provides fire protection and EMS to the visitors of the East Bay Regional Parks (EBRPD, 2008) and employs 16 full-time staff and 4 staff that can be called upon as needed. Fire protection facilities are combined with park operations and are scattered throughout the parks, and are only staffed during the fire season. The EBRPD has fire engines as well as helicopters with water dropping capabilities to support larger-scale wildfire fighting. The nearest stations to the site are Station Number 3, located at 700 Carquinez Scenic Drive in Martinez, and Briones Station Number 6, located at 53/63 Alhambra Valley Road in Martinez (EBRPD, 2008).

CAL FIRE provides statewide emergency response and resource protection (CAL FIRE, 2008) in State Response Area (SRA) lands. The Department is divided into four regions with 21 administrative units statewide. The site is located in the Santa Clara Unit; the main unit office is located in Morgan Hill, and the closest station to the site is Sunshine Station**,** 11851 Marsh Creek Road in Clayton (CAL FIRE, 2008).

The ECCFPD, the EBRPD, and CAL FIRE have mutual aid agreements with the CCCFPD and can be called upon for fire protection and emergency resources if any one fire protection agency's resources are depleted in the region.

14.1.1 Schools

Within the City of Concord, educational facilities are provided by a number of public and private schools, one university, a number of trade and vocational schools, and several adult and special education schools (City of Concord, 2007). Community college facilities are located nearby in the City of Pleasant Hill.



Legend

- Contra Costa County Fire Protection District Station
- California Department of Forestry and Fire Protection Station
- East Contra Costa Fire Protection District Station
- East Bay Regional Park District Fire Station
- Concord Naval Weapons Station Fire Department Station

Base Map

- Concord City Limit
- Proposed Reuse Site
- Park or Open Space
- Airport
- Railroad
- Swamp or Marsh
- Mt. Diablo Creek
- Canal
- Other Creek or Stream
- Highway
- Arterial Street

Notes & Sources

Contra Costa County GIS, 2007

Concord Community Reuse Plan

Revised June 9, 2009

Figure 14-2
Fire Stations At or Near the Site

14.1.1.1 Public

There are currently no public schools on the site. The area is served by the Mt. Diablo Unified School District (MDUSD), which includes the City of Concord and a large portion of Central Contra Costa County including Clayton, Bay Point, and portions of Walnut Creek and Pleasant Hill. A total of 52 public school sites and programs are encompassed within the Concord Planning Area, including 29 elementary schools, 10 middle schools, and 13 high schools (including alternative high schools) (MDUSD, 2007). On average, within the District, elementary, middle, and high schools are estimated to be under capacity (MDUSD, 2007). However there are four elementary schools and two high schools that are over capacity. These are detailed in Table 14-3 (MDUSD, 2007).

Table 14–3: Over-Capacity Schools in the Mt. Diablo Unified School District

School Name	Location	Capacity in 2007 (%)
Gregory Gardens Elementary School	1 Corritone Ct, Pleasant Hill	-2.5
Meadow Homes Elementary School	1371 Detroit Av, Concord	-5.0
Sequoia Elementary School	277 Boyd Rd, Pleasant Hill	-8.5
Walnut Acres Elementary School	180 Cerezo Dr, Walnut Creek	-8.5
College Park High School	200 Viking Dr, Pleasant Hill	-5.0
Crossroads High School	1266 San Carlos Av, Concord	-4.0

Source: Mt. Diablo Unified School District, 2007

Sources of funding for operating public schools in California are provided by the federal government (10 percent), and the State from business and personal income taxes, sales, and some special taxes (60 percent), local property taxes (slightly less than 23 percent), the California Lottery (less than 2 percent), and other miscellaneous sources (less than 6 percent) (EdSource, 2009).

Each district's income is based on the average number of students attending school during the year (average daily attendance), the general purpose (revenue limit) money the district receives based on average daily attendance, and special support (categorical aid) from the State and federal governments that is earmarked for particular purposes (EdSource, 2006).

The cost of building and modernizing schools is funded by a partnership between the State and local school districts. The State provides districts with financial support for new school construction and modernization projects through the School Facility Program (SFP). This financing comes from voter-approved bonds (Brunner, 2007). Local school districts finance their share of school construction and modernization project costs with revenue raised from local General Obligations Bonds, developer fees, and property tax overrides (Legislative Analyst's Office, 2001).

The State Legislature has developed a variety of programs to allocate State school facility aid to districts. These include Education Code Section 17620, which authorizes school districts to levy a fee, charge, dedication, or other requirement against any development

project for the construction or reconstruction of school facilities, provided that the district can show justification for levying of fees. In addition, the Code limits the fee to be collected to the statutory fee unless a school district conducts a Facility Needs Assessment (Government Code Section 65995.6) and meets certain conditions. The Senate Bill (SB) 50 program (SB 50, 1998) instituted a new school facility program by which school districts can apply for State construction and modernization funds. This program determines eligibility for State funds based on measures of school facility capacity, enrollment, and age of existing structures, allocates funds to a specific school project, requires a local contribution of funds unless certain hardship conditions exist, and is funded by voter-approved State general obligation bonds.

14.1.1.2 Private

There are currently no private schools on the site. There are a variety of private elementary and middle schools as well as two private high schools located in the City of Concord.

14.1.1.3 CSU East Bay

CSU East Bay is a public university providing education in fields like business, education, health care (especially nursing), and emerging environmental programs (CSU, 2007a). CSU East Bay is comprised of two campuses, the Hayward Campus on approximately 300 acres, and the Concord Campus on approximately 350 acres, located at 4700 Ygnacio Valley Road at Ayers Road. The combined campuses of CSU East Bay currently offer 10 ~~bachelor's~~bachelors and 6 ~~master's~~ masters degrees, teaching credentials, and certificate programs (CSU East Bay, 2007b). The overall headcount enrollment at CSU East Bay in fall 2008 was 10,604 full-time students and 3,563 part-time students (CSU, 2008). Presently, the Concord campus offers only select upper-division, graduate, credential, and certificate instruction, and does not provide a four-year educational program. As such, Contra Costa County is the only county in California with a population over a million that does not have a four-year institution of higher education (CSU, 2007c).

For the college year 2008, the number of full-time and part-time students at the Concord Campus was 1,400 students[1] in total (914 full-time and 486 part-time students) (CSU, 2009). Between the years 2007 and 2027, Contra Costa County's projected population growth will increase the number of traditional college age students (18–24) by 43.7 percent, or an annual rate of 1.5 percent (CSU, 2007c). Growth at the current CSU East Bay Concord Campus is, however, constrained by environmental conditions on the site and traffic access, limiting its potential to between 4,800 and 6,000 full-time education students (FTES), a capacity that will not be sufficient to meet the long-term educational needs of the area (CSU, 2007c).

In order to expand the higher education programs that are currently available at the Concord Campus and accommodate anticipated future growth in student enrollment, CSU East Bay is requesting through the public benefit conveyance that a portion of the site (CSU, 2007b) be set aside to develop an additional campus that would support an enrollment of 10,000 FTES. This would provide an opportunity for students to attend a

[1] This headcount includes students taking one or more courses at Concord or a mixture of courses at the Concord and Hayward campuses.

public four-year university in Contra Costa County. In addition, CSU East Bay would explore partnering with the community and/or other agencies to "share-space"—for example, a library, performing arts venue, and recreation facilities—which would reduce the university's overall requirements. CSU East Bay's request is that the new campus be accessible both by road and BART (CSU, 2007c).

Diablo Valley College (DVC), which is part of the Contra Costa Community College District, also offers classes at the CSU East Bay Concord campus to supplement courses offered at its main campus located off Interstate Highway (I-) 680 in Pleasant Hill (DVC, 2008). The Community College District does not project the need for a new campus within the site, but it does believe that co-located uses with a CSU campus would be beneficial.

14.1.2 Other Community Facilities

There are no community facilities at the site. A range of public, non-profit, and private community facilities are provided within Concord and the surrounding area. Details of these are provided below.

Public community centers located within Concord include:

- Centre Concord, at 5298 Clayton Road
- Concord Senior Center, at 2727 Parkside Circle
- Willow Pass Center, at 2748 East Olivera Road
- Police Department Community Meeting Rooms at City of Concord Police Headquarters, at 1350 Galindo Street

Demand for space at these facilities exceeds availability on many occasions.

Other public facilities located within Concord include the Concord Civic Center, located at 1950 Parkside Drive, and the main branch of the Concord Library, located at 2900 Salvio Street.

Non-profit and private community facilities located in close proximity to the site include hospitals and medical centers as well as religious facilities. Hospitals and medical centers include the John Muir Medical Centers, which are based in a number of locations within Contra Costa County; the closest center to the site is at 2540 East Street, Concord. In addition, there is the Concord Health Center, at 3052 Willow Pass Road; and La Clinica Monument Medical Clinic, at 2100 Monument Boulevard in Pleasant Hill, which provides health care for low-income families.

14.1.3 City of Concord 2030 Urban Area General Plan

Policies associated with the provision of public services are included within the City of Concord 2030 Urban Area General Plan (General Plan) (City of Concord, 2007), and those relevant to the site are listed in Table 14-4.

Table 14–4: City of Concord General Plan Principles and Policies for Public Services

	Description
Policy GM-2.1.1	Establish performance standards, to be maintained through capital projects, for the following facilities and service: c. Police. 200 square feet of station per 1,000 residents
Policy PF-2.1.6	Ensure that future planning for the CNWS reserves adequate land for schools, churches, and community centers
Policy S-7.1.1	Evaluate the effects of new development on law enforcement service and take public safety issues into account when reviewing land use proposals
Policy S-7.2.1	Coordinate plans and activities with the CCFPD, including siting of fire stations
Policy S-7.2.3	Ensure that sufficient access for fire protection services is available in all new development

Source: Concord 2030 Urban Area General Plan, 2007

14.2 Standards of Significance

Criteria for determining the significant impacts associated with public services have been developed based on Appendix G of the CEQA Guidelines and any relevant agency thresholds. For purposes of this EIR, an alternative may have significant impact on public services if it would:

- Result in substantial adverse effects or demand on new or altered governmental facilities needed to maintain acceptable service ratios, response times, or other performance objectives for police, fire protection and EMS, schools, or other community services.

14.3 Potential Public Service Impacts

14.3.1 Assumptions about Potential Public Services Impacts

Following are the assumptions that have been applied in the analysis of potential public services impacts of the two alternatives. The assumptions are based on information gathered during the planning process to develop the two alternatives. This information has been incorporated into both alternatives as ways to avoid or minimize their environmental consequences.

- The Preferred Alternative allocates a total of 285 acres for public, non-profit, and private services. The Concentration and Conservation allocates a total of 245 acres for such uses. Both Alternatives allocate 150 acres for a university campus.
- The Preferred Alternative and the Concentration and Conservation Alternative will incorporate land areas dedicated to providing sufficient police facilities in order to meet applicable standards, including those of the City of Concord for police facilities. No new police stations are anticipated to be built on the site, but it is assumed that a field office up to several thousand square feet in size would be leased from a private commercial

outlet to supplement existing police services located outside the site. In addition, a fiscal sustainability model confirmed that the ongoing operation and maintenance of the facility could be offset by the income generated by the new development proposed on the site for either alternative (CBRE, 2008).

- The Preferred Alternative and the Concentration and Conservation Alternative will incorporate land areas dedicated to providing sufficient fire protection and EMS facilities in order to meet applicable CCCFPD standards and to accommodate comments received from the CCCFPD (CCFPD, 2008). Two new fire stations are assumed to be built on the site for each alternative. Funding for capital investments in public services would come from developer fees or special district fees such as a fire facilities impact fee levied on the new development associated with either alternative; specific fees are dependent on the type of development and are outlined further in Section 14.1.2. A financial feasibility model confirmed that these assumptions were supported by the levels of development proposed under each alternative (CBRE, 2008). It is also assumed that the CCCFPD would be responsible for operating the stations, and would receive revenues from property taxes on new development.
- Both alternatives accommodate the CCCFPD and CCC Sherriff Public Benefit Conveyance request by setting aside land for the construction and operation of an emergency training and command center that will be located on the site. This site will cover approximately 80 acres, located north of SR 4 and east of the Diablo Creek Golf Course.
- The Preferred Alternative and the Concentration and Conservation Alternative will incorporate land areas dedicated to providing sufficient public school facilities in order to meet applicable standards, including those of the MDUSD for grade K–12 facilities. Student generation factors, presented in Table 14-5, were formulated in collaboration with the MDUSD to reflect the anticipated population growth, residential housing mixes (single-family detached, single-family attached, or multi-family), and level of education (grades K–5, 6–8, or 9–12) associated with each Alternative. It is projected that the Preferred Alternative will require school accommodation for 4,359 students, and the Concentration and Conservation Alternative will require school accommodation for 3,288 students. To meet this demand, the Preferred Alternative has 98.8 acres set aside for four elementary schools, one middle school, and one high school (shown in Tables 14-5 and 14-6). The Concentration and Conservation Alternative has 74.5 acres set aside for three elementary schools, one middle school, and one high school.
- Capital investment for public schools for grades K–12 would be financed at a minimum by both the State and MDUSD, as detailed in Section 14.1.3.1. However, beyond these legally required funding sources, it is the City's intent and assumption that development agreement(s) will be negotiated to require the provision of free land and construction of new schools at no cost to MDUSD.
- It is assumed that operating costs associated with public schools would be the responsibility of MDUSD and that revenue would be provided to MDUSD using the funding sources that are available to it, as detailed in Section 14.1.3. This would most likely include property taxes levied against new development on the site, and would

probably also be in part determined by the number of students generated by the implementation of either alternative.

- Both alternatives will set aside 150 acres for an urban university campus that will ultimately accommodate 10,000 FTES. The number of students was developed in consultation with CSU East Bay staff. In both alternatives, the proposed site for the university campus is located between the North Concord/Martinez BART Station and Willow Pass Road to provide convenient road and transit access.
- Both alternatives will include at least one new community center on the site.
- Implementation of either of the alternatives would increase demand for staff and operation and maintenance costs associated with fire, police, schools, and other community facilities both on the site as well as in the surrounding area.
- Staffing, maintenance, and operation costs for public services financed by the City of Concord's General Fund have been included within the fiscal analysis of each alternative; this includes funding of police services, libraries, and other community facilities. Based on information currently available, both alternatives are fiscally viable (CBRE, 2008).

Table 14–5: Student Generation Factors - Percentage of Students by Level of Education

Alternative	Household Type	Student Generation Factor (per household)	Number of Students (grades K–5)	Number of Students (grades 6–8)	Number of Students (grades 9–12)	Acres Allocated for Schools
Preferred Alternative	Multi-family	0.20	2,113	999	1,247	98.8
	Single-family attached	0.19				
	Single-family detached	0.62				
Concentration and Conservation Alternative	Multi-family	0.20	1,594	756	938	74.5
	Single-family attached	0.19				
	Single-family detached	0.62				

Table 14–6: School Allocation

Type of School	Acres Allocated for Schools in the Preferred Alternative	Acres Allocated for Schools in the Concentration and Conservation Alternative	Recommended Acres per School	Assumed Number of Schools in the Preferred Alternative	Assumed Number of Schools in the Concentration and Conservation Alternative
Elementary school (grades K–5)	40.2	30.3	10	4	3
Middle school (grades 6–8)	25.0	18.9	20	1	1
High school (grades 9–12)	33.7	25.3	30	1	1

14.3.2 Public Services Impacts of the Preferred Alternative

14.3.2.1 Potentially Significant Public Services Impacts of the Preferred Alternative

None identified.

14.3.2.2 Public Services Impacts of the Preferred Alternative That Are Less Than Significant

Impact Public Services 1: The Preferred Alternative would result in an increase in demand for police services. This impact is considered to be less than significant.

With the Preferred Alternative, there would be an increase in population on the site, which would require police services from the City of Concord Police Department. In addition, the development would result in increased traffic on the surrounding road network and increased ridership on BART, which would have resource implications for the CHP, Contra Costa County Sheriff, and BART Police services.

As discussed in Section 14.3.1, no new police stations are anticipated on the site. However, according to the City standard of providing 200 square feet of police station area per 1,000 residents, the existing police headquarters building would be sufficient to provide for 335,000 residents, which far exceeds the anticipated population of Concord including the Preferred Alternative. In addition, the reuse planning process included provision for a small field office space that would be leased from private parties. The fiscal sustainability model that analyzed the Preferred Alternative indicated that revenue from development would be sufficient to maintain ongoing police operations associated with the site. Nevertheless, as required by the General Plan, the City would verify that adequate services exist prior to issuance of any occupancy permits.

Based on these factors, this potential impact is considered to be less than significant.

Mitigation Measure Public Services 1: None required.

Impact Public Services 2: The Preferred Alternative would result in an increase in demand for fire protection and emergency medical services. This impact is considered to be less than significant.

With the Preferred Alternative, there would be an increase in population on the site, which would require fire protection and EMS. As described in Section 14.3.1, provision of fire fighting facilities has been integrated into the design of this alternative, and two new fire stations are included within the area to be developed with the Preferred Alternative.

As required by the General Plan, the City will verify that adequate services exist prior to issuance of any occupancy permits.

Based on these factors, this impact is considered to be less than significant.

Mitigation Measure Public Services 2: None required.

Impact Public Services 3: The Preferred Alternative would result in an increase in demand for public school services. This impact is considered to be less than significant.

The Preferred Alternative would increase demand for public schools; including elementary, middle, and high schools. Required public school facilities have been calculated to be included in the area to be developed with the Preferred Alternative using generation factors specific to the anticipated population growth and residential housing mixes, as discussed in Section 14.1.3.1.

The Preferred Alternative will provide sufficient public school facilities and meet the City of Concord's policy to ensure that future planning for the site reserves adequate land for schools. The Preferred Alternative allocates 98.8 acres for K–12 schools. Based on these factors, this potential impact is considered to be less than significant.

Mitigation Measure Public Services 3: None required.

Impact Public Services 4: The Preferred Alternative would result in an increase in demand for other community services. This impact is considered to be less than significant.

Other community facilities include public, private, and non-profit community facilities that serve both civic and social needs. Land has been allocated to community facilities proportionate to the anticipated population growth associated with implementation of the Preferred Alternative. In addition, the Preferred Alternative will include at least one new community center on the site. As such, the Preferred Alternative meets the City of Concord's policy to ensure that future planning for the site reserves adequate land for community services such as libraries, homeless facilities, religious facilities, museums, health and group care, and community centers. Based on these factors, this impact is therefore considered to be less than significant.

Mitigation Measure Public Services 4: None required.

14.3.3 Public Services Impacts of the Concentration and Conservation Alternative

14.3.3.1 Potentially Significant Public Services Impacts of the Concentration and Conservation Alternative

None identified.

14.3.3.2 Public Services Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Public Services 5: The Concentration and Conservation Alternative would result in an increase in demand for police services. This impact is considered to be less than significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Public Services 1).

Mitigation Measure Public Services 5: None required.

Impact Public Services 6: The Concentration and Conservation Alternative would result in an increase in demand for fire protection and EMS. This impact is considered to be less than significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Public Services 2).

Mitigation Measure Public Services 6: None required.

Impact Public Services 7: The Concentration and Conservation Alternative would result in an increase in demand for public school services. This impact is considered to be less than significant.

The Concentration and Conservation Alternative would increase demand for public schools; including elementary, middle, and high schools. Required public school facilities have been calculated to be included in the area to be developed with the Concentration and Conservation Alternative using generation factors specific to the anticipated population growth and residential housing mixes, as discussed in Section 14.1.3.1.

The Concentration and Conservation Alternative will provide sufficient public school facilities and meet the City of Concord's policy to ensure that future planning for the site reserves adequate land for schools. The Concentration and Conservation Alternative allocates 74.5 acres for K–12 schools. Based on these factors, this potential impact is considered to be less than significant.

Mitigation Measure Public Services 7: None required.

Impact Public Services 8: The Concentration and Conservation Alternative would result in an increase in demand for other community services. This impact is considered to be less than significant.

Refer to the discussion of this impact for the Preferred Alternative (Impact Public Services 4).

Mitigation Measure Public Services 8: None required.

14.3.4 Public Services Impacts of the 2030 No Project Alternative

14.3.4.1 Potentially Significant Public Services Impacts of the 2030 No Project Alternative

None identified.

14.3.4.2 Public Services Impacts of the 2030 No Project Alternative That Are Less Than Significant

None identified.

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15. Recreation

15 Recreation

This chapter begins by describing existing recreation facilities, including parks, open space, and trails in the vicinity of the site. Then it lists the assumptions with respect to potential impacts of implementing the Preferred Alternative and the Concentration and Conservation Alternative. It concludes with a discussion of the potential recreation impacts of the alternatives in relation to the Standards of Significance. Impacts to the trail network are discussed in Chapter 4, Transportation, though the trail system is also described in this chapter because it figures prominently within the overall context of recreation.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR)~~-~~, the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on recreation. This has resulted in the recreation impacts of both alternatives being substantially less than they would have been had recreation impacts not been taken into account during all stages of the planning and environmental analysis process.

15.1 Existing Conditions

Site Conditions

During the period of military use at the site, recreation facilities were provided for U.S. Navy personnel, and large components of the site were used as open space for grazing. However, the public has had little access to the site since 1944 when the Navy purchased it, except to the Diablo Creek Golf Course. The golf course is located north of State Route (SR) 4 and east of Port Chicago Highway. Approximately 50 percent of it is located on land leased from the Navy. The remaining portion of the golf course is owned by the City of Concord, and the facility is managed as a public course.

15.1.1 City of Concord

Contra Costa County contains a comprehensive network of parks, recreation facilities, trails, and open space areas serving a current population of over a million residents. The City of Concord itself has 636 acres of parks, recreation, and open space facilities, as shown in Table 15-1 and on Figure 15-1, serving more than 121,000 City residents, as well as other people residing and working in the region. This means that the current supply of parkland provided by the City is approximately 5.25 acres per 1,000 Concord residents.

Concord's current park system includes active recreation areas for field sports, such as baseball and soccer, and court sports, including basketball, tennis, and skateboarding. Passive recreational areas include playgrounds, walking and jogging areas, biking and rollerblading routes, picnic areas, and dog parks. Cultural and institutional programs and activities include community centers, senior and childcare facilities, classes and workshops, historic sites, and memorials. There are two locations for water sports: at Concord Community Park and Meadow Homes Park. Figure 15-2 illustrates Concord's existing park system amenities.

15.1.2 Regional Parks and Open Space

The project site is also located in the jurisdiction of the East Bay Regional Park District (EBRPD), which controls over 98,000 acres of parkland throughout Alameda and Contra Costa Counties. The EBRPD's mission is "to provide recreational opportunities, ensure the natural beauty of the land, and to protect wildlife habitat."

Three of the closest regional parks within the EBRPD are Briones Regional Park, Diablo Foothills Regional Park (EBRPD, 2008a), and Las Trampas Regional Wilderness (EBRPD, 2008b). Black Diamond Mines Regional Preserve is 2.6 miles east of the reuse site, Waterbird Regional Park is 3.5 miles west, and the Clayton Ranch landbank is 4.5 miles south.

Briones Regional Park is located on the hills located approximately 5 miles to the west of the site, as shown on Figure 15-4. Briones Regional Park covers 6,117 acres, and includes rolling vegetated hills suited for activities such as hiking, running, and horseback riding. The park has camping and picnicking facilities, as well as an archery range.

Table 15-1: Existing Park Acreage in the City of Concord

Name	Acres
BART Linear Park	5.2
Bayview Circle Park	3.3
Brazil Quarry Park	3.6
Cambridge Park	6.4
Dave Brubeck Park	7.1
Concord Community Park	30.2
Concord Skate Park	0.6
El Dorado Middle School Park	11.8
Ellis Lake Park	9.6
Highlands Park	5.7
Hillcrest Park	28.4
Iron Horse Park	0.2
John F. Baldwin Park	17.8
Krueger Fields	7.2
Len Hester Park	3.9
Meadow Homes Park	8.5
Newhall Community Park	126.1
Rick Seers Neighborhood Park	0.6
Sun Terrace Park	2.6
Todos Santos Plaza	2.0
Willow Pass Community Park	40.4

Name	Acres
Ygnacio Valley Park	9.5
Neighborhood and Community Parks Subtotal	330.7
Boatwright Sports Complex	9.4
Diablo Creek Golf Course	189.9
Galindo House and Gardens	1.6
Lime Ridge (within Planning Area)[1]	90.0
Markham Nature Park & Arboretum	14.2
Specialized Recreation Subtotal	305.1
Total	635.8

[1] Although Lime Ridge is designated as open space, the total acreage includes staging areas, trails, and parking areas located within its boundaries.

Source: City of Concord, 2007

Diablo Foothills Regional Park is located approximately 4 miles to the southwest of the site, providing a gateway to Mt. Diablo State Park and the Walnut Creek Open Space. Diablo Foothills Regional Park is 1,060 acres of rolling grasslands, providing for horseback riding, hiking, and bicycling activities. The park contains the Castle Rock Recreation Area, which offers aquatic recreational activities during the warmer seasons.

Las Trampas Regional Wilderness also offers an expanded area of open space about 10 miles to the south of the site, encompassing 5,342 acres of wilderness and trails.

15.1.3 State and Federal Open Space

Other jurisdictional parks—for example, Mt. Diablo State Park, Golden Gate National Recreation Area (GGNRA), and quasi-private land banks such as those provided by the East Bay Municipal Utility District (EBMUD) and private non-profits such as the Trust for Public Land—support this regional network of open space that can be used for both active and passive recreation.

The closest boundary of Mt. Diablo State Park is approximately 2.5 miles southeast of the site. The state park is more than 20,000 acres. A museum at the summit of the 3,849-foot Mt. Diablo provides historic and ethnographic information, as well as exhibits about the park's natural features. On a clear day, views from the summit can extend to the Sierra Nevada. Recreational activities at the park include hiking, biking, horseback riding, and camping. The park also contains popular rock climbing sites.

The GGNRA system, operated by the National Park Service, controls much of the coastal open space within the San Francisco Bay Area, as shown on Figure 15-3. The recreational open space extends across Marin, San Francisco, and San Mateo Counties, some 30 miles to the west of the site. Some GGNRA areas included along the 60 miles of coastline are Point Reyes, the Marin Headlands, Muir Woods, Alcatraz, the Presidio, and Fort Mason.

15.1.4 Other Open Spaces

To the south and west of the site, EBMUD provides quasi-private open space for hiking and physical activity, as shown on Figure 15-4. The primary use of these properties is for water storage and management. EBMUD owns approximately 28,000 acres of land that includes watersheds around five reservoirs: San Pablo, Briones, Lafayette, Upper San Leandro, and Chabot (EBMUD, 1999).

This land is complemented by land grants obtained through non-profit organizations such as the Trust for Public Land, which works to preserve land and has added vast amounts of acreage to the GGNRA, California State Parks, and the EBRPD. One of the Trust's recent acquisitions in Contra Costa County is Cowell Ranch, located southeast of the site near Mt. Diablo. The 6-square-mile Cowell Ranch will eventually become part of John Marsh State Historic Park.

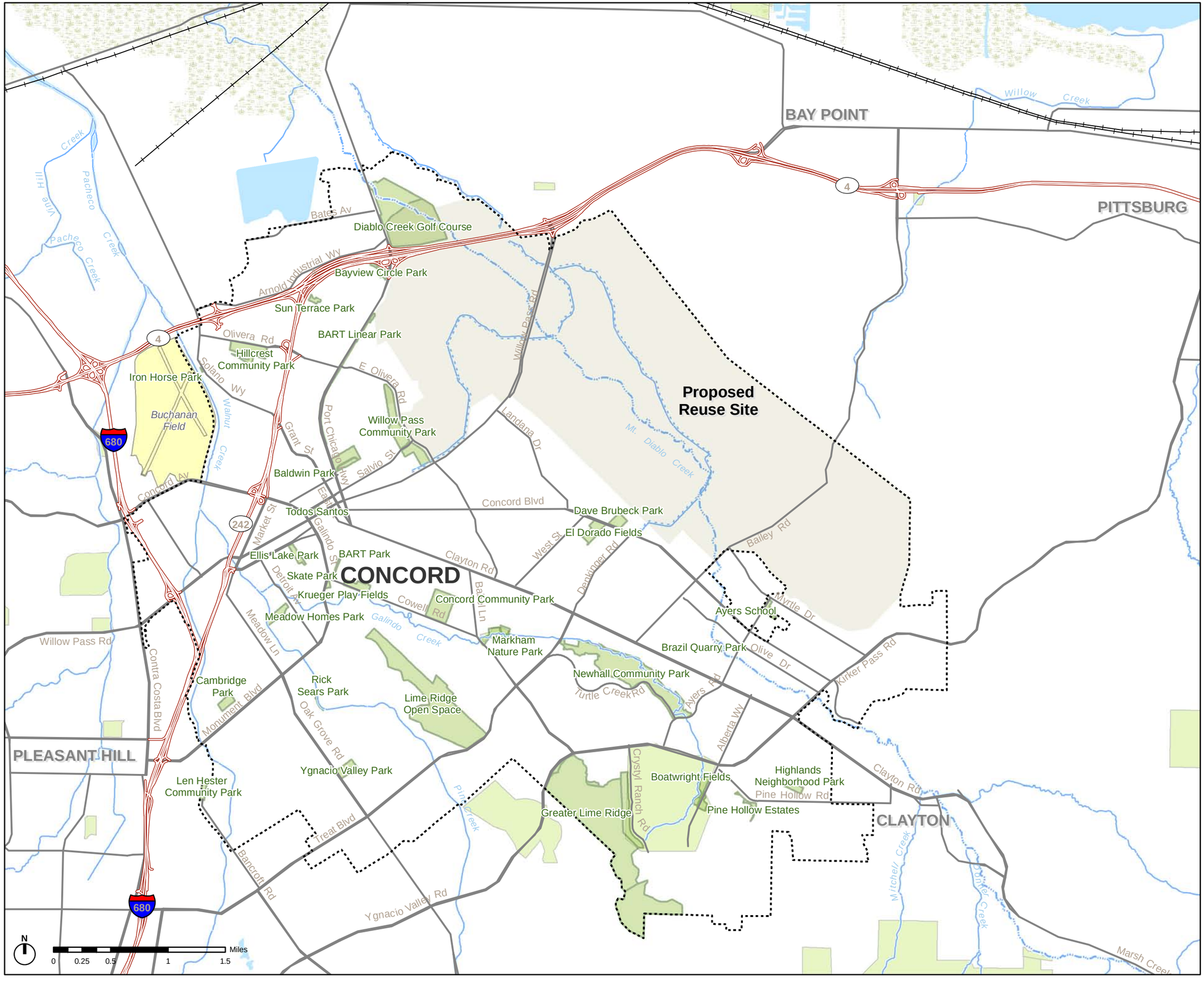
Other often-overlooked informal recreational land uses can arise in the open spaces provided by churches and public and private schoolyards. Often, these spaces can double as after-hours recreation and physical fitness areas in addition to serving their daytime functions. Often, informal recreational areas are created in green spaces, such as the one that exists around Concord High School.

15.1.5 Trail Network

A trail network provides people with the ability to travel, exercise, and explore, as well as access parks and open space recreation areas. As described in Chapter 4, Transportation, a number of off-street (Class 1) trails pass through Concord and/or terminate near the site. Connecting on-site trails to the regional trail network offers a substantial opportunity to increase access between existing neighborhoods in Concord and the parks and open space proposed for the site. Off-street trails separate from the roadway network help to ensure a safe environment for all trail users.

At the regional scale, the EBRPD builds and maintains intercity trails and trails within the regional parks. The EBRPD offers more than 1,150 miles of trails that are linked closely with other trails throughout the Bay Area; many trails can be traversed by foot, bicycle, or horseback. As illustrated on Figure 15-5, 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.

In addition, the Delta Protection Commission, a body created by the State of California, is overseeing the planning for the Great California Delta Trail, which would link the San Francisco Bay Trail system in Martinez with planned trails along the Sacramento River (Delta Protection Commission, 2009). The exact alignment of that trail is as yet unknown, but could potentially connect to the site via an extension of the Delta de Anza Regional Trail between Martinez and Bay Point at the northern edge of the site.



Legend

- City of Concord Parks
- Other Parks and Open Space

Base Map

- Concord City Limit
- Site Area
- Canal
- Mt. Diablo Creek
- Other Creek or Stream
- Swamp or Marsh
- Water
- Highways
- Arterials
- Railroad

Notes & Sources

City of Concord, 2007
Contra Costa County, 2007

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Figure 15-1
Parks in Concord

EXISTING PARKS, TRAILS, RECREATION FACILTIES & OPEN SPACE ACTIVITY MATRIX

NEGHBORHOOD & COMMUNITY PARKS

SPECIALIZED RECREATION

PRIVATE REC. FACILITIES

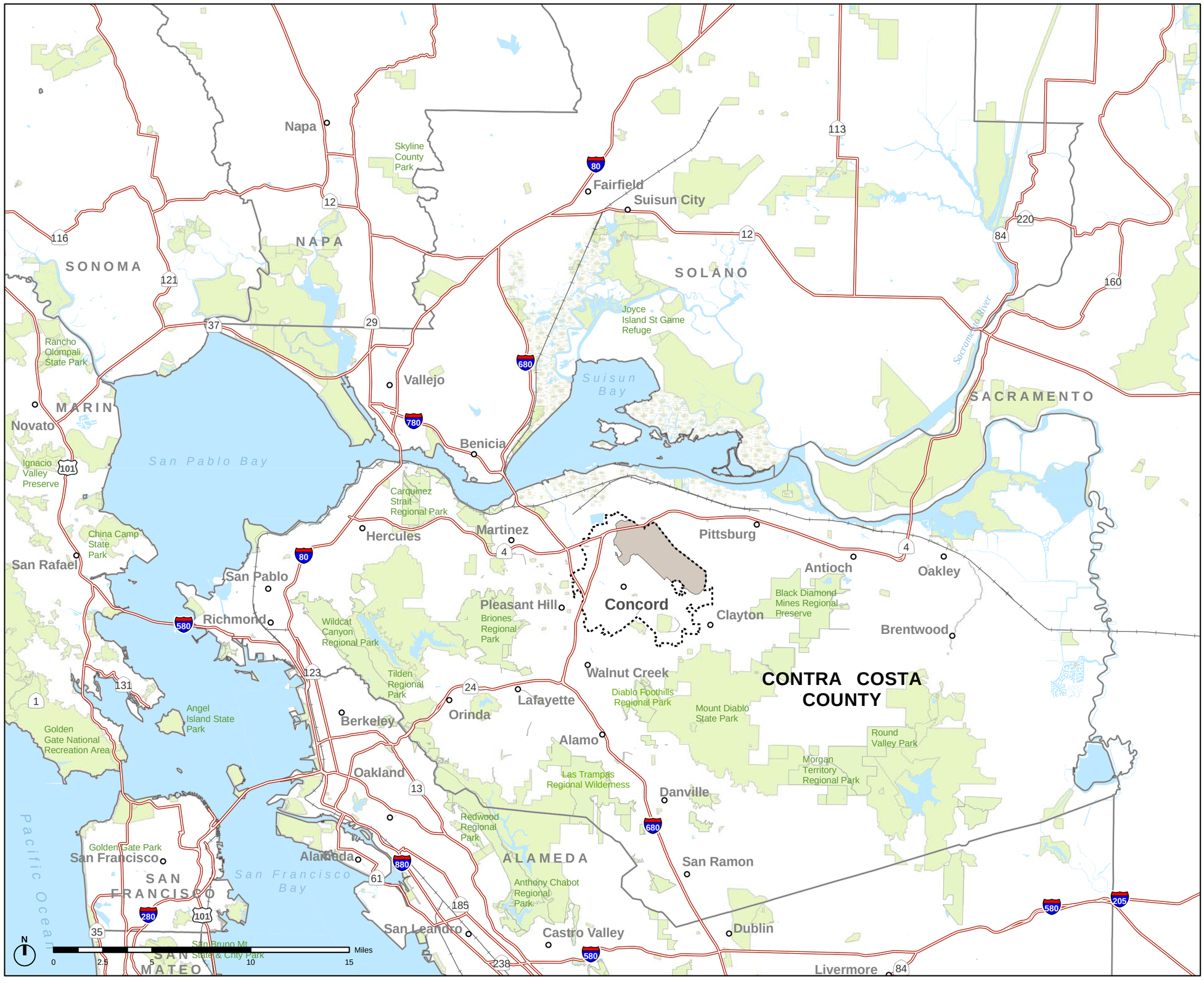
	BART Linear Park	Bayview Circle Park	Brazil Quarry Park	Cambridge Park	Dave Brubeck Park (Concord Blvd.Park)	Centre Concord Community Center	Concord Community Park	Concord Skate Park	El Dorado Middle School Park	Ellis Lake Park	Highlands Park	Hillcrest Park	Iron Horse Park	John F. Baldwin Park / Senior Center	Krueger Fields	Len Hester Park	Meadow Homes Park	Newhall Community Park	Rick Seers Neighborhood Park	Sun Terrace Park	Todos Santos Plaza	Willow Pass Community Park	Ygnacio Valley Park	Boatwright Sports Complex	Diablo Creek Golf Course	Galindo House & Gardens	Lime Ridge Open Space	Markham Nature Park & Arboretum	Iron Horse Trail	Contra Costa Canal	Mokelumne	BART	CA Riding & Hiking Trail	Bailey Road Parkway	Chronicle Pavilion	Waterworld
CULTURAL - INSTITUTIONAL																																				
Community Center - Events, Weddings, Parties																																				
Community Center - Senior Activities																																				
Community Center - Childcare																																				
Community Center - Classes & Workshops																																				
Public Art																																				
Historic Sites																																				
Memorials																																				
PASSIVE - SOCIAL RECREATION																																				
Promenading/Walking/Jogging - paved																																				
Promenading/Walking/Jogging - unpaved																																				
Equestrian Trail																																				
Biking/Rollerblading																																				
Designated Picnic Areas																																				
View Points and Overllooks																																				
Dog Parks - Runs																																				
Playgrounds												*																								
Kite flying																																				
Bird Watching - Nature Walks - Interpretive Trails																																				
Café - Public Restrooms																																				
Civic Events - Markets - Festivals																																				
Camping																																				
ACTIVE RECREATION																																				
Golf / Frisbee/Frisbee Gulf/Ultimate Frisbee																																				
Field Sports: Baseball - Softball - Soccer - Football																																				
Court Sports: Basketball, Handball etc.																																				
Volleyball, Badmittion, Horsehoes																																				
Tennis Courts																																				
Skateboarding																																				
WATER SPORTS & ACTIVITIES																																				
Aquatic facilities - swimming																																				
Sailing School and Center																																				
Board Sailing/Kite Surfing																																				
Kayaking																																				
Fishing																																				
Beach																																				
PRODUCTIVE LANDSCAPES AND GREEN INFRASTRUCTURE																																				
Native Plants - Bird, Butterfly, Pollinator Garden or planting area																																				
Urban Forest - Shade Trees																																				
Aquatic Habitat - Lakes, Ponds, Streams																																				
Ag-Park - CSA Organic Farm - Community Gardens - Native Plant Nursery																																				
Environmental Education / Stewardship																																				
Maintenance and Operation Yard and Building																																				
Recycling/Composting Center																																				
Stormwater Treatment Wetland																																				
Habitat Restoration																																				

* Includes Matteo's Dream accessible playground

Concord Community Reuse Plan

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Figure 15-2
City of Concord Parks, Amenities



Legend

- Regional Parks and Open Space

Base Map

- Proposed Reuse Site
- County Boundaries
- Concord City Limit
- Cities
- Major Roads
- Railroad
- Swamp or Marsh

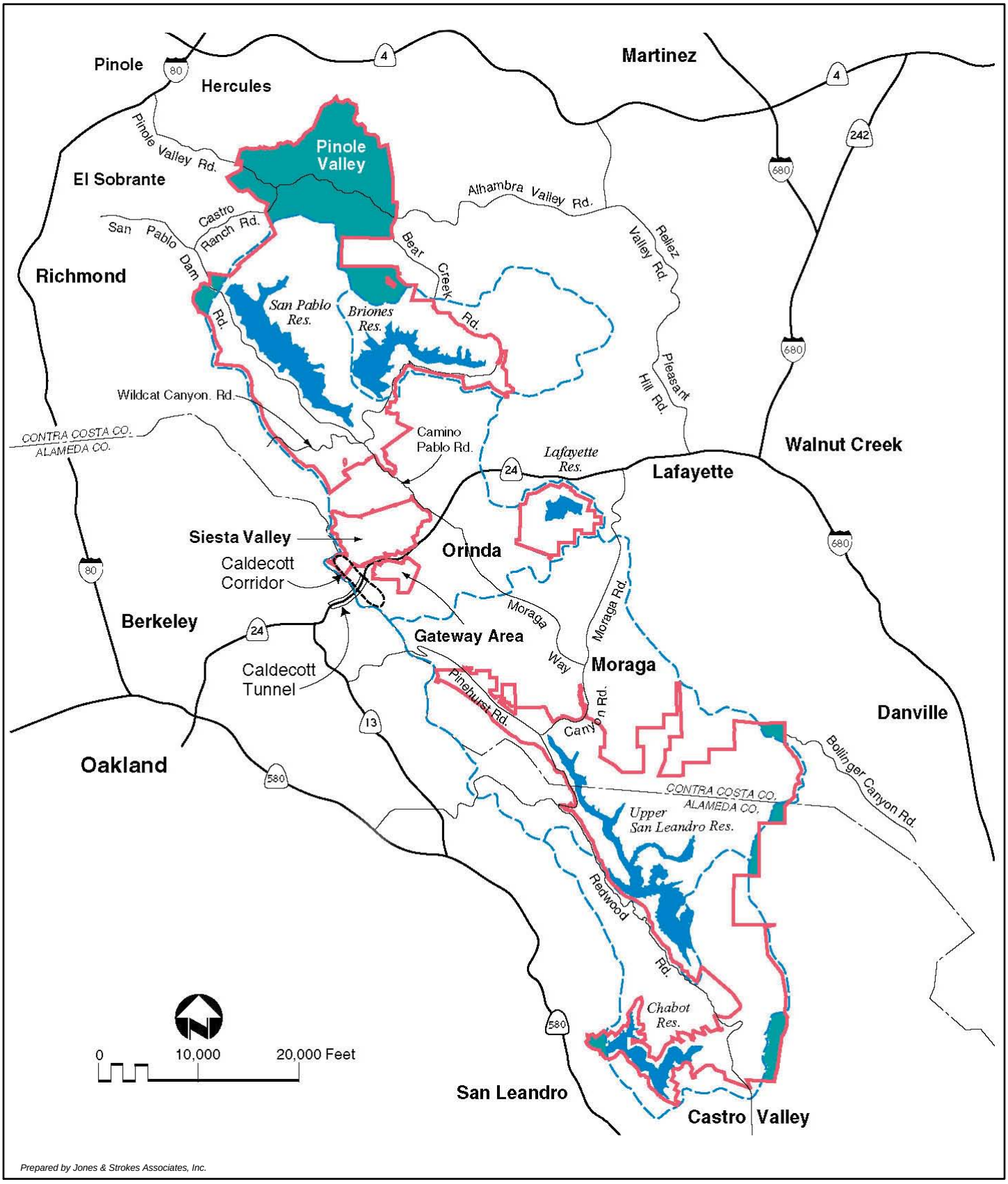
Notes & Sources

Data Source for East Bay Regional Park District boundaries: EBRPD, 2009

Concord Community Reuse Plan

Revised December 28, 2009

Figure 15-3
Regional Parks and Open Space



Legend

- District-Owned Watershed Land
- Reservoir Watershed Land Not Owned by the District
- District-Owned Nonreservoir Watershed Land
- Watershed Basin Boundaries

Concord
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Figure 15-4
EBMUD Owned Land

The Contra Costa Countywide Bike and Pedestrian Plan, adopted most recently in 2003, provides policy and infrastructure recommendations to improve bicycle and pedestrian facilities throughout the region. It is currently being updated to reflect current conditions and provide further guidance for improvements to the bicycle and pedestrian network.

The Concord Trails Master Plan (City of Concord, 2003) provides a framework for planning trails in Concord with the purpose of promoting the use of trails for recreation as well as an alternative mode of transportation. The plan proposes a network of trails in Concord that would link to the regional trail system through a system of collector trails, feeder trails, and bike routes on residential and arterial streets. Within the site, the Trails Master Plan identifies several potential trail routes, including a connection to the Delta de Anza Trail and Class I collector trails that follow either rail lines or creeks that run through the site, although it notes that the exact routes would be determined through the Concord Community Reuse Project planning process. The Concord Trails Master Plan diagram is reproduced on Figure 15-6.

While the impact analysis of the trail (bicycle and pedestrian) network is contained in Chapter 4, Transportation, the proposed trail networks for the Preferred Alternative and the Concentration and Conservation Alternative are reproduced here as Figures 15-7 and 15-8, respectively. The proposed trail networks help to demonstrate how the provision of greenways within the site help to facilitate increased access from the edges of the site to the parks and open space areas proposed within the site.

15.1.6 Concord Requirements

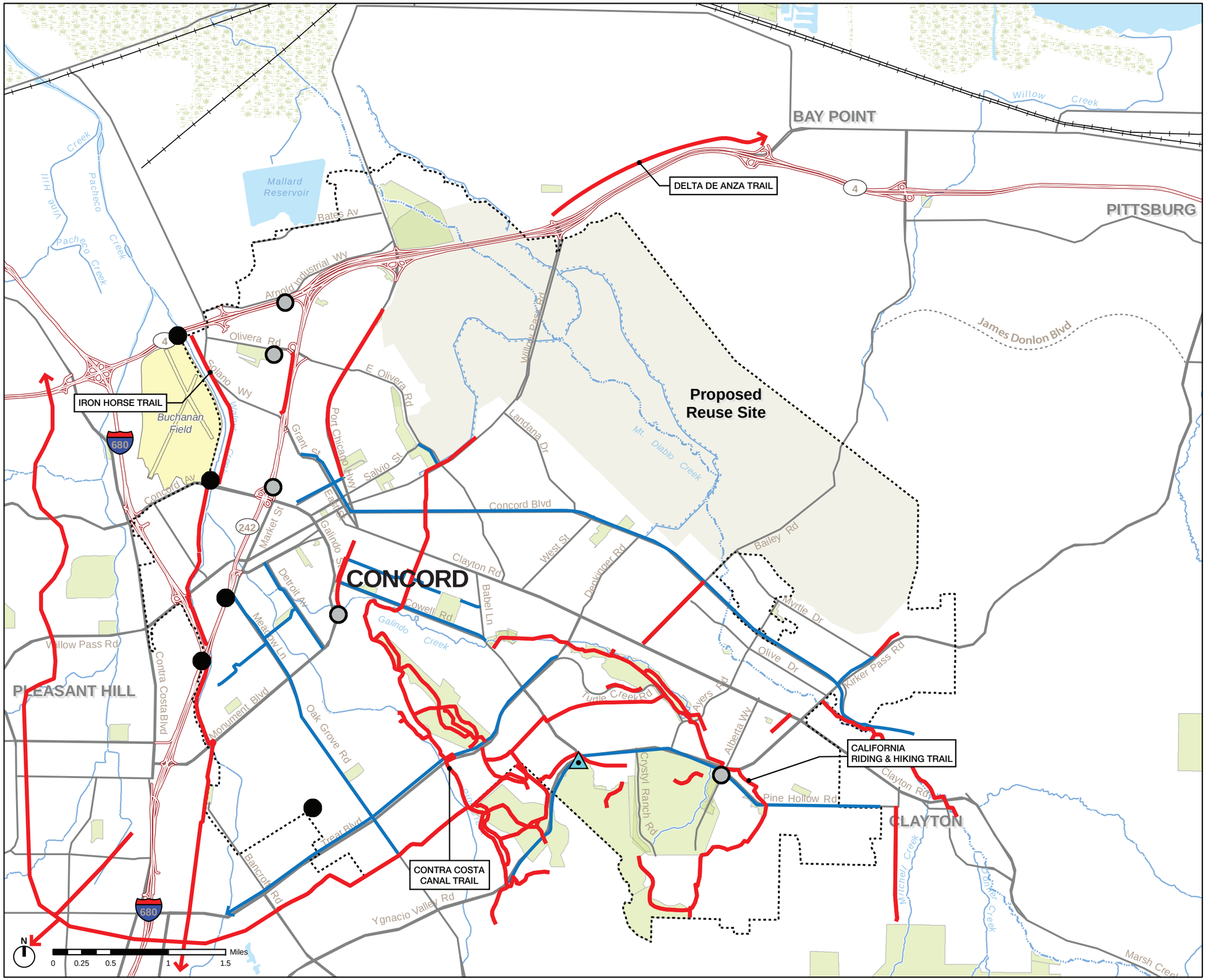
The goals and regulatory framework for Concord's parks and recreation system are described in the City of Concord 2030 Urban Area General Plan (General Plan) (City of Concord, 2007), which contains both broad and specific park policies.

The Parks, Open Space, and Conservation Element, Policy 1.1.1, broadly calls for parks acquisition to meet a standard of 6 acres of parkland per 1,000 residents. The Growth Management Element, Policy 2.1.1, sets a more specific park performance standard; it establishes a requirement that new development dedicate parkland at the ratio of 5 acres per 1,000 residents.

It is the City's policy to achieve the higher ratio of 6 acres of parkland per 1,000 residents through a combination of development exactions and municipal financing. Therefore, new parkland is to be provided by any proposed development at the ratio of 5 acres per 1,000 residents and the additional parklands to meet the 6-acre standard are to be provided for through other funding sources, such as parkland bonds and private donations.

The Concord Municipal Code (City of Concord, 2002) establishes a Parks, Recreation, and Open Space Commission, with the responsibility of advising on "public parks, open space, recreation, and issues pertaining to youth." The Commission is also responsible for coordinating and reviewing programs and recommending changes to the City Council based on the needs and goals of the community.

Additional regulatory grounding for recreational space comes from Chapter 74 of the Municipal Code, which regulates use and activities within City parks.



Legend

- Existing Class 1 Trails
- Existing Class 3 Bike Routes
- Existing Over/Undercrossings
- Available Over/Undercrossings
- Existing Staging Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street

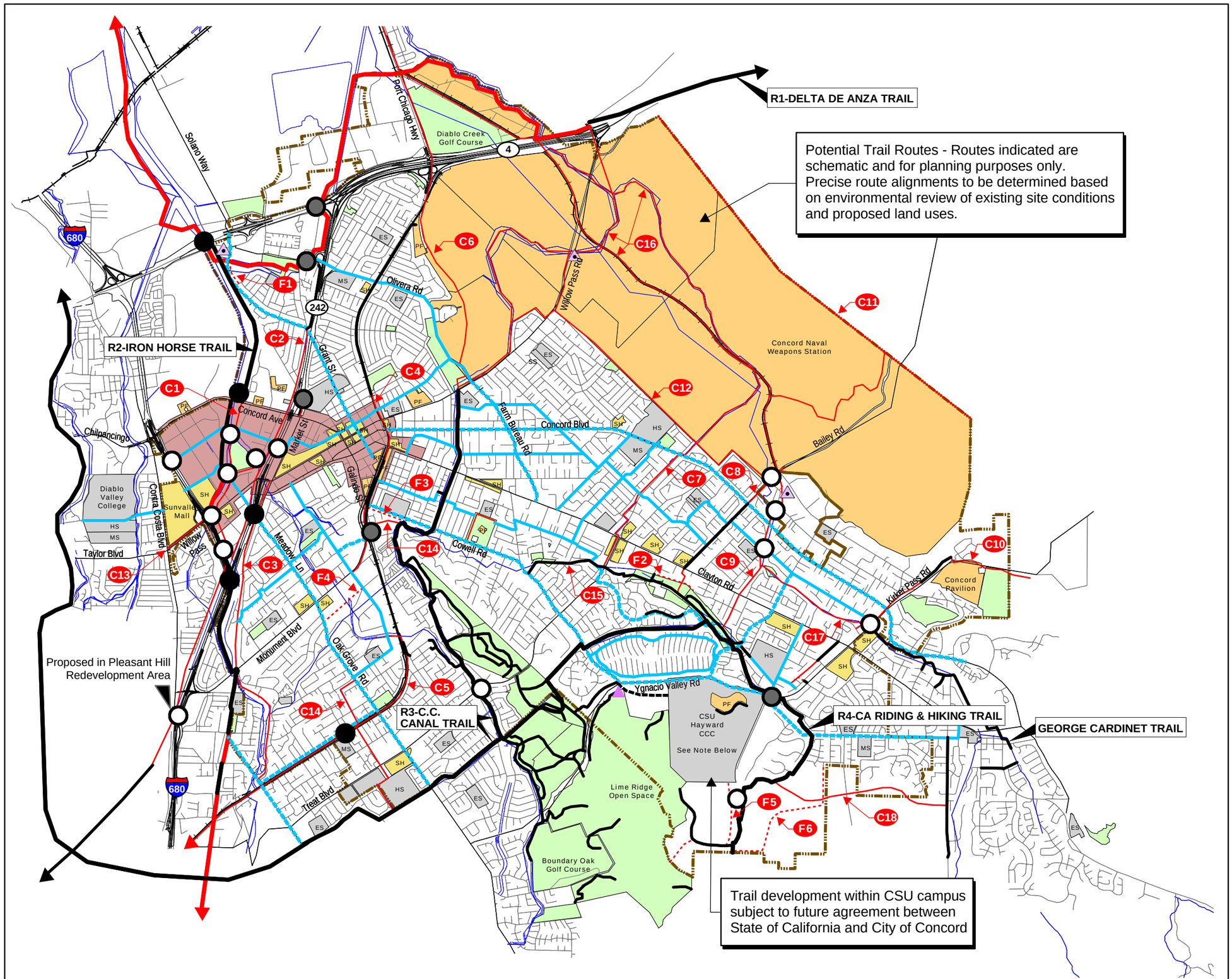
Notes & Sources

Sources: Concord Trails Master Plan, 2003
Contra Costa Countywide Bicycle and Pedestrian Plan, 2003
East Bay Regional Park District, 2009

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Figure 15-5
Existing Trails Network



Legend

- Existing Class 1 trails - Regional
- Existing Class 1 trails - Collector
- Planned Class 1 trails under construction
- Planned Class 1 trails - Regional
- Proposed Class 1 trails - Collector
- Proposed Class 1 trails - Feeder
- Proposed Class 3A bike routes on residential street
- Proposed Class 3B bike routes with edge line
- Schools
- PF — Public facilities
- Parks
- SH — Shopping
- Existing Over/Undercrossings
- Available Over/Undercrossings
- Proposed Over/Undercrossings
- Existing Staging Area
- Proposed Staging Area
- Redevelopment Area
- City limits

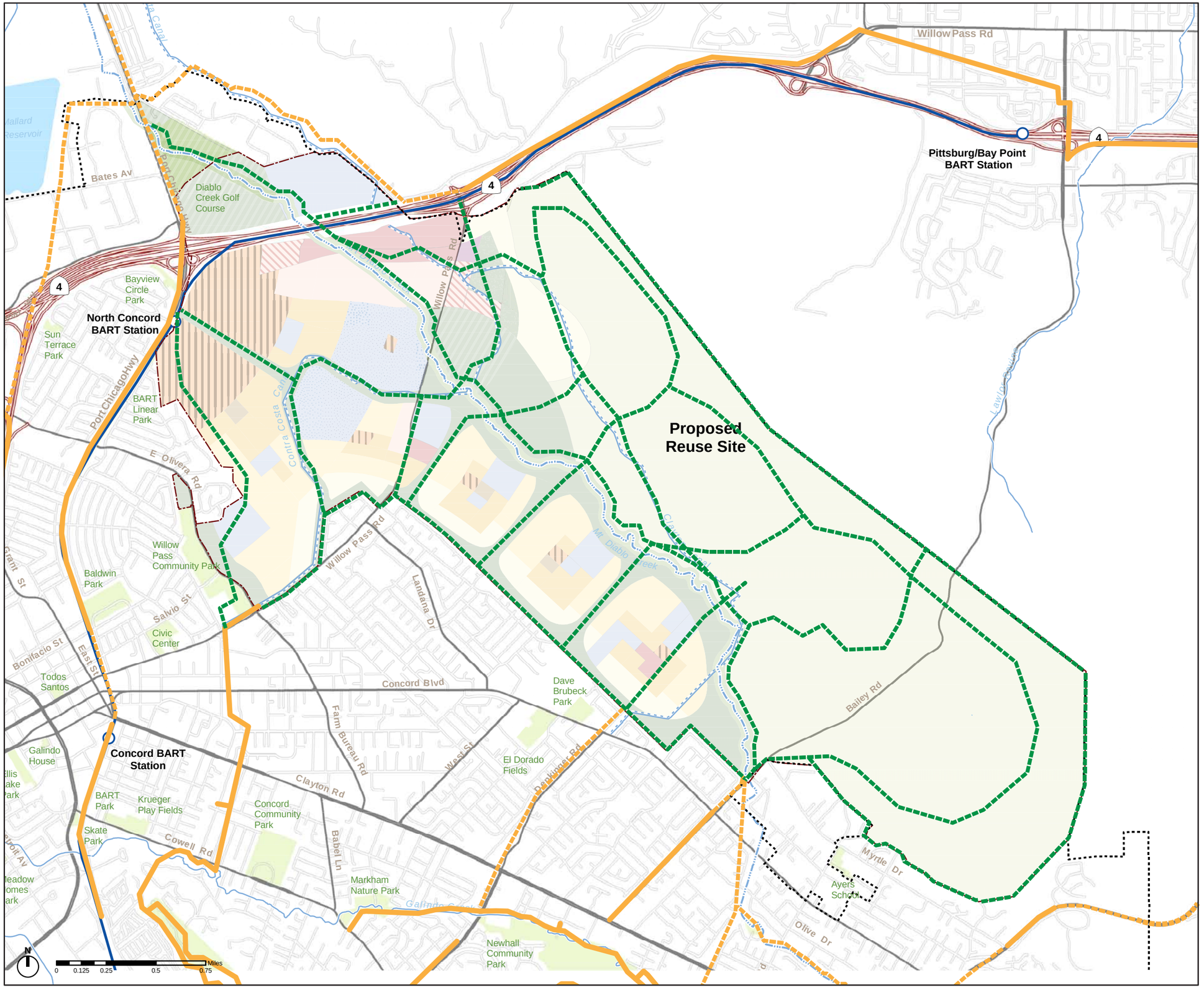
0 2,000 4,000 Feet

NORTH

Concord Community Reuse Plan

Revised 20 August 2009

Figure 15-6
Concord Trails Master Plan Diagram



Legend

- Existing Class 1 Trails, Outside CNWS
- Proposed Class 1 Trails, Outside CNWS
- Proposed Onsite Class 1 Trails

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

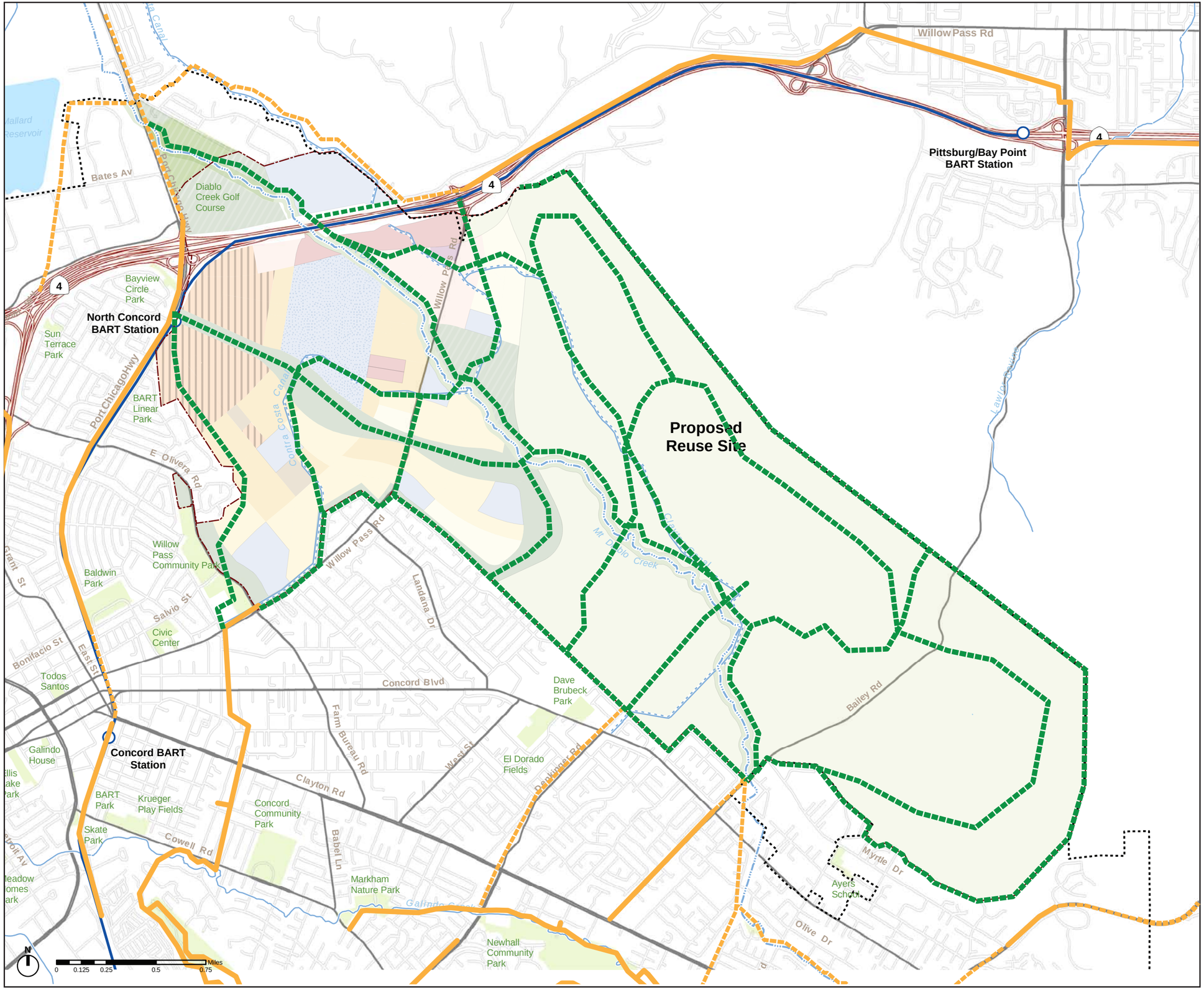
Note: Proposed Class 1 Trails include conceptual trail network from EBRPD PBC request.

Sources: Concord Trails Master Plan, 2003; Contra Costa Countywide Bicycle and Pedestrian Plan, 2003; EBRPD, 2007 & 2008; Arup 2009

Concord Community Reuse Plan

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Figure 15-7
Preferred Alternative
Proposed Trail Network



Legend

- Existing Class 1 Trails,Outside CNWS
- Proposed Class 1 Trails, Outside CNWS
- Proposed Onsite Class 1 Trails

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Proposed Class 1 Trails include conceptual trail network from EBRPD PBC request.

Sources: Concord Trails Master Plan, 2003; Contra Costa Countywide Bicycle and Pedestrian Plan, 2003; EBRPD, 2007 & 2008; Arup 2009

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Figure 15-8
Concentration and Conservation Alternative Proposed Trail Network

15.2 Standards of Significance

Criteria for determining the significant impacts associated with recreation have been developed based on Appendix G of the California Environmental Quality Act (CEQA, 1970) Guidelines and any relevant agency thresholds. For purposes of this environmental impact report (EIR), an alternative may have a significant impact on recreation if it would:

- Result in new development that does not meet the City standard of 6 acres of parks and recreation areas for every 1,000 new residents
- Increase the use of existing neighborhood and regional parks, resulting in substantial physical deterioration

15.3 Potential Recreation Impacts

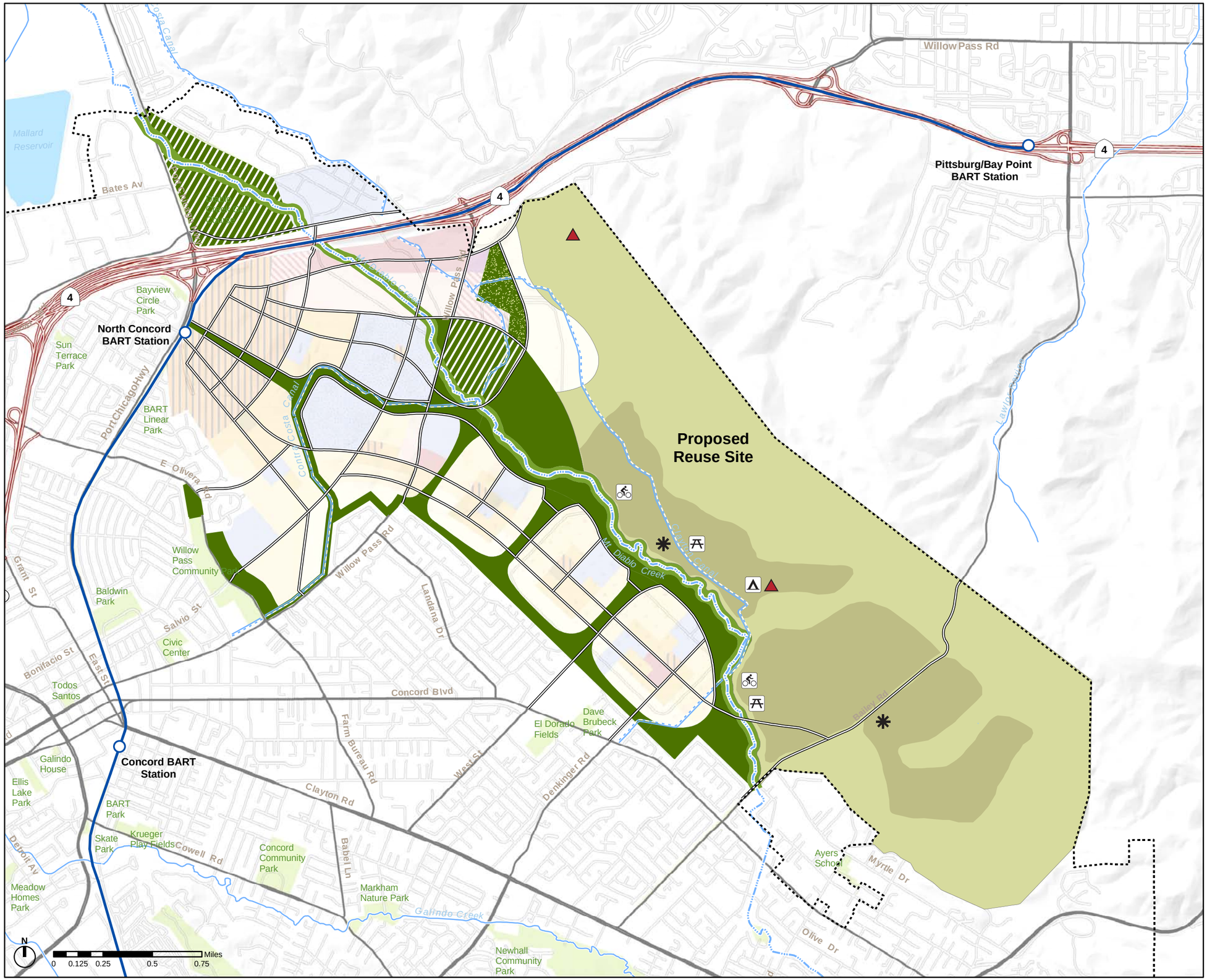
This section begins with a description of assumptions that have been incorporated in the analysis of potential recreation impacts. Impacts of the Preferred Alternative, the Concentration and Conservation Alternative, and the No Project Alternative are listed separately and in consecutive order. For each alternative, impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented.

15.3.1 Assumptions about Potential Recreation Impacts

Following are the assumptions that have been applied in the analysis of potential recreation impacts of the alternatives. The assumptions are based on information gathered during the planning process to develop the Preferred Alternative and the Concentration and Conservation Alternative. This information has been incorporated into both alternatives as ways to avoid or minimize their environmental consequences.

- As shown in Table 15-2, the Preferred Alternative proposes 2,387 acres for open space, and the Concentration and Conservation Alternative proposes 3,044 acres for open space. Areas designated for open space use would include passive recreation and habitat protection. It is assumed that this could include hiking, biking, and picnicking. Campgrounds and interpretive facilities are possible uses, but detailed planning of such uses needs to be deferred until negotiations with permitting agencies progress further. The total acreage corresponds with the request by the EBRPD for public benefit conveyance.
- The proposed recreation and open space land use layout is shown on Figure 15-9 for the Preferred Alternative and on Figure 15-10 for the Concentration and Conservation Alternative. These figures also incorporate the EBRPD's proposed concepts for how the alternatives could accommodate active recreation areas; recreation sites and staging areas; and environmental education, historical interpretation, and Port Chicago visitors center locations (subject to negotiations with permitting agencies).

- Both alternatives are designed around a system of green corridors that serve several functions. The green corridors link together all the uses on the site, from the transit-oriented development (TOD) uses located around the North Concord/Martinez BART Station to the open space areas on the southern and eastern sides of the site. The green corridors would also support recreational walking and biking activities, and could also be used to link existing Concord neighborhoods to open space areas on site. The green corridors also function as park areas serving the neighborhoods around them. In many cases, the corridors are wide enough to accommodate entire sports fields and other park facilities, providing easy access to informal pick-up games and neighborhood events. Finally, the green corridors serve as transition zones between neighborhoods, both existing and new.
- Both alternatives include a 75-acre site for a tournament quality youth and adult sports complex consisting of multiple sports fields and facilities, as described in further detail in Chapter 2, Project Description. The Preferred Alternative also designates a 35-acre Recreation/Residential Low Density Flex Area and a 25-acre Commercial/Retail Flex Space land use adjacent to the sports complex that could allow for an enlarged sports complex and/or shared parking and expanded supporting uses including retail, hotel/motel accommodations, and restaurants.
- The number of active recreation acres, as listed in Table 15-2 for each alternative, is comprised of the land designated as neighborhood parks, community parks, recreation facilities such as the golf course and a tournament sports complex, and a city-wide park. These recreation uses are described in Chapter 2, Project Description, except for the city-wide park. The city-wide park is specific to the Preferred Alternative and is assumed to be a larger park similar to Newhall Park, with a blend of active and passive recreation uses that transition in character from more intense developed uses like sports playfields and facilities to the less intense uses envisioned for the open space. The total active recreation acreage counted for each alternative excludes areas designated as riparian corridor and open space.
- It is unknown at this time how much of the areas designated for the 300-foot-wide riparian corridor along Mt. Diablo Creek will be accessible for active or passive recreation uses, pending resolution of biologic mitigation requirements.
- New biking and hiking trails that connect to the existing local and regional network, as identified in the Concord Trails Master Plan and shown on Figures 15-7 and 15-8, will be provided on the site, subject to more detailed site planning.
- Landscaped buffers or open space will be provided to provide transition zones between the new development and the existing community.
- Areas of the site with existing contamination and where parks and recreation facilities would be developed would be remediated to a level that would allow the designated parks and recreation uses.
- New parks and recreation facilities would be developed using construction techniques that apply best management practices (BMPs) so that adverse physical effects would be minimized. Similar BMPs would be applied to the management of the new parks and recreation facilities.



Legend

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area
- Potential Recreation Areas (Subject to habitat restriction)
- Recreation Sites & Staging Areas (per East Bay Regional Park District (EBRPD) plan)
- Environmental Education, Historical Interpretation & Port Chicago Visitors Center (per EBRPD plan)

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

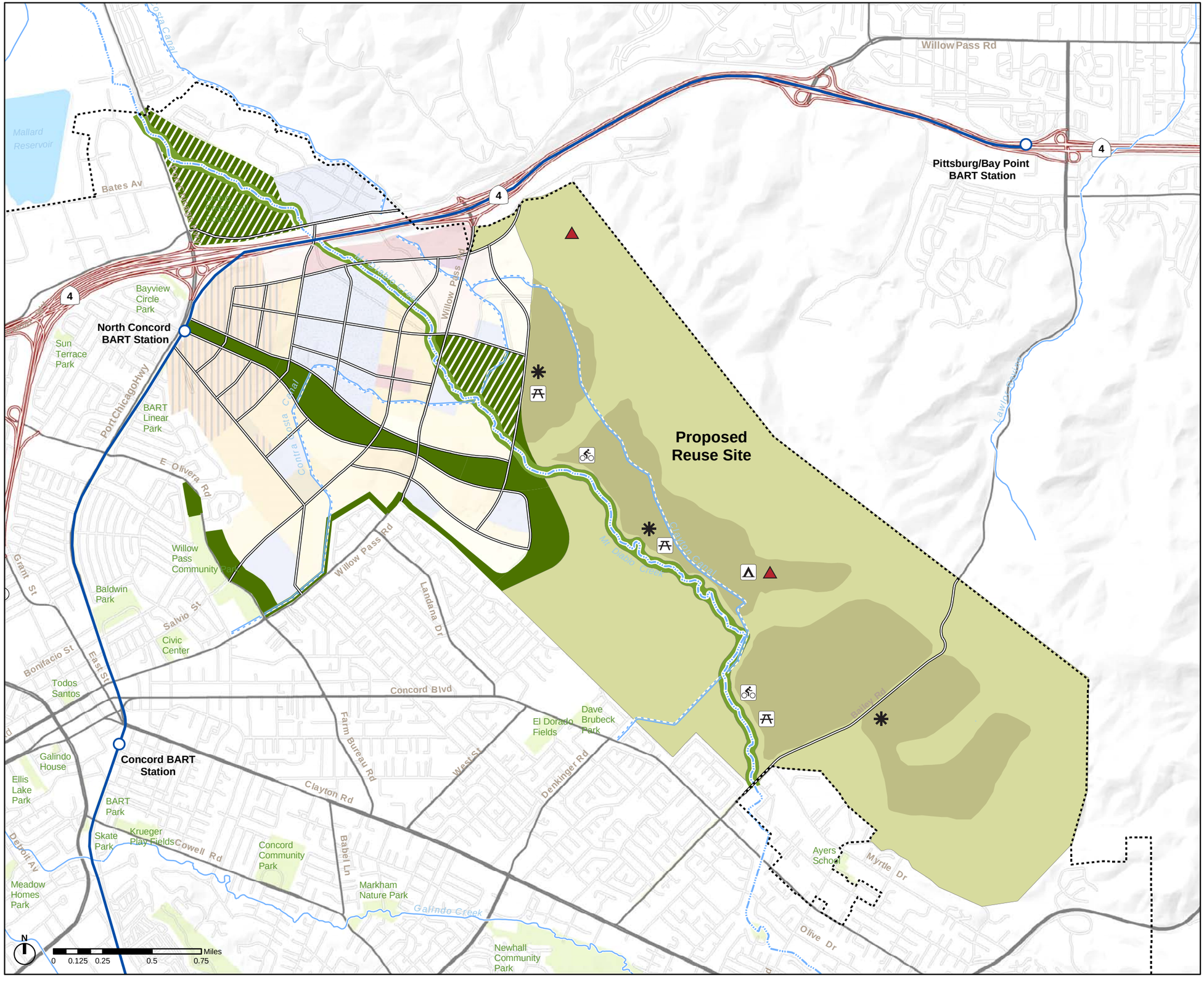
Notes & Sources

Note: Locations of icons are illustrative depictions only and subject to habitat mitigation constraints.

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Figure 15-9
Preferred Alternative Recreation and Open Space Land Use Layout



Legend

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Potential Recreation Areas (Subject to habitat restriction)
- Recreation Sites & Staging Areas (per East Bay Regional Park District (EBRPD) plan)
- Environmental Education, Historical Interpretation & Port Chicago Visitors Center (per EBRPD plan)

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Notes & Sources

Note: Locations of icons are illustrative depictions only and subject to habitat mitigation constraints.

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Figure 15-10
Concentration and Conservation Alternative Recreation and Open Space Land Use Layout

Table 15-2: Allocation of Land in the Alternatives to Parks Uses

Parks Land Use Categories[1]	Acreage Proposed in Preferred Alternative	Acreage Proposed in Concentration and Conservation Alternative
Active Recreation		
Neighborhood parks	43	35
Community parks	415	269
Recreation facilities: Existing golf course	88	88
Recreation facilities: Sports complex	75[2]	75
City-wide park	100	0
Subtotal	721	467
Riparian Corridor and Open Space		
Riparian corridor	178	178
Open space	2,387	3,044
Subtotal	2,565	3,222
Total	3,286	3,689

[1] As listed in Tables 2-1 and 2-2.

[2] Does not include an additional 35 acres of land designated Recreation/Residential Low Density Flex Area and 25 acres of land designated Commercial/Retail Flex Space that could be used to expand or provide supporting uses to the sports complex.

Source: Arup, 2009

15.3.2 Recreation Impacts of the Preferred Alternative

15.3.2.1 Potentially Significant Recreation Impacts of the Preferred Alternative

None identified.

15.3.2.2 Recreation Impacts of the Preferred Alternative That Are Less Than Significant

Impact Recreation 1: The Preferred Alternative proposes development on the site that would increase the number of new residents, with the possibility that it would propose insufficient parks and recreation areas to meet the City standard of 6 acres per 1,000 residents. This impact is considered to be less than significant.

The Preferred Alternative would result in an allocation of land for parks and active recreation that exceeds the City standard of 6 acres per 1,000 residents. As discussed in

the assumptions and as shown in Table 15-3, the Preferred Alternative proposes to add approximately 721 acres of land, or 14.3 percent of the site, for active recreation uses (exclusive of open space areas), while it proposes up to 28,800 new residents. This amount of land is more than the 636 acres of existing parkland in Concord, and it equates to a ratio of 25 acres of active recreation land per 1,000 residents on the site, greatly exceeding the City standard. This is also well beyond the widely cited standard of 10 acres per 1,000 residents recommended by the National Recreation and Park Association (NRPA).

Based on this information, this impact is considered to be less than significant.

Mitigation Measure Recreation 1: None required.

Table 15-3: Analysis of Active Recreation Land in Alternatives to City Standard

Alternative	Land Allocated (%)	Land Allocated (approximate acres)	Potential New Residents	Land Allocated per 1,000 Residents (acres)
Preferred Alternative	14.3	721	28,800	25
Concentration and Conservation Alternative	9.3	467	23,241	20

Source: Arup, 2009

Impact Recreation 2: The Preferred Alternative proposes development on the site that could increase the use of existing neighborhood and regional parks, potentially resulting in substantial physical deterioration of the existing facilities. This impact is considered to be less than significant.

Generally speaking, a marked increase in use of existing neighborhood and regional parks could be attributed to insufficient supply of new park facilities compared to the demand generated by the new development, inadequate access between new park facilities and other areas of new development, or a lack of functionality of the new park facilities.

As discussed under Impact Recreation 1, the level of active recreation areas proposed under the Preferred Alternative would far exceed the City's standard of 6 acres per 1,000 residents and the NRPA-recommended standard of 10 acres per 1,000 residents. The amount of land supplied would actually raise the City's overall ratio from 5.25 acres per 1,000 residents to beyond 8 (using the projected population of 153,000, as discussed in Section 13.1.1). By providing a supply that exceeds the City standard, new parks and recreation facilities could also support users in the rest of Concord and in the surrounding area, and alleviate burdens on existing parks. In the context of this impact, the open space areas should also be considered. The Preferred Alternative will provide a substantial amount of land in the form of open space, consistent with the EBRPD PBC application. The location and size of the open space makes the area a prime candidate for augmenting the regional park system.

Further, the Preferred Alternative is designed to provide a high level of recreational access within the site and between existing Concord neighborhoods and the site. As described in

the assumptions, the green corridors serve a number of functions. Not only do the corridors provide access from outside the site to the park and open space areas on the site via a comprehensive trail network, they also are a significant part of the recreation system, weaving a substantial acreage of active recreation land within close proximity of the other uses on site. Considering the location of existing parks in Concord near the site boundary, as shown on Figure 15-9, the Preferred Alternative appears to provide substantially more parkland near the surrounding neighborhoods than exists now. Even near the Sun Terrace and Holbrook neighborhoods, where relatively less green color is shown on the figure, it is assumed that community parks (not shown) will still be interspersed throughout all residential areas of the site, including the area around the North Concord/Martinez BART Station. In addition, residents of those neighborhoods will benefit from a doubled-in-size Willow Pass Community Park, as well as a high level of access to the sports complex, city-wide park, and open space via the central green corridor linking to the Contra Costa Canal corridor.

Finally, the Preferred Alternative has the capacity to accommodate a range of recreational and open space uses similar to existing park uses throughout Concord. As described previously, the proposed parks and recreation facilities would include neighborhood and community parks, new biking and hiking trails, picnic and group use areas, a renovated golf course, a large city-wide park, and tournament-level sports fields.

During the development of the Preferred Alternative, the Parks and Recreation Technical Advisory Group (TAG) that participated in the planning effort identified a need in the City for a tournament-quality sports complex. While Concord does have baseball diamonds, soccer fields, and other facilities, the TAG indicated that these facilities are inadequate to meet the demands of the citizens of Concord or participants from a wider regional area. The addition of a tournament quality facility for both youth and adult sports such as the one proposed would address a major need identified by the TAG.

Given these considerations, this impact is considered to be less than significant.

Mitigation Measure Recreation 2: None required.

15.3.3 Recreation Impacts of the Concentration and Conservation Alternative

15.3.3.1 Potentially Significant Recreation Impacts of the Concentration and Conservation Alternative

None Identified.

15.3.3.2 Recreation Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Recreation 3: The Concentration and Conservation Alternative proposes development on the site that would increase the number of new residents, with the possibility that it would propose insufficient parks and recreation areas to meet the City standard of 6 acres per 1,000 residents. This impact is considered to be less than significant.

The Concentration and Conservation Alternative would result in an allocation of land for parks and active recreation that exceeds the City standard of 6 acres per 1,000 residents. As discussed in the assumptions and shown in Table 15-3, the Concentration and Conservation Alternative proposes to add approximately 467 acres of land, or 9.3 percent of the site, for active recreation uses (exclusive of open space areas), while it proposes up to 23,241 new residents. This amount of land represents more than half of the 636 acres of existing parkland in Concord, and it equates to a ratio of 20 acres of active recreation land per 1,000 residents on the site, greatly exceeding the City standard. This is also well beyond the widely cited standard of 10 acres per 1,000 residents recommended by the NRPA.

Based on this information, this impact is considered to be less than significant.

Mitigation Measure Recreation 3: None required.

Impact Recreation 4: The Concentration and Conservation Alternative proposes development on the site that could increase the use of existing neighborhood and regional parks, potentially resulting in substantial physical deterioration of the existing facilities. This impact is considered to be less than significant.

Please see the discussion of Impact Recreation 2, which applies to the Concentration and Conservation Alternative except for these details:

- The amount of land supplied would actually raise the City's overall ratio from 5.25 acres per 1,000 residents to beyond 7 (using the projected population of 153,000, as discussed in Section 13.1.1).
- Considering the location of existing parks in Concord near the site boundary, as shown on Figure 15-9, the Preferred Alternative appears to provide substantially more parkland near the surrounding neighborhoods than exists now. It is assumed that community parks (not shown) will still be interspersed throughout all residential areas of the site, including the area around the North Concord BART Station. In addition, residents near the northern part of the site will benefit from a doubled-in-size Willow Pass Community Park, as well as a high level of access to the sports complex and open space via a wide central green corridor. Adjacent residents south of Willow Pass Road will be able to access the green transition buffer and open space via the proposed trail network.

Given the considerations stated in Impact Recreation 2, and as modified here, this impact is considered to be less than significant.

Mitigation Measure Recreation 4: None required.

15.3.4 Recreation Impacts of the No Project Alternative

15.3.4.1 Potentially Significant Recreation Impacts of the No Project Alternative

Impact Recreation 5: The No Project Alternative would result in the continued dormancy of the site, and the site would remain inaccessible to and unusable by the general public. No new parks, recreation facilities, or publicly accessible open space would be provided. This impact is considered to be potentially significant.

If the site is not opened for development including parks and recreation facilities, the residents of Concord and surrounding areas would continue to have to rely on existing facilities. Because there would be no new development of parks, recreation, and publicly accessible open space, there is the potential that existing facilities could be overcrowded. In addition, the current supply of parkland in the City is approximately 5.25 acres per 1,000, which is below the City standard of 6 acres per 1,000 residents. This impact is considered to be significant.

Mitigation Measure Recreation 5: None available.

With no mitigation measures available to address the non-development of the site, this impact will remain significant.

15.3.4.2 Recreation Impacts of the No Project Alternative That Are Less Than Significant

None identified.

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16.
Utilities

16 Utilities

This chapter describes existing utilities~~,~~ as shown on Figure 16-1~~,~~ that serve the site, the City of Concord, and the surrounding area. The utilities addressed in most detail are water supply and wastewater management, including recycled water, stormwater management, and solid waste management. Electrical supply, natural gas supply, petroleum and oil pipeline systems, and information technology/communications (IT/COMM) are also addressed. The discussion summarizes the effects on utilities that would result from implementation of either of the two alternatives. This chapter also includes proposed mitigation measures that will reduce the identified impacts to the extent feasible.

During the extensive community planning effort that resulted in the development of the alternatives, and in response to the comments provided by the public and State and federal resource agencies during the scoping process and on the May 2008 Draft Environmental Impact Report (EIR) and August 2009 Draft Revised Environmental Impact Report (EIR), the City made a concerted effort to design and refine the two alternatives so as to avoid or minimize the potential effects of the two alternatives on utilities. This has resulted in the utilities impacts of both alternatives being substantially less than they would have been had utilities impacts not been taken into account during all stages of the planning and environmental analysis process.

16.1 Existing Conditions

16.1.1 Water Supply

Water is supplied to the site, the City of Concord, and adjacent areas by the Contra Costa Water District (CCWD). The site receives its potable water from ~~a~~ connections with CCWD's water trunk lines at the main gate on Port Chicago Highway, and along the western side of the site near the existing Coast Guard Housing complex located on Olivera Road. The existing water distribution system at the site includes five water storage tanks with a total capacity of 1.7 million gallons, and ~~five~~ three pump stations that are currently owned by the U.S. Navy.

16.1.1.1 Water Supply Sources

The major supply source of CCWD's water is the Sacramento–San Joaquin Delta. Water originates from rivers draining the Sierra Nevada and flows into the Sacramento and San Joaquin Rivers, eventually reaching the Delta and San Francisco Bay. CCWD's water supply delivery is primarily from the Central Valley Project (CVP). CCWD's long-term CVP contract was recently renewed to 2045. The CVP contract with the U.S. Bureau of Reclamation provides for a maximum delivery of 195,000 acre-feet of water per year, with a reduction in deliveries during water shortages including regulatory restrictions and drought. Other sources available to CCWD include the East Contra Costa Irrigation District, Mallard Slough, recycled water, local groundwater from off-site wells, and water transfers.

CCWD's three existing Delta intakes are located near Discovery Bay at Old River, in eastern Oakley at Rock Slough, and in Bay Point at Mallard Slough. These are vulnerable to saltwater intrusion from the Bay in the late summer and fall months and during prolonged

droughts. Figure 16-2 shows the locations of CCWD's existing and proposed water intakes. To address the water quality challenges at the intakes, CCWD initiated Alternative Intake Project 4 (CCWD, 2006), which involves building a fourth water intake on Victoria Island in a location where higher-quality water is available at key times of year. The new intake is under construction and will provide water quality benefits to CCWD by changing the location and timing of diversions, but will not increase the total amount of water that can be diverted from the Delta. The new intake is expected to be online by 2010.

16.1.1.2 Water Treatment Facilities

CCWD owns and operates three water treatment facilities: the Bollman Water Treatment Plant (WTP) in Concord, the Randall-Bold WTP in Oakley (refer to Figure 16-1), and the City of Brentwood Treatment Plant in Oakley (adjacent to the Randall-Bold WTP). The current combined water treatment capacity for the Bollman and Randall-Bold WTPs is 115 million gallons per day (mgd). The treatment plants use ozone gas for primary disinfection and chloramine for residual disinfection after the treated water leaves the treatment plants. CCWD's treated drinking water meets all State and federal drinking water standards.

Untreated water delivered from the Delta and/or Los Vaqueros Reservoir is channeled using the Contra Costa Canal to either the Randall-Bold grit basin before being treated at the Randall-Bold WTP or the Bollman WTP.

The Bollman WTP (CCWD, 2001a) is currently operating near its capacity of 75 mgd. It treats water for 220,000 residents in central Contra Costa County including supplemental deliveries from the District's Randall-Bold WTP. Delta water is conveyed in the Contra Costa Canal to Mallard Reservoir northwest of the site before being treated at the Bollman WTP.

The Randall-Bold WTP (CCWD, 2001b), which is jointly owned with the Diablo Water District, has an existing capacity of 40 mgd. It has the potential to expand to a capacity of 80 mgd. The Randall-Bold WTP provides treated water to Antioch, Diablo Water District, Brentwood, and CCWD's retail customers in central Contra Costa County via CCWD's Multi-Purpose Pipeline (MPP). The 21-mile MPP (CCWD, 2000) is a 42-inch-diameter welded steel pipeline that delivers treated water west from the Randall-Bold WTP to the District's treated water distribution system in north Concord.

16.1.1.3 Water Distribution Canals

The Contra Costa Canal and Clayton Canal currently traverse the site. Both canals were built as part of the Delta Division of the CVP by the Bureau of Reclamation. The canals are managed by CCWD and the canal rights-of-way are owned by the Bureau of Reclamation. The Contra Costa Canal is currently in use, while use of the Clayton Canal has been discontinued.

The Contra Costa Canal forms the northeastern boundary of the site to the south of Clyde and north of State Route (SR) 4. It enters the site north of SR4 before crossing under the highway and the Bay Area Rapid Transit (BART) District rail line via a culvert. The canal winds through the hilly area south of SR 4 adjacent to the North Concord/Martinez BART Station and exits the site at the west of the intersection between Willow Pass Road and St.

Vincente Drive. It forms the site boundary along Willow Pass Road. The portion of the Contra Costa Canal running through the hilly area next to the North Concord/Martinez BART Station is approximately 3.7 miles long.

Per its agreement with the Bureau of Reclamation, CCWD currently operates and maintains the Contra Costa Canal. During the wet season, the canal acts as a drainage channel within the site and in adjacent neighborhoods. There are off-site access and utility easements for crossing the canal within the City.

The Clayton Canal branches from the Contra Costa Canal south of Willow Pass Road and runs longitudinally through the site north of Kinne Boulevard. It makes a 90-degree turn to exit the site at Denkinger Road. The Clayton Canal extends for approximately 3.5 miles within the site and for approximately 1.35 miles off site.

16.1.1.4 The Clayton Canal was last used for water transportation more than 20 years ago, and CCWD has no plan to put it back in service. If the Clayton Canal were to be permanently abandoned, the action would need to be approved by both CCWD and the Bureau of Reclamation, and would also require Congressional approval.
Groundwater

As described in Chapter 7, groundwater was characterized by the Navy in 2002 as being located at depths of 30 feet to 50 feet under semi-confined to confined conditions. Artesian seeps and springs are typically found in the vicinity of these aquifers. Springs are currently used as water supply for wildlife and cattle. Groundwater wells extract water for livestock and for irrigation of the Diablo Creek Golf Course. Well water quality was determined to be fair by the Navy. The Navy's study concluded that higher yields of groundwater could be extracted in the future, but that extraction could result in saltwater intrusion.

16.1.2 Wastewater Management

Wastewater generated at the site is collected by the Central Contra Costa Sanitary District (CCCSD) system and by the City of Concord. Approximately 2,160 acres (43 percent) of the site was annexed by CCCSD in 1967 as part of its DA 12-1 service area, which includes the northeastern portion of the site and a small portion of land to the west near the abandoned airfield. The southwestern portion, an additional approximate 2,160 acres, does not have an existing sewer system, but is entitled to have its sanitary sewer collection service provided by the City of Concord or CCCSD and wastewater treatment services provided by CCCSD. The remaining 708 acres (14 percent of the site) near the abandoned airfield currently does not have a designated sanitary sewer collection service provider. Its future sanitary sewer collection services could either be provided by CCCSD or the City of Concord, while the wastewater treatment service would be provided by CCCSD.

16.1.2.1 City of Concord Wastewater System

The City of Concord maintains and operates the majority of the sewer collection system in Concord, all of the sewer collection system in Clayton, and a small portion of the sewer collection system in Walnut Creek as well as certain unincorporated areas in the county, primarily in the Ayers Ranch area. The sewage is conveyed to CCCSD's system through

three sewage collection zones, each with its own meter. The largest zone flows by gravity to Concord's Sewage Pump Station, located next to Waterworld at the confluence of Pine Creek and the Walnut Creek Flood Control Channel. This zone accounts for approximately 86 percent of the City's total flow. The other two zones flow by gravity to their connections with CCCSD's system.

The City is responsible for paying a flow-proportional share of the costs associated with operating and maintaining CCCSD's Wastewater Treatment Plant (WWTP), as well as a flow-proportional share of related CCCSD capital costs (e.g., treatment plant improvements). The City has a 20 Year Sewer Enterprise Plan that forecasts the anticipated revenues and expenditures associated with operating and maintaining the Sewage Pump Station and sewage collection system, the cost of treating the City's sewage at the CCCSD WWTP, Concord's share of related CCCSD capital improvements, and capital improvement projects associated with Concord's sewage infrastructure.

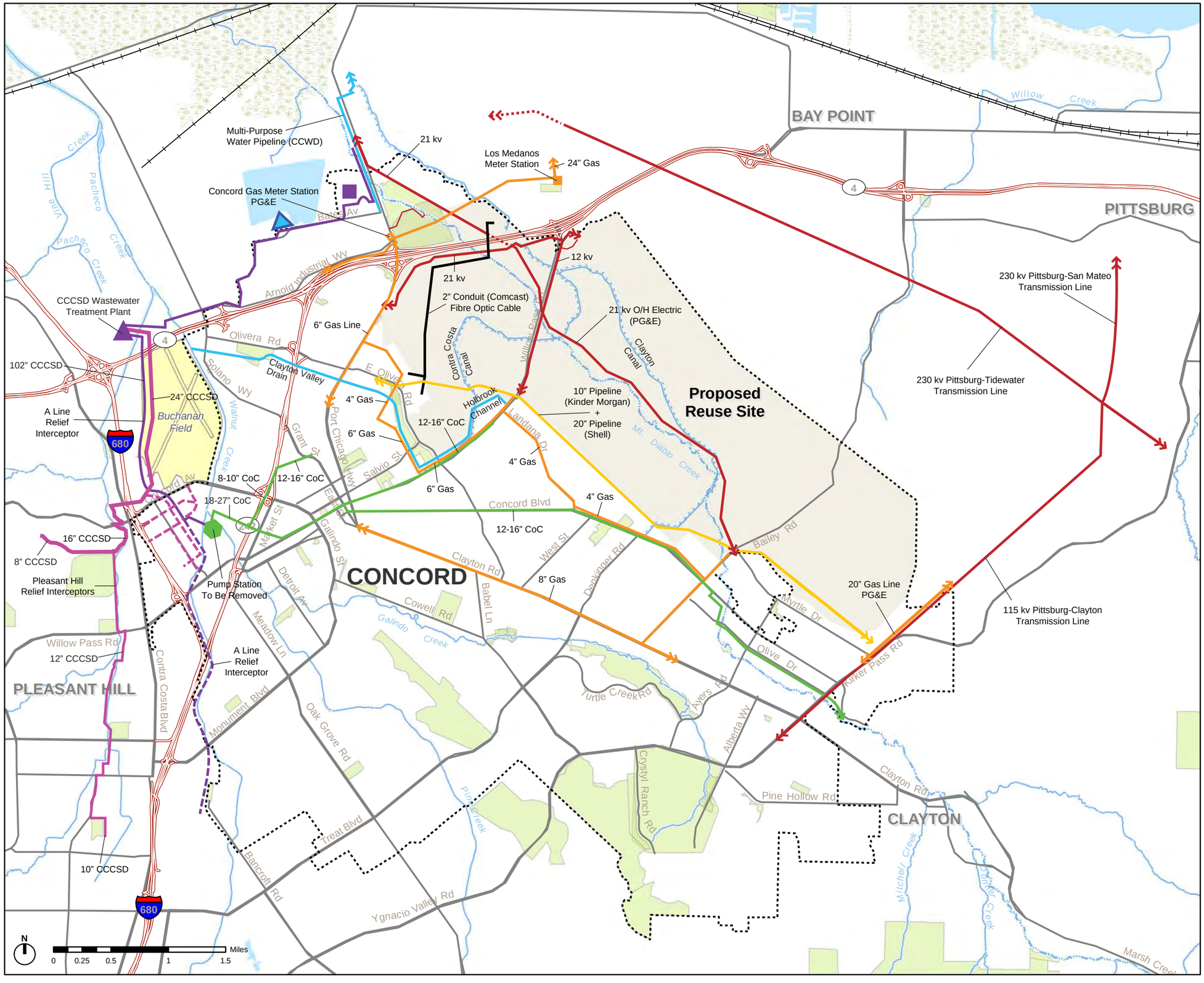
The City's sewer collection infrastructure consists of approximately 502 miles of underground pipelines. The sewer mains range in size from 6 inches to 72 inches in diameter. The sewer laterals that the City of Concord maintains are typically 4 to 6 inches in diameter. The Concord Sewage Pump Station currently pumps an average daily dry weather flow of approximately 12 mgd to CCCSD, but is capable of pumping up to 40 mgd during peak wet weather flows. An additional 8 mgd of wastewater can be conveyed to the CCCSD system from the Sewage Pump Station through two gravity-flow bypass lines. The Concord Sewage Pump Station will be abandoned and replaced by a new gravity connection to CCCSD's A-Line Relief Interceptor sewer by August 2009. The new gravity connection is designed to match projected wet weather flows.

16.1.2.2 Central Contra Costa Sanitary District

CCCSD is a special district, established in 1946, providing sewage collection, wastewater treatment, recycled water distribution, and household hazardous waste collection services. Its service area is approximately 142 square miles, including Concord, Clayton, Walnut Creek, Pleasant Hill, Lafayette, Moraga, Orinda, Danville, portions of Martinez and San Ramon, and the adjacent unincorporated areas within Contra Costa County. The total population served is 456,200 as of January 2009.

CCCSD is contracted to provide sewage treatment for the City of Concord and City of Clayton. CCCSD owns, maintains, and operates a portion of the collection system within the City, primarily in North Concord and in/around the Sunvalley Mall and the Willows shopping centers in western Concord. The pipes range in size from 6 inches to 102 inches in diameter.

Wastewater generated from homes and businesses in Concord and other central Contra Costa County communities flows through underground pipelines to the WWTP northeast of the intersection of Interstate Highway (I-) 80 and SR 4. Much of the wastewater flows through the pipes by force of gravity. Some hilly areas and lands down slope from the WWTP require pumping facilities to "lift" the effluent to the gravity system.



Legend

- CCWD Mulit-Purpose Water Line
- CCWD Bollman Water Treatment Plant
- City of Concord Trunk Sewers
- City of Concord Sewer Pump Station
- CCCSD Trunk Sewers
- CCCSD Concord Industrial Pump Station
- CCCSD Planned Trunk Sewers
- CCCSD Wastewater Treatment Plant
- CCCSD Recycled Water System
- CCCSD Planned Recycled Water System
- PG&E Electricity (overhead transmission lines)
- PG&E Natual Gas Pipelines
- PG&E Concord Gas Meter Station
- Comcast Telecom (on site shown only)
- Oil/Petroleum Pipelines (on site shown only)

Abbreviations

CCWD	Contra Costa Water District
CCCSD	Contra Costa Sanitary District
PG&E	Pacific Gas and Electric Company
CoC	City of Concord

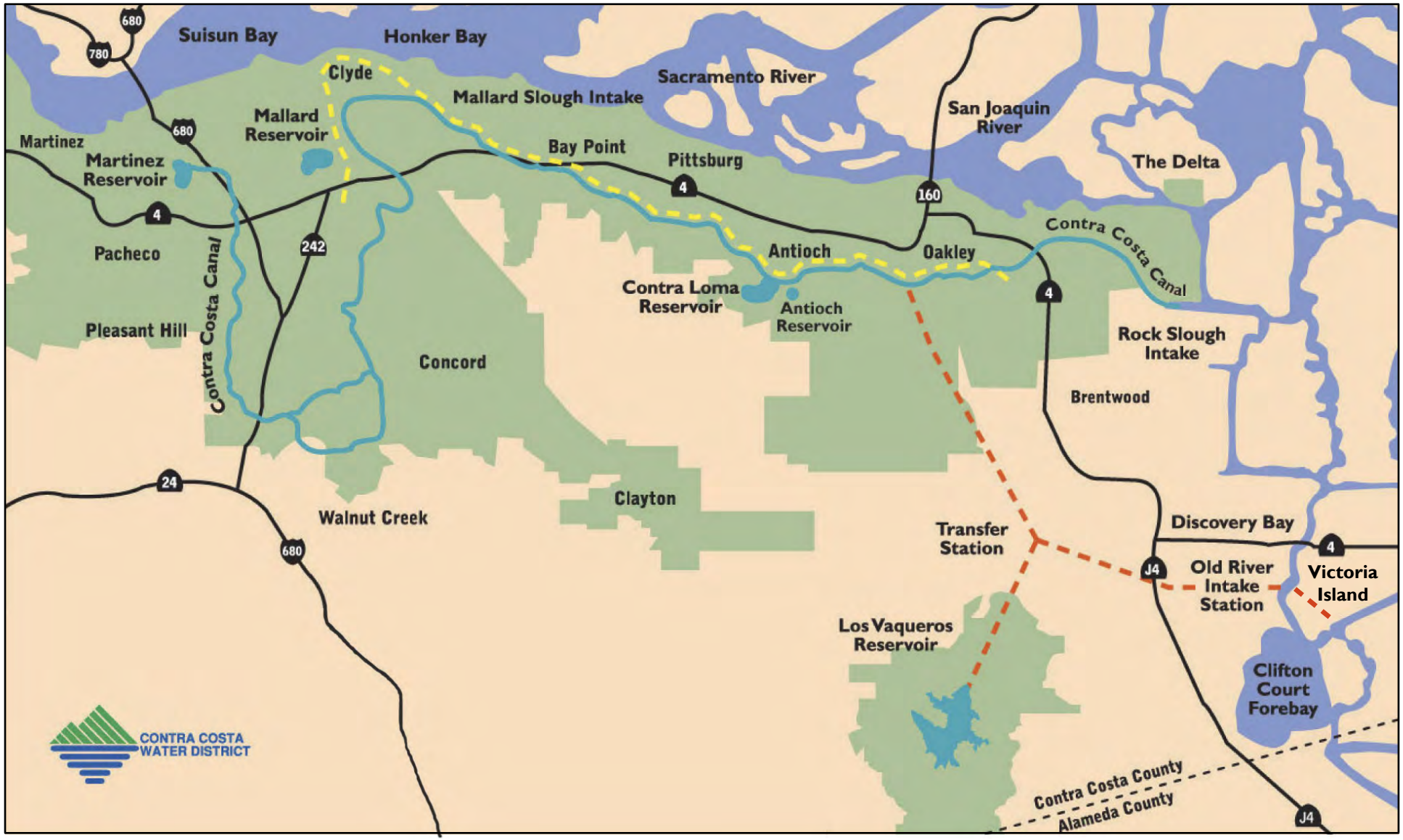
Base Map

- Concord City Limit
- Site Area
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highways
- Arterials
- Local Streets

Concord
Community Reuse Plan

Revised May 12, 2009

Figure 16-1
Existing Major Utility Network



Legend

- Contra Costa Water District Treated and Untreated Water Service Area
- Multi-Purpose Pipline
- Los Vaqueros Pipline
- Contra Costa Canal

Notes & Sources

Sources: CCWD 2007 Annual Report
CCWD Alternative Intake Project Sheet, December 2006

Concord Community Reuse Plan

Revised May 8, 2008

Figure 16-2
Contra Costa Water District System

CCCSD and the City are constructing the second phase (Phase 2A) of their A-Line Relief Interceptor project, the goal of which is to eliminate the need for the existing Concord Sewage Pump Station. The new line is designed to be deep enough to allow for a gravity-flow connection between the City's sanitary sewer collection system and CCCSD's new A-Line Relief Interceptor system. The A-Line Relief Interceptor project will include installation of 10,955 feet of 48 to 96-inch-diameter sewer pipes. The A-Line Relief Interceptor project is expected to be completed during the summer of 2009.

16.1.2.3 Wastewater Treatment and Disposal

In 2008, the CCCSD treated an average of 36.5 mgd of wastewater per day for residents and businesses in central Contra Costa County. Wastewater is treated to either secondary or advanced levels. The secondary treated wastewater is released into Suisun Bay, while the water to be recycled receives additional advanced treatment at CCCSD's Filter Plant. This treatment includes chemical-assisted filtration and hypochlorite disinfection. The result is high-quality recycled water suitable for nonpotable uses. CCCSD stores excess recycled water in a 30-million-gallon capacity WWTP clearwell.

The WWTP is primarily powered by its own cogeneration power plant, utilizing natural gas and methane gas from a neighboring landfill. Generators have been installed to provide emergency backup electricity. The WWTP also has a connection to the Pacific Gas and Electric Company (PG&E) grid.

The WWTP's maximum operating capacity is approximately 125 mgd. Its permitted dry weather flow (DWF) treatment capacity is set by the District's National Pollution Discharge Elimination System (NPDES) permit approved by the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board). The maximum allowable DWF for the treatment plant per the NPDES permit is 53.8 mgd, which is calculated as the mean DWF observed during the driest three months of any given year. The maximum allowable DWF is assumed to consist of approximately 40.6 mgd of dry weather sewer flows and approximately 13.2 mgd of groundwater infiltration. The measured DWF of the WWTP in fiscal year 2008 was 35.2 mgd. This represents a reduction from the measured DWF in 2005 of 41.4 mgd. CCCSD believes that the reduction in DWF can be attributed to one or more of the following causes: effective water conservation practices being implemented, reduced inflow and infiltration resulting from annual renovation of 2 percent of the sewer conveyance system, and/or lower groundwater levels due to prolonged drought.

During wet weather, the District diverts excess sewer inflow into WWTP holding basins, which can store up to 140 million gallons of wet weather flow, and then return the flow for treatment.

16.1.2.4 Recycled Water

In 1996, CCCSD and CCWD reached an agreement allowing CCCSD to supply recycled water to specific areas of Concord and Pleasant Hill. The existing recycled water distribution system extends from the WWTP at Imhoff Drive to Patterson Boulevard, via Marsh Drive, Ruth Drive, and Ardith Drive (refer to Figure 16-1).

About 200 million gallons of recycled water are used annually by irrigation customers, including two golf courses, a community college, an elementary school, three middle schools, a high school, and the City of Pleasant Hill.

The CCRP site does not have any existing recycled water service. Future recycled water service provision is under discussion. The closest existing service connection point for obtaining recycled water is west of the site, either at the CCCSD WWTP or by connecting to the existing or planned extensions of the CCCSD recycled water distribution system.

CCCSD has a current recycled water generation capacity of approximately 3 mgd. This capacity has already been allotted to current and future customers in the Concord/Pleasant Hill (Zone 1) area. Additional production capacity can be obtained with improvements to the filtration and disinfection systems. These improvements may include process changes needed to improve recycled water quality to standards required for the various end uses proposed. Improvements to pumping, transmission, and storage facilities will also be required.

Preliminary studies have been undertaken for a future extension to the recycled water system, which would include 3,100 feet of new 8-inch-diameter recycled water main from CCCSD's WWTP, via Buchanan Field's golf course, to the intersection of Meridian Park Boulevard and Galaxy Way in Concord.

16.1.3 Stormwater Management

The City is responsible for the operation and maintenance of the storm drainage collection system within the City limits, and the City's system is solely conveyed via gravity flow.

The City of Concord stormwater collection system is composed of 229 miles of storm drain pipes, 1,140 manholes, and almost 6,000 catch basins, and is maintained by the Streets & Drainage Section of the City's Public Works Department. The storm drain pipes typically discharge into 11 miles of creeks and drainage channels, among them Mt. Diablo Creek, Galindo Creek, Pine Creek, and their tributaries, and/or the Walnut Creek Flood Control Channel, which is maintained by the Contra Costa County Flood Control and Water Conservation District (CCCFC&WCD).

16.1.3.1 Watersheds and Stream Channels

The storm drainage pattern at the site is controlled generally by the topography and the surface drainage features. The majority of the existing site is pervious, undeveloped area. Chapter 7, Hydrology and Water Quality, describes the project site's topographical and hydrological features in more detail.

Mt. Diablo Creek and the Holbrook Channel, also known as the Clayton Valley Drain, are the major surface drainage features within the site.

More than 75 percent of the site drains into Mt. Diablo Creek, which is an ephemeral stream that only flows during the rainy season. The Mt. Diablo Creek Channel has been significantly altered due to land use changes on the site dating back to the 19th century.

Approximately 22 percent of the project site drains to the Holbrook Channel and associated Concord urban drainages. This feature is a constructed channel that begins near the

western edge of the project site and flows north through the residential neighborhoods of Concord until it joins Walnut Creek near Marsh Drive.

As discussed in Chapter 7, Hydrology and Water Quality, about 1 percent of the project site drains to the Willow Creek watershed toward the City of Pittsburg. There are no stream channels on site in the Willow Creek watershed, and contributing drainage is limited to sheet flow only during high-intensity storms.

Other notable features include:

- A number of small, unnamed tributaries that drain the northeast portion of the project site. Most of these tributaries are short, steep drainages that flow only during and shortly after storms.
- A groundwater seep is located at the former runway site at the western portion of the project site. Groundwater rises to the surface and ponds before flowing to the Holbrook Channel though a series of open channels and culverts. These have been placed to drain the site, and were likely installed during construction of the runway.
- A number of wetlands have been identified within the project area. These are discussed in detail in Chapters 7 and 8.

The Holbrook Channel receives storm runoff from an upstream watershed in the City of Clayton through a 36-inch outfall at the intersection of Olivera Road and Willow Pass Road at the site boundary. According to the City of Concord (Pascual, 2006, pers. comm.), a portion of the Holbrook Channel near the abandoned airfield and the area at the outfall location experienced flooding during a recent storm event.

The City of Concord believes the capacity of the Holbrook Channel may be constrained at the existing culvert crossings. The location of the constrained culverts may be the three 18-inch pipe culverts crossing the Contra Costa Canal and/or the two 72-inch pipe culverts near the intersection of Willow Pass Road and Olivera Road. There is no existing capacity analysis report for the City's storm drainage system.

The CCCFC&WCD maintains and oversees maintenance of surface water bodies within its service area, including Mt. Diablo Creek and the Holbrook Channel. The District ensures that adequate capacity exists to manage stormwater runoff from development and requires that storm channels be designed to handle a 25-year storm event. Storm drainage facilities require meeting the CCCFC&WCD's standards and ensuring adequate and safe flow to minimize flooding.

As described in Chapter 7, Hydrology and Water Quality, Federal Emergency Management Agency (FEMA) flood maps were completed for portions of the site in 1984 and updated in 2001 and 2009. Approximately 125 acres of the site are designated by FEMA as being within the 100-year floodplain. However, as reported in Chapter 7, the majority of the site has not been mapped by FEMA.

16.1.3.2 Canals

While the Contra Costa Canal's major function is to transport raw (untreated) water, it presently conveys stormwater during the wet season. CCWD will require that stormwater runoff within the project area shall not be discharged to the Contra Costa Canal. The

Clayton Canal no longer conveys raw water and is a functioning stormwater channel. (Welch, 2006, pers. comm).

16.1.4 Solid Waste Management

Solid waste, recycling, and greenwaste collection services at the site are currently provided by Concord Disposal Service (CDS), which was established in the 1930s to provide residential and commercial garbage and recycling collection services for the City of Concord (CDS, 2005).

16.1.4.1 Solid Waste Disposal

Based on the City of Concord 2030 Urban Area General Plan (General Plan): Draft Environmental Impact Report, (City of Concord, 2007a), the total amount of solid waste generated in the CDS service area in 2004 was about 247,259 tons. About 98,904 tons, or 44 percent, was diverted for recycling, resulting in a net solid waste disposal of 138,465 tons in 2004. Approximately 73 percent of the net solid waste disposal (100,937 tons) was disposed of at the Potrero Hills Landfill. The remaining 27 percent (approximately 37,528 tons) of the solid waste was disposed of at Keller Canyon Landfill (KCL).

16.1.4.2 Landfills

The Potrero Hills Landfill (PHLF) (California Integrated Waste Management Board [CIWMB], 2005) is located in Solano ~~county~~County near SR 12 in Suisun City, about 16 miles to the north of the site. It is a Class III landfill with a projected closure date of January 2011. The facility accepts municipal solid waste, industrial waste, construction waste, ash, tires, and sludges. Based on the most current data available, the facility has a permitted capacity of 21.5 million cubic yards (cy) and can accept up to 4,330 tons per day. The remaining capacity as of 2006 was 8.2 million cy. The yearly disposal tonnage was 896,475 in 2005, equivalent to an average of 2,456 tons per day. In 2008, the yearly disposal tonnage was 720,723, equivalent to an average of 1,975 tons per day.

An expansion of PHLF onto a 178.34-acre parcel, owned by Potrero Hills Landfill Incorporated, next to the eastern boundary of the existing PHLF site, is planned. The proposed expansion project will also include a number of operational changes that would increase the overall capacity of the landfill and waste processing capabilities. Solano County intends to publish a Subsequent EIR for the expansion project during the summer of 2009 (telecon between Anna Liu, Arup, and Ed Padilla, Solano County; May 15, 2009). The expanded area is intended to be designated as Class III landfill. The expansion project will include an additional 164-acre waste disposal footprint with higher final elevations than the existing landfill area, which will result in approximately 62 million cy of additional fill capacity. The total fill capacity of PHLF including the expansion will be approximately 83 million cy, which will add approximately 35 years to the current landfill's remaining site life.

KCL is located in unincorporated Contra Costa County on Bailey Road near Pittsburg just northeast of the site. KCL is a Class II landfill and accepts municipal solid waste, non-liquid industrial waste, contaminated soils, ash, grit, and sludges. Design capacity is approximately 75 million cy (air space) with a disposal capacity of about 60 to 64 million cy (net waste). KCL commenced operation on May 7, 1992. Remaining site life was estimated

in January 2007 as part of the County's 2006 AB939 Annual Report to the CIWMB. Site life was projected at between 34 to 44 years. This range results in a possible closure date occurring between 2040 and 2050. The range in KCL site life was based on estimates of remaining capacity in both cy and tons; actual, average, and maximum permitted tons of disposal per day; number of annual operating days; and operations of other landfills in the region. The annual disposal tonnage in 2005 was approximately 843,560, equivalent to about 2,812 tons per day. In 2008, the yearly disposal tonnage was approximately 782,688, equivalent to about 2,609 tons per day.

The Keller Canyon Landfill Company submitted an application in June 2008 to Contra Costa County for amendment of the facility land use permit. A key proposed operational change is to increase the maximum daily tonnage from the current 3,500 tons to 4,900 tons. The County's Subsequent EIR will describe the proposed operational changes, and will be prepared prior to taking discretionary action on the proposed land use permit amendment. The issue of potential impact on facility lifespan as a result of increased maximum daily tonnage will be evaluated. If approved, maximum daily tonnage for disposal would increase by 1,400 tons per day, or about 40 percent.

16.1.4.3 Residential and Commercial Solid Waste Recycling

The City of Concord and other California communities are required by State law to achieve at least a 50 percent recycling rate each year starting in the year 2000. This means that 50 percent of all solid waste generated annually in the community by residences and businesses, including construction and demolition waste, must be diverted from landfill material recycling and recovery programs. Residential, commercial, industrial, and office recycling services, including greenwaste (commonly referred to as yard waste), are available through CDS.

The City of Concord is also served by the Household Hazardous Waste Collection Facility (HHHWCF), located in unincorporated Contra Costa County adjacent to the City of Martinez. The HHHWCF is operated by CCCSD. Programs such as these have led to an increase in the amount of the City's solid waste that is diverted from landfills. The Annual Report 2007 for the City of Concord (March 2009), prepared by Pacific Waste Consulting Group, provides a detailed analysis of the City's disposal and diversion rates, and its Source Reduction and Recycling Element (SRRE) and Household Hazardous Waste Element (HHWE) programs.

The City of Concord met the 50 percent recycling goal in 2000; however, in 2006, the diversion rate fell to 49 percent (CIWMB, 2009). This diversion rate was approved by the CIWMB as a good faith effort to meet the goal.

16.1.4.4 Construction and Demolition Waste Recycling

The City of Concord has a Construction and Demolition Recycling Ordinance (City of Concord, 2007b), effective July 1, 2007, that requires recycling of a minimum of 50 percent of all construction and demolition waste and 75 percent of all concrete, soil, asphalt, and masonry products (inert debris). The material can be recycled or reused, as long as it is diverted from disposal in a landfill. The amount of self-hauled construction and demolition waste in Concord in 2004 was approximately 20,649 tons, or 8.3 percent of total waste generation.

16.1.5 Electrical Supply

The Navy currently purchases electrical power for the site directly from the Western Area Power Administration (Western) (WAPA, 2008) and distributes the power throughout the majority of the site using a 4.16-kilovolt (kv) system. Western most likely will not continue to be the electricity supplier for the site in the future because it functions as an electricity wholesaler.

PG&E, which is the electricity supplier for the City of Concord, will likely be the future electricity supplier for the site. PG&E has a 21-kv overhead line running through the middle of the site adjacent to Kinne Boulevard, parallel to Western's transmission facilities; and a 12-kv line that passes through the site adjacent to Willow Pass Road. These distribution lines also provide utility feeds to the City of Clayton and to the area north of Willow Pass Road. PG&E also operates a 115-kv transmission route in the utility corridors. This transmission line is parallel to 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 of PG&E's electrical substations are currently located in the City of Concord.

PG&E obtains its energy supplies from power plants (CEC, 2008) in northern California and from energy purchased outside its service area and delivered through high-voltage transmission lines. In Contra Costa County, 25 power plants, such as Calpine's Los Medanos Energy Center in Pittsburg (Calpine, 2008), with combined online baseload capacity provide about 4,400 megawatts (MW).

16.1.6 Natural Gas Supply

PG&E currently is the natural gas supplier for the site and the City of Concord. A PG&E natural gas distribution line terminates near the existing front entrance gate of the site, north of SR 4. A 24-inch high-pressure gas main traverses the site north of SR 4, and a 20-inch high-pressure gas main travels in the utility corridor next to Kirker Pass Road. PG&E's Concord Gas Meter Station is located north of the intersection of Port Chicago Highway and SR 4.

16.1.7 Petroleum and Oil Transmission Pipeline Systems

According to the National Pipeline Mapping System (DOT, 2007), three pipelines traverse the site: a 20-inch-diameter pipeline operated by Shell Pipeline Company, a 10-inch-diameter pipeline operated by Kinder Morgan, and a 16-inch-diameter pipeline operated by ConocoPhillips, all run longitudinally across the site, along its southern boundary. Figure 16-1 shows the location of existing petroleum and oil transmission pipelines at the site.

Record drawings were obtained for the pipelines that show the pipeline easement right-of-way is typically 20 to 25 feet in width. A title survey for the site will be required to reveal any additional information about pipelines or pipeline easements. Petroleum pipeline warning markers are located on site along the pipeline alignment.

16.1.8 Information Technology/Communications

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. Underground conduits and overhead cables are present at the site. The site is within the franchise agreement area between Comcast and the City. Comcast maintains an existing

aerial line running through the site and a 2-inch conduit fiber-optic cable runs across the site transversely in the area between Port Chicago Highway and Willow Pass Road.

16.2 Standards of Significance

Criteria for determining the significance of impacts to utilities have been developed based on Appendix G of the California environmental Quality Act (CEQA) Guidelines and relevant agency thresholds. For the purposes of this EIR, an alternative may have a significant impact on utilities if it would:

- Exceed wastewater treatment requirements of the Water Board
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Result in insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments
- Result in insufficient permitted capacity to accommodate the project's solid waste disposal needs
- Violate federal, State, and local statutes and regulations related to solid waste

16.3 Potential Utilities Impacts

This section begins with a description of assumptions that have been incorporated in the analysis of potential impacts to utilities. Then, the impacts associated with the Preferred Alternative are identified, followed by the impacts associated with the Concentration and Conservation Alternative. Impacts that are considered to be significant are presented first, accompanied by an explanation of why the application of a standard resulted in a determination that the impact would be significant. When a significant impact has been set forth, mitigation measures to address that potential impact are also presented, along with a determination of whether the impact will continue to be significant after implementation of the mitigation measure. Next, impacts that are less than significant are presented. The section concludes with a description of the potential impacts of the No Project Alternative.

16.3.1 Assumptions about Potential Utilities Impacts

The following assumptions have been applied in the analysis of the potential utilities impacts of the two alternative reuse concepts. These assumptions are based on information gathered during the planning process and interactions with utility providers. Strategies associated with these assumptions have been incorporated into each reuse concept to the extent feasible to avoid or minimize their environmental consequences.

Table 16-1 identifies the principles and policies set forth in the General Plan that future development at the site should comply with, to facilitate provision of public utilities to adequately support development.

Table 16-1: City of Concord General Plan Principles and Policies for Utilities

	Description
Principle PF-1.1	Provide a safe and reliable water supply.
Policy PF-1.1.1	Coordinate with CCWD to provide an adequate and safe water supply.
Policy PF-1.1.2	Encourage water conservation through City programs and cooperation with CCWD.
Policy PF-1.1.3	Coordinate with the Water Board to provide for the implementation of Stormwater Management Programs intended to protect receiving water sources from pollutants.
Principle PF-1.2	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 transfer to 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 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.
Principle PF-1.4	Ensure access to utility systems.
Policy PF-1.4.1	Require new development to coordinate with all utility providers to assure quality services to all residents and businesses throughout the community.
Principle PF-1.5	Continue solid waste reduction and recycling efforts.
Policy PF-1.5.1	Continue reduction and recycling efforts within the City to divert increasingly larger portions of the waste stream from local landfills.
Policy PF-1.5.2	Promote the importance of recycling industrial and construction wastes.
Policy PF-1.5.3	Prepare and distribute informational handouts to the public regarding opportunities to reduce waste at homes and businesses, as well as methods of safe disposal of hazardous materials.
Policy PF-1.5.4	Require builders to incorporate adequate storage areas appropriately screened from the street for recyclables into new multi-family, commercial, and industrial structures.

Source: Concord 2030 Urban Area General Plan, 2007

General Utilities

As set forth in Chapter 2, the Preferred Alternative and the Concentration and Conservation Alternative have been developed so that future uses of the site incorporate sustainability principles including provisions with respect to efficient supply and use of natural resources such as water.

Existing and proposed utility systems will typically be constructed within utility easements or public rights-of-way, which may or may not already be available. Typically, utilities are placed in streets for easier maintenance access; easements are avoided where practical. Utility systems shall be kept clear of obstructions, per the requirements of the utility provider, unless otherwise agreed upon with the utility provider.

Proposed utility systems will typically be constructed underground within utility easements. Exceptions to this design guideline may include, but not be limited to, PG&Es overhead electrical transmission lines.

Water

Definitions:

- Potable water: Water that is safe and satisfactory for drinking and cooking.
- Non-potable water: Water that may contain objectionable pollution, contamination, minerals, or infective agents, and is considered unsafe and/or unpalatable for drinking. (This EIR assumes that raw water, untreated water, and recycled water are non-potable, as they have not been treated to potable standards.)
- Raw water: Water in its natural state, prior to any treatment for drinking.
- Untreated water: Water in its natural state, prior to any treatment for drinking.
- Recycled water: Water that, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource. (EPA, 2009) (California Department of Public Health, 2001)

The feasibility of reusing the existing on-site water distribution system, including the five water pump stations and the five water storage tanks, will be determined during detail design.

The City's Diablo Creek Golf Course currently provides its own well water for irrigation purposes, which it will continue to do. Future irrigation demands at the existing golf course are therefore excluded from the water demand calculations.

The future site uses in the areas currently occupied by the Contra Costa Canal and the Clayton Canal require further planning and analysis. The Contra Costa Canal could be rerouted or placed in a pipe, but such action would require approval of CCWD and the Bureau of Reclamation. Abandonment of the unused Clayton Canal would require the same approvals and Congressional action. In addition, the City of Concord or some other legal entity would need to become responsible for the 1.35 miles of the Clayton Canal that are located off the site.

Per the requirements of Senate Bill (SB) 610 and SB 221, the City of Concord will formally request that CCWD prepares a Water Supply Assessment (WSA) for amendment of the General Plan, to determine whether an adequate water supply can be made available to the project, and how policies/land use in the General Plan will impact the WSA. CCWD will prepare the WSA based on water usage that considers available City of Concord, CCWD, and CCCSD water conservation and recycling programs.

To facilitate meeting the Reuse Plan's goal of being an environmentally sustainable community, updates to General Plan policies pertaining to water conservation measures and recycling will be considered by the City in collaboration with CCWD and CCCSD.

The water systems that will serve the Preferred Alternative or the Concentration and Conservation Alternative will function together as an integrated system. Several potential sources of water may be available to the project, each of which will require treatment to a standard suitable for the intended end use, and conveyance to end users. These sources include potable water from CCWD; raw water, recycled water, and groundwater. Potential end uses include potable indoor uses (e.g., drinking water), non-potable indoor uses (e.g., toilet flushing), non-potable outdoor uses (e.g., irrigation), and potable and non-potable process uses (e.g., cooling tower water). Figure 16-3 illustrates the potential relationships between the water potential supply, treatment, distribution, and collection systems.

The potential impacts of each water supply source and associated infrastructure system are discussed separately in this section (i.e., potable water, raw water, and recycled water). The potential impacts of each system are discussed in terms of supply, treatment, and conveyance, and mitigations are identified as appropriate. Wastewater and storm drainage impacts and mitigations are discussed separately.

Wastewater

Anticipated wastewater discharge rates for the two alternatives are calculated as average daily dry weather flows for the purposes of identifying impacts to the WWTP's effluent discharge limit. The future sewer pipeline improvements will likely be designed using the average daily dry weather flow plus the anticipated wet weather peaking factors.

Wastewater demands are presented as average daily dry weather flows and as peak wet weather flows, assuming a wet weather peaking factor of at least 2.0. The average daily dry weather flow can be used to determine the project's impact to CCCSD's wastewater treatment plan effluent limit. Peak wet weather flows would be used to design the sewer infrastructure that would transport the flows to the treatment plant. The wet weather peaking factor will be subject to change during detailed design as more information is developed; however, this should not alter the environmental impacts of constructing the collection system improvements, as they would likely still be constructed within the same right-of-way width.

Storm Drainage

Stormwater from the site will be managed to comply with NPDES requirements. Stormwater management measures shall also incorporate best management practices (BMPs) required by the Water Board for all development.

Solid Waste

Solid waste management at the site will comply with State diversion requirements.

Solid waste from demolition of the existing munitions storage bunkers, railroad revetments, and buildings will be managed to comply with the requirements of the Concord Construction and Demolition Recycling Ordinance. Similarly, solid waste from site construction will be managed to meet the ordinance requirements.

Electrical, Gas, IT/COMM, and Petroleum

Future electricity and natural gas needs will be supplied by PG&E, or other appropriate providers.

Future IT/COMM needs will be provided by the local franchise holders or other appropriate providers. IT/COMM infrastructure that is appropriate to the market conditions at the time of development will be implemented.

The uses allowed in the areas where the existing petroleum pipelines are located will be compatible with those facilities and will respect their existing easements. Alternatively, the pipelines may be rerouted and paid for as part of the development of either alternative.

Utility Demands

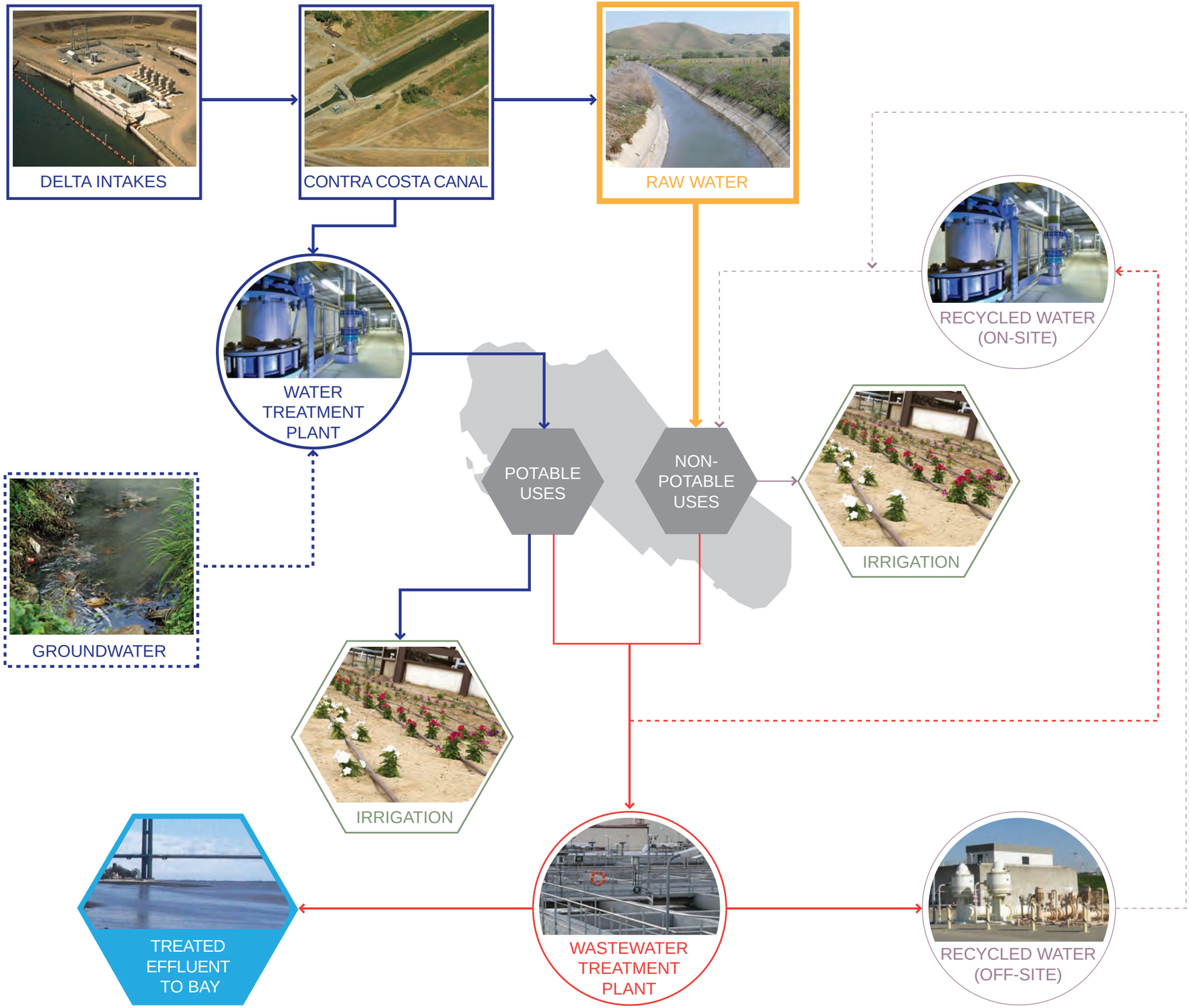
The site is assumed to have a minimal existing utility demand currently. The utilities demand analyses are based on the land uses proposed for the two alternatives. At a maximum, buildout of the site would create a minimum of 10,203 new residential units (Concentration and Conservation Alternative) and a maximum of 12,272 units (Preferred Alternative). This would result in a minimum population of 23,241 at the site (Concentration and Conservation Alternative) and a maximum population of 28,800 (Preferred Alternative) by 2030.

It is recognized that the calculated utility demands are illustrative at this time and that actual utility demands may vary at buildout. Variances may occur due to amendments to the site configuration, future advances in technology, and when actual development occurs (e.g., the wastewater discharge from the project area will be dependant on the extent of the demand-side water management measures that are implemented).

For example, if sanitary fixtures that meet code are selected, these will generate a greater amount of wastewater than if fixtures that exceed code are selected. Table 16-2 summarizes the calculated utility demands for the two alternatives.

Utility demands may vary from those presented in the Draft EIR due to:

- Minor programmatic updates to the alternatives
- Amendments to the calculation methodology (e.g., irrigation demand for landscaping has been amended from 2 acre-feet per year per acre to 3 acre-feet per year per acre). Refer to Appendix 16A for a detailed summary of the utility demand calculations.



Legend

- Source
- Treatment
- End Use
- Existing Potable
- Existing Raw Water
- Existing Wastewater
- Potential Future Wastewater
- Existing Recycled Water
- Potential Future Recycled Water

Notes

Potable Uses May Include:
- Drinking Water
- Toilet Flushing
- Irrigation

Non-Potable Uses May Include:
- Commercial Toilet FLushing
- Irrigation
- Cooling Tower Make-Up Water
- Process Water
- Fire Fighting Water
- Commercial Laundries
- Commercial Car Washes

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Figure 16-3
Illustrated Water Story Schematic

Table 16-2: Summary of Anticipated Utility Demands

	Utility	Preferred Alternative	Concentration and Conservation Alternative
1	Indoor water demand (average day, mgd) (potable water) (acre-feet per year)	3.1 3,478	2.6 2,926
2	Outdoor water demand for irrigation (average day, mgd) (potable/recycled/raw water)* (acre-feet per year)	2.5 2,749	1.6 1,745
3	Total water demand without recycled water or conservation (mgd) (Row 1 + Row 2) (acre-feet per year)	5.6 6,227	4.2 4,671
4	Recycled wastewater for irrigation or commercial/industrial use (mgd) (acre-feet per year)	(2.7) (2,749)	(1.8) (1,745)
5	Water conservation (assume 20% of indoor water demand) (mgd) (acre-feet per year)	(0.6) (697)	(0.5) (585)
6	Total recycled water and conservation to offset water demands (mgd) (row 4 + row 5) (acre-feet per year)	(3.3) (3,446)	(2.3) (2,330)
7	Net potable water demand after consideration of recycling and conservation (mgd) (row 3 – row 6) (acre-feet per year)	2.5 2,781	2.1 2,371
8	Wastewater (average daily dry weather, mgd) (estimated peak wet weather, mgd)	2.9 5.9	2.5 5.0
9	Electricity (MW/year)	62.1	49.0
10	Natural gas (megatherms/yr)	6.3	5.1
11	Solid waste (ton/yr)	49,884	40,407

mgd = million gallons per day; MW = megawatt; /yr = per year

* As the Diablo Creek Golf Course will continue to utilize its own well water for its future irrigation supply, its irrigation demand is excluded from the water demand calculations.

Source: Arup, 2009

The assumptions used to generate the anticipated utility demands are summarized in Table 16-3. Refer to Appendix 16A for a summary of the methodology and calculations used to assess the utility demands.

The maximum estimated demand for potable water, wastewater, electricity, natural gas, and solid waste occurs with the Preferred Alternative due to its more extensive development footprint as compared with the Concentration and Conservation Alternative. The maximum estimated demand for irrigation water also occurs with the Preferred Alternative due to its greater area of parks. Recycled water will be used for irrigation purposes to the maximum extent practicable. Use of untreated or raw water for irrigation is not precluded. Use of potable water for irrigation will be prohibited unless alternative supply sources are unavailable.

The percentage of each land use area assumed to be irrigated is included in the water demand calculation tables in Appendix 16A, which can be summarized as follows:

- The existing open spaces to be preserved will not be irrigated. If irrigation of existing open spaces is required, recycled water will be the preferred supply source, where feasible.
- The proposed park spaces will contain areas of hardscaping and are assumed to be 75 percent irrigated.
- The playing fields associated with the proposed Tournament Sports Facility will likely contain a significant proportion of artificial turf surfacing. The sports center is therefore assumed to be 20 percent irrigated.
- The proposed park area adjacent to the existing Willow Pass Park is assumed to consist of approximately 50 percent artificial turf surfacing.
- 45 percent of low-density housing areas are assumed to be irrigated.
- 14 percent of medium- to high-density housing areas are assumed to be irrigated.
- 10 percent to 20 percent of urban land use areas, such as office, commercial, retail, and educational facilities, are assumed to have irrigated landscaping.

Table 16-3: Estimated Utility Demand Assumptions for the Preferred Alternative and Concentration and Conservation Alternative

Utilities Demand	Assumptions
Indoor water demand (average day)	Indoor water demand is assumed to be met using potable water only. Demands (before implementation of conservation measures) are as follows: Residential demand: 60 gpd per resident Office demand: 15 gpd per employee Industrial demand: 70 gpd per employee Retail demand: 15 gpd per person Neighborhood commercial center demand: 2214 gpd/acre Hotel demand: 100 gpd per room; 10 gpd per employee PBC educational campus demand: 50 gpd per student; 15 gpd per employee Community facilities (inc. K–12 schools): 25 gpd per student; 15 gpd per employee Health care demand: 90 gpd per bed; 10 gpd per employee Other facilities demand varies from 0.13 to 0.39 gallon/gsf (refer to Table 16-4A in Appendix 16A)
Outdoor water demand for Irrigation (average day)	Recycled water will be used for irrigation purposes to the maximum extent practicable (see text above): Irrigation demands of private parcels and public facilities are included; Irrigation demand = 2,678 gpd per acre of landscaped area (equivalent to 3 acre-feet/acre/year) (refer to Table 16-4A in Appendix 16A)
Wastewater	Average daily dry weather flow is estimated to be 95% of the indoor potable water demand. PWWF = ADDWF × PF, where PF is a wet weather peaking factor of at least 2.0. (refer to Table 16-4A in Appendix 16A)
Solid waste	Disposal rates exclude solid waste diversion, i.e., recycling and composting: Residential disposal rate: 0.42 tons/capita/year Multi-family disposal rate: 0.46 tons/unit/year Commercial disposal rate: 0.3 – 2.1 tons/employee/year (refer to Table 16-7A in Appendix 16A)
Electricity	Diversity factor varies from 0.6 to 0.8: Residential demand: 0.0024 kW/gsf; Office demand: 0.0030 kW/gsf; Retail demand: 0.0060 to 0.0080 kW/gsf; Hotel demand: 0.0050 kW/gsf; Campus demand: 0.0040 kW/gsf; Street demand: 0.0002 kW/gsf; Other facilities demand: 0.0004 to 0.0040 kW/gsf (refer to Table 16-6A in Appendix 16A)

Utilities Demand	Assumptions
Natural Gas	Natural gas demand is estimated for space heating and water heating. Space heating gas demand: 0.24 therm/year/gsf Water Heating: Residential demand: 26.1 therm/year/person Office demand: 0.9 therm/year/person Retail demand: 0.11 therm/year/gsf Hotel demand: 39.1 therm/year/room Education demand: 2.4 therm/year/student (refer to Table 16-5A in Appendix 16A)

ADDWF = average daily dry weather flow; PWWF = peak wet weather flow; gpd = gallons per day; mgd = million gallons per day; kW = kilowatts; gsf = gross square feet

Source: Arup, 2009

16.3.2 Utilities Impacts of the Preferred Alternative

16.3.2.1 Potentially Significant Utilities Impacts

Impact Utilities 1: Implementation of the Preferred Alternative would result in an increase in demand for water that could exceed supply limits. This impact is considered to be potentially significant.

The projected population growth of the Preferred Alternative is 28,800. CCWD completed the Future Water Supply Study (FWSS) to identify alternatives to offer customers a high-quality, reliable supply for the next 50 years. The FWSS examined water demand, conservation, and existing and potential supplies for a range of service area alternatives. The demand projections and supply alternatives developed by CCWD were based on approved general plans for the cities and communities served by CCWD.

The development that would occur as a result of implementation of the Preferred Alternative is not anticipated in the Concord General Plan because the site was excluded from the General Plan update effort. With the proposed land transfer from Navy ownership and subsequent urban development and increase in population, additional water supply would be required. Commencing in 2006, the City has regularly briefed CCWD on the status of the project. CCWD's current forecasts include an allowance for growth in Concord, some of which may or may not occur within the project area. However, the current project program is not completely reflected in CCWD's forecasts, resulting in a potentially significant impact. Further, there could be disruptions to the ability to provide water as a result of climate change and global warming, which could reduce the snow pack in the Sierra Nevada or result in other changes that would prevent CCWD from having sufficient water supplies to meet the needs of the Preferred Alternative.

> **<u>Mitigation Measure Utilities 1a</u>: The City of Concord will request that CCWD provide a Water Supply Assessment (WSA) for incorporation as part of the Amendment of the General Plan. The City of Concord has provided CCWD with the programmatic data for the Preferred Alternative, to enable CCWD to assess the future water demand and prepare the WSA, per the requirements of SB 610 and SB 221. CCWD will prepare the WSA based on water usage**

that considers all available City of Concord and CCWD water conservation and recycling programs. No development of the site shall be approved by the City of Concord until CCWD can demonstrate that adequate supplies can be delivered to meet the identified water demands.

Pursuant to Water Code Section 10910 et seq., the City shall request that CCWD prepare a WSA, incorporating the project program, to support the Amendment of the General Plan, as a first step in entitlement of the property. CCWD can use the information provided by the City to update its plans, to secure additional supplies, and to program facilities improvements to accommodate the development at the site. Additional water could be obtained from the CVP, from purchase and transfer of water rights, or from other sources such as recycled water, rainwater harvesting, and groundwater.

CCWD will need to prepare an evaluation of the development alternatives to identify the water supply facilities required to provide service to the site. Initial demand calculations based on current understandings are presented in Tables 16-2 and 16-3. Implementation of the above mitigation measure will likely ensure adequate supplies are available to meet the needs of any new development; however, this cannot be confirmed until completion of the WSA.

Mitigation Measure Utilities 1b: Prior to approving any development of the site, CCWD and the City shall implement demand-side management practices to reduce water demand, in accordance with General Plan Policy PF-1.1.2.

Demand-side management can help control the demand of customers to the average demand per service level. The Urban Water Conservation Council (UWCD), of which CCWD is a member, has adopted 14 BMPs to help conserve water, such as education programs and incentive programs for high-efficiency appliances and irrigation systems. CCWD is committed to implementing these BMPs as outlined in a Memorandum Of Understanding Regarding Urban Water Conservation In California between UCWD members, most recently revised on December 10, 2008.

In accordance with the City's General Plan Policy PF-1.1.2, which "encourage(s) water conservation through City programs and cooperation with the CCWD," future development at the site will be required to implement water demand management measures. These measures will include maximizing use of recycled water for landscape irrigation, utilizing high-efficiency fixtures and appliances, high-efficiency irrigation systems, and water-wise landscape techniques.

Specific demand management measures that will be considered for inclusion in the amendment of the General Plan will include the following:

- Prior to issuance of any building permit, on- and off-site water infrastructure for potable and recycled water necessary for the development approved under such permit shall be constructed or suitably guaranteed, satisfactory to the City of Concord Department of Public Works, California Department of Health Service, CCWD and CCCSD, as applicable.

Residential Conservation Measures

Fixtures and Appliances

- Toilets: Maximum of 1.28 gallons per flush (gpf) or less on average, or 1.1/1.6 gpf dual flush; they also must meet EPA high-efficiency toilet WaterSense requirements.
- Showerheads: Maximum of 2.0 gallons per minute (gpm) per shower stall.
- Faucet Aerator: Kitchen sink maximum of 2.0 gpm; bathroom sink maximum of 1.5 gpm.
- Clothes washers installed by developer: Maximum 4.5 water factor based on the Consortium for Energy Efficiency (CEE).

Landscape

- Developers shall install front yards.
- Turf grass shall not be installed in front yards unless irrigated with recycled water or graywater.
- Ninety percent of all plant material shall be well suited to local climate and have a rating no greater than Low per the Water Use Classification of Landscape Species (WUCOLS III) Report (www.owue.water.ca.gov/docs/wucols00.pdf). Ten percent of plant material may have a rating of Medium per the WUCOLS III Report.
- Irrigation and landscape design shall comply with the California Department of Water Resources (DWR) most recent Model Water Efficient Landscape Ordinance (www.owue.water.ca.gov/landscape/ord/ord.cfm).
- Recycled water or graywater shall be used for irrigation. Raw and potable water will only be used for irrigation when recycled water service is not available.

Non-Residential Conservation Measures

Plumbing Fixtures

- Toilets: Gravity type maximum of 1.28 gpf or less on average or 1.1/1.6 gpf dual flush; they also must meet EPA high-efficiency toilet WaterSense requirements; pressure-assisted or flushometer type maximum of 1.0 gpf.
- Urinals: 0.125 gpf (1 pint) or less.
- Faucets: Maximum of 1.5 gpm flow rate in public restrooms.
- Showerheads: Maximum of 2.0 gpm (except hospitals) per stall.
- In office, retail, and other public buildings, water faucet fixtures with activators shall be installed that automatically shut off the flow of water when not in use.

Commercial Landscape

- Turf grass shall not be allowed unless there is a business function for it (i.e., play field, picnic area, etc.).

- Ninety percent of plant material shall be well suited to the local climate and have a rating no greater than Low as described in the WUCOLS III report. Ten percent of plant material may have a rating of Medium per the WUCOLS III Report.
- Irrigation and landscape design shall comply with the DWR most recent Model Water Efficient Landscape Ordinance (www.owue.water.ca.gov/landscape/ord/ord.cfm).
- Recycled water shall be used as the primary supply for commercial landscape irrigation. Raw or potable water will only be used for irrigation where recycled water service is not feasible.

Cooling Towers

- Reclaimed or recycled water shall be used for non-residential and multistory residential building cooling towers if available by time of permitting. Buildings shall be designed to accommodate future change over to reclaimed or recycled water for cooling tower supply. Cooling towers that utilize potable water shall be operated with conductivity controllers and makeup water meters and operate at a minimum of 4 cycles of concentration. Hybrid cooling towers that have the capacity to operate in wet or dry mode shall be considered.

Refrigeration

- Once-through water cooling is prohibited. Refrigeration systems must be air cooled or be fed with water from a closed loop system.

Ice Machines

- Ice machines must be air cooled or use 25 gallons or less per 100 pounds of ice.

Restaurant and Food Service Pre-Rinse Spray Nozzles

- Pre-rinse spray valves shall use no more than 1.6 gpm and be self-closing.

Food Steamers

- Food steamers shall be self-contained and boilerless (with no water supply connection) where applicable.

Vehicle Washing

- Vehicle washes shall reuse a minimum of 50 percent of water from previous vehicle rinses in subsequent washes.

Commercial Laundry

- Commercial laundry facilities and multi-family common laundry facilities: Clothes washers shall have a maximum 4.5 water factor based on the CEE.

Construction

- Use of potable water for construction purposes shall be prohibited except if no other water supply is available.

Prohibited Uses of Potable Water

- Use of water in a decorative fountain or pool that does not recycle water
- Washing paved or other hard-surfaced areas, including sidewalks, walkways, driveways, patios, and parking areas
- Outside watering that results in flooding or excessive runoff in a gutter, drain, patio, driveway, walkway, or street
- Flushing sewers or hydrants, or washing streets except for emergencies, protection of public health or safety, or essential operations
- Use of single-pass cooling systems in new connections
- Failure to repair a controllable leak of water

Mitigation Measure Utilities 1c: The City of Concord will require developers to install "purple pipe" in outdoor irrigation systems throughout the project area to maximize the potential use of recycled water to reduce demand on the potable and raw water supplies.

With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

The City of Concord will require that outdoor irrigation systems be installed using "purple pipe" that is suitable to convey recycled water per code. This will enable irrigation systems to utilize recycled water wherever it is available, thus minimizing the potable water demand of outdoor irrigation systems.

Impact Utilities 2: Implementation of the Preferred Alternative would result in an increase in wastewater generation that could exceed the capability of the CCCSD wastewater treatment facilities to comply with the wastewater discharge requirements of the Water Board. In addition, implementation of the Preferred Alternative would result in an increase in wastewater generation that could exceed the capacity of CCCSD and City collection and transmission facilities, resulting in the need to construct additional facilities. This impact is considered to be potentially significant.

The WWTP permitted effluent discharge limit of 53.8 mgd average dry weather flow (ADWF) was obtained by CCCSD to accommodate buildout of the land use plans of jurisdictions within CCCSD's service area, expected to occur by the year 2035 based on service area General Plan in the year 2000. Development not anticipated in 2000 might increase wastewater treatment demand beyond the existing discharge limit.

The projected increase in demand for wastewater treatment as a result of implementing the Preferred Alternative would be 2.9 mgd (average daily dry weather flow). As newly planned growth, this additional wastewater generation could cause CCCSD to reach its effluent discharge limit sooner than 2035. Since sewer connections are issued on a first-come, first-served basis, and whatever flow comes to CCCSD from the City must be accommodated, there may be sufficient capacity to comply with the discharge limit at the time development at the site is ready for wastewater utility service. However, if all other wastewater flow projections used in the most recent discharge limit increase are realized, the discharge limit could be reached sooner than 2035. If that happens, some future development projects (planned pre-2000) could cause an additional discharge limit increase to be needed. Such

an increase would require a discretionary approval by the Water Board. Conversely, there may still be sufficient wastewater treatment capacity with the development at the site if other growth does not build out as densely as planned, if a worst-case assumption of groundwater infiltration does not occur, or if CCCSD continues to be successful at recycling water.

If CCCSD reaches its effluent discharge limit and is unable to obtain a needed increase, a sewer connection moratorium could be triggered. A sewer connection moratorium would pose a barrier to growth. It is possible that developers would seek alternative wastewater services (on-site package treatment plants, community septic systems, and similar options) to meet the needs of their projects.

> **Mitigation Measure Utilities 2: The City of Concord shall reach an agreement with CCCSD such that CCCSD commits to improving its collection system and treatment process and to pursuing a sufficient effluent discharge limit, as needed over time, to accommodate the project. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

It is anticipated that by August 2009, the Concord Sewage Pump Station will be abandoned and the new gravity connection to CCCSD's A-Line Relief Interceptor will be active. CCCSD has confirmed that the A-Line Relief Interceptor project is expected to be completed during 2010, at which time the sewer system between the pump station and WWTP will have sufficient capacity to serve the flows anticipated after buildout of the Preferred Alternative.

Depending on the split of wastewater flow between CCCSD and the City's collection systems, improvements may be needed to one or both systems, such as the City's existing Willow Pass Road and Concord Boulevard pipelines, and upgrade/relocation of CCCSD's Concord Industrial Pumping Station and associated gravity lines serving the North Concord area. CCCSD's WWTP may need improvements to its solids handling facilities and primary sedimentation processes.

Impacts from construction of new CCCSD facilities could include disturbances related to noise, air quality (dust), and traffic; however, these construction-related impacts would be temporary. These potential improvements would result in temporary, construction-related impacts that are less than significant.

Implementing demand-side water management BMPs will likely reduce the amount of wastewater discharging from the site during dry weather flow conditions. Necessary improvements to the existing sewer system will be sized to accommodate wet weather flows, which typically occur as sewers age, become less water tight, and allow rainwater and groundwater to seep into the collection system. This may decrease the concentration of the effluent being delivered to the WWTP over time.

The demand for wastewater treatment required to support implementation of the Preferred Alternative is not addressed in the General Plan. CCCSD has not included the potential increased demand for wastewater treatment that could result from the implementation of any of the Preferred Alternative in its projections. By updating the projections for future wastewater generation in its service areas, CCCSD and the City will be able to include needed system enhancements in their respective capital improvement and developer fee programs to fund required capacity expansions. Also, the City will need to ensure that

measures to reduce the demand for wastewater treatment are incorporated in the alternative to reduce the need for treatment.

However, CCCSD is currently uncertain whether the Preferred Alternative will cause the permitted wastewater discharge limit to be exceeded. ''

Impact Utilities 3: Implementation of the Preferred Alternative could result in an increase in demand for untreated or raw water for irrigation or other non-potable uses. This impact is considered to be potentially significant.

If raw or recycled water is used to supply the anticipated irrigation requirements of the Preferred Alternative, the average day demand for potable water would be 3.1 mgd. The anticipated irrigation demand would be 2.5 mgd.

The increase in parks and recreational facilities associated with the Preferred Alternative, depending on how they are designed, could result in areas that have the potential to be irrigated with untreated or raw water. The use of untreated or raw water could reduce the demand for potable water. There is also the potential that untreated or raw water could be used to supply residential, commercial, and community facilities at the site, if those potential uses comply with applicable regulations.

The demand for non-potable water for implementation of the Preferred Alternative is not addressed in the Concord General Plan. As described in Impact Utilities 1, the City of Concord will request that CCWD provide a WSA for incorporation as part of the Amendment of the General Plan, which will include an assessment of non-potable water supply and demand.

Mitigation Measure Utilities 3a: Prior to approving any development at the site, the City of Concord shall provide data to CCWD and request that CCWD assess the future demand for untreated or raw water supplies as part of the WSA, to demonstrate that it can supply the water to the site.

Mitigation Measure Utilities 3b: Recycled water shall be utilized in preference to untreated or raw water where feasible. The City of Concord will work with CCWD and CCCSD to maximize the use of recycled water, and to determine if the potential recycled water supply will match the potential demand.

Mitigation Measure Utilities 3c: Per Mitigation Measure Utilities 1b, CCWD and the City of Concord shall implement demand-side management practices to reduce indoor and outdoor water use at the project site. Per Mitigation Measure Utilities 1c, the City of Concord shall require developers to install "purple pipe" in outdoor irrigation systems, to maximize the potential use of recycled water.

These measures will subsequently reduce the demand for untreated or raw water. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

The City and CCWD will work together to identify the potential level of use of untreated or raw water at the site. CCWD can use the information to update its demand calculations and to program facilities improvements to accommodate for the level of use of untreated or raw water as part of the WSA that have to be prepared in accordance with Water Code Section 10910 et. seq.

Impact Utilities 4: Implementation of the Preferred Alternative could require construction of a new untreated water distribution system, possibly including pump stations and storage tanks. This impact is considered to be potentially significant.

Untreated, raw water could be taken from the Contra Costa Canal that currently crosses the site. However, there is inadequate infrastructure at the site to deliver and distribute the water to new development.

> **Mitigation Measure Utilities 4a: Based on agreement with CCWD on the amount of raw water to be supplied, the City of Concord shall ensure that future development at the site includes construction of the untreated water distribution system, storage tanks/ponds, filtering system, pump stations, and other facilities needed to supply the desired amount of untreated or raw water, in accordance with CCWD's requirements and standards.**
>
> **Mitigation Measure Utilities 4b: The City of Concord shall ensure that any use of untreated or raw water at the site includes the measures identified by CCWD to upgrade or improve the Contra Costa Canal to supply the agreed to amount of water.**
>
> **Mitigation Measure Utilities 4c: The City of Concord shall ensure that any untreated or raw water obtained from the Contra Costa Canal will be at a metered location designated by CCWD.**
>
> **With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.**

It is recognized that CCWD can provide untreated or raw water to the site directly during most of the year from the Contra Costa Canal for irrigation and other purposes if the supply is available. However, depending on how the Preferred Alternative is developed, a separate system supplied either with treated or untreated water may be required to accommodate the interruption of untreated water service during the Contra Costa Canal annual maintenance period. Cross-connecting treated and untreated water is unacceptable. The City will also need to require that future development at the site includes the facilities required to store and distribute the untreated or raw water and that the water is obtained from a location and in a manner that complies with the requirements of CCWD.

Impact Utilities 5: Implementation of the Preferred Alternative would result in a need for potable water that could require the construction of new or expansion of existing facilities to provide treated water. This impact is considered to be potentially significant.

The maximum potential anticipated average day demand for potable water for the Preferred Alternative is 5.6 mgd. If the additional supplies are available to meet these needs, limited

water treatment capacity exists currently at the two WTPs. The construction of a sedimentation basin (CCWD, 2006) at Randall-Bold WTP has been completed that maximizes uses of that plant's design capacity of 40 mgd. The Randall-Bold WTP was designed to be expandable to up to 80 mgd, but it would require additional financing and construction to effectively double the size of the facility. CCWD currently has no plans to expand the Bollman WTP beyond its current capacity. However, even if CCWD has adequate water treatment capacity to meet the needs of the Preferred Alternative, there is inadequate infrastructure at the site to deliver and distribute the water.

> **Mitigation Measure Utilities 5: The City of Concord shall ensure that all required water distribution systems, water storage tanks, pump stations, and other facilities at the site to supply the demand for potable water are constructed to meet CCWD's requirements and standards. With the implementation of this mitigation measure, the potentially significant impact will be reduced to a level that is less than significant.**

New treated water distribution system components, including water storage tanks, pump stations, and other facilities (including treated and untreated water conveyance), will need to be constructed at or adjacent to the site to accommodate the anticipated demand. The water storage tanks will need to be designed with the operational, emergency, and fire service capacities required by CCWD. Existing water infrastructure may be reused where feasible, or abandoned/removed as required.

The project may include undergrounding of the open and exposed sections of the Contra Costa Canal. If the operational portion of the canal is not undergrounded, CCWD will likely require installation of a 6-foot-high property line fence and a liner fence at the edge of the concrete canal.

Impacts from construction of new facilities could include disturbances related to noise, air quality (dust), and traffic; however, these construction-related impacts would be temporary. These potential improvements would result in temporary construction-related impacts that are less than significant.

Impact Utilities 6: Implementation of the Preferred Alternative would result in an opportunity to use recycled water at the site. Recycled water could be provided by CCCSD's existing system, by an alternative off-site source, or by a future on-site treatment system. Additional treatment capacity will be required at the CCCSD WWTP to provide the additional recycled water. New recycled water distribution lines, pumping stations, and on-site storage reservoirs will be required to connect the project to CCCSD's existing recycled water system. This impact is considered to be potentially significant.

The use of recycled water in California is regulated by the requirements of Title 22 of the California Code of Regulations. Permitted uses of recycled water vary depending on the level of treatment provided, and may vary in the future. Potential uses may include irrigation, toilet flushing in non-residential buildings, car washes, water features, etc.

The development of the Preferred Alternative would allow the incorporation of purple piping systems to be used for the distribution of treated water at the site. It is understood that any

use of recycled water would have to comply with all applicable water quality regulations. A connection will have to be constructed from the existing treatment and distribution facilities to the site unless an on-site option is implemented.

The closest points of connection to the existing CCCSD recycled water system are at the WWTP in Martinez, located adjacent to the I-680 and SR 4 interchange. A potential route for a new recycled water main would be from the WWTP running east parallel to SR 4 to Port Chicago Highway~~.~~. If recycled water is provided to the site, the capacity of the existing treatment facility would need to be expanded. Alternatively, a new recycled water facility could be developed as part of the reuse plan, which could be located within the project boundary.

The capacity of the CCCSD WWTP to produce recycled water will have to be increased from the current production of 3.0 mgd, which is substantially committed to other users. Transmission, pumping, and storage facilities will also have to be added. Alternatively, an on-site treatment facility for water reclamation could be constructed that would eliminate the need for the expanded facilities at the CCCSD WWTP and the extension of the recycled water system to the site.

The potential demand for the use of untreated or recycled water[1] at the site for irrigation is approximately 2.5 mgd. This assumes that parks and recreational facilities; portions of parks; and residential, commercial, and other development will be irrigated by untreated or recycled water. The CCCSD has provided the City a "will serve" letter indicating the districts intention to supply or make available 5.3 mgd of recycled water for use at the site (CCCSD, August 10, 2009). The use of recycled water could result in a decrease in demand for water from the CVP system.

Impacts from construction of new facilities could include disturbances related to noise, air quality (dust), and traffic; however, these construction-related impacts would be temporary. These potential improvements would result in temporary, construction-related impacts that are less than significant.

> **Mitigation Measure Utilities 6: It will be incumbent upon the City of Concord, CCCSD, and CCWD to have an agreement in place regarding the provision of recycled water to the site, prior to recycled water being utilized on site. The City of Concord needs to reach an agreement with CCCSD, or an alternative off-site provider, to ensure that the recycled water treatment and transmission facilities are sufficiently expanded to serve the project. Alternatively, an on-site recycled water treatment plant may be constructed, which may eliminate the need for expanded off-site facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.**

The City shall withhold development approvals pertaining to the use of recycled water until an agreement is in place between the City, CCCSD, and CCWD. Implementing this mitigation measure will reduce this impact to a level that is less than significant.

[1] Irrigation water demand may be fulfilled by using either recycled water or untreated water. Demand for other non-potable uses of recycled water or untreated water is not estimated in this EIR.

Impact Utilities 7: Implementation of the Preferred Alternative would result in an increase in impervious surface, which would result in an alteration of the existing site drainage pattern and could increase the rate and volume of surface runoff. This increase could exceed the capacity of the existing stormwater drainage system, and require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. This impact is considered to be potentially significant.

The majority of the existing site is a pervious, undeveloped area which allows a significant amount of rainfall to infiltrate into the ground. The Preferred Alternative will increase the amount of impervious surface by introducing buildings, streets, and hardscaping, which will increase the rate and amount of surface runoff. The Preferred Alternative could also result in changes to the existing topography that may alter the existing drainage pattern of the site.

With reference to Chapter 7, Hydrology and Water Quality, to mitigate the risk of housing from being within the 100-year floodplain, Mitigation Measure Hydrology and Water Quality 1 recommends actions that may include (1) improvements to the Mt. Diablo Creek channel to enhance flood conveyance, (2) on-site detention to reduce peak flood levels, and/or (3) placement of fill to raise building floor elevations above the base flood elevation. The Preferred Alternative incorporates a minimum 300-foot creek corridor, which could be designed as a two-stage channel that includes a floodplain terrace to convey 100-year flood flows. The terrace could be formed using earthen slopes or embankment structures such as rock gabions, retaining walls, etc.

Detention facilities could be provided in the open space on the east side of the creek, or integrated as dual-use facilities into the programmed areas on the west side—e.g., park areas could be programmed and designed to flood temporarily during significant rainfall events.

The groundwater seep located at the former runway site at the western portion of the project site lies within a zone that is proposed to be developed. The flow from the seep should be controlled and directed using new drainage facilities.

Linear drainage features and BMPs such as ponds, swales, and raingardens may be integrated into the site design along the western boundary of the site. These could be used to detain and treat stormwater, prior to discharging off site. The design of these features will have to account for the existing oil pipelines located in the vicinity of the western boundary.

> **Mitigation Measure Utilities 7: Prior to approving any development at the site, the City of Concord shall require that the new development incorporate drainage facilities and BMPs to reduce the quantity and improve the quality of runoff in accordance with NPDES permit requirements. New development shall also be required to consult with the CCCFC&WCD to manage any additional stormwater generated at the site. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

The City's Municipal Code, Chapter 86, "Stormwater Management and Grading and Erosion Control," requires new development to submit a grading permit and a stormwater control plan that meets the requirements of the most recent version of the Contra Costa Clean

Water Program Stormwater C.3. Guidebook. The intent of these measures is to meet the City's NDPES permit requirements by reducing erosion and sedimentation potential on site, to improve the quality of runoff during construction, and to improve stormwater quality post-construction. Recommended measures to treat runoff from urban, hardscaped areas include BMPs such as permeable surfaces, on-site detention, sediment trapping and filtering, and landscaping.

The Contra Costa Clean Water Program's Joint Municipal NPDES Permit, Provision C.3, was amended on February 19, 2003. The Amended Stormwater Permit requires most new and redevelopment projects to capture and treat and/or infiltrate a specific quantity of stormwater on site prior to discharge. It also requires that new runoff be managed to protect streams from erosive flows. To effectively address these new development standards, the proposed drainage systems should cost-effectively manage flooding, control streambank erosion, and protect water quality.

Low-impact design guidelines will be implemented where appropriate and feasible. Low-impact development strategies to be considered include:

- Project site designs should seek to minimize the area of new roofs and paving.
- Direct connections to storm drains from roofs and hardscape should be discouraged.
- Pervious surfaces should be considered instead of asphalt/concrete, so rain can infiltrate into the ground rather than becoming stormwater runoff.
- Detention or infiltration of runoff should be implemented so that peak flows and durations match pre-project conditions.
- Applicants for approval of future projects at the site will be required to prepare stormwater plans and execute agreements to ensure that private stormwater treatment devices are maintained in perpetuity.

Further to complying with the requirements of the Concord General Plan with respect to managing stormwater, BMPs will be required such that the project complies with NPDES permit requirements. Compliance with the current requirements related to managing stormwater during and after construction identified in Chapter 7, Hydrology and Water Quality, will further ensure that the NPDES requirements are met. Additional drainage capacity may need to be provided to effectively convey stormwater from the site. If the City of Concord makes approval of development at the site contingent upon demonstrating that stormwater quality, capacity, and conveyance requirements are adequately addressed, the potential impact will be less than significant.

Impact Utilities 8: Implementation of the Preferred Alternative would result in an increase in demand for electricity that could require or result in the construction of new electricity facilities, transformers, distribution systems, substations, or expansion of existing electricity facilities. This impact is considered to be potentially significant.

It is assumed that PG&E will be the electricity provider for households, businesses, and community facilities at the site. The projected increase in electricity demand is approximately 62 MW.

PG&E has not included the increased electricity demand from the site in its projection for electricity demand and supply, since the proposed development program is not included in the City's General Plan.

There is no existing major electricity distribution system at the site to accommodate the new development.

PG&E has confirmed that new off-site electrical infrastructure will be required to connect the development's distribution system to the existing transmission infrastructure. A new substation will be required to be constructed within the new development that would occur as a result of the Preferred Alternative.

The proposed substation should be located adjacent to an area with a significant electric load. A typical PG&E distribution substation site with a footprint of approximately 5 acres could be located near one of the following (refer to Figure 16-4):

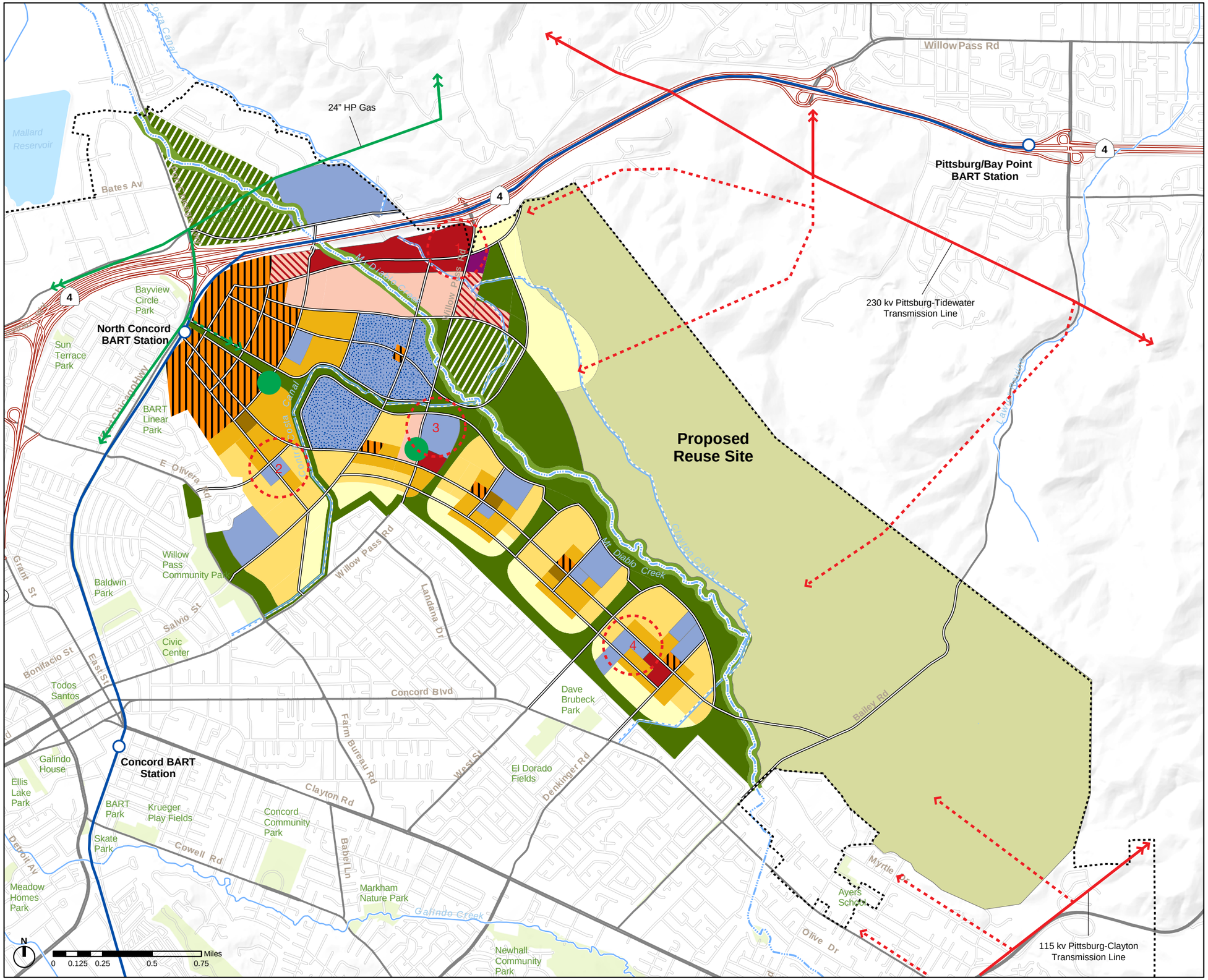
1. South of the intersection of SR 4 and Willow Pass Road
2. West of Willow Pass Road near the southerly boundary of the project
3. East of Willow Pass Road near the southerly boundary of the project
4. The southeast corner of the project near Concord Boulevard and West Street

For substation locations 1 through 3, the overhead transmission line to serve the substation would tie into PG&E's existing Pittsburg-Tidewater 230kV transmission line near San Marco Boulevard and SR 4 in Pittsburg and run southwesterly to the project site. To serve location 4 near Concord Boulevard and West Street, the transmission line would tie into one of the following PG&E transmission lines:

1. Pittsburg-Tidewater 230kV near Bailey Road, south of West Leland Road in Pittsburg, running west to the project site
2. Pittsburg-Clayton 115kV near Kirker Pass Road

Land use within the transmission line easement will be limited to compatible uses such as parking, landscaping (with height restrictions), and passive recreation. Structures will not be allowed within the transmission line easement, unless otherwise agreed upon with PG&E. From the substation, electric distribution feeders would radiate out to serve the development.

Currently, PG&E serves the existing customers adjacent to this project from Tidewater Substation in Martinez. Once the proposed substation is operational, Tidewater Substation may serve a portion of this project, and the proposed substation may serve some current customers in the Martinez area.



Legend

- Existing Electricity Line
- Illustrative Route of Potential Future Transmission Line to Serve Substation
- Existing Gas Line
- Illustrative Route of Potential Future Gas Line
- Electricity Line Continues
- Gas Line Continues
- Illustrative Future Substation Location
- Illustrative Future Gas Regulator Location

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Concord
Community Reuse Plan

Revised May 12, 2009

Figure 16-4
Preferred Alternative: Electrical and Gas Facilities - Illustrative Layout

Mitigation Measure Utilities 8a: Prior to approving any development at the site, the City of Concord shall coordinate with PG&E regarding the planned development and provide data for PG&E to assess the future electricity demand, and for the Project Proponent to study the environmental impacts of such facilities in its approval process.

Mitigation Measure Utilities 8b: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing electrical supply infrastructure and construct new electrical substations either on or off site to meet potential energy demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in its approval process.

With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.

It is assumed that PG&E can use the information provided by the City to update its planning processes and program facilities to accommodate the development that would occur as a result of the Preferred Alternative. The City shall withhold development approvals until PG&E has demonstrated that it can supply the required electrical service to support the development, and until the environmental impacts of the new facilities are reviewed under CEQA.

Impact Utilities 9: Implementation of the Preferred Alternative would result in an increase in demand for natural gas that could require or result in the construction of new natural gas facilities, distribution systems, or expansion of existing natural gas facilities. This impact is considered to be potentially significant.

It is assumed that PG&E will be the natural gas provider for the site. The projected increase of natural gas demand for the Preferred Alternative is approximately 6 megatherms/year. PG&E has not included the increase in natural gas demand from development at the site in its projections for natural gas demand and supply, because the potential development is not included in the Concord General Plan. No existing natural gas distribution system is present at the site to accommodate the potential development.

PG&E has confirmed that there is sufficient capacity in the adjacent existing gas transmission systems to serve the development. PG&E is proposing that a distribution feeder main (DFM) would tap the existing gas transmission line near Port Chicago Highway and SR 4. The main would then run southerly, below ground, and within a roadway or public utility easement to a gas regulator site that would be approximately 1 acre in size. The location of the gas regulating station will be determined during the future design process. With reference to Figure 16-4, potential locations for the station may include the following:

1. At the southeast border of the planned transit-oriented development (TOD) near the North Concord/Martinez BART Station.
2. On Willow Pass Road, near the planned community facilities.

Distribution mains would radiate out from the gas regulator station to serve the development.

> **Mitigation Measure Utilities 9a: Prior to approving any development at the site, the City of Concord shall coordinate with PG&E regarding the planned development and provide data for PG&E to assess the future natural gas demand, and for the Project Proponent to study the environmental impacts of such facilities in its approval process.**
>
> **Mitigation Measure Utilities 9b: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing gas supply infrastructure or construct new gas supply infrastructure to meet potential natural gas demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in its approval process.**
>
> **With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.**

PG&E can use the information provided by the City to update its planning processes and program facilities improvement to accommodate for the planned development. The City shall withhold development approvals until PG&E has demonstrated that it can supply the required ~~electrical~~ natural gas service to support development of any of the alternatives, and until the environmental impacts of the new facilities are reviewed under CEQA.

Impact Utilities 10: Implementation of the Preferred Alternative would result in an increase in demand of IT/COMM services at the site that would require additional levels of service or construction of additional IT/COMM facilities. This impact is considered to be potentially significant.

AT&T, Comcast, and/or Astound are the current IT/COMM providers in the City of Concord. They or another IT/COMM provider could service the site in the future. However, because there are minimal IT/COMM services and facilities at the site currently, development of the Preferred Alternative will require the provision of additional services and the development of new facilities. Provision of these additional services and facilities is considered to be a potentially significant impact.

> **Mitigation Measure Utilities 10: Prior to approving any development at the site, the City of Concord shall require that the IT/COMM providers demonstrate that they can provide the needed services and facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.**

The City shall withhold development approvals until the IT/COMM providers demonstrate that they can supply the required services and facilities to support the development of the alternatives.

16.3.2.2 Utilities Impacts of the Preferred Alternative That Are Less Than Significant

Impact Utilities 11: Implementation of the Preferred Alternative would increase residential and commercial land uses at the site, resulting in increased solid waste generation that the landfills in the local service area may not have sufficient permitted capacity to accommodate. This potential impact is considered to be less than significant.

CDS has not included the increased solid waste generation and disposal in its planning scenarios, because the development that would result from the Preferred Alternative is not included in the Concord General Plan.

The current daily capacity of PHLF and KCL, at 4,330 and 3,500 tons per day, respectively, result in a combined daily permitted disposal tonnage of approximately 7,830 tons per day.

In 2008, the annual disposal tonnages at PHLF and KCL were 720,723 and 774,463 tons per year. PHFL was operating on 364 days and KCL was operating on 312 days during 2008. The equivalent average daily disposal tonnages were 1,980 and 2,482 tons per operating day, respectively; therefore, the total equivalent daily disposal tonnage for both landfills in 2008 was 4,462 tons per operating day. Given the combined daily permitted disposal tonnage of 7,830 tons per day, the remainder of daily permitted disposal tonnage at both landfills in 2008 was about 3,368 tons per day.

Assuming the proposed maximum daily tonnage at KCL is approved (which would allow up to 4,900 tons per day of material to be disposed), the projected combined daily permitted disposal tonnage at PHLF and KCL would be 9,230 tons per day.

The Preferred Alternative is anticipated to generate approximately 49,884 tons per year or approximately 137 tons per day. This tonnage represents approximately 1.5 percent of the projected combined permitted capacity of both landfills. This estimate is based on the following waste disposal rate assumptions:

- Single-family residential = 0.42 tons per capita per year
- Multi-family residential = 0.46 tons per unit per year
- Commercial development = 0.3 to 2.1 tons per employee per year

Assuming the total estimate of annual solid waste from the Preferred Alternative (49,884 tons) is disposed of at PHLF and KCL, using the same proportions as the City of Concord in 2004 (73 percent and 27 percent, respectively), the maximum yearly disposal tonnage to PHLF and KCL would be approximately 36,415 and 13,469 tons per year, respectively. Based on the 2008 disposal tonnages, this would represent a 5.1 percent increase in disposal to PHLF and a 1.7 percent increase to KCL.

The projected closure dates for PHLF (2011) and KCL (2040) will be affected by the increase in solid waste generated by the Preferred Alternative. Assuming PHLF expands and extends its operational period accordingly, PHLF and KCL are anticipated to have sufficient permitted capacity to accommodate the solid waste disposal needs of the

Preferred Alternative; therefore, this potential impact is considered to be less than significant.

Should the planned expansion of PHLF not be approved and closure occur in 2011, solid waste from the Preferred Alternative would either be taken to KCL exclusively, or to KCL and/or alternative permitted landfills with adequate capacity, most likely located further from the project. The locations of such facilities cannot be confirmed at present; however, alternative sites will be available—e.g., Vasco Road Landfill in Alameda County. Therefore, this potential impact is considered to be less than significant.

The recycling goal for the development shall be in accordance with the City of Concord's recycling goals noted in Section 16.1.4.

Mitigation Measure Utilities 11: None required.

16.3.3 Utilities Impacts of the Concentration and Conservation Alternative

16.3.3.1 Potentially Significant Utilities Impacts

Impact Utilities 12: Implementation of the Concentration and Conservation Alternative would result in an increase in demand for water that could exceed supply limits. This impact is considered to be potentially significant.

Refer to the discussion of Impact Utilities 1.

Mitigation Measure Utilities 12a: The City of Concord will request that CCWD provide a WSA for incorporation as part of the Amendment of the General Plan. The City of Concord has provided CCWD with the programmatic data for the Concentration and Conservation Alternative, to enable CCWD to assess the future water demand and prepare the WSA, per the requirements of SB 610 and SB 221. CCWD will prepare the WSA based on water usage that considers all available City of Concord and CCWD water conservation and recycling programs. No development of the site shall be approved by the City of Concord until CCWD can demonstrate that adequate supplies can be delivered to meet the identified water demands.

Refer to the discussion of Mitigation Measure Utilities 1a.

Mitigation Measure Utilities 12b: Prior to approving any development of the site, CCWD and the City shall implement demand-side management practices to reduce water demand, in accordance with General Plan Policy PF-1.1.2.

Refer to the discussion of Mitigation Measure Utilities 1b.

Mitigation Measure Utilities 12c: The City of Concord will require developers to install "purple pipe" in outdoor irrigation systems throughout the project area to maximize the potential use of recycled water to reduce demand on

the potable and raw water supplies. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

Refer to the discussion of Mitigation Measure Utilities 1c.

Impact Utilities 13: Implementation of the Concentration and Conservation Alternative would result in an increase in wastewater generation that could exceed the capability of the CCCSD wastewater treatment facilities to comply with the wastewater discharge requirements of the Water Board. In addition, implementation of the Concentration and Conservation Alternative would result in an increase in wastewater generation that could exceed the capacity of CCCSD and City collection and transmission facilities, resulting in the need to construct additional facilities. This impact is considered to be potentially significant.

The projected increase in demand for wastewater treatment as a result of implementing the Concentration and Conservation Alternative would be 2.5 mgd (average daily dry weather flow) mgd. Refer to the discussion of Impact Utilities 2.

Mitigation Measure Utilities 13: The City of Concord shall reach an agreement with CCCSD such that CCCSD commits to improving its collection system and treatment process and to pursuing a sufficient effluent discharge limit, as needed over time, to accommodate the project. With implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.

Refer to the discussion of Mitigation Measure Utilities 2.

Impact Utilities 14: Implementation of the Concentration and Conservation Alternative could result in an increase in demand for untreated or raw water for irrigation or other non-potable uses. This impact is considered to be potentially significant.

If raw or recycled water is used to supply the anticipated irrigation requirements of the Concentration and Conservation Alternative, the average day demand for potable water would be 2.6 mgd. The anticipated irrigation demand would be 1.6 mgd.

Refer to the discussion of Impact Utilities 3.

Mitigation Measure Utilities 14a: Prior to approving any development at the site, the City of Concord shall provide data to CCWD and request that CCWD assess the future demand for untreated or raw water supplies as part of the WSA, to demonstrate that it can supply the water to the site.

Mitigation Measure Utilities 14b: Recycled water shall be utilized in preference to untreated or raw water where feasible. The City of Concord will work with CCWD and CCCSD to maximize the use of recycled water, and to determine if the potential recycled water supply will match the potential demand.

Mitigation Measure Utilities 14c: Per Mitigation Measure Utilities 1b, CCWD and the City of Concord shall implement demand-side management practices to reduce indoor and outdoor water use at the project site. Per Mitigation Measure Utilities 1c, the City of Concord shall require developers to install "purple pipe" in outdoor irrigation systems, to maximize the potential use of recycled water. These measures will subsequently reduce the demand for untreated or raw water. With implementation of these mitigation measures, this potentially significant impact would be reduced to a level that is less than significant.

Refer to the discussion of Mitigation Measures Utilities 3a, 3b, and 3c.

Impact Utilities 15: Implementation of the Concentration and Conservation Alternative could require construction of a new untreated water distribution system, possibly including pump stations and storage tanks. This impact is considered to be potentially significant.

Refer to the discussion of Impact Utilities 4.

Mitigation Measure Utilities 15a: Based on agreement with CCWD on the amount of raw water to be supplied, the City of Concord shall ensure that future development at the site includes construction of the untreated water distribution system, storage tanks/ponds, filtering systems, pump stations, and other facilities needed to supply the desired amount of untreated or raw water, in accordance with CCWD's requirements and standards.

Mitigation Measure Utilities 15b: The City of Concord shall ensure that any use of untreated or raw water at the site includes the measures identified by CCWD to upgrade or improve the Contra Costa Canal to supply the agreed amount of water.

Mitigation Measure Utilities 15c: The City of Concord shall ensure that any untreated or raw water obtained from the Contra Costa Canal will be at a metered location designated by CCWD. With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.

Refer to the discussion of Mitigation Measures Utilities 4a, 4b, and 4c.

Impact Utilities 16: Implementation of the Concentration and Conservation Alternative would result in a need for potable water that could require the construction of new or expansion of existing facilities to provide treated water. This impact is considered to be potentially significant.

The maximum potential anticipated average day demand for potable water for the Concentration and Conservation Alternative is 4.2 mgd. Refer to the discussion of Impact Utilities 5.

Mitigation Measure Utilities 16: The City of Concord shall ensure that all required water distribution systems, water storage tanks, pump stations, and other facilities at the site to supply the demand for potable water are constructed to meet CCWD's requirements and standards. With the implementation of this mitigation measure, the potentially significant impact will be reduced to a level that is less than significant.

Refer to the discussion of Mitigation Measure Utilities 5.

Impact Utilities 17: Implementation of the Concentration and Conservation Alternative would result in an opportunity to use recycled water at the site. Recycled water could be provided by CCCSD's existing system, by an alternative off-site source, or by a future on-site treatment system. Additional treatment capacity will be required at the CCCSD WWTP to provide the additional recycled water. New recycled water distribution lines, pumping stations, and on-site storage reservoirs will be required to connect the project to CCCSD's existing recycled water system. This impact is considered to be potentially significant.'

The potential demand for the use of untreated or recycled water[2] at the site for irrigation is approximately 1.6 mgd. The CCCSD has provided the City a "will serve" letter indicating the districts intention to supply or make available 5.3 mgd of recycled water for use at the site (CCCSD, August 10, 2009). Refer to the discussion of Impact Utilities 6.

Mitigation Measure Utilities 17: It will be incumbent upon the City of Concord, CCCSD, and CCWD to have an agreement in place regarding the provision of recycled water to the site, prior to recycled water being utilized on site. The City of Concord needs to reach an agreement with CCCSD, or an alternative off-site provider, to ensure that the recycled water treatment and transmission facilities are sufficiently expanded to serve the project. Alternatively, an on-site recycled water treatment plant may be constructed, that may eliminate the need for expanded off-site facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.

Refer to the discussion of Mitigation Measure Utilities 6.

Impact Utilities 18: Implementation of the Concentration and Conservation Alternative would result in an increase in impervious surface, which would result in an alteration of the existing site drainage pattern and could increase the rate and volume of surface runoff. This increase could exceed the capacity of existing stormwater drainage systems, and require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. This impact is considered to be potentially significant.

[2] Irrigation water demand may be fulfilled by using either recycled water or untreated water. Demand for other non-potable uses of recycled water or untreated water is not estimated in this EIR.

Refer to the discussion of Impact Utilities 7.

> **<u>Mitigation Measure Utilities 18</u>: Prior to approving any development at the site, the City of Concord shall require that the new development incorporate drainage facilities and BMPs to reduce the quantity and improve the quality of runoff in accordance with NPDES permit requirements. New development shall also be required to consult with the CCCFC&WCD to manage any additional stormwater generated at the site. With the implementation of this mitigation measure, this potentially significant impact would be reduced to a level that is less than significant.**

Refer to the discussion of Mitigation Measure Utilities 7.

Impact Utilities 19: Implementation of the Concentration and Conservation Alternative would result in an increase in demand for electricity that could require or result in the construction of new electricity facilities, transformers, distribution systems, and substations; or expansion of existing electricity facilities. This impact is considered to be potentially significant.

It is assumed that PG&E will be the electricity provider for households, businesses, and community facilities at the site. The projected increase in electricity demand is approximately 49 MW.

PG&E has not included the increased electricity demand from the site in its projection for electricity demand and supply, since the proposed development program is not included in the City's General Plan.

There is no existing major electricity distribution system at the site to accommodate the new development.

PG&E has confirmed that new off-site electrical infrastructure will be required to connect the development's distribution system to the existing transmission infrastructure. A new substation will be required to be constructed within the new development.

The proposed substation should be located adjacent to an area with a significant electric load. A typical PG&E distribution substation site with a footprint of approximately 5 acres could be located near one of the following (refer to Figure 16-5):

1. South of the intersection of SR 4 and Willow Pass Road
2. West of Willow Pass Road near the southerly boundary of the project
3. East of Willow Pass Road near the southerly boundary of the project

The overhead transmission line to serve the substation would tie into PG&E's existing Pittsburg-Tidewater 230kV transmission line near San Marco Boulevard and SR 4 in Pittsburg, and run southwesterly to the project site.

Land use within the transmission line easement will be limited to compatible uses such as parking, landscaping (with height restrictions), passive recreation, etc. Structures shall not be allowed within the transmission line easement, unless otherwise agreed upon with

PG&E. From the substation, electric distribution feeders would radiate out to serve the development.

Currently, PG&E serves the existing customers adjacent to this project from Tidewater Substation in Martinez. Once the proposed substation is operational, Tidewater Substation may serve a portion of this project, and the proposed substation may serve some current customers in the Martinez area.

Mitigation Measure Utilities 19a: Prior to approving any development at the site, the City of Concord shall coordinate with PG&E regarding the planned development and provide data for PG&E to assess the future electricity demand, and for the Project Proponent to study the environmental impacts of such facilities in its approval process.

Mitigation Measure Utilities 19b: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing electrical supply infrastructure and construct new electrical substations either on or off site to meet potential energy demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in its approval process.

With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.

It is assumed that PG&E can use the information provided by the City to update its planning processes and program facilities to accommodate the development that would occur as a result of the Concentration and Conservation Alternative. The City shall withhold development approvals until PG&E has demonstrated that it can supply the required electrical service to support the development, and until the environmental impacts of the new facilities are reviewed under CEQA.~~It is assumed that PG&E can use the information provided by the City to update its planning processes and program facilities to accommodate the planned development. The City shall withhold development approvals until PG&E has demonstrated that it can supply the required electrical service to support development of any of the alternatives. Implementing these mitigation measures will reduce this potential impact to a level that is less than significant.~~

Impact Utilities 20: Implementation of the Concentration and Conservation Alternative would result in an increase in demand for natural gas that could require or result in the construction of new natural gas facilities and distribution systems, or expansion of existing natural gas facilities. This impact is considered to be potentially significant.

PG&E will be the natural gas provider for the site. The projected increase of natural gas demand for the Concentration and Conservation Alternative is approximately 5 megatherms/year. PG&E has not included the increase in natural gas demand from development at the site in its projections for natural gas demand and supply, because the potential development is not included in the Concord General Plan. No existing natural gas distribution system is present at the site to accommodate the potential development.

PG&E has confirmed that there is sufficient capacity in the adjacent existing gas transmission systems to serve the development. PG&E is proposing that a DFM would tap the existing gas transmission line near Port Chicago Highway and SR 4. The main would then run southerly, below ground, and within a roadway or public utility easement to a gas regulator site that would be approximately 1 acre in size. The location of the gas regulating station will be determined during the future design process. With reference to Figure 16-5, potential locations for these sites may include:

1. On the southwest tip of the proposed Educational Campus
2. On Willow Pass Road, just south of the strip of the proposed Parks and Recreation area

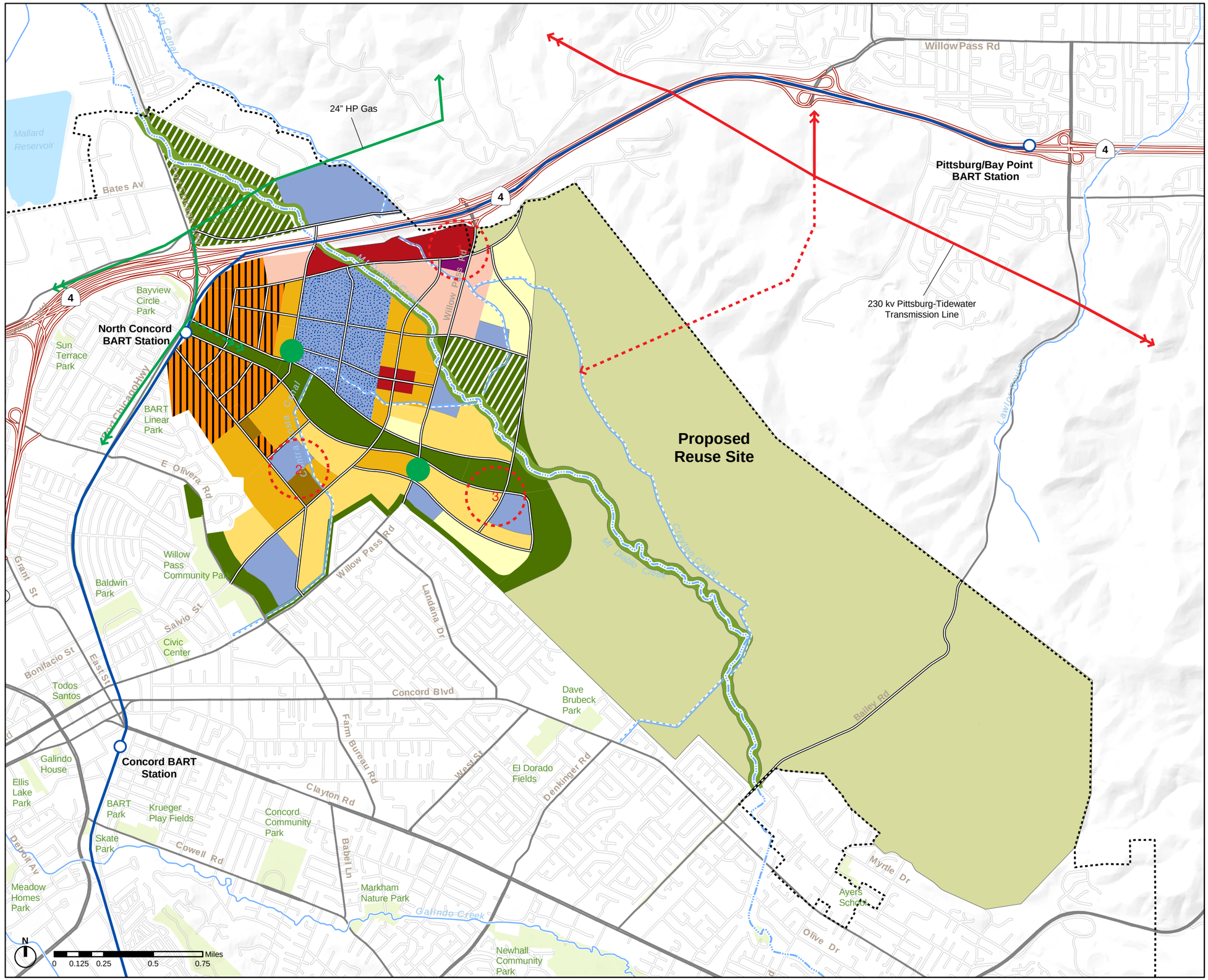
Distribution mains would radiate out from the gas regulator station to serve the development.

Mitigation Measure Utilities 20a: Prior to approving any development at the site, the City of Concord shall coordinate with PG&E regarding the planned development and provide data for PG&E to assess the future natural gas demand, and for the Project Proponent to study the environmental impacts of such facilities in its approval process.

Mitigation Measure Utilities 20b: Prior to approving any development at the site, the City of Concord shall require that PG&E demonstrate that it can upgrade its existing gas supply infrastructure or construct new gas supply infrastructure to meet potential natural gas demand for the development. The Project Proponent shall then study the environmental impacts of such facilities in its approval process.

With the implementation of these mitigation measures, this potentially significant impact will be reduced to a level that is less than significant.

PG&E can use the information provided by the City to update its planning processes and program facilities improvement to accommodate for the planned development. The City shall withhold development approvals until PG&E has demonstrated that it can supply the required ~~electrical~~ natural gas service to support development of any of the alternatives and until the environmental impacts of the new facilities are reviewed under CEQA.



Legend

- Existing Electricity Line
- Illustrative Route of Potential Future Transmission Line to Serve Substation
- Existing Gas Line
- Illustrative Route of Potential Future Gas Line
- Electricity Line Continues
- Gas Line Continues
- Illustrative Future Substation Location
- Illustrative Future Gas Regulator Location

Land Uses

- Transit-Oriented Development (Mixed Use)
- High-Density Residential
- Medium-Density Residential
- Medium-Low-Density Residential
- Low-Density Residential
- Commercial Office
- Commercial Retail
- Commercial/Retail Flex Space
- Commercial Hotel
- Community Facilities
- Educational Campus
- Open Space
- Parks and Recreation
- Riparian Corridor
- Golf Course and Tournament Facilities
- Recreation/Residential Low Density Flex Area

Base Map

- Concord City Limit
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street
- Bay Area Rapid Transit Line
- BART Station

Concord
Community Reuse Plan

Revised May 12, 2009

Figure 16-5
Concentration and Conservation Alternative: Electrical and Gas Facilities - Illustrative Layout

Impact Utilities 21: Implementation of the Concentration and Conservation Alternative would result in an increase in demand of IT/COMM services at the site that would require additional levels of service or construction of additional IT/COMM facilities. This impact is considered to be potentially significant.

Refer to the discussion of Impact Utilities 10.

> **Mitigation Measure Utilities 21: Prior to approving any development at the site, the City of Concord shall require that the IT/COMM providers demonstrate that they can provide the needed services and facilities. With the implementation of this mitigation measure, this potentially significant impact will be reduced to a level that is less than significant.**

Refer to the discussion of Mitigation Measure Utilities 10.

16.3.3.2 Utilities Impacts of the Concentration and Conservation Alternative That Are Less Than Significant

Impact Utilities 22: Implementation of the Concentration and Conservation Alternative would increase residential and commercial land uses at the site, resulting in increased solid waste generation that the landfills in the local service area may not have sufficient permitted capacity to accommodate. This impact is considered to be less than significant.

The Concentration and Conservation Alternative is anticipated to generate approximately 40,407 tons per year, or approximately 111 tons per day. This tonnage represents approximately 1.2 percent of the projected combined daily permitted capacity of the PHLF and KCL landfills. This estimate is based on the following waste disposal rate assumptions:

- Single-family residential = 0.42 tons per capita per year
- Multi-family residential = 0.46 tons per unit per year
- Commercial development = 0.3 to 2.1 tons per employee per year

Assuming the total estimate of annual solid waste from the Concentration and Conservation Alternative (40,407 tons) is disposed of at PHLF and KCL, using the same proportions as the City of Concord in 2004 (73 percent and 27 percent, respectively), the maximum yearly disposal tonnage to PHLF and KCL would be approximately 29,497 and 10,910 tons per year, respectively. Based on the 2008 disposal tonnages, this would represent a 4.1 percent increase in disposal to PHLF and a 1.4 percent increase to KCL.

Refer to the discussion of Impact Utilities 11.

> **Mitigation Measure Utilities 22: None required.**

16.3.4 Utilities Impacts of the No Project Alternative

16.3.4.1 Potentially Significant Utilities Impacts of the No Project Alternative

None identified.

16.3.4.2 Utilities Impacts of the No Project Alternative That Are Less Than Significant

None identified.

16.4 References

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Concord
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17.

Other CEQA Considerations

17 Other CEQA Considerations

Introduction

In addition to the project-related impacts analyzed for the specific environmental resources evaluated in Chapters 3 through 16 of this Environmental Impact Report (EIR), the following impacts are assessed in this chapter:

- Cumulative impacts (Section 17.1)
- Growth inducing impacts (Section 17.2)
- Unavoidable significant impacts (Section 17.3)
- Significant irreversible environmental effects (Section 17.4)

17.1 Cumulative Impacts

17.1.1 Cumulative Definition

The California Environmental Quality Act (CEQA) requires that an EIR contain an assessment of the cumulative impacts that could be associated with project implementation. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. Although project-related impacts may be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (CEQA Guidelines, section 15130, subdivision (a)).

An EIR must discuss the “cumulative impacts” of a project when its incremental effect will be cumulatively considerable. This means that the incremental effects of an individual project would be considerable when viewed in combination with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines, section 15065, subdivision (c)).

CEQA Guidelines, section 15355 defines cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” This section states further that “individual effects may be changes resulting from a single project or a number of separate projects.” “The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.”

Section 15130(a)(3) of the Guidelines states also that an EIR may determine that a project’s contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Section 15130(b) of the Guidelines indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, that it should reflect the severity of the impacts and their likelihood of occurrence, and that it should be focused, practical, and reasonable.

The resources analyzed for cumulative contribution are:

- Land Use
- Transportation
- Visual Resources
- Earth Resources
- Hydrology and Water Quality
- Biological Resources
- Cultural Resources
- Hazardous Materials
- Noise and Vibration
- Population, Housing, and Employment
- Public Services
- Recreation
- Utilities
- Air Quality (regional and global)

17.1.2 Cumulative Methodology

The methodology for assessing cumulative impacts considers the impacts of the two alternatives in combination with other projects that could combine in space and time to result in cumulative impacts. For this assessment, most of the potential combinations of impacts would occur at a subregional level based on the potential for the impacts anticipated from the alternatives to combine with impacts from other projects. Examples of such subregional impacts are land use impacts from either of the two alternatives combining with land use changes resulting from other sub-regional planned developments. Other broader cumulative impacts could also occur. For example, cumulative impacts from climate change would extend beyond the subregional geography and have relevance to the rest of Contra Costa County and the Bay Area, and could even have global considerations.

To assess the cumulative impacts of the two alternatives in the context of subregional development, this EIR has assessed the maximum demand for each resource topic. Based on comparing Table 17-1, summarizing the Preferred Alternative, with Table 17-2, summarizing the Concentration and Conservation Alternative, it is evident that the Preferred Alternative would result in the maximum development program at the site with respect to each resource area analyzed.

Table 17-1: Preferred Alternative Development Program

Land Uses	Acres	Units and Population					SF and Jobs				Notes
	Total Acres	Gross DU/Acre	Units	% of Units	Persons/ Unit	Population	Gross FAR	SF	SF/Job	Jobs	
Residential											
High-Density Residential	20.0	50.0	1,000	8.1%	1.85	1,850					**1. Recreation/Residential Low Density Flex Area:** The flex area adjacent to the Tournament Sports Facility is assumed to be Low-Density Residential use, but can be developed to support a larger recreation area, subject to a determination of financial feasibility and impact on the City's fiscal sustainability.
Medium-High Density Residential	36.0	30.0	1,080	8.8%	1.85	1,998					
Mixed-Use Residential/Retail	35.0	30.0	1,050	8.6%	1.85	1,943					
Medium-Density Residential	300.0	15.0	4,500	36.7%	2.11	9,495					
Medium-Low Density Residential	353.0	10.0	3,530	28.8%	2.94	10,378					
Low-Density Residential (see Note 1) *35 acres are designated as Recreation/Residential Low Density Flex Area*	278.0	4.0	1,112	9.1%	2.82	3,136					
Total	**1022.0**		**12,272**	**100.0%**		**28,800**					
Commercial											
Office/Transit-Oriented Development	12.0						1.70	888,624	225	3,949	
Office Park (see Note 2) *25 acres are designated as Commercial/Retail Flex use*	92.0						0.51	2,043,835	225	9,084	
Town Center Retail	10.0						0.68	296,208	500	592	**2. Commercial/Retail Flex Space:** The flex area between the North Concord BART Station and Willow Pass Road is assumed to be Commercial Retail use, but can be developed as Commercial Office use depending upon market conditions and impact on the City's fiscal sustainability. The flex area south of Willow Pass Road is assumed to be Commercial Office, but could be developed as Commercial Retail to support complementary uses to the Tournament Sports Facility, subject to a determination of financial feasibility and impact on the City's fiscal sustainability.
Neighborhood Commercial Center	16.0						0.34	236,966	500	474	
Regional Retail (see Note 2) *15 acres are designated as Commercial/Retail Flex use*	90.0						0.26	1,019,304	500	2,039	
Mid-Rise Hotel	10.0							400,000	840	476	
Family/Business Hotel	5.0							120,000	840	143	
Commercial Cluster 2 - Campus Setting	50.0						0.51	1,110,780	225	4,937	
Mixed-Use Residential/Retail	0.0						0.43	131,116	500	262	
Total	**285.0**							**6,246,833**		**21,956**	
Institutional											
Potential PBC - CSU East Bay Campus/Education Campus	150.0						0.35	2,286,900	500	4,574	
Total	**150.0**							**2,286,900**		**4,574**	
Community/Other											
Community Facilities (inc. K–12 schools)	103.0										
Other Uses - Health, Group Care, Homeless	10.0										
Other Uses - Religious Centers, Libraries, Community Centers	72.0										
Potential PBC - Sheriff and Fire Training	80.0										
Potential PBC - Center for Adaptive Learning	2.0										
Potential - Habitat for Humanity East Bay	3.0										
Transit Center/Yard	15.0										
Total	**285.0**										**3. Open Space** creates potential for regional recreation per the EBRPD's PBC request and areas for habitat protection and restoration.
Parks											
Neighborhood Parks	43.0										
Community Parks	415.0										
Recreation Facilities - Existing Golf Course	88.0										
Recreation Facilities - Sports Complex	75.0										
City-Wide Park	100.0										
Riparian Corridor	178.0										
Open Space (see Note 3)	2387.0										
Total	**3286.0**										
TOTAL	**5,028**		**12,272**			**28,800**		**8,533,733**		**26,530**	
		Average DU/Acre	**12.0**								
		Percent Open Space	**65.4%**								

DU = dwelling units; FAR = floor-to-area ratio; SF = square feet; PBC = Public Benefit Conveyance; CSU = California State University

Source: City of Concord, January 30, 2009

Table 17-2: Concentration and Conservation Alternative Development Program

Land Uses	Acres	Units and Population					SF and Jobs				Notes
	Total Acres	Gross DU/Acre	Units	% of Units	Persons/ Unit	Population	Gross FAR	SF	SF/Job	Jobs	
Residential											1. **Open Space** creates potential for regional recreation per the EBRPD's PBC request and areas for habitat protection and restoration.
High-Density Residential	20.0	50.0	1,000	9.8%	1.85	1,850					
Medium-High Density Residential	42.0	30.0	1,260	12.3%	1.85	2,331					
Mixed-Use Residential/Retail	25.0	30.0	750	7.4%	1.85	1,388					
Medium-Density Residential	275.0	15.0	4,125	40.4%	2.11	8,704					
Medium-Low Density Residential	264.0	10.0	2,640	25.9%	2.94	7,762					
Low-Density Residential	107.0	4.0	428	4.2%	2.82	1,207					
Total	**733.0**		**10,203**	**100.0%**		**23,241**					
Commercial											
Office/Transit-Oriented Development	10.0						1.70	740,520	225	3,291	
Office Park	80.0						0.51	1,777,248	225	7,899	
Town Center Retail	8.0						0.68	236,966	500	474	
Neighborhood Commercial Center	13.0						0.34	192,535	500	385	
Regional Retail	60.0						0.26	679,536	500	1,359	
Mid-Rise Hotel	10.0							400,000	840	476	
Family/Business Hotel	5.0							120,000	840	143	
Commercial Cluster 2 - Campus Setting	25.0						0.51	555,390	225	2,468	
Mixed-Use Residential/Retail	0.0						0.43	93,654	500	187	
Total	**211.0**							**4,795,850**		**16,683**	
Institutional											
Potential PBC - CSU East Bay Campus/Education Campus	150.0						0.35	2,286,900	500	4,574	
Total	**150.0**							**2,286,900**		**4,574**	
Community/Other											
Community Facilities (inc. schools)	78.0										
Other Uses - Health, Group Care, Homeless	9.0										
Other Uses - Religious Centers, Libraries, Community Centers	58.0										
Potential PBC - Sheriff and Fire Training	80.0										
Potential PBC - Center for Adaptive Learning	2.0										
Potential - Habitat for Humanity East Bay	3.0										
Transit Center/Yard	15.0										
Total	**245.0**										
Parks											
Neighborhood Parks	35.0										
Community Parks	269.0										
Recreation Facilities - Existing Golf Course	88.0										
Recreation Facilities - Sports Complex	75.0										
City-Wide Park	0.0										
Riparian Corridor	178.0										
Open Space (see Note 1)	3044.0										
Total	**3689.0**										
TOTAL	**5,028**		**10,203**			**23,241**		**7,082,750**		**21,257**	
		Average DU/Acre	**13.9**								
		Percent Open Space	**73.4%**								

DU = dwelling units; FAR = floor-to-area ratio; SF = square feet; PBC = Public Benefit Conveyance; CSU = California State University

Source: City of Concord, January 30, 2009

In addition, this EIR identifies other relevant projects that could combine in space and time to result in cumulative impacts. CEQA Guidelines, section 15130 recommends using either a "list" or "projection" approach to identify these projects. The list approach requires the identification of all past, present, and probable future projects that could contribute to a significant cumulative environmental impact. A projection approach requires a review of related planning documents that describe regional conditions related to the cumulative impact. This EIR uses a combination of these approaches.

The General Plans of Contra Costa County and the Cities of Concord, Pittsburg, and Clayton were reviewed to identify the approved areas of potential future development. The Pittsburg General Plan indicates a pertinent land use designation change in the Los Medanos Hills Area adjacent to the eastern boundary of the site. This change in land use from Vacant/Utility/ROW to Low Density Residential (1–7 units) allows residential development on these hillsides. Although construction of a number of residential developments has already commenced in that area, it is likely that further residential development will take place in the future. From a cumulative perspective, this change in land use policy is a key consideration, particularly from the perspective of visual resources and biological resources.

In addition, land use on the periphery of the site, immediately east of the Contra Costa Canal and north of the intersection of Willow Pass Road and State Route (SR) 4 is classified as mixed-use according to the County General Plan. Development in this area consists of the 357,700-square-foot Willow Pass Business Park, part of which has been occupied and another part is currently being constructed. This development includes light industrial, warehouse commercial, office, restaurant, and retail space uses.

Other projects in the vicinity of the site that have either been approved, or for which an urban development permit or other permit application has been submitted to a federal or non-federal agency, were identified using the following sources of information:

- Current Projects Report for the City of Concord (January 2009–March 2009)
- Project Pipeline List for the City of Pittsburg (last updated on November 18, 2008)
- Independent research including consultation with the Contra Costa County Planning Department and numerous site visits
- The City of Clayton General Plan (also reviewed, but no projects to be included in this analysis were identified)

Figure 17-1 illustrates the other projects in the site vicinity that have been included in the cumulative impact assessment, and Appendix 17A provides further detail on each development. These projects were selected based on their status (they are approved or have submitted a permit application), their location in relationship to the site, their size, and their context (e.g., in-fill, greenfield development, located on ridge). It is considered that these projects could potentially combine in space and time with either alternative to result in cumulative impacts. However, the Sphere of Influence (SOI), or area, considered in the cumulative assessment is specific to each resource area assessed, and is noted in that specific resource assessment.

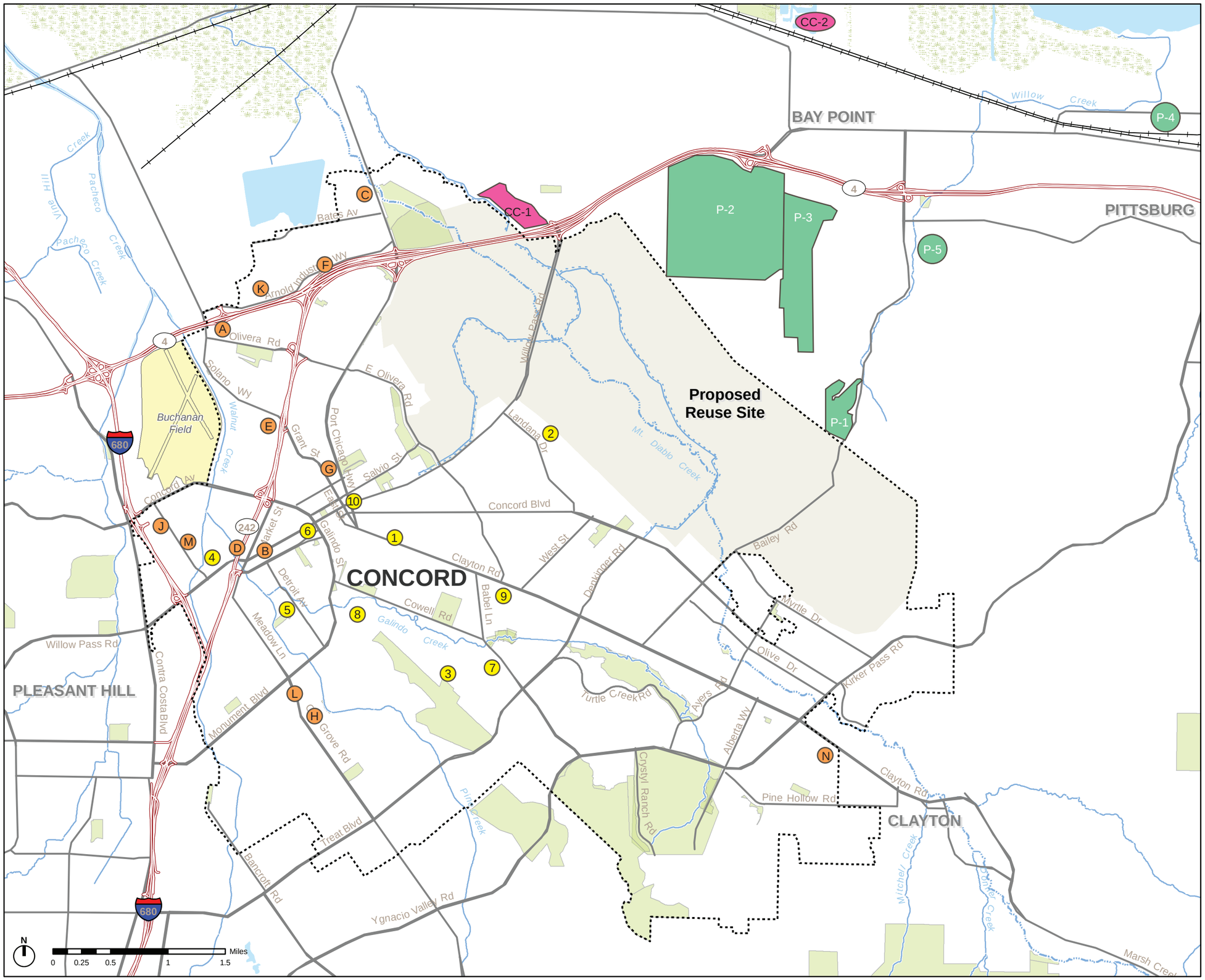
The majority of the projects shown on Figure 17-1 and described in Appendix 17-A are small-scale and would be constructed within a relatively short time frame. Either of the alternatives would result in relatively large-scale development, with a potential of 1,742 acres on residential, commercial, institutional, and community uses for the Preferred Alternative; and 1,339 acres of these uses for the Concentration and Conservation Alternative. This potential development would occur over a lengthier period than most of the other projects considered in the cumulative analysis. Within the City of Concord, the other projects are generally small, in-fill projects that would be phased over time (based on their stage in the planning process), and are expected to be similar in scale, nature, and use as existing surrounding land uses. It is anticipated that these in-fill projects, which are located within or immediately adjacent to existing urban areas, would generally be compatible with these uses. Those projects located in the City of Pittsburg, however, are comparatively larger-scale developments and have the potential to adversely affect the hillside corridor areas that could be developed.

17.1.3 Land Use

The projects considered in the land use cumulative assessment are shown on Figure 17-1 and described in Appendix 17A. The potential impacts from these projects in combination with impacts from the Preferred Alternative, which would result in the most developed acres, or the Concentration and Conservation Alternative, could combine in space and time to result in cumulative impacts to land use. As discussed in Chapter 3, either alternative would result in a significant land use impact with respect to the Sun Terrace Neighborhood and the Coast Guard Housing complex that cannot be mitigated to a level that is less than significant.

Within Concord, Pittsburg, and Contra Costa County, the other projects described in Appendix 17A are in conformance with the prescribed General Plan designations for the respective jurisdictions. Ultimately, development at the site will be incorporated into this framework through an approved General Plan Amendment by the City of Concord. Generally, except as noted previously, land use envisioned with either alternative is consistent with existing designations, and the other projects in combination with the two alternatives would not result in cumulative impacts to land use. Although other projects in Pittsburg or the County could result in project-specific impacts, particularly projects developed on the Los Medanos Hills ridgeline, they are consistent with the General Plan for their respective jurisdictions, and therefore would not result in cumulative impacts based on anticipated use.

On a regional scale, all the other projects noted in Appendix 17A contribute to the Association of Bay Area Governments' (ABAG's) growth management strategy to accommodate growth within the existing urban framework and service limits. As noted in Chapter 3, the other projects would not result in impacts to designated open space or agriculture and would maintain an appropriate interface between existing urban and rural uses.



Legend

Projects in Unincorporated Contra Costa County

CC-1 Willow Pass Business Park
CC-2 Bay Harbor Commerce Center

Projects in the City of Pittsburg

P-1 Bailey Estates
P-2 San Marco Developments:
P-3 Vista Del Mar Developments:
P-4 Empire Business Park Developments:
P-5 Lawlor Estates

Commercial Projects in Concord

A BP/ARCO AM/PM Mini-Mart
B Chuck E. Cheese's
C Conco Industrial Building
D Concord Business Center
E Estates Shopping Center
F Industrial Condominiums
G John Muir Medical Center
H La Clinica
J Lexus Dealership
K Lowe's Shopping Center
L Rite Aid
M Seafood City
N St. Bonaventure Catholic Community Addition

Residential Projects in Concord

1 Centre Pointe Residential Subdivision
2 Farry Grove Residential Subdivision
3 Kings Crest
4 Palmero Condominiums
5 Poetry Garden Townhomes
6 Renaissance Condominiums
7 Ridgeview Estates
8 Sendera Residential
9 Villa De La Vista Residential Subdivision
10 Wisteria Residential Subdivision

Base Map

- Concord City Limit
- Proposed Reuse Site
- Parks and Open Space
- Mt. Diablo Creek
- Other Creek or Stream
- Canal
- Highway
- Arterial Street
- Local Street

Notes & Sources

Contra Costa County: Conversation with William Nelson, Senior Planner, Contra Costa Department of Conservation and Development, July 2009.

Pittsburg: City of Pittsburg Project Pipeline List, Updated November 18 2008.

Concord: City of Concord Current Projects Report, January 2009-March 2009.

Concord
Community Reuse Plan

Revised August 21, 2009

Figure 17-1
Other Projects Considered in the Cumulative Impact Assessment

Limited agricultural lands in the general region are designated Prime and/or Unique Farmland by the California Department of Conservation. Prime and Unique Farmlands are focused in land designated as open space or agricultural in the long-range plans of nearby cities and the County, and therefore would not be affected by either alternative or other cumulative projects. Agricultural lands do not account for a substantial portion of the local economy and are used primarily for grazing rather than crop production. Therefore, the other projects in combination with either alternative would not result in significant cumulative impacts to land use or the loss of agricultural resources.

17.1.4 Transportation

Travel demand forecasting for the analysis of direct and indirect traffic impacts takes into consideration approved, proposed, and buildout projects, as described in the Technical Procedures Update (CCTA, 2006). Proposed projects are those that would be completed within the next 20 years, but are pending approval. Buildout projects are the development potential remaining in each traffic zone after completion of all approved and proposed projects (based on General Plan designations and probable market forces in a 25- to 30-year time frame or beyond).

For the purpose of this cumulative program-level analysis, the impacts of the two alternatives were analyzed under a future baseline (2030 No Project) condition.

Adjustments were made to the Contra Costa Transportation Authority (CCTA) Decennial Model, which includes the nine-county Bay Area, to reflect the two alternatives. The land use assumptions for Concord are consistent with those used to develop the traffic analysis of the Concord 2030 Urban Area General Plan (General Plan). However, the assumptions for the rest of Contra Costa County were updated to the more recent ABAG Projections 2005 resulting in updated 2030 No Project traffic projections when compared to the General Plan. The model was run for the year 2030 without either of the alternatives (the 2030 No Project Alternative), as well as with the two alternatives.

The alternatives were analyzed under a future 2030 condition, and therefore traffic related to other development that will occur between now and 2030 is incorporated into the traffic model. As such, this analysis is a cumulative analysis incorporating the impacts of all future development. In determining impacts by comparing the specific reuse alternative to the 2030 No Project Alternative, only the impacts attributable to the alternative are identified (i.e., the results of both the specific reuse alternative and the 2030 No Project Alternative include all future development, but the determination of the impact is based on the difference between the two, which is the contribution or effect of the specific reuse alternative).

A list of all potential alternative reuse concepts' cumulative impacts follows Table 17-8. Impacts that are considered significant cumulative impacts are impacts for which the specific alternative exceeded the threshold in the year 2030 as described in Section 4.2, and is worse than the 2030 No Project Alternative. The significant impacts are shaded and set forth in bold in Tables 17-3 through 17-8.

17.1.4.1 Summary of Transportation Impacts

The number of impacted locations associated with each alternative reuse concept is summarized in Table 17-9. The number of cumulative impacts is calculated in the following manner, and reflects the transportation impacts presented previously in Chapter 4, Transportation, for the two alternatives:

- Freeway segments: There are 19 freeway analysis locations, each operating in two directions, resulting in 38 separate analysis segments. The maximum number of impacts summarized in Table 4-28 is therefore 38.
- Freeway ramps: There are 42 freeway ramp analysis locations resulting in a maximum number of 42 impacts summarized in Table 4-28.
- Roadway segments: There are 18 roadway segment analysis locations, each operating in two directions, resulting in 36 separate analysis segments. The maximum number of impacts summarized in Table 4-28 is therefore 36.
- Intersections: There are 62 intersection analysis locations resulting in a maximum number of 62 impacts summarized in Table 4-28.
- Traffic service objectives (TSOs): There are 35 Regional Route segment locations, each operating in two directions, resulting in 70 separate analysis segments. The maximum number of impacts summarized in Table 4-28 is therefore 70. There are up to three separate TSOs for each location, but impacts are not counted separately for each TSO. If a location exceeds the threshold for one, two, or three of the TSOs, the impact is counted only once.

Impacts are not counted separately for the AM and PM peak periods. If a threshold is exceeded in the same segment and same direction in the AM and PM peak hours, it is counted as one impact.

A detailed description of the impacts and required mitigation measures follow Table 17-3. All impacts, whether they occur in the AM or PM peak hour at a location with an additional impact at another time of day, are explicitly identified and described.

Table 17-3: Number of Cumulative Significant Transportation Impacts

	Number of Significantly Impacted Locations	
Facility Type	**Preferred Alternative**	**Concentration and Conservation Alternative**
Freeway segments	6	7
Freeway ramps	11	11
Roadway segments	3	4
Intersections	19	19
Traffic service objectives	38	40
Total significant impacts	77	81

Table 17–4: Capacity Analysis of Freeway Mainline Segments (Northbound and Eastbound)

Mainline Segment	Dir	LOS Threshold	Existing - 2006 AM LOS	Existing - 2006 AM v/c	Existing - 2006 PM LOS	Existing - 2006 PM v/c	Future - 2030 No Project Alternative AM LOS	No Project Alternative AM v/c	No Project Alternative PM LOS	No Project Alternative PM v/c	Future - 2030 Preferred Alternative AM LOS	Preferred Alternative AM v/c	Preferred Alternative PM LOS	Preferred Alternative PM v/c	Future - 2030 Concentration and Conservation Alternative AM LOS	Concentration and Conservation Alternative AM v/c	Concentration and Conservation Alternative PM LOS	Concentration and Conservation Alternative PM v/c
1 I-680 s/o Monument Bl	NB	F	B	0.46	F	1.10	**C**	**0.63**	**F**	**1.37**	**C**	**0.66**	F	1.34	**C**	**0.67**	F	1.35
2 I-680 n/o Monument Bl	NB	F	B	0.37	E	0.90	**B**	**0.51**	**F**	**1.13**	**C**	**0.57**	F	1.12	**C**	**0.57**	F	1.12
3 I-680 n/o SR 242	NB	E	D	0.75	F	1.80	**E**	**0.94**	**F**	**2.07**	E	0.91	F	2.07	E	0.91	**F**	**2.08**
4 I-680 n/o Willow Pass Rd	NB	E	B	0.41	E	0.95	**B**	**0.47**	**F**	**1.06**	B	0.45	F	1.04	B	0.44	F	1.05
5 I-680 n/o Concord Av	NB	E	B	0.34	D	0.82	**B**	**0.42**	**F**	**1.03**	B	0.40	F	1.03	B	0.40	F	1.03
6 I-680 n/o SR 4	NB	F	A	0.29	C	0.71	**B**	**0.42**	**D**	**0.90**	B	0.40	**E**	**0.91**	B	0.39	**E**	**0.91**
7 SR 242 n/o I-680	NB	E	B	0.33	E	0.92	**B**	**0.42**	**F**	**1.12**	**C**	**0.56**	F	1.10	**C**	**0.55**	F	1.09
8 SR 242 n/o Clayton Rd	NB	E	A	0.25	C	0.70	**B**	**0.43**	**D**	**0.88**	**C**	**0.55**	D	0.86	**C**	**0.55**	D	0.87
9 SR 242 n/o Concord Av	NB	E	A	0.31	D	0.85	**B**	**0.44**	**D**	**0.90**	**B**	**0.52**	D	0.88	**B**	**0.52**	D	0.88
10 SR 242 n/o Grant Av	NB	E	A	0.29	D	0.81	**B**	**0.43**	**D**	**0.84**	**C**	**0.55**	D	**0.85**	**B**	**0.52**	D	0.84
11 SR 242 n/o Olivera Rd	NB	E	A	0.22	C	0.60	**B**	**0.37**	**C**	**0.73**	**B**	**0.40**	**C**	**0.74**	**B**	**0.40**	C	0.73
12 SR 4 e/o I-680	EB	E	D	0.80	E	0.92	**C**	0.59	D	0.82	**C**	**0.71**	**D**	0.81	**C**	**0.72**	D	0.80
13 SR 4 e/o Arnold Industrial Wy	EB	E	C	0.66	D	0.75	B	0.53	**D**	**0.78**	**C**	**0.65**	D	0.75	**C**	**0.65**	D	0.75
14 SR 4 e/o SR 242	EB	F	B	0.45	B	0.52	**C**	**0.57**	**D**	**0.77**	**C**	**0.58**	C	0.73	**C**	**0.58**	C	0.72
15 SR 4 e/o Port Chicago Hwy	EB	F	D	0.75	D	0.85	**D**	**0.88**	**F**	**1.19**	**E**	**0.94**	F	1.15	**E**	**0.93**	F	1.14
16 SR 4 e/o Willow Pass Rd	EB	F	C	0.59	C	0.68	**C**	**0.72**	**D**	**0.88**	**D**	**0.86**	**F**	**1.00**	**D**	**0.86**	**E**	**0.99**
17 SR 4 e/o San Marco Bl	EB	F	B	0.38	D	0.75	**B**	**0.52**	**E**	**0.97**	C	**0.64**	**F**	**1.09**	C	**0.63**	**F**	**1.09**
18 SR 4 e/o Bailey Rd	EB	F	B	0.39	C	0.61	**C**	**0.55**	**D**	**0.85**	**C**	**0.63**	**D**	**0.87**	**C**	**0.62**	**E**	**0.91**
19 SR 4 e/o Railroad	EB	F	B	0.48	C	0.58	**C**	**0.66**	**F**	**1.00**	**C**	**0.72**	**E**	0.99	**C**	**0.71**	**F**	**1.05**

Capacity based on 2100 vphpl (vehicles per hour per lane) for freeway lanes, 1600 vphpl for auxiliary lanes.
Dir = direction; LOS = level of service; v/c = volume-to-capacity ratio; EB = eastbound; NB = northbound; e/o = east of; n/o = north of; s/o = south of.
Bold indicates where the alternative reuse concept contributes traffic to or increases v/c at a location when compared to the No Project Alternative or the No Project Alternative contributes traffic to or increases v/c

Source: 2000 Highway Capacity Manual; Dowling, 2009

Table 17–5: Capacity Analysis of Freeway Mainline Segments (Southbound and Westbound)

			Existing - 2006				Future - 2030											
							No Project Alternative				Preferred Alternative				Concentration and Conservation Alternative			
		LOS	AM		PM		AM		PM		AM		PM		AM		PM	
Mainline Segment	Dir	Threshold	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c
1 I-680 s/o Monument Bl	SB	F	D	0.81	C	0.60	**F**	**1.03**	**D**	**0.78**	F	1.01	**D**	**0.82**	E	1.00	**D**	**0.81**
2 I-680 n/o Monument Bl	SB	F	D	0.80	C	0.59	**F**	**1.03**	**D**	**0.78**	F	1.01	**D**	**0.83**	E	1.00	**D**	**0.83**
3 I-680 n/o SR 242	SB	F	F	1.20	D	0.89	**F**	**1.46**	**F**	**1.07**	F	1.45	**F**	**1.10**	F	1.46	**F**	**1.10**
4 I-680 n/o Willow Pass Rd	SB	F	C	0.67	B	0.48	**D**	**0.82**	**C**	**0.56**	D	0.80	**C**	**0.57**	D	0.81	**C**	**0.58**
5 I-680 n/o Concord Av	SB	F	C	0.72	C	0.54	**E**	**0.93**	**C**	**0.66**	E	0.91	C	0.66	E	0.92	C	0.66
6 I-680 n/o SR 4	SB	F	D	0.84	C	0.62	**F**	**1.05**	**D**	**0.83**	**F**	**1.08**	D	0.78	**F**	**1.08**	D	0.79
7 SR 242 n/o I-680	SB	F	D	0.83	C	0.57	**E**	**0.98**	**C**	**0.73**	E	0.94	**D**	**0.81**	E	0.92	**D**	**0.80**
8 SR 242 n/o Clayton Rd	SB	F	C	0.64	B	0.44	**D**	**0.84**	**C**	**0.70**	D	0.81	**C**	**0.74**	D	0.80	**C**	**0.73**
9 SR 242 n/o Concord Av	SB	F	D	0.83	C	0.57	**E**	**0.92**	**C**	**0.63**	D	0.89	**C**	**0.68**	D	0.88	**C**	**0.66**
10 SR 242 n/o Grant Av	SB	F	D	0.81	C	0.56	**D**	**0.86**	**C**	**0.63**	D	0.86	**C**	**0.71**	D	0.85	**C**	**0.70**
11 SR 242 n/o Olivera Rd	SB	F	D	0.81	C	0.56	**E**	**0.97**	**C**	**0.73**	E	0.94	**D**	**0.76**	E	0.93	**D**	**0.76**
12 SR 4 e/o I-680	WB	E	E	1.00	D	0.78	E	0.93	C	0.59	D	0.90	**C**	**0.73**	D	0.90	**C**	**0.72**
13 SR 4 e/o Arnold Industrial Wy	WB	E	D	0.82	C	0.64	**D**	**0.86**	C	0.56	D	0.83	**C**	**0.67**	D	0.83	**C**	**0.66**
14 SR 4 e/o SR 242	WB	F	**F**	1.13	D	0.88	**F**	**1.76**	**F**	**1.16**	F	1.57	**F**	**1.22**	F	1.56	**F**	**1.23**
15 SR 4 e/o Port Chicago Hwy	WB	F	E	0.93	C	0.72	**F**	**1.38**	**D**	**0.87**	F	1.19	**E**	**0.93**	F	1.18	**E**	**0.92**
16 SR 4 e/o Willow Pass Rd	WB	F	E	0.92	C	0.72	**F**	**1.22**	**E**	**0.92**	**F**	**1.38**	**F**	**1.06**	**F**	**1.33**	**F**	**1.05**
17 SR 4 e/o San Marco Bl+B43	WB	F	D	0.86	B	0.44	**F**	**1.38**	**D**	**0.87**	F	1.19	**E**	**0.93**	F	1.18	**E**	**0.92**
18 SR 4 e/o Bailey Rd	WB	F	C	0.61	B	0.39	**C**	**0.74**	**B**	**0.49**	C	0.66	**B**	**0.51**	C	0.66	**B**	**0.52**
19 SR 4 e/o Railroad	WB	F	C	0.63	B	0.46	**F**	**1.08**	**C**	**0.70**	F	1.04	**D**	**0.84**	F	1.04	**D**	**0.83**

Capacity based on 2100 vphpl ((vehicles per hour per lane) for freeway lanes, 1600 vphpl for auxiliary lanes.
Dir = direction; LOS = level of service; v/c = volume-to-capacity ratio; SB = southbound; WB = westbound; e/o = east of; n/o = north of; s/o = south of.

Bold indicates where the alternative reuse concept contributes traffic to or increases v/c at a location when compared to the No Project Alternative or the No Project Alternative contributes traffic to or increases v/c at a location when compared to Existing Conditions. **Shaded** cells indicate a significant impact where the alternative reuse concept contributes traffic and exceeds a threshold that was not exceeded in the 2030 No Project Alternative described in Section 4.2, or contributes to already deficient conditions where a threshold was exceeded in the 2030 No Project Alternative.

Source: 2000 Highway Capacity Manual; Dowling, 2009.

Table 17–6: Capacity Analysis of Freeway Ramps

		Existing							Future - 2030															
									No Project Alternative						Preferred Alternative						Concentration and Conservation Alternative					
		AM			PM			LOS	AM			PM			AM			PM			AM			PM		
		v/c	Density	LOS	v/c	Density	LOS	Threshold	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS	v/c	Density	LOS
1	I-680: Willow Pass Rd NB off-ramp	0.67	23.21	C	1.42	51.64	F	E	**n/a**	**28.70**	**D**	**1.51**	**n/a**	**F**	n/a	28.29	D	1.51	n/a	F	n/a	28.38	D	**1.52**	**n/a**	**F**
2	I-680: Willow Pass Rd NB on-ramp	0.32	n/a	C	0.53	n/a	C	E	0.32	n/a	C	**0.57**	**n/a**	**C**	0.32	n/a	C	0.53	n/a	C	0.32	n/a	C	0.53	n/a	C
3	I-680: Concord Av NB off-ramp	0.50	n/a	C	0.41	n/a	C	E	**0.66**	**n/a**	**C**	**0.62**	**n/a**	**C**	**0.67**	**n/a**	**C**	0.57	n/a	C	**0.68**	**n/a**	**C**	0.59	n/a	C
4	I-680: Concord Av Burnett NB on-ramp	0.28	9.26	A	0.74	25.56	C	E	**n/a**	**13.35**	**B**	**n/a**	**29.94**	**D**	n/a	12.25	B	n/a	29.68	D	n/a	12.35	B	n/a	29.92	D
5	I-680: Concord Av WB to NB on-ramp	0.31	10.07	B	0.79	27.48	C	E	**n/a**	**13.81**	**B**	**1.02**	**n/a**	**F**	n/a	12.68	B	1.02	n/a	F	n/a	12.71	B	1.02	n/a	F
6	I-680: Concord Av SB off-ramp	0.81	28.54	D	0.61	21.11	C	F	**1.01**	**n/a**	**F**	**n/a**	**25.76**	**C**	n/a	35.36	E	**n/a**	**25.96**	**C**	n/a	35.74	E	**n/a**	**26.10**	**C**
7	I-680: Concord Av WB to SB on-ramp	0.65	22.24	C	0.54	18.08	B	F	**n/a**	**28.46**	**D**	**n/a**	**21.74**	**C**	n/a	27.82	C	n/a	21.42	C	n/a	27.98	C	n/a	21.62	C
8	I-680: Concord Av EB to SB on-ramp	0.18	n/a	C	0.16	n/a	C	F	**0.21**	**n/a**	**C**	**0.18**	**n/a**	**C**	0.19	n/a	C	**0.32**	**n/a**	**C**	0.19	n/a	C	**0.32**	**n/a**	**C**
9	I-680: Willow Pass Rd SB off-ramp	0.38	14.95	B	0.29	10.74	B	F	**n/a**	**19.99**	**B**	**n/a**	**13.53**	**B**	n/a	19.42	B	**n/a**	**13.87**	**B**	n/a	19.60	B	**n/a**	**14.02**	**B**
10	I-680: Willow Pass Rd WB to SB on-ramp	0.61	20.81	C	0.48	16.26	B	F	**n/a**	**27.69**	**C**	**n/a**	**20.73**	**C**	**n/a**	**28.04**	**D**	**n/a**	**22.78**	**C**	**n/a**	**28.11**	**D**	**n/a**	**22.98**	**C**
11	I-680: Willow Pass Rd EB to SB on-ramp	0.80	26.42	C	0.55	18.75	B	F	**1.12**	**n/a**	**F**	**n/a**	**23.14**	**C**	**1.16**	**n/a**	**F**	**n/a**	**25.80**	**C**	**1.17**	**n/a**	**F**	**n/a**	**26.07**	**C**
12	SR 242: Clayton Rd NB off-ramp	0.44	14.43	B	0.95	33.76	D	E	**n/a**	**17.95**	**B**	**1.09**	**n/a**	**F**	**n/a**	**22.45**	**C**	1.07	n/a	F	**n/a**	**22.16**	**C**	1.06	37.94	F
12a	SR 242: Clayton Rd NB on-ramp (proposed)							E	n/a	8.69	A	n/a	28.11	D	**n/a**	**13.05**	**B**	n/a	27.66	C	**n/a**	**12.91**	**B**	n/a	27.68	C
13	SR 242: Concord Av EB to NB on-ramp	0.28	9.20	A	0.80	27.58	C	E	**n/a**	**21.94**	**C**	**1.01**	**n/a**	**F**	**n/a**	**25.02**	**C**	1.01	n/a	F	**n/a**	**25.11**	**C**	**1.02**	**n/a**	**F**
14	SR 242: Concord Av WB to NB on-ramp	0.39	n/a	C	0.79	n/a	D	E	**0.42**	**n/a**	**C**	0.79	n/a	D	0.39	n/a	C	0.79	n/a	D	0.39	n/a	C	0.79	n/a	D
15	SR 242: Concord Av SB off-ramp	0.54	17.85	B	0.37	12.29	B	F	**n/a**	**21.95**	**C**	**n/a**	**15.07**	**B**	n/a	21.27	C	**n/a**	**16.22**	**B**	n/a	21.22	C	**n/a**	**15.91**	**B**
15a	SR 242: Clayton Rd SB off-ramp (proposed)							E	n/a	26.77	C	n/a	22.42	C	n/a	25.58	C	**n/a**	**23.42**	**C**	n/a	25.52	C	**n/a**	**23.18**	**C**
16	SR 242: Clayton Rd SB on-ramp	0.81	27.89	C	0.71	24.07	C	F	**1.18**	**n/a**	**F**	**1.18**	**n/a**	**F**	1.13	n/a	F	1.15	n/a	F	1.16	n/a	F	1.15	n/a	F
17	SR 242: Concord Av+B41 SB on-ramp	0.63	21.76	C	0.46	15.65	B	F	**n/a**	**30.19**	**D**	**n/a**	**24.99**	**C**	n/a	28.63	D	**n/a**	**27.31**	**C**	n/a	28.71	D	**n/a**	**26.76**	**C**
18	SR 4: Port Chicago Hwy EB off-ramp	0.65	27.05	C	0.80	32.76	D	F	**n/a**	**34.17**	**D**	**1.17**	**n/a**	**F**	**0.96**	**n/a**	**F**	1.10	n/a	F	**0.95**	**n/a**	**F**	1.09	n/a	F
19	SR 4: Port Chicago Hwy EB on-ramp	0.62	25.10	C	0.95	36.42	E	F	**n/a**	**30.41**	**D**	**1.27**	**n/a**	**F**	**n/a**	**30.43**	**D**	1.20	n/a	F	**n/a**	**30.56**	**D**	1.20	n/a	F
20	SR 4: Willow Pass Rd EB off-ramp	0.75	30.67	D	0.88	35.57	E	F	**n/a**	**35.27**	**E**	**1.27**	**n/a**	**F**	**n/a**	**37.26**	**E**	1.15	n/a	F	**n/a**	**37.14**	**E**	1.14	n/a	F
21	SR 4: Willow Pass Rd EB on-ramp	0.14	n/a	C	0.30	n/a	C	F	**0.23**	**n/a**	**C**	0.30	n/a	C	**0.80**	**n/a**	**D**	**0.63**	**n/a**	**C**	**0.78**	**n/a**	**D**	**0.62**	**n/a**	**C**
22	SR 4: Port Chicago Hwy WB on-ramp	1.22	45.82	F	1.01	38.33	F	F	**1.90**	**n/a**	**F**	**1.39**	**n/a**	**F**	1.77	n/a	F	**1.60**	**n/a**	**F**	1.77	n/a	F	**1.59**	**n/a**	**F**
23	SR 4: Port Chicago Hwy WB off-ramp	0.86	35.29	E	0.63	26.60	C	F	**1.36**	**n/a**	**F**	**n/a**	**30.26**	**D**	1.10	n/a	F	**n/a**	**34.50**	**D**	1.08	n/a	F	**n/a**	**33.81**	**D**
24	SR 4: Willow Pass Rd WB on-ramp	0.70	25.45	C	0.60	22.20	C	F	**1.33**	**n/a**	**F**	**n/a**	**25.89**	**C**	1.28	n/a	F	**n/a**	**27.38**	**C**	1.27	n/a	F	**n/a**	**27.12**	**C**
25	SR 4: Willow Pass Rd WB off-ramp	0.52	n/a	C	0.18	n/a	C	F	0.52	n/a	C	**0.42**	**n/a**	**C**	**1.00**	**n/a**	**F**	**0.79**	**n/a**	**D**	**0.83**	**n/a**	**D**	**0.79**	**n/a**	**D**
26	SR 4: San Marco Bl EB off-ramp	0.24	n/a	C	0.71	n/a	D	F	**0.45**	**n/a**	**C**	**1.30**	**n/a**	**F**	**0.55**	**n/a**	**C**	**1.58**	**n/a**	**F**	**0.53**	**n/a**	**C**	**1.58**	**n/a**	**F**
27	SR 4: SB San Marco Bl WB on-ramp	0.96	n/a	E	0.25	n/a	C	F	**1.19**	**n/a**	**F**	**0.40**	**n/a**	**C**	**1.22**	**n/a**	**F**	**0.46**	**n/a**	**C**	**1.27**	**n/a**	**F**	**0.47**	**n/a**	**C**
28	SR 4: SB San Marco Bl EB on-ramp	0.25	12.46	B	0.45	19.70	B	F	**n/a**	**14.55**	**B**	**n/a**	**22.28**	**C**	**n/a**	**17.30**	**B**	**n/a**	**24.12**	**C**	**n/a**	**17.20**	**B**	**n/a**	**23.70**	**C**
29	SR 4: NB San Marco Bl WB on-ramp	0.52	21.96	C	0.27	13.09	B	F	**1.11**	**n/a**	**F**	**n/a**	**16.61**	**B**	**1.25**	**n/a**	**F**	**n/a**	**18.47**	**B**	**1.19**	**n/a**	**F**	**n/a**	**18.37**	**B**
30	SR 4: NB San Marco Bl EB on-ramp	0.24	12.06	B	0.46	20.00	C	F	**n/a**	**15.31**	**B**	**n/a**	**22.20**	**C**	**n/a**	**17.54**	**B**	**1.06**	**n/a**	**F**	**n/a**	**17.43**	**B**	**1.06**	**n/a**	**F**
31	SR 4: San Marco Bl B55WB off-ramp	0.82	33.86	D	0.45	19.98	B	F	**1.26**	**n/a**	**F**	**n/a**	**26.45**	**C**	**1.33**	**n/a**	**F**	**n/a**	**28.26**	**D**	1.26	n/a	F	**n/a**	**27.95**	**C**
32	SR 4: SB Bailey Rd EB off-ramp	0.39	17.74	B	0.72	30.08	D	F	**n/a**	**21.44**	**C**	**n/a**	**37.52**	**E**	**n/a**	**26.27**	**C**	**1.03**	**n/a**	**F**	**n/a**	**25.74**	**C**	**1.03**	**n/a**	**F**
33	SR 4: Bailey Rd WB on-ramp	0.48	20.48	C	0.29	14.21	B	F	1.13	n/a	F	**n/a**	**16.44**	**B**	1.22	n/a	F	**n/a**	**17.63**	**B**	1.17	n/a	F	**n/a**	**17.51**	**B**
34	SR 4: SB Bailey Rd WB off-ramp	0.14	n/a	C	0.13	n/a	C	F	**0.24**	**n/a**	**C**	**0.24**	**n/a**	**C**	0.19	n/a	C	0.14	n/a	C	0.14	n/a	C	0.15	n/a	C
35	SR 4: NB Bailey Rd EB off-ramp	0.11	n/a	C	0.45	n/a	C	F	0.11	n/a	C	0.45	n/a	C	**0.13**	**n/a**	**C**	**0.78**	**n/a**	**D**	**0.14**	**n/a**	**C**	**0.76**	**n/a**	**D**
36	SR 4: NB Bailey Rd WB off-ramp	0.57	24.60	C	0.43	19.33	B	F	**n/a**	**34.45**	**D**	**n/a**	**23.40**	**C**	**n/a**	**36.35**	**E**	**n/a**	**24.72**	**C**	n/a	30.91	D	**n/a**	**24.61**	**C**
37	SR 4: Bailey Rd EB on-ramp	0.28	13.27	B	0.38	17.04	B	F	**n/a**	**16.36**	**B**	**n/a**	**20.40**	**C**	**n/a**	**17.45**	**B**	**n/a**	**20.72**	**C**	**n/a**	**17.34**	**B**	**n/a**	**20.87**	**C**
38	SR 4: Railroad Av WB on-ramp	0.45	19.31	B	0.31	14.51	B	F	**n/a**	**20.75**	**C**	**n/a**	**16.84**	**B**	**1.04**	**n/a**	**F**	**n/a**	**17.38**	**B**	n/a	20.60	C	**n/a**	**17.33**	**B**
39	SR 4: Railroad Av EB off-ramp	0.20	7.88	A	0.54	12.50	B	F	**n/a**	**11.24**	**B**	**n/a**	**17.31**	**B**	**n/a**	**12.81**	**B**	**n/a**	**17.77**	**B**	**n/a**	**12.69**	**B**	**n/a**	**18.56**	**B**
40	SR 4: Railroad Av EB on-ramp	0.47	20.28	C	0.55	23.08	C	F	**n/a**	**26.76**	**C**	**n/a**	**37.99**	**E**	**n/a**	**27.94**	**C**	n/a	37.59	E	**n/a**	**27.82**	**C**	**1.01**	**n/a**	**F**

NB = northbound; SB = southbound; WB = westbound; EB = eastbound; v/c = volume-to-capacity ratio; LOS = level of service; n/a = not applicable.

For the ramp analysis when the demand does not exceed capacity of the ramp or freeway, the LOS is based on density for the merge and diverge areas and v/c is not applicable. For ramps with a dedicated freeway lane, or if the freeway demand exceeds the capacity, the v/c is applied and the density is not applicable, as shown by the "n/a" in the table.

Bold indicates where the alternative reuse concept contributes traffic to or increases v/c or density at a location when compared to the No Project Alternative or the No Project Alternative contributes traffic to or increases v/c or density at a location when compared to Existing Conditions. Shaded cells indicate a significant impact where the alternative reuse concept contributes traffic and exceeds a threshold that was not exceeded in the 2030 No Project Alternative described in Section 4.2, or contributes to already deficient conditions where a threshold was exceeded in the 2030 No Project Alternative

Source: 2000 Highway Capacity Manual; Dowling, 2009

Table 17–7: Capacity Analysis of Roadway Segments

AM Roadway Segment Operations				Existing Condition			Future - 2030								
	Street Name	Location	LOS Threshold				No Project Alternative			Preferred Alternative			Concentration and Concentration Alternative		
				LOS	v/c	AM Volume	LOS	v/c	AM Volume	LOS	v/c	AM Volume	LOS	v/c	AM Volume
1	Clayton Rd	East of Treat Bl	E	C	0.62	3,026	**C**	**0.66**	**3,264**	C	0.65	3,175	**C**	**0.67**	**3,299**
2	Kirker Pass Rd	East of Concord Bl	D	C	0.41	1,998	**C**	**0.59**	**2,887**	C	0.55	2,696	**C**	**0.64**	**3,129**
3	Kirker Pass Rd	South of Myrtle Dr	D	C	0.41	2,003	**C**	**0.59**	**2,902**	C	0.55	2,704	**C**	**0.64**	**3,134**
4	Kirker Pass Rd	North of James Donlon Bl	E	C	0.53	1,722	C	0.37	1,221	**C**	**0.39**	**1,270**	C	0.34	1,119
5	Treat Bl	East of Oak Grove Rd	E	C	0.66	3,229	**C**	**0.73**	**3,569**	C	0.71	3,501	C	0.69	3,402
6	Ygnacio Valley Rd	East of Cowell Rd	E	C	0.97	3,299	**F**	**1.01**	**5,121**	D	0.99	5,036	**F**	**1.03**	**5,240**
7	Bailey Rd	East of Concord Bl	D	F	1.21	1,947	**F**	**1.36**	**2,183**	F	1.25	2,015	**F**	**1.42**	**2,286**
8	Clayton Rd	East of Market St	E	D	0.42	1,972	**D**	**0.53**	**2,483**	**D**	**0.53**	**2,497**	D	0.49	2,292
9	Concord Bl	West of Denkinger Rd	E	D	0.78	2,425	**F**	**1.00**	**3,100**	**F**	**1.05**	**3,274**	**F**	**1.21**	**3,767**
10	Denkinger Rd	Between Concord Bl and Clayton Rd	E	C	0.56	863	C	0.37	1,197	C	0.33	1,094	C	0.28	911
11	Monument Bl	West of Oak Grove Rd	E	C	0.53	2,601	**C**	**0.64**	**3,130**	**C**	**0.66**	**3,254**	**C**	**0.67**	**3,298**
12	Port Chicaco Hwy	North of Olivera Rd	E	E	0.98	1,664	**F**	**1.23**	**2,080**	**F**	**1.80**	**3,036**	**F**	**1.93**	**3,261**
13	Willow Pass Rd	North of Landana Dr	D	F	1.20	1,924	F	1.09	3,709	C	0.97	3,283	F	1.05	3,545
14	Willow Pass Rd	East of Farm Bureau Rd	E	C	0.58	1,895	**D**	**0.95**	**3,106**	D	0.87	2,855	D	0.89	2,903
15	Willow Pass Rd	East of Galindo St	E	D	0.52	1,574	**D**	**0.64**	**1,914**	**D**	**0.66**	**1,993**	D	0.64	1,912
16	Willow Pass Rd	Between Diamond Blvd and SR 242	E	D	0.52	2,372	**D**	**0.68**	**3,094**	**D**	**0.72**	**3,234**	**D**	**0.71**	**3,225**
17	Avila Rd	East of Willow Pass Rd	D	A	0.08	108	**B**	**0.49**	**1,647**	B	0.45	1,525	B	0.37	1,263
18	Evora Rd	East of Willow Pass Rd	D	D	0.83	1,069	B	0.69	2,343	**B**	**0.81**	**2,753**	**C**	**0.86**	**2,922**

PM Roadway Segment Operations				Existing Condition			Future - 2030								
	Street Name	Location	LOS Threshold				No Project Alternative			Preferred Alternative			Concentration and Concentration Alternative		
				LOS	V/C	PM Volume	LOS	V/C	PM Volume	LOS	V/C	PM Volume	LOS	V/C	PM Volume
1	Clayton Rd	East of Treat Bl	E	C	0.62	3,054	**D**	**0.78**	**3,857**	C	0.77	3,807	**D**	**0.79**	**3,877**
2	Kirker Pass Rd	East of Concord Bl	D	C	0.49	2,410	**C**	**0.77**	**3,799**	**D**	**0.85**	**4,177**	**D**	**0.87**	**4,281**
3	Kirker Pass Rd	South of Myrtle Dr	D	C	0.49	2,406	**D**	**0.78**	**3,834**	**D**	**0.86**	**4,217**	**D**	**0.88**	**4,325**
4	Kirker Pass Rd	North of James Donlon Bl	E	C	0.59	1,937	C	0.53	1,735	**C**	**0.58**	**1,884**	**C**	**0.57**	**1,877**
5	Treat Bl	East of Oak Grove Rd	E	D	0.79	3,871	**D**	**0.94**	**4,622**	**E**	**0.98**	**4,820**	**E**	**0.97**	**4,780**
6	Ygnacio Valley Rd	East of Cowell Rd	E	F	1.13	3,830	F	1.07	5,459	**F**	**1.08**	**5,500**	**F**	**1.11**	**5,655**
7	Bailey Rd	East of Concord Bl	D	F	1.08	1,733	**F**	**1.41**	**2,274**	F	1.28	2,060	**F**	**1.52**	**2,440**
8	Clayton Rd	East of Market St	E	D	0.54	2,556	**D**	**0.61**	**2,873**	D	0.60	2,792	D	0.59	2,764
9	Concord Bl	West of Denkinger Rd	E	C	0.62	1,916	**D**	**0.85**	**2,629**	**F**	**1.02**	**3,156**	**F**	**1.13**	**3,522**
10	Denkinger Rd	Between Concord Blvd and Clayton Rd	E	C	0.39	612	C	0.25	817	**C**	**0.28**	**909**	C	0.23	744
11	Monument Bl	West of Oak Grove Rd	E	C	0.60	2,960	**C**	**0.69**	**3,402**	**C**	**0.70**	**3,456**	**C**	**0.70**	**3,454**
12	Port Chicaco Hwy	North of Olivera Rd	E	D	0.92	1,562	**F**	**1.10**	**1,858**	**F**	**1.79**	**3,021**	**F**	**1.84**	**3,118**
13	Willow Pass Rd	North of Landana Dr	D	F	1.24	1,991	F	1.09	3,711	C	0.90	3,062	F	1.08	3,651
14	Willow Pass Rd	East of Farm Bureau Rd	E	C	0.60	1,964	**F**	**1.05**	**3,437**	D	0.79	2,587	D	0.86	2,826
15	Willow Pass Rd	East of Galindo St	E	D	0.64	1,912	**D**	**0.79**	**2,387**	**D**	**0.82**	**2,471**	D	0.78	2,362
16	Willow Pass Rd	Between Diamond Bl and SR 242	E	D	0.75	3,410	**D**	**0.90**	**4,060**	D	0.89	4,039	D	0.90	4,048
17	Avila Rd	East of Willow Pass Rd	D	A	0.05	62	**B**	**0.40**	**1,352**	**B**	**0.45**	**1,527**	**B**	**0.47**	**1,579**
18	Evora Rd	East of Willow Pass Rd	D	C	0.51	662	B	0.40	1,359	**B**	**0.79**	**2,663**	**B**	**0.76**	**2,580**

v/c = volume to capacity ratio; LOS = level of service

Bold indicates where the alternative reuse concept contributes traffic to or increases v/c at a location when compared to the No Project Alternative or the No Project Alternative contributes traffic to or increases v/c at a location when compared to Existing Conditions. Shaded cells indicate a significant impact where the alternative reuse concept contributes traffic and exceeds a threshold that was not exceeded in the 2030 No Project Alternative described in Section 4.2, or contributes to already deficient conditions where a threshold was exceeded in the 2030 No Project Alternative.

Source: 2000 Highway Capacity Manual; Florida DOT; Dowling, 2009

Table 17–8: Capacity Analysis of Intersections

Intersection	Control	Peak Hour	LOS Threshhold v/c	Existing		Future - 2030					
						No Project Alternative		Preferred Alternative		Concentration and Conservation Alternative	
				LOS	v/c or Delay (sec)[2]	LOS	v/c or Delay (sec)[2]	LOS	v/c or Delay (sec)[2]	LOS	v/c or Delay (sec)[2]
1 Arnold Industrial Wy/Port Chicago Hwy	Signal	AM	E	A	0.36	**D**	**0.82**	B	0.65	B	0.65
		PM	E	A	0.51	**B**	**0.68**	**C**	**0.74**	**C**	**0.76**
2 Port Chicago Hwy/Panoramic Dr	Signal	AM	E	A	0.43	**B**	**0.60**	**F**	**1.04**	**E**	**0.99**
		PM	E	A	0.42	**B**	**0.64**	**E**	**0.91**	**E**	**0.91**
3 Port Chicago Hwy/Olivera Rd	Signal	AM	E	B	0.69	**D**	**0.84**	**F**	**1.21**	**F**	**1.30**
		PM	E	D	0.82	**E**	**0.99**	**F**	**1.34**	**F**	**1.27**
4 Olivera Rd/Salvio St	One-way stop/signal (future project only)	AM	D	A	1.6	**C**	**15.2**	A	0.43	A	0.46
		PM	D	A	2.7	**A**	**5.5**	A	0.57	A	0.58
5 Clayton Wy/Willow Pass Rd	One-way stop/signal (future project only)	AM	E	A	1.3	**B**	**14.6**	B	0.67	B	0.65
		PM	E	A	1.8	**B**	**14.4**	A	0.54	A	0.58
6 Farm Bureau Rd/Willow Pass Rd	Signal	AM	E	A	0.59	**E**	**0.99**	B	0.64	B	0.66
		PM	E	B	0.70	**F**	**1.12**	F	1.04	F	1.10
7 Diamond Blvd/Willow Pass Rd	Signal	AM	E	A	0.35	**A**	**0.45**	A	0.44	A	0.44
		PM	E	B	0.62	**C**	**0.77**	**C**	**0.80**	**C**	**0.80**
8 Market St/Concord Av[1]	Signal	AM	E	F	1.04	**F**	**1.11**	D	0.82	D	0.81
		PM	E	F	1.46	**F**	**1.60**	E	0.93	E	0.92
9 Oakland Av/Clayton Rd	Signal	AM	E	A	0.52	**B**	**0.64**	B	0.63	B	0.63
		PM	E	B	0.67	**C**	**0.71**	B	0.69	B	0.70
10 Beechwood Dr/Landana Dr	All-way Stop	AM	E	B	11.8	**C**	**18.2**	**D**	**28.5**	**F**	**59.7**
		PM	E	A	9.7	**B**	**11.9**	**C**	**17.3**	**E**	**38.1**
11 West St/Concord Bl	Signal	AM	E	A	0.53	**B**	**0.67**	**D**	**0.89**	**C**	**0.77**
		PM	E	A	0.45	**B**	**0.64**	**B**	**0.66**	**B**	**0.70**
12 West St/Clayton Rd	Signal	AM	E	B	0.61	**C**	**0.76**	B	0.64	B	0.68
		PM	E	A	0.43	**A**	**0.54**	**A**	**0.55**	**A**	**0.55**
13 Denkinger Rd/Concord Bl	Signal	AM	E	A	0.58	**B**	**0.67**	**C**	**0.78**	**C**	**0.79**
		PM	E	A	0.54	**B**	**0.66**	**C**	**0.71**	**C**	**0.78**
14 Clayton Rd/Treat Bl	Signal	AM	E	B	0.64	**D**	**0.85**	C	0.74	C	0.78
		PM	E	C	0.71	**E**	**0.90**	**E**	**0.92**	D	0.90
15 Cowell Rd/Treat Bl	Signal	AM	E	D	0.86	**E**	**0.98**	E	0.91	E	0.91
		PM	E	C	0.75	**E**	**0.92**	E	0.92	E	0.91
16 Oak Grove Rd/Treat Bl	Signal	AM	E	F	1.33	**F**	**1.51**	**F**	**1.53**	**F**	**1.53**
		PM	E	E	0.93	**F**	**1.15**	F	1.14	F	1.15
17 Oak Rd/Treat Bl	Signal	AM	E	C	0.77	**F**	**1.07**	F	1.03	F	1.07
		PM	E	E	0.92	**F**	**1.09**	**F**	**1.21**	**F**	**1.19**
18 Bailey Rd/Myrtle Dr	One-way stop/signal (future project	AM	D	A	1.7	A	0.55	A	0.45	A	0.55
		PM	D	A	1.5	A	0.54	A	0.41	**A**	**0.58**
19 Bailey Rd/Concord Bl	Signal	AM	E	A	0.60	**B**	**0.67**	**C**	**0.71**	**C**	**0.78**
		PM	E	A	0.52	**B**	**0.66**	**B**	**0.69**	**C**	**0.73**
20 Bailey Rd/Clayton Rd	Signal	AM	E	B	0.63	B	0.63	B	0.63	**B**	**0.64**
		PM	E	A	0.45	**A**	**0.54**	A	0.53	A	0.54
21 Kirker Pass Rd/Clearbrook Dr	Signal	AM	E	A	0.47	**B**	**0.64**	A	0.57	B	0.64
		PM	E	A	0.46	**B**	**0.67**	**C**	**0.73**	**B**	**0.68**
22 Kirker Pass Rd/Concord Blvd[1]	Signal	AM	E	B	0.65	**D**	**0.88**	D	0.83	D	0.85
		PM	E	B	0.69	**E**	**0.93**	**E**	**0.96**	**E**	**0.97**
23 Clayton Rd/Ygnacio Valley Rd	Signal	AM	E	A	0.57	**C**	**0.71**	B	0.68	C	0.70
		PM	E	B	0.63	**D**	**0.84**	D	0.80	D	0.83
24 Cowell Rd/Ygnacio Valley Rd	Signal	AM	E	D	0.83	**D**	**0.90**	C	0.80	D	0.83
		PM	E	E	0.95	**F**	**1.01**	E	0.95	E	0.98
25 Oak Grove Rd/Ygnacio Valley Rd	Signal	AM	F	C	0.78	**F**	**1.04**	F	1.03	**F**	**1.09**
		PM	F	D	0.89	**F**	**1.32**	F	1.31	F	1.31
26 Galindo St/Willow Pass Rd	Signal	AM	E	A	0.55	**C**	**0.75**	**C**	**0.76**	C	0.73
		PM	E	C	0.75	**E**	**0.95**	E	0.94	D	0.88
27 Market St/Willow Pass Rd	Signal	AM	E	A	0.56	**B**	**0.68**	B	0.63	B	0.66
		PM	E	B	0.64	**B**	**0.68**	**C**	**0.75**	**C**	**0.74**
28 I-680 NB ramp/Willow Pass Rd	Signal	AM	E	B	0.66	**C**	**0.74**	C	0.74	C	0.74
		PM	E	C	0.78	**D**	**0.87**	D	0.85	D	0.85
29 I-680 SB ramp/Willow Pass Rd	Signal	AM	E	A	0.55	**B**	**0.61**	A	0.59	A	0.58
		PM	E	A	0.49	**A**	**0.55**	A	0.54	A	0.52
30 Market St/Clayton Rd	Signal	AM	E	B	0.64	**F**	**1.02**	E	0.95	E	0.95
		PM	E	B	0.65	**C**	**0.73**	C	0.73	C	0.73
31 Commerce Av - SR 242 SB/Concord Av	Signal	AM	E	B	0.63	**F**	**1.05**	E	0.98	E	1.00
		PM	E	D	0.83	**F**	**1.20**	F	1.15	F	1.14
32 Diamond Bl/Concord Av	Signal	AM	E	A	0.53	**A**	**0.58**	**A**	**0.59**	**A**	**0.59**
		PM	E	C	0.71	**D**	**0.80**	**D**	**0.82**	**D**	**0.82**
33 Monument Bl/Oak Grove Rd	Signal	AM	E	A	0.51	**C**	**0.77**	**C**	**0.79**	**C**	**0.80**
		PM	E	A	0.57	**C**	**0.77**	**C**	**0.78**	C	0.77
34 Walnut Bl/Ygnacio Valley Rd	Signal	AM	F	C	0.78	**E**	**0.93**	E	0.91	E	0.92
		PM	F	F	1.00	**F**	**1.13**	**F**	**1.15**	**F**	**1.14**
35 Bancroft Rd/Ygnacio Valley Rd	Signal	AM	F	D	0.90	**E**	**0.98**	E	0.94	E	0.98
		PM	F	C	0.70	**D**	**0.81**	**D**	**0.84**	**D**	**0.84**
36 Alberta Wy/Ygnacio Valley Rd	Signal	AM	E	D	0.82	**E**	**0.96**	D	0.90	E	0.93
		PM	E	D	0.82	**D**	**0.87**	D	0.83	D	0.85
37 Ayers Rd/Ygnacio Valley Rd	Signal	AM	E	E	0.92	**F**	**1.06**	E	0.97	F	1.02
		PM	E	D	0.81	C	0.78	C	0.72	C	0.74
38 North Main St/Geary Rd	Signal	AM	F	C	0.80	**E**	**0.95**	**F**	**1.08**	**F**	**1.03**
		PM	F	E	0.93	**F**	**1.17**	**F**	**1.20**	F	1.16
39 Bates/Port Chicago Hwy	Signal	AM	E	A	0.52	**C**	**0.72**	C	0.71	C	0.70
		PM	E	C	0.74	**C**	**0.80**	C	0.80	C	0.79
40 Bancroft Rd/Treat Blvd	Signal	AM	F	D	0.82	**E**	**0.97**	E	0.95	**E**	**0.99**
		PM	F	D	0.89	**F**	**1.13**	**F**	**1.14**	**F**	**1.15**
41 Kirker Pass Rd/Myrtle Dr	Signal	AM	E	A	0.37	**A**	**0.49**	A	0.44	A	0.48
		PM	E	A	0.56	**C**	**0.78**	**C**	**0.79**	**C**	**0.79**
42 Burskirk Av - NB I-680 off-ramp/Treat Bl	Signal	AM	E	F	1.33	F	1.33	F	1.33	**F**	**1.34**
		PM	E	F	1.57	**F**	**1.62**	**F**	**1.70**	**F**	**1.66**
43 North Main St/Sunnyvale Av - SB I-680 ramps	Signal	AM	F	E	0.93	**F**	**1.16**	**F**	**1.20**	F	1.09
		PM	F	C	0.79	**F**	**1.16**	F	1.12	F	1.12
44 NB I-680 off-ramp/Ygnacio Valley Rd	Signal	AM	E	F	1.27	**F**	**1.32**	**F**	**1.39**	**F**	**1.38**
		PM	E	F	1.26	**F**	**1.49**	F	1.49	F	1.47
45 SB I-680 on-ramp/Ygnacio Valley Rd	Signal	AM	E	B	0.62	**C**	**0.72**	B	0.70	C	0.72
		PM	E	A	0.53	**A**	**0.57**	**A**	**0.58**	A	0.57
46 Willow Pass Rd/Evora Rd (east) - SR 4 WB off-ramp [in Pittsburg]	Signal	AM	mid-D 0.85	A	0.40	**F**	**1.02**	F	1.01	**F**	**1.04**
		PM	mid-D 0.85	A	0.31	**A**	**0.59**	**D**	**0.83**	**D**	**0.83**
47 Willow Pass Rd/Evora Rd (west) [at project site]	Signal	AM	mid-D 0.85	A	0.55	**F**	**1.28**	F	1.16	**F**	**1.31**
		PM	mid-D 0.85	A	0.33	**C**	**0.72**	**F**	**1.27**	**F**	**1.28**
48 Willow Pass Rd/Avila Rd	One-way stop/signal (future project	AM	mid-D 0.85	A	0.2	**F**	**OVFL**	**F**	**1.51**	**F**	**1.53**
		PM	mid-D 0.85	A	0.1	**F**	**OVFL**	**F**	**1.49**	**F**	**1.49**
49 Bailey Rd/Willow Pass Rd	Signal	AM	E	A	0.42	**D**	**0.86**	**D**	**0.88**	**D**	**0.89**
		PM	E	B	0.63	**C**	**0.79**	**E**	**0.96**	**E**	**0.95**

Intersection	Control	Peak Hour	LOS Threshhold	v/c	Existing		Future - 2030					
							No Project Alternative		Preferred Alternative		Concentration and Conservation Alternative	
					LOS	v/c or Delay (sec)[2]	LOS	v/c or Delay (sec)[2]	LOS	v/c or Delay (sec)[2]	LOS	v/c or Delay (sec)[2]
50 San Marco Bl/W Leland Rd	Signal	AM	mid-D	0.85	A	0.52	**C**	**0.75**	**D**	**0.90**	**E**	**0.97**
		PM	mid-D	0.85	A	0.28	**C**	**0.71**	**C**	**0.78**	**C**	**0.78**
51 Bailey Rd/W Leland Rd	Signal	AM	E		B	0.60	**E**	**0.93**	D	0.89	D	0.88
		PM	E		A	0.45	**D**	**0.87**	**E**	**0.92**	**D**	**0.89**
52 Railroad Ave & W Leland Rd	Signal	AM	mid-D	0.85	B	0.63	**E**	**0.94**	**E**	**0.98**	E	0.93
		PM	mid-D	0.85	E	0.98	**F**	**1.35**	F	1.31	F	1.33
53 Railroad Av/Buchanan Rd	Signal	AM	mid-D	0.85	A	0.54	**B**	**0.65**	**B**	**0.66**	B	0.65
		PM	mid-D	0.85	C	0.70	**C**	**0.77**	C	0.74	C	0.74
54 Kirker Pass Rd/James Donlon Bl Ext [future extension of James Donlon Bl]	Signal	AM	E		A	0.35	**F**	**1.04**	E	0.99	F	1.04
		PM	E		A	0.40	**F**	**1.05**	**F**	**1.09**	**F**	**1.10**
55 San Marco Bl - Willow Pass Rd/SR 4 EB ramps	Signal	AM	mid-D	0.85	A	0.30	**A**	**0.58**	**C**	**0.70**	**B**	**0.68**
		PM	mid-D	0.85	A	0.39	**C**	**0.73**	**E**	**0.99**	**E**	**0.94**
56 Bailey Rd/SR 4 EB ramps - BART access	Signal	AM	E		A	0.44	**B**	**0.65**	**C**	**0.78**	B	0.65
		PM	E		F	1.12	**F**	**1.49**	**F**	**1.87**	**F**	**1.67**
57 Bailey Rd/SR 4 WB on-ramp - Canal Rd	Signal	AM	E		A	0.54	**D**	**0.87**	C	0.79	C	0.74
		PM	E		B	0.60	**D**	**0.85**	**E**	**0.94**	**E**	**0.94**
58 Railroad Av/SR 4 WB on ramp - California Av	Signal	AM	mid-D	0.85	A	0.54	**B**	**0.68**	**C**	**0.71**	B	0.68
		PM	mid-D	0.85	A	0.58	**C**	**0.71**	B	0.64	B	0.67
59 Railroad Av/SR 4 EB ramps	Signal	AM	mid-D	0.85	A	0.53	**C**	**0.74**	B	0.65	B	0.66
		PM	mid-D	0.85	B	0.60	**D**	**0.81**	C	0.76	**D**	**0.82**
60 Willow Pass Rd/SR 4 WB ramps	All-way stop/signal (future project only)	AM	mid-D	0.85	C	19.9	**F**	**345.0**	**E**	**0.98**	**E**	**0.93**
		PM	mid-D	0.85	B	13	**F**	**105.3**	**B**	**0.70**	**C**	**0.71**
61 Willow Pass Rd/SR 4 EB ramps	All-way stop/signal (future project only)	AM	mid-D	0.85	D	26.1	**F**	**276.2**	**E**	**0.96**	**E**	**0.91**
		PM	mid-D	0.85	B	14.5	**F**	**163.3**	**B**	**0.69**	**B**	**0.66**
62 Port Chicago Hwy/SR 4 WB ramps	Signal	AM	E		A	0.49	**C**	**0.71**	B	0.69	B	0.69
		PM	E		A	0.47	**B**	**0.64**	**E**	**0.90**	**E**	**0.94**

[1] Analysis performed with CCTALOS software program v. 2.35. Otherwise, CCTALOS was applied in the Traffix software program.

[2] v/c denotes volume-to-capacity ratio and is used for signalized intersections; average vehicle delay in seconds is used for unsignalized intersections.
v/c = volume to capacity ratio; LOS = level of service; OVFL = overflow conditions where the volume exceeds the capacity resulting in unstable overflow conditions.

Bold indicates where the alternative reuse concept contributes traffic to or increases v/c at a location when compared to the No Project Alternative or the No Project Alternative contributes traffic to or increases v/c at a location when compared to Existing Conditions. Shaded cells indicate a significant impact where the alternative reuse concept contributes traffic and exceeds a threshold that was not exceeded in the 2030 No Project Alternative described in Section 4.2 or contributes to already deficient conditions where a threshold was exceeded in the 2030 No Project Alternative.

Source: CCTA; 2000 Highway Capacity Manual; Dowling, 2009.

Table 17–9: Analysis of Traffic Service Objectives

	Roadway	Location	Dir	Peak Hour	Significance Thresholds			Existing Condition			Future - 2030								
											No Project Alternative			Preferred Alternative			Concentration and Concentration Alternative		
					Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO
	Central County																		
1	Clayton Rd	East of Treat Bl	NB	AM	15	2.0	1.2	34	1.0	1.09	34	1.0	1.10	34	1.0	1.10	34	1.0	1.10
			NB	PM	15	2.0	1.2	35	1.0	1.19	35	1.0	1.25	35	1.0	1.25	35	1.0	**1.24**
			SB	AM	15	2.0	1.2	35	1.0	1.13	35	1.0	1.26	35	1.0	**1.24**	35	1.0	**1.24**
			SB	PM	15	2.0	1.2	35	1.0	1.14	35	1.0	1.14	35	1.0	1.14	35	1.0	1.14
2	Kirker Pass Rd	East of Concord Bl	EB	AM	15	2.0	1.2	40	1.0	1.12	40	1.0	1.13	40	1.0	**1.12**	40	1.0	**1.12**
			EB	PM	15	2.0	1.2	40	1.0	1.12	**39**	1.0	**1.04**	39	1.0	**1.03**	39	1.0	**1.03**
			WB	AM	15	2.0	1.2	39	1.0	1.07	**38**	**1.1**	**1.02**	39	1.0	1.02	38	1.0	1.02
			WB	PM	15	2.0	1.2	40	1.0	1.18	40	1.0	**1.16**	40	1.0	**1.13**	40	1.0	**1.13**
3	Treat Bl	East of Oak Grove Rd	EB	AM	15	2.0	1.2	30	1.0	1.17	30	1.0	1.17	30	1.0	**1.13**	30	1.0	**1.16**
			EB	PM	15	2.0	1.2	30	1.0	1.12	30	1.0	**1.10**	30	1.0	1.10	30	1.0	1.11
			WB	AM	15	2.0	1.2	30	1.0	1.08	**29**	1.0	**1.06**	29	1.0	1.07	29	1.0	1.06
			WB	PM	15	2.0	1.2	30	1.0	1.22	30	1.0	1.22	30	1.0	**1.20**	30	1.0	**1.19**
4	Ygnacio Valley F	East of Cowell Rd	EB	AM	15	2.0	1.2	35	1.0	1.12	35	1.0	1.12	35	1.0	**1.10**	35	1.0	**1.11**
			EB	PM	15	2.0	1.2	29	1.2	1.11	35	1.0	**1.06**	35	1.0	1.06	35	1.0	1.06
			WB	AM	15	2.0	1.2	24	1.4	1.07	34	1.0	**1.05**	35	1.0	1.05	34	1.0	**1.04**
			WB	PM	15	2.0	1.2	35	1.0	1.19	35	1.0	**1.17**	35	1.0	**1.14**	35	1.0	**1.14**
5	I-680	South of Monument Bl	NB	AM	30	2.0	1.4	44	1.4	1.15	**41**	**1.5**	**1.02**	**38**	**1.6**	1.02	**37**	**1.6**	**1.01**
			NB	PM	30	2.0	1.4	37	1.6	1.15	**28**	**2.1**	**1.02**	30	2.0	1.03	29	2.1	1.03
			SB	AM	30	2.0	1.4	37	1.6	1.13	**27**	**2.2**	**1.04**	29	2.1	**1.03**	29	2.1	1.04
			SB	PM	30	2.0	1.4	37	1.6	1.18	**32**	**1.9**	**1.06**	**28**	**2.1**	1.06	**28**	**2.1**	1.06
6	I-680	North of Monument Bl	NB	AM	30	2.0	1.4	57	1.1	1.17	**49**	**1.2**	**1.03**	**45**	**1.3**	**1.02**	**45**	**1.3**	**1.02**
			NB	PM	30	2.0	1.4	46	1.4	1.15	**29**	**2.0**	**1.03**	30	2.0	1.04	30	2.0	1.03
			SB	AM	30	2.0	1.4	44	1.5	1.13	**25**	**2.4**	**1.02**	27	2.2	1.02	28	2.2	1.03
			SB	PM	30	2.0	1.4	46	1.4	1.18	**30**	**2.0**	**1.04**	**26**	**2.3**	**1.03**	**26**	**2.3**	**1.03**
7	I-680	North of SR 242	NB	AM	30	2.0	1.4	41	1.5	1.18	**39**	**1.6**	**1.01**	41	1.5	1.01	40	1.5	1.01
			NB	PM	30	2.0	1.4	49	1.2	1.14	**43**	**1.4**	**1.01**	43	1.4	1.03	43	1.4	1.03
			SB	AM	30	2.0	1.4	50	1.2	1.12	**35**	**1.7**	**1.04**	36	1.7	1.04	**34**	1.7	1.04
			SB	PM	30	2.0	1.4	30	2.0	1.17	**24**	**2.5**	**1.07**	**22**	**2.8**	1.08	**22**	**2.7**	1.07
8	I-680	North of Willow Pass Rd	NB	AM	30	2.0	1.4	56	1.1	1.18	56	1.1	**1.08**	57	1.1	1.09	57	1.1	1.09
			NB	PM	30	2.0	1.4	55	1.1	1.15	**50**	**1.2**	**1.11**	52	1.1	1.11	52	1.2	1.11
			SB	AM	30	2.0	1.4	51	1.2	1.14	**43**	**1.4**	**1.05**	45	1.3	1.05	44	1.4	1.05
			SB	PM	30	2.0	1.4	52	1.2	1.17	52	1.2	**1.06**	**51**	1.2	1.08	**51**	1.2	1.08
9	I-680	North of Concord Av	NB	AM	30	2.0	1.4	44	1.5	1.16	**41**	1.5	**1.06**	43	1.4	**1.05**	43	1.4	**1.05**
			NB	PM	30	2.0	1.4	41	1.6	1.14	**28**	**2.1**	**1.02**	29	2.1	1.03	29	2.1	1.04
			SB	AM	30	2.0	1.4	31	2.1	1.12	**22**	**2.7**	**1.03**	24	2.5	1.03	23	2.6	1.03
			SB	PM	30	2.0	1.4	43	1.5	1.18	**38**	**1.6**	**1.11**	39	1.5	1.11	39	1.5	1.11
10	I-680	North of SR 4	NB	AM	30	2.0	1.4	43	1.4	1.16	**42**	**1.6**	**1.06**	44	1.5	1.06	44	1.5	1.07
			NB	PM	30	2.0	1.4	50	1.2	1.13	**42**	**1.6**	**1.03**	**41**	1.6	1.03	**40**	1.6	1.03
			SB	AM	30	2.0	1.4	45	1.3	1.12	**41**	**1.6**	**1.01**	**36**	**1.8**	1.01	**37**	**1.8**	1.01
			SB	PM	30	2.0	1.4	42	1.4	1.16	**38**	**1.7**	**1.02**	42	1.6	1.02	41	1.6	1.02
11	SR 242	North of I-680	NB	AM	30	2.0	1.4	60	1.0	1.14	**59**	1.0	1.14	**56**	**1.1**	**1.13**	**57**	**1.1**	**1.13**
			NB	PM	30	2.0	1.4	51	1.2	1.16	**36**	**1.7**	**1.12**	38	1.6	1.12	38	1.6	**1.10**
			SB	AM	30	2.0	1.4	29	2.0	1.14	**16**	**3.7**	**1.09**	19	3.2	**1.08**	20	3.0	1.09
			SB	PM	30	2.0	1.4	53	1.1	1.19	**36**	**1.6**	**1.15**	**29**	**2.1**	**1.11**	**30**	**2.0**	**1.11**
12	SR 242	North of Willow Pass Rd	NB	AM	30	2.0	1.4	60	1.0	1.16	**58**	1.0	1.18	**54**	**1.1**	**1.15**	**54**	**1.1**	**1.15**
			NB	PM	30	2.0	1.4	52	1.2	1.16	**32**	**1.9**	**1.12**	34	1.8	**1.11**	34	1.8	**1.10**
			SB	AM	30	2.0	1.4	49	1.2	1.15	**26**	**2.3**	**1.09**	29	2.0	**1.08**	30	2.0	1.09
			SB	PM	30	2.0	1.4	59	1.0	1.20	**43**	**1.4**	**1.14**	**40**	**1.5**	**1.10**	**41**	**1.5**	**1.10**
13	SR 242	North of Concord Av	NB	AM	30	2.0	1.4	65	1.0	1.16	**54**	**1.1**	1.19	**47**	**1.3**	**1.16**	**48**	**1.3**	**1.16**
			NB	PM	30	2.0	1.4	37	1.7	1.17	**16**	**3.7**	**1.14**	17	3.5	**1.13**	17	3.5	**1.12**
			SB	AM	30	2.0	1.4	41	1.6	1.16	**14**	**4.2**	**1.10**	16	3.7	1.10	17	3.6	1.10
			SB	PM	30	2.0	1.4	62	1.0	1.20	**47**	**1.3**	**1.14**	**41**	**1.5**	**1.10**	**43**	**1.4**	**1.10**
14	SR 242	North of Solano Wy	NB	AM	30	2.0	1.4	65	1.0	1.15	**59**	1.0	1.19	**56**	**1.1**	**1.16**	**57**	**1.1**	**1.16**
			NB	PM	30	2.0	1.4	59	1.1	1.17	**45**	**1.3**	**1.14**	**44**	**1.4**	**1.13**	45	1.3	**1.12**
			SB	AM	30	2.0	1.4	60	1.1	1.16	**45**	**1.3**	**1.10**	**44**	1.3	1.11	46	1.3	1.11
			SB	PM	30	2.0	1.4	65	1.0	1.19	**57**	**1.1**	**1.15**	**54**	1.1	**1.11**	**54**	1.1	**1.11**
15	SR 242	North of Olivera Rd	NB	AM	30	2.0	1.4	65	1.0	1.15	**59**	1.0	1.19	59	1.0	1.19	59	1.0	**1.18**
			NB	PM	30	2.0	1.4	62	1.0	1.17	**50**	**1.2**	**1.14**	**49**	1.2	**1.13**	50	1.2	**1.12**
			SB	AM	30	2.0	1.4	54	1.2	1.16	**30**	**2.0**	**1.10**	33	1.8	1.11	34	1.8	1.11
			SB	PM	30	2.0	1.4	64	1.0	1.19	**52**	**1.2**	**1.14**	**49**	1.2	**1.12**	**50**	1.2	**1.11**
16	SR 4	East of I-680	EB	AM	30	2.0	1.4	63	1.0	1.12	64	1.0	**1.11**	**63**	1.0	**1.10**	**63**	1.0	**1.09**
			EB	PM	30	2.0	1.4	32	2.0	1.18	39	1.7	1.29	41	1.6	1.29	42	1.6	1.30
			WB	AM	30	2.0	1.4	31	2.1	1.19	31	2.1	1.32	34	1.9	**1.31**	34	1.9	**1.31**
			WB	PM	30	2.0	1.4	61	1.1	1.18	64	1.0	1.26	**60**	**1.1**	**1.25**	**61**	**1.1**	**1.25**
17	SR 4	East of Solano Wy	EB	AM	30	2.0	1.4	65	1.0	1.12	65	1.0	**1.10**	65	1.0	**1.08**	**64**	1.0	**1.08**
			EB	PM	30	2.0	1.4	62	1.1	1.19	**47**	**1.4**	1.29	50	1.3	1.29	50	1.3	1.30
			EB	AM	30	2.0	1.4	59	1.1	1.19	**37**	**1.7**	1.30	40	1.6	1.31	40	1.6	1.30
			EB	PM	30	2.0	1.4	65	1.0	1.18	65	1.0	1.27	**63**	1.0	1.27	**64**	1.0	1.27
18	SR 4	East of SR 242	EB	AM	24	2.5	1.4	65	1.0	1.14	**64**	1.0	1.15	64	1.0	1.15	64	1.0	1.15
			EB	PM	24	2.5	1.4	55	1.2	1.18	**25**	**2.6**	1.24	29	2.3	1.24	29	2.2	1.24
			WB	AM	24	2.5	1.4	59	1.1	1.20	**13**	**5.0**	1.32	20	3.2	1.37	19	3.4	1.33
			WB	PM	24	2.5	1.4	65	1.0	1.20	**63**	1.0	1.33	**62**	1.0	1.37	**61**	**1.1**	1.36
19	SR 4	East of Port Chicago Hwy	EB	AM	24	2.5	1.4	64	1.0	1.10	**61**	**1.1**	**1.05**	**58**	1.1	**1.03**	**58**	1.1	**1.03**
			EB	PM	24	2.5	1.4	26	2.5	1.01	**6**	**10.5**	1.01	9	7.5	1.01	9	7.3	1.01
			WB	AM	24	2.5	1.4	19	3.5	1.01	**3**	**24.3**	1.01	6	11.4	1.01	6	11.6	**1.00**
			WB	PM	24	2.5	1.4	61	1.1	1.21	**52**	**1.3**	**1.06**	**48**	1.3	**1.02**	**48**	1.3	**1.03**
20	SR 4	East of Willow Pass Rd	EB	AM	24	2.5	1.4	65	1.0	1.09	**64**	1.0	**1.06**	**60**	**1.1**	**1.04**	**60**	**1.1**	**1.05**
			EB	PM	24	2.5	1.4	49	1.3	1.03	**32**	**2.1**	1.04	**19**	**3.4**	**1.03**	**20**	**3.2**	**1.02**
			WB	AM	24	2.5	1.4	43	1.5	1.01	**23**	**2.9**	1.03	**13**	**4.9**	**1.01**	**13**	**4.9**	**1.01**
			WB	PM	24	2.5	1.4	65	1.0	1.10	**61**	**1.1**	**1.02**	**55**	**1.2**	**1.01**	**55**	**1.2**	**1.01**

Table 17–9: Analysis of Traffic Service Objectives

	Roadway	Location	Dir	Peak Hour	Significance Thresholds			Existing Condition			Future - 2030								
											No Project Alternative			Preferred Alternative			Concentration and Concentration Alternative		
					Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO	Avg Speed	Delay Index	AVO
East County (Note that for LOS TSO, the results are shown in the Roadway LOS Table 4-25 and Intersection LOS Table 4-26																			
21	SR 4	East of San Marco Bl	EB	AM	n/a	2.5	1.2	n/a	1.0	1.06	n/a	**1.1**	**1.01**	n/a	**1.2**	**1.00**	n/a	**1.2**	**1.00**
			EB	PM	n/a	2.5	1.2	n/a	1.7	1.01	n/a	**3.1**	1.01	n/a	**5.8**	1.01	n/a	**5.8**	1.01
			WB	AM	n/a	2.5	1.2	n/a	1.8	1.00	n/a	**5.3**	1.01	n/a	**8.3**	1.01	n/a	**7.7**	1.01
			WB	PM	n/a	2.5	1.2	n/a	1.0	1.07	n/a	**1.2**	**1.01**	n/a	**1.4**	**1.00**	n/a	**1.4**	**1.00**
22	SR 4	East of Bailey Rd	EB	AM	n/a	2.5	1.2	n/a	1.0	1.05	n/a	**1.1**	**1.00**	n/a	**1.3**	1.00	n/a	**1.3**	1.00
			EB	PM	n/a	2.5	1.2	n/a	1.3	1.00	n/a	**2.4**	1.01	n/a	**2.9**	1.01	n/a	**2.9**	1.01
			WB	AM	n/a	2.5	1.2	n/a	1.4	1.01	n/a	**4.0**	1.01	n/a	**5.1**	1.01	n/a	**5.0**	1.01
			WB	PM	n/a	2.5	1.2	n/a	1.1	1.09	n/a	**1.3**	**1.00**	n/a	**1.4**	1.01	n/a	**1.4**	1.01
23	SR 4	East of Railroad Av	EB	AM	n/a	2.5	1.2	n/a	1.2	1.11	n/a	1.1	**1.02**	n/a	**1.2**	**1.01**	n/a	1.1	**1.01**
			EB	PM	n/a	2.5	1.2	n/a	2.7	1.17	n/a	1.8	**1.01**	n/a	**2.0**	**1.00**	n/a	**2.0**	**1.00**
			WB	AM	n/a	2.5	1.2	n/a	2.5	1.18	n/a	2.0	**1.01**	n/a	**2.4**	1.01	n/a	**2.4**	1.01
			WB	PM	n/a	2.5	1.2	n/a	1.1	1.17	n/a	1.1	**1.00**	n/a	1.1	1.01	n/a	1.1	1.01
24	Kirker Pass Rd	East of James Donlon Bl	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			WB	AM	n/a	2.0	n/a	n/a	1.2	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
25	Railroad Av	North of Buchanan Rd	NB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			NB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			SB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			SB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
26	Bailey Rd (propo	South of West Leland Rd	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.4**	n/a	n/a	1.4	n/a	n/a	1.4	n/a
			WB	AM	n/a	2.0	n/a	n/a	1.1	n/a	n/a	**4.0**	n/a	n/a	3.8	n/a	n/a	3.8	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.1**	n/a	n/a	**1.2**	n/a	n/a	1.1	n/a
27	Bailey Rd	North of W Leland Rd	NB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.8**	n/a	n/a	1.2	n/a	n/a	1.4	n/a
			NB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			SB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			SB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
28	Buchanan Rd	East of Railroad Av	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.2	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			WB	AM	n/a	2.0	n/a	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
29	Evora Rd	West of Willow Pass Rd (P	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			WB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.2**	n/a	n/a	1.1	n/a	n/a	1.0	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
30	James Donlon Bl Ext (proposed)	East of Kirker Pass Rd	EB	AM	n/a	2.0	n/a	n/a	-	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	-	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			WB	AM	n/a	2.0	n/a	n/a	-	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			WB	PM	n/a	2.0	n/a	n/a	-	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
31	Leland Rd	West of Railroad Av	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.1**	n/a	n/a	1.1	n/a	n/a	1.1	n/a
			WB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.3**	n/a	n/a	**1.5**	n/a	n/a	1.1	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
32	Leland Rd	West of Bailey Road	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.1**	n/a	n/a	1.1	n/a	n/a	1.1	n/a
			WB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**2.8**	n/a	n/a	2.7	n/a	n/a	1.8	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
33	Leland Rd (proposed)	East of San Marco Bl	EB	AM	n/a	2.0	n/a	n/a	-	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	-	n/a	n/a	1.2	n/a	n/a	**2.3**	n/a	n/a	**2.1**	n/a
			WB	AM	n/a	2.0	n/a	n/a	-	n/a	n/a	**3.5**	n/a	n/a	**5.8**	n/a	n/a	**4.3**	n/a
			WB	PM	n/a	2.0	n/a	n/a	-	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
34	Avila Rd	West of San Marco Bl	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	**1.1**	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**1.1**	n/a	n/a	**12.8**	n/a	n/a	**14.2**	n/a
			WB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**2.8**	n/a	n/a	**18.6**	n/a	n/a	**18.1**	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	**2.7**	n/a	n/a	**2.5**	n/a
35	Willow Pass Rd	East of Evora Rd	EB	AM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a
			EB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	**2.0**	n/a	n/a	**4.2**	n/a	n/a	**4.0**	n/a
			WB	AM	n/a	2.0	n/a	n/a	1.1	n/a	n/a	**5.4**	n/a	n/a	**7.6**	n/a	n/a	**7.6**	n/a
			WB	PM	n/a	2.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a	n/a	1.0	n/a

Dir = direction, NB = northbound, SB = southbound, EB = eastbound, WB = westbound; Avg = average; AVO = average vehicle occupancy, which represents the average number of persons per vehicle; LOS = level of service.
n/a = specific TSO does not apply to to the facility per the applicable Action Plan for Routes of Regional Significance. Not all TSOs apply to all Routes of Regional Significance. Refer to Section 4.2.1.2 for more information on TSOs.
- = Road segment did not exist at date of analysis.

Bold indicates where the alternative reuse concept decreases average speed, increases the delay index, and/or reduces AVO at a location when compared to the No Project Alternative or the No Project Alternative decreases average speed, increases the delay index, and/or reduces AVO at a location when compared to Existing Conditions. Shaded cells indicate a significant impact where the alternative reuse concept contributes traffic and exceeds a threshold that was not exceeded in the 2030 No Project Alternative described in Section 4.2, or contributes to already deficient conditions where a threshold was exceeded in the 2030 No Project Alternative.

Source: CCTA Decennial Model forecasts; Dowling, 2009

17.1.5 Transportation Impacts of the Preferred Alternative

Potentially significant cumulative transportation impacts resulting from the development of the Preferred Alternative that remain significant after mitigation are presented first. These would be followed by potentially significant transportation impacts that are not significant after mitigation; however, there are no such impacts.

Cumulative Impact Transportation 1: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on six freeway segments:

1. **SR 4 east of Willow Pass Road eastbound (PM peak hour)**
2. **SR 4 east of Willow Pass Road westbound (AM and PM peak hour)**
3. **SR 4 east of San Marco Boulevard eastbound (PM peak hour)**
4. **I-680 north of SR 242 southbound (PM peak hour)**
5. **I-680 north of SR 4 southbound (AM peak hour)**
6. **SR 4 east of SR 242 westbound (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 17-3 and 17-4, these six freeway segments would exceed the established performance threshold with the traffic from the Preferred Alternative. Therefore, ~~This~~this impact is considered to be potentially significant.

Cumulative Mitigation Measure Transportation 1: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish

**an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the CCTA. An Assembly Bill (AB) 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this cumulative impact will remain significant and unavoidable.~~

Peak hour operations on the six freeway segments are projected to be deficient with buildout traffic from the Preferred Alternative. Improvements that have been included in the Contra Costa County Authority (CCTA) traffic model used to evaluate these freeway segments are listed in Section 4.3.4. Additional improvements beyond those identified in Section 4.3.4 have not been planned or programmed by the agencies responsible for the freeway network at this time. Future development will be required to pay a fair share of the cost of currently identified improvements and improvements agreed to in the future through the regional process described in Section 4.1.2.2. However, because a significant impact would occur even with the currently identified improvements, this cumulative impact will remain significant and unavoidable.

Cumulative Impact Transportation 2: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on 11 freeway ramps:

1. **SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour)**
2. **SR 4/Willow Pass Road westbound off-ramp (AM peak hour)**
3. **SR 4/northbound San Marco Boulevard eastbound on-ramp (PM peak hour)**
4. **SR 4/southbound Bailey Road eastbound off-ramp (PM peak hour)**
5. **SR 4/Railroad Avenue westbound on-ramp (AM peak hour)**
6. **I-680/Willow Pass Road eastbound to southbound on-ramp (AM peak hour)**
7. **SR 4/Port Chicago Highway westbound on-ramp (PM peak hour)**
8. **SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour)**
9. **SR 4/southbound San Marco Boulevard westbound on-ramp (AM peak hour)**

10. **SR 4/northbound San Marco Boulevard westbound on-ramp (AM peak hour)**
11. **SR 4/San Marco Boulevard westbound off-ramp (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 17-5, these 11 freeway ramps exceed the established performance threshold either on the ramp itself or on the downstream freeway mainline with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project condition. This impact is considered to be potentially significant.

The low level of service (LOS) at the ramp junctions with the freeway mainline at merge and diverge locations that result with the Preferred Alternative would largely be caused by congestion on the freeway mainline.

**Cumulative Mitigation Measure Transportation 2: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the CCTA. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development~~

~~projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this cumulative impact will remain significant and unavoidable.~~

Ramp Impact Location 1: The SR 4/Port Chicago Highway eastbound off-ramp would operate at LOS F during the AM peak hour due to congestion on SR 4. The volumes on the freeway at the diverge point for this single-lane off-ramp exceed the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 2: Improvements to the SR 4/Willow Pass Road interchange are programmed in the 2035 Regional Transportation Plan (RTP); however, the CCTA 2030 model does not include this improvement because specific project-level details have not been determined. The interchange improvements will be defined in detail once a Project Study Report (PSR) and document to comply with CEQA are prepared by Caltrans. Because the specific improvement, and therefore the effects of the improvement, cannot be measured at this time, this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 3: The SR 4/northbound San Marco Boulevard eastbound on-ramp would operate at LOS F during the PM peak hour due to the high volume of traffic that would use the Avila Road - West Leland Road connection to avoid congestion on SR 4. This single-lane on-ramp merges with SR 4. The volume at the merge exceeds the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 4: The SR 4/southbound Bailey Road eastbound off-ramp would operate at LOS F during the PM peak hour due to upstream traffic volumes on the freeway that exceed the capacity where the ramp diverges from the freeway. Traffic from the freeway cannot exit at the ramp due to congestion on this segment of SR 4. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 5: The SR 4/Railroad Avenue westbound on-ramp is a single-lane ramp that would operate at LOS F during the AM peak hour. This is due to volumes on the freeway and ramp exceeding the capacity of the freeway at the ramp merge area. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible

for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 6: The I-680/Willow Pass Road eastbound to southbound on-ramp would operate at LOS F during the AM peak hour due to downstream freeway volumes at the merge area of this one-lane on-ramp. The volumes exceed the capacity of the freeway, resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed by the agencies responsible for freeway network operations, there are no feasible mitigation measures to address the capacity of the freeway, and the cumulative impact on freeway ramps is therefore considered to be significant and unavoidable.

Ramp Impact Location 7: The SR 4/Port Chicago Highway westbound on-ramp would operate at LOS F during the PM peak hour due to congestion on SR 4. The downstream volumes on the freeway at the merge point exceed the capacity of the freeway. This ramp is two lanes at Port Chicago Highway with one lane splitting off to SR 242 and one lane that merges onto SR 4 westbound. The operations of this ramp can be attributed to the operations on SR 4. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 8: The SR 4 eastbound off-ramp at San Marco Boulevard is a single-lane off-ramp with a dedicated freeway lane where the LOS F is due to the ramp volume exceeding the ramp capacity. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 9: The SR 4 westbound on-ramp from southbound San Marco Boulevard is a single-lane on-ramp with a dedicated freeway lane where the ramp volume exceeds the capacity. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 10: The SR 4 westbound on-ramp from northbound San Marco Boulevard is a single-lane on-ramp. The impact that occurs at this location can be attributed to the over-capacity condition on SR 4 that results in unstable ramp operations. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion,

there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 11: The SR 4 westbound off-ramp to San Marco Boulevard is a single-lane off-ramp. The impact that occurs at this location can be attributed to the over-capacity conditions on SR 4 that results in unstable ramp operations. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Cumulative Impact Transportation 3: The development of the Preferred Alternative would increase traffic volumes and contribute to already deficient conditions on three roadway segments:

1. **Ygnacio Valley Road east of Cowell Road (PM peak hour)**
2. **Concord Boulevard west of Denkinger Road (AM and PM peak hours)**
3. **Port Chicago Highway north of Olivera Road (AM and PM peak hours)**

This impact is considered to be potentially significant.

As shown in Table 17-6, these three roadway segments would exceed the established performance threshold with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project condition. Even with the implementation of transportation demand management (TDM) measures, this impact is considered to be potentially significant.

> **Cumulative Mitigation Measure Transportation 3: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor these roadway segments periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. However, this cumulative impact is considered significant and unavoidable.**

Roadway widening would mitigate the impact of the Preferred Alternative, but widening would potentially require acquisition of property and possible displacement of existing businesses and residents. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening, as wider roads in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not

necessarily alleviate impacts that will occur on Concord Boulevard and Port Chicago Highway. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Impact Transportation 4: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold at 19 intersections:

1. **Port Chicago Highway and Panoramic Drive (AM peak hour)**
2. **Port Chicago Highway and Olivera Road (AM and PM peak hours)**
3. **North Main Street and Geary Road (AM and PM peak hour)**
4. **Willow Pass Road and Evora Road (west) (PM peak hour)**
5. **Willow Pass Road and Avila Road (AM and PM peak hours)**
6. **San Marco Boulevard and West Leland Road (AM peak hour)**
7. **San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramp (PM peak hour)**
8. **Willow Pass Road and SR 4 westbound ramps (AM peak hour)**
9. **Willow Pass Road and SR 4 eastbound ramps (AM peak hour)**
10. **Oak Grove Road and Treat Boulevard (AM peak hour)**
11. **Oak Road and Treat Boulevard (PM peak hour)**
12. **Walnut Boulevard and Ygnacio Valley Road (PM peak hour)**
13. **Bancroft Road and Treat Boulevard (PM peak hour)**
14. **Buskirk Avenue northbound I-680 off-ramp and Treat Boulevard (PM peak hour)**
15. **North Main Street and Sunnyvale Avenue and southbound I-680 ramps (AM peak hour)**
16. **Northbound I-680 off-ramp and Ygnacio Valley Road (AM peak hour)**
17. **Railroad Avenue and West Leland Road (AM peak hour)**
18. **Kirker Pass Road and James Donlon Boulevard Extension (PM peak hour)**
19. **Bailey Road and SR 4 eastbound ramps - BART access (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 17-7, these 19 intersections would exceed the established performance threshold with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project condition. This impact is considered to be potentially significant.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 1: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

At the intersection of Port Chicago Highway and Panoramic Drive, providing a third through lane northbound would reduce the impact to LOS E during AM and PM peak hours, but this would require widening Port Chicago Highway to accommodate an additional through lane. Port Chicago Highway is constrained by the Bay Area Rapid Transit (BART) District tracks to the east. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 2: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

Improvements to the intersection of Port Chicago Highway and Olivera Road would require widening of Port Chicago Highway, which is constrained by the BART tracks to the east, or widening of Olivera Road through an existing residential neighborhood. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 3: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will

work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of North Main Street and Geary Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC Subregional Transportation Mitigation Program (STMP) requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 4: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will

**work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this cumulative impact is considered significant and unavoidable.~~

At the intersection of Willow Pass Road and Evora Road (west), the increased traffic is due to the heavy northbound right turns from Willow Pass Road and the westbound left turns from Evora Road. Widening the northbound and westbound approaches to provide an additional westbound left turn lane and an additional northbound right turn lane would improve the operations at the intersection of Willow Pass Road and Evora Road (west). However, additional improvements would be required to fully mitigate the impacts to the mid-D LOS standard. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 5: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit

promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

At the intersection of Willow Pass Road and Avila Road, the Preferred Alternative adds a new eastbound approach to the existing T-intersection. Improvements assumed as part of the Preferred Alternative include signalization of this intersection and new lane configurations on all approaches to accommodate the new approach. Additional widening at the intersection would be required to fully mitigate the impacts to the mid-D LOS standard. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 6: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and

agreement is reached, this impact is considered significant and unavoidable.~~**The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this cumulative impact is considered significant and unavoidable.**~~

The intersection of San Marco Boulevard and West Leland Road would operate at LOS D with a volume-to-capacity (v/c) ratio of 0.90 due to the use of the West Leland Road connection to Avila Road as a parallel roadway to SR 4. This intersection is located outside of the City of Concord's jurisdiction, in the City of Pittsburg. Widening the northbound approach for a right turn lane as programmed by the City of Pittsburg would not reduce the v/c ratio during the AM peak hour. However, an additional right turn lane in the westbound direction would mitigate the impact. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 7: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively

by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.~~

The intersection of San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp is located outside the City of Concord. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 8: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

Improvements to the SR 4/Willow Pass Road interchange are programmed in the RTP; however, the intersection analysis does not include a new ramp configuration because specific project-level details have not been determined. For this analysis, the existing stop control was assumed to be replaced with a new signal. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 9: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of

automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

Improvements to the SR 4/Willow Pass Road interchange are programmed in the RTP; however, the intersection analysis does not include a new ramp configuration because specific project-level details have not been determined. For this analysis, the existing stop control was assumed to be replaced with a new signal. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 10: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable

At the intersection of Oak Grove Road and Treat Boulevard, widening is not feasible. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 11: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute

**a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

At the intersection of Oak Road and Treat Boulevard, widening is not feasible. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 12: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional

**Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~ ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of Walnut Boulevard and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 13: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County

Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~ ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.**~~

The intersection of North Bancroft Road and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 14: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing

**applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of Buskirk Avenue - northbound I-680 off-ramp and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 15: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation

Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of North Main Street and Sunnyvale Avenue/southbound I-680 ramp is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 16: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic

Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of the northbound I-680 off-ramp/Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 17: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated

process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's planned improvement at the intersection of Railroad Avenue and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this cumulative impact is considered significant and unavoidable.~~

The City of Pittsburg had identified improvements at the intersection of Railroad Avenue and West Leland Road, but funding has not been secured. The improvements include widening the southbound approach for two left turn lanes and widening the eastbound approach for a right turn lane. However, additional widening would be required to mitigate the impacts to the mid-D LOS standard. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 4, Intersection Impact Location 18: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study,

**may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.~~

At Kirker Pass Road and James Donlon Boulevard Extension, additional improvements to widen the intersection would be needed to mitigate the impacts. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 11, Intersection Impact Location 19: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall

be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements to the intersection of Bailey Road and SR 4 eastbound ramps. Until future coordination with the affected jurisdiction, this cumulative impact will remain significant and unavoidable.~~

The intersection of Bailey Road and SR 4 eastbound ramps - BART access is included as part of the current study for streetscape improvements for Bailey Road. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Impact Transportation 5: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold on 38 segments of Routes of Regional Significance:

1. **I-680 south of Monument Boulevard - southbound PM peak hour (average speed and delay index), AM peak hour (average vehicle occupancy)**
2. **I-680 north of Monument Boulevard - southbound PM peak hour (average vehicle occupancy, average speed and delay index)**
3. **I-680 north of Monument Boulevard - northbound AM peak hour (average vehicle occupancy)**
4. **I-680 north of SR 242 - southbound PM peak hour (average speed and delay index)**
5. **I-680 north of Concord Avenue - northbound AM peak hour (average vehicle occupancy)**
6. **SR 242 north of I-680 - southbound PM peak hour (average speed and delay index), AM and PM peak hours (average vehicle occupancy)**
7. **SR 242 north of I-680 - northbound AM peak hour (average vehicle occupancy)**

8. **SR 242 north of Willow Pass Road - northbound AM and PM peak hours (average vehicle occupancy)**
9. **SR 242 north of Willow Pass Road - southbound AM and PM peak hours (average vehicle occupancy)**
10. **SR 242 north of Concord Avenue - northbound AM and PM peak hours (average vehicle occupancy)**
11. **SR 242 north of Concord Avenue - southbound PM peak hour (average vehicle occupancy)**
12. **SR 242 north of Solano Way - northbound AM and PM peak hours (average vehicle occupancy)**
13. **SR 242 north of Solano Way - southbound PM peak hour (average vehicle occupancy)**
14. **SR 242 north of Olivera Road - northbound PM peak hour (average vehicle occupancy)**
15. **SR 242 north of Olivera Road - southbound PM peak hour (average vehicle occupancy)**
16. **SR 4 east of Willow Pass Road - eastbound PM peak hour (average speed and delay index), AM and PM peak hours (average vehicle occupancy)**
17. **SR 4 east of Bailey Road - eastbound PM peak hour (delay index)**
18. **SR 4 east of I-680 - eastbound AM peak hour (average vehicle occupancy)**
19. **SR 4 east of I-680 - westbound AM and PM peak hours (average vehicle occupancy)**
20. **SR 4 east of Solano Way - eastbound AM peak hour (average vehicle occupancy)**
21. **SR 4 east of Port Chicago Highway - eastbound AM peak hour (average vehicle occupancy)**
22. **SR 4 east of Port Chicago Highway - westbound PM peak hour (average vehicle occupancy)**
23. **SR 4 east of Willow Pass Road - westbound AM and PM peak hours (average vehicle occupancy)**
24. **SR 4 east of San Marco Boulevard - eastbound AM peak hour (average vehicle occupancy) and PM peak hour (delay index)**
25. **SR 4 east of San Marco Boulevard - westbound AM peak hour (delay index) and PM peak hour (average vehicle occupancy)**
26. **SR 4 east of Bailey Road - westbound AM peak hour (delay index)**
27. **SR 4 east of Railroad Avenue - eastbound AM and PM peak hours (average vehicle occupancy)**

28. **Leland Road (proposed) east of San Marco Boulevard - eastbound PM peak hour (delay index)**
29. **Avila Road (proposed) west of San Marco Boulevard - eastbound PM peak hour (delay index)**
30. **Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM peak hours (delay index)**
31. **Willow Pass Road east of Evora Road - eastbound PM peak hour (delay index)**
32. **Kirker Pass Road east of Concord Boulevard - eastbound AM and PM peak hours (average vehicle occupancy)**
33. **Kirker Pass Road east of Concord Boulevard - westbound PM peak hour (average vehicle occupancy)**
34. **Treat Boulevard east of Oak Grove Road - eastbound AM peak hour (average vehicle occupancy)**
35. **Ygnacio Valley Road east of Cowell Road - eastbound AM peak hour (average vehicle occupancy)**
36. **Ygnacio Valley Road east of Cowell Road - westbound PM peak hour (average vehicle occupancy)**
37. **Leland Road (proposed) east of San Marco Boulevard - westbound AM peak hour (delay index)**
38. **Willow Pass Road east of Evora Road - westbound AM peak hour (delay index)**

This impact is considered to be potentially significant.

As shown in Table 17-8, these 38 segments of Routes of Regional Significance would exceed the established performance threshold with the traffic from the Preferred Alternative. In addition, the Preferred Alternative worsens the 2030 No Project condition. This impact is considered to be potentially significant.

Cumulative Mitigation Measure Transportation 5: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC

**Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~ ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the CCTA. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this cumulative impact will remain significant and unavoidable.~~

The Action Plan for Routes of Regional Significance identifies planned improvements to the regional system. Additional mitigation measures beyond the planned improvements included in the assumptions listed in Section 4.3.4 will require consultation and coordination with other TRANSPAC members, other regional transportation planning committees (RTPCs), and the CCTA. Future traffic studies for specific development projects on the site should update the TSO impact analysis to analyze the adopted Central County and East County Action Plans for Routes of Regional Significance. Because no improvements beyond those identified in the assumptions have been planned or programmed by the agencies at this time, this cumulative impact is considered to be significant and unavoidable.

17.1.6 Transportation Impacts of the Concentration and Conservation Alternative

Potentially significant cumulative transportation impacts resulting from the development of the Concentration and Conservation Alternative that will remain significant after mitigation are presented first. These impacts would be followed by potentially significant transportation impacts that are not significant after mitigation; however, there are no such impacts.

Cumulative Impact Transportation 6: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on seven freeway segments:

1. **SR 4 east of Willow Pass Road westbound (AM and PM peak hours)**
2. **SR 4 east of San Marco Boulevard eastbound (PM peak hour)**
3. **I-680 north of SR 242 northbound (PM peak hour)**
4. **I-680 north of SR 242 southbound (PM peak hour)**
5. **I-680 north of SR 4 southbound (AM peak hour)**
6. **SR 4 east of SR 242 westbound (PM peak hour)**
7. **SR 4 east of Railroad Avenue eastbound (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Tables 17-3 and 17-4, these seven freeway segments would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. Therefore, this impact is considered to be potentially significant.

Cumulative Mitigation Measure Transportation 6: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes

place and agreement is reached, this impact is considered significant and unavoidable.~~**Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the CCTA. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this cumulative impact will remain significant and unavoidable.**~~

Peak hour operations on the seven freeway segments are projected to be deficient with buildout traffic from the Concentration and Conservation Alternative. Improvements that have been included in the model are listed in Section 4.3.4. Additional improvements beyond those identified in Section 4.3.4 have not been planned or programmed by the agencies responsible for the freeway network at this time. Future development will be required to pay a fair share of the cost of currently identified improvements and improvements agreed to in the future through the regional process described in Section 4.1.2.2. However, because a significant impact would occur even with the currently identified improvements, this cumulative impact will remain significant and unavoidable.

Cumulative Impact Transportation 7: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on 11 freeway ramps:

1. **SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour)**
2. **SR 4/northbound San Marco Boulevard eastbound on-ramp (PM peak hour)**
3. **SR 4/southbound Bailey Road eastbound off-ramp (PM peak hour)**
4. **SR 4/Railroad Avenue eastbound on-ramp (PM peak hour)**
5. **I-680/Willow Pass Road northbound off-ramp (PM peak hour)**
6. **I-680/Willow Pass Road eastbound to southbound on-ramp (AM peak hour)**
7. **SR 242/Concord Avenue eastbound to northbound on-ramp (PM peak hour)**
8. **SR 4/Port Chicago Highway westbound on-ramp (PM peak hour)**
9. **SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour)**
10. **SR 4/southbound San Marco Boulevard westbound on-ramp (AM peak hour)**
11. **SR 4/northbound San Marco Boulevard westbound on-ramp (AM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 17-5, these 11 freeway ramps exceed the established performance threshold either on the ramp itself or on the downstream freeway mainline with the traffic

from the Concentration and Conservation Alternative. In addition, the Concentration and Conservation Alternative worsens the 2030 No Project condition. This impact is considered to be potentially significant.

The low LOS at the ramp junctions with the freeway mainline at merge and diverge locations that result with the Concentration and Conservation Alternative would largely be caused by congestion on the freeway mainline.

Cumulative Mitigation Measure Transportation 7: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~Prior to approving a specific development, the City shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans, the CCTA, and other affected jurisdictions. The calculation of fair share contribution shall be included in the finance plan that will be prepared once a preferred Reuse Plan is approved. No development will occur until the finance plan is implemented. Even with the implementation of this mitigation measure, this cumulative impact will remain significant and unavoidable.~~

Ramp Impact Location 1: The SR 4/Port Chicago Highway eastbound off-ramp would operate at LOS F during the AM peak hour due to congestion on SR 4. The volumes on the

freeway at the diverge point for this single-lane off-ramp exceed the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 2: The SR 4/northbound San Marco Boulevard eastbound on-ramp would operate at LOS F during the PM peak hour due to the high volume of traffic that would use the Avila Road - West Leland Road connection to avoid congestion on SR 4. This single-lane on-ramp merges with SR 4. The volume at the merge exceeds the capacity of the freeway. The operations of this ramp can be attributed to the operations on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 3: The SR 4/southbound Bailey Road eastbound off-ramp would operate at LOS F during the PM peak hour due to upstream traffic volumes on the freeway that exceed the capacity where the ramp diverges from the freeway. Traffic from the freeway cannot exit at the ramp due to congestion on this segment of SR 4. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 4: The SR 4/Railroad Avenue eastbound on-ramp is a single-lane on-ramp that operates at LOS F during the PM peak hour. The impact of the Concentration and Conservation Alternative at this location can be attributed to shifts between the freeway and the parallel arterial roadways due to over-capacity conditions on SR 4. The operations of this ramp can be attributed to the over-capacity conditions on SR 4. No improvements have been planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, and therefore no feasible mitigation measures have been identified. This cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 5: The I-680/Willow Pass Road northbound off-ramp would operate at LOS F during the PM peak hour due to the upstream freeway volumes at the diverge area of this single-lane off-ramp. The volumes exceed the capacity of the freeway, resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 6: The I-680/Willow Pass Road eastbound to southbound on-ramp would operate at LOS F during the AM peak hour due to downstream freeway volumes at the merge area of this one-lane on-ramp. The volumes exceed the capacity of the freeway,

resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed by the agencies responsible for freeway network operations, there are no feasible mitigation measures to address the capacity of the freeway, and the cumulative impact on freeway ramps is therefore considered to be significant and unavoidable.

Ramp Impact Location 7: The SR 242/Concord Avenue eastbound to northbound on-ramp would operate at LOS F during the PM peak hour due to downstream freeway volumes at the merge area of this single-lane on-ramp. The volumes would exceed the capacity of the freeway, resulting in unstable flow of the on-ramp. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed by the agencies responsible for freeway network operations, there are no feasible mitigation measures to address the capacity of the freeway, and the cumulative impact on freeway ramps is therefore considered to be significant and unavoidable.

Ramp Impact Location 8: The SR 4/Port Chicago Highway westbound on-ramp would operate at LOS F during the PM peak hour due to congestion on SR 4. The downstream volumes on the freeway at the merge point exceed the capacity of the freeway. This ramp is two lanes at Port Chicago Highway with one lane splitting off to SR 242 and one lane that merges onto SR 4 westbound. The operations of this ramp can be attributed to the operations on SR 4. Because no improvements beyond those identified in the assumptions listed in Section 4.3.4 have been planned or programmed to address the capacity of SR 4, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 9: The SR 4 eastbound off-ramp at San Marco Boulevard is a single-lane off-ramp with a dedicated freeway lane where the LOS F is due to the ramp volume exceeding the ramp capacity. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 10: The SR 4 westbound on-ramp from southbound San Marco Boulevard is a single-lane on-ramp with a dedicated freeway lane where the ramp volume exceeds the capacity. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures, and this cumulative impact is considered to be significant and unavoidable.

Ramp Impact Location 11: The SR 4 westbound on-ramp from northbound San Marco Boulevard is a single-lane on-ramp. The impact that occurs at this location can be attributed to the over-capacity condition on SR 4 that results in unstable ramp operations. The SR 4 ramps at San Marco Boulevard would operate at LOS F due to the traffic using the parallel

arterials of Avila Road - West Leland Road and Evora Road - Willow Pass Road to avoid congestion on SR 4. Because there are no improvements planned or programmed by the regional agencies responsible for operations on SR 4 that would alleviate this congestion, there are no feasible mitigation measures to address the capacity of SR 4, and this cumulative impact is considered to be significant and unavoidable.

Cumulative Impact Transportation 8: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on four roadway segments:

1. **Ygnacio Valley Road east of Cowell Road (AM and PM peak hour)**
2. **Bailey Road east of Concord Boulevard (AM and PM peak hours)**
3. **Concord Boulevard west of Denkinger Road (AM and PM peak hours)**
4. **Port Chicago Highway north of Olivera Road (AM and PM peak hours)**

This impact is considered to be potentially significant.

As shown in Table 17-6, these four roadway segments would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. In addition, the Concentration and Conservation Alternative worsens the 2030 No Project condition. This impact is considered to be potentially significant.

Cumulative Mitigation Measure Transportation 8: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor these roadway segments periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. However, this cumulative impact is considered significant and unavoidable.

Roadway widening would mitigate the impact of the Concentration and Conservation Alternative, but widening would potentially require acquisition of property and possible displacement of existing businesses and residents. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening, as wider roads in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur on Concord Boulevard and Port Chicago Highway. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Impact Transportation 9: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold at 19 intersections:

1. **Port Chicago Highway and Olivera Road (AM and PM peak hours)**
2. **Beechwood Drive and Landana Drive (AM peak hour)**
3. **North Main Street and Geary Road (AM peak hour)**
4. **Willow Pass Road and Evora Road (west) (AM and PM peak hours)**
5. **Willow Pass Road and Avila Road (AM and PM peak hours)**
6. **San Marco Boulevard and West Leland Road (AM peak hour)**
7. **San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramps (PM peak hour)**
8. **Willow Pass Road and SR 4 westbound ramps (AM peak hour)**
9. **Willow Pass Road and SR 4 eastbound ramps (AM peak hour)**
10. **Oak Grove Road and Treat Boulevard (AM peak hour)**
11. **Oak Road and Treat Boulevard (PM peak hour)**
12. **Oak Grove Road and Ygnacio Valley Road (AM peak hour)**
13. **Walnut Boulevard and Ygnacio Valley Road (PM peak hour)**
14. **Bancroft Road/Treat Boulevard (PM peak hour)**
15. **Buskirk Avenue - northbound I-680 off-ramp/Treat Boulevard (AM and PM peak hours)**
16. **Northbound I-680 off-ramp/Ygnacio Valley Road (AM peak hour)**
17. **Willow Pass Road/Evora Road (east) - SR 4 westbound off-ramp (AM peak hour)**
18. **Kirker Pass Road/James Donlon Boulevard Extension (AM and PM peak hours)**
19. **Bailey Road/SR 4 eastbound ramps - BART access (PM peak hour)**

This impact is considered to be potentially significant.

As shown in Table 17-7, these 19 intersections would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. In addition, the Concentration and Conservation Alternative worsens the 2030 No Project condition. This impact is considered to be potentially significant.

> **<u>Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 1</u>: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.**

Improvements to the intersection of Port Chicago Highway and Olivera Road would require widening of Port Chicago Highway, which is constrained by the BART tracks to the east, or widening of Olivera Road through an existing residential neighborhood. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 2: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this impact is considered significant and unavoidable.

The intersection of Beechwood Drive and Landana Drive is an all-way stop controlled intersection. With the addition of the Concentration and Conservation Alternative, traffic volumes on Landana Drive will increase, since the Concentration and Conservation Alternative does not provide a parallel roadway within the project site. Providing a signal at this intersection would improve the operations to LOS A, which would fully mitigate the impacts. However, a signal may not be feasible given the nature of the surrounding residential neighborhood. TDM programs will need to be adopted as a part of the General Plan Amendment for the site, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts as development occurs in the future. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 3: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip

reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~ ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.**~~

The intersection of North Main Street and Geary Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 4: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute

**a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~ ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this cumulative impact is considered significant and unavoidable.~~

At the intersection of Willow Pass Road and Evora Road (west), the increased traffic is due to the heavy northbound right turns from Willow Pass Road and the westbound left turns from Evora Road. Widening the northbound and westbound approaches to provide an additional westbound left turn lane and an additional northbound right turn lane would improve the operations at the intersection of Willow Pass Road and Evora Road (west). However, additional improvements would be required to fully mitigate the impacts to the mid-D LOS standard. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 5: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

At the intersection of Willow Pass Road and Avila Road, the Concentration and Conservation Alternative adds a new eastbound approach to the existing T-intersection. Improvements assumed as part of the Concentration and Conservation Alternative include

signalization of this intersection and new lane configurations on all approaches to accommodate the new approach. Additional widening at the intersection would be required to fully mitigate the impacts to the mid-D LOS standard. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

**Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 6: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even~~

~~**with Pittsburg's planned improvement. Therefore, this cumulative impact is considered significant and unavoidable.**~~

The intersection of San Marco Boulevard and West Leland Road would operate at LOS D with a v/c ratio of 0.90 due to the use of the West Leland Road connection to Avila Road as a parallel roadway to SR 4. This intersection is located outside of the City of Concord's jurisdiction, in the City of Pittsburg. Widening the northbound approach for a right turn lane as programmed by the City of Pittsburg would not reduce the v/c ratio during the AM peak hour. However, an additional right turn lane in the westbound direction would mitigate the impact. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

**Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 7: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with~~

~~**the goal of reaching agreement on appropriate improvements at San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.**~~

The intersection of San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp is located outside the City of Concord. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 8: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

Improvements to the SR 4/Willow Pass Road interchange are programmed in the RTP; however, the intersection analysis does not include a new ramp configuration because specific project-level details have not been determined. For this analysis, the existing stop control was assumed to be replaced with a new signal. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 9: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

Improvements to the SR 4/Willow Pass Road interchange are programmed in the RTP; however, the intersection analysis does not include a new ramp configuration because specific project-level details have not been determined. For this analysis, the existing stop control was assumed to be replaced with a new signal. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway

widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 10: TDM programs will be adopted through an amendment to the Concord General Plan—including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management—that supports the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. However, this cumulative impact is considered significant and unavoidable.

At the intersection of Oak Grove Road and Treat Boulevard, widening is not feasible. As discussed in the assumptions in Section 4.3.4, as a policy matter the City will implement TDM measures rather than roadway widening at intersections, as large intersections in residential neighborhoods and urban locations would encourage the use of automobile travel and discourage walking by increasing exposure of pedestrians during crossings. Widening roadways in Concord therefore would conflict with policies in the General Plan as described in Section 4.1.2.3. However, implementation of TDM measures will not necessarily alleviate impacts that will occur at this intersection. Therefore, this cumulative impact is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 11: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable

**traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

At the intersection of Oak Road and Treat Boulevard, widening is not feasible. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC Subregional STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 12: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects

will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of Oak Grove Road and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 13: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively

by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of Walnut Boulevard and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 14: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will

occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program (STMP) requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.~~

The intersection of North Bancroft Road and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 15: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until

future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~**The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.**~~

The intersection of Buskirk Avenue - northbound I-680 off-ramp and Treat Boulevard is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 16: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and

agreement is reached, this impact is considered significant and unavoidable.~~**The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this cumulative impact is considered significant and unavoidable.**~~

The intersection of the northbound I-680 off-ramp and Ygnacio Valley Road is in the City of Walnut Creek. The City of Concord will coordinate with the City of Walnut Creek and Caltrans prior to the approval of a specific development on the appropriate mitigation measures in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. No changes are currently recommended for this intersection. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 17: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and

unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Willow Pass Road and Evora Road (east) - SR 4 westbound ramp. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this impact will remain significant and unavoidable.~~

The intersection of Willow Pass Road and Evora Road (east) - SR 4 westbound ramp is located outside the City of Concord. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 18: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate~~

~~**improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected jurisdiction takes place and an agreement is reached, this cumulative impact will remain significant and unavoidable.**~~

At Kirker Pass Road and James Donlon Boulevard Extension, additional improvements to widen the intersection would be needed to mitigate the impacts. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Mitigation Measure Transportation 9, Intersection Impact Location 19: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is considered significant and unavoidable.~~ ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements to the intersection of Bailey Road and SR 4**~~

~~**eastbound ramps. Until future coordination with the affected jurisdiction, this cumulative impact will remain significant and unavoidable.**~~

The intersection of Bailey Road and SR 4 eastbound ramps - BART access is included as part of the current study for streetscape improvements for Bailey Road. No specific improvements have been identified. Any improvements at this intersection will be developed through discussions and coordination with the City of Pittsburg and Caltrans prior to the approval of a specific development in accordance with the TRANSPAC STMP requirements of the Central County Action Plan for Routes of Regional Significance. Because no improvements have been agreed upon at this time, the increase in traffic volumes at this location will remain a potential cumulative impact that is considered to be significant and unavoidable.

Cumulative Impact Transportation 10: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold on 40 segments of Routes of Regional Significance:

1. **I-680 south of Monument Boulevard - southbound PM (average speed and delay index)**
2. **I-680 north of Monument Boulevard - southbound PM (average vehicle occupancy, average speed, and delay index)**
3. **I-680 south of Monument Boulevard - northbound AM (average vehicle occupancy)**
4. **I-680 north of Monument Boulevard - northbound AM (average vehicle occupancy)**
5. **I-680 north of SR 242 - southbound PM (average speed and delay index)**
6. **I-680 north of Concord Avenue - northbound AM (average vehicle occupancy)**
7. **SR 242 north of I-680 - northbound AM and PM (average vehicle occupancy)**
8. **SR 242 north of I-680 - southbound PM (average vehicle occupancy)**
9. **SR 242 north of Willow Pass Road - northbound AM and PM (average vehicle occupancy)**
10. **SR 242 north of Willow Pass Road - southbound PM (average vehicle occupancy)**
11. **SR 242 north of Concord Avenue - northbound AM and PM (average vehicle occupancy)**
12. **SR 242 north of Concord Avenue - southbound PM (average vehicle occupancy)**
13. **SR 242 north of Solano Way - northbound AM and PM (average vehicle occupancy)**

14. **SR 242 north of Solano Way - southbound PM (average vehicle occupancy)**
15. **SR 242 north of Olivera Road - northbound AM and PM (average vehicle occupancy)**
16. **SR 242 north of Olivera Road - southbound PM (average vehicle occupancy)**
17. **SR 4 east of Willow Pass Road - eastbound PM (average speed and delay index), AM and PM (average vehicle occupancy)**
18. **SR 4 east of Willow Pass Road - westbound AM (average speed, delay index, and average vehicle occupancy) and PM (average vehicle occupancy)**
19. **SR 4 east of Bailey Road - eastbound PM (delay index)**
20. **SR 4 east of Bailey Road - westbound PM (delay index)**
21. **SR 4 east of I-680 - eastbound AM (average vehicle occupancy)**
22. **SR 4 east of I-680 - westbound AM and PM (average vehicle occupancy)**
23. **SR 4 east of Solano Way - eastbound AM (average vehicle occupancy)**
24. **SR 4 east of Port Chicago Highway - eastbound AM (average vehicle occupancy)**
25. **SR 4 east of Port Chicago Highway - westbound AM and PM (average vehicle occupancy)**
26. **SR 4 east of San Marco Boulevard - eastbound AM (average vehicle occupancy) and PM (delay index)**
27. **SR 4 east of San Marco Boulevard - westbound AM (delay index) and PM (average vehicle occupancy)**
28. **SR 4 east of Railroad Avenue - eastbound AM and PM (average vehicle occupancy)**
29. **Leland Road (proposed) east of San Marco Boulevard - eastbound PM (delay index)**
30. **Leland Road (proposed) east of San Marco Boulevard - westbound AM (delay index)**
31. **Avila Road (proposed) west of San Marco Boulevard - eastbound PM (delay index)**
32. **Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM (delay index)**
33. **Willow Pass Road east of Evora Road - eastbound PM (delay index)**
34. **Willow Pass Road east of Evora Road - westbound AM (delay index)**
35. **Kirker Pass Road east of Concord Boulevard - eastbound AM and PM (average vehicle occupancy)**

36. **Kirker Pass Road east of Concord Boulevard - westbound PM (average vehicle occupancy)**
37. **Treat Boulevard east of Oak Grove Road - eastbound AM (average vehicle occupancy)**
38. **Treat Boulevard east of Oak Grove - westbound PM (average vehicle occupancy)**
39. **Ygnacio Valley Road east of Cowell Road - eastbound AM (average vehicle occupancy)**
40. **Ygnacio Valley Road east of Cowell Road - westbound AM and PM (average vehicle occupancy)**

This impact is considered to be potentially significant.

As shown on Table 17-8, these 40 segments of Routes of Regional Significance would exceed the established performance threshold with the traffic from the Concentration and Conservation Alternative. In addition, the Concentration and Conservation Alternative worsens the 2030 No Project condition. This impact is considered to be potentially significant.

Cumulative Mitigation Measure Transportation 10: The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes

place and agreement is reached, this impact is considered significant and unavoidable.~~**Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the CCTA. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this cumulative impact will remain significant and unavoidable.**~~

The Action Plan for Routes of Regional Significance identifies planned improvements to the regional system. Additional mitigation measures beyond the planned improvements included in the assumptions listed in Section 4.3.4 will require consultation and coordination with other TRANSPAC members, other RTPCs, and the CCTA. Future traffic studies for specific development projects on the site should update the TSO impact analysis to analyze the adopted Central County and East County Action Plans for Routes of Regional Significance. Because no improvements beyond those identified in the assumptions have been planned or programmed by the agencies at this time, this cumulative impact is considered to be significant and unavoidable.

17.1.7 Visual Resources

The other projects considered in the visual resources cumulative assessment are shown on Figure 17-1 and described in Appendix 17A. The potential impacts from these projects, in addition to the impacts from either alternative (recognizing that the Preferred Alternative has a larger development footprint—1,742 acres—than the Concentration and Conservation Alternative—1,339 acres), could combine in space and time to result in cumulative impacts to visual resources. As discussed in Chapter 5, not all potential direct or indirect impacts to visual resources that result from implementing either of the alternatives could be mitigated to a less than significant level, and some potential impacts would remain significant and unavoidable after mitigation.

Projects that would contribute to visual changes of the site and surrounding area include the Willow Pass Business Park located to the north of the SR 4/Willow Pass Road interchange, and the Bailey Estates and San Marco developments on the Los Medanos Hills ridgeline in the City of Pittsburg.

Either alternative would create almost continuous urban development on the lowland portions of the site to the north of Willow Pass Road, and, in combination with the Willow Pass Business Park, development would extend north of SR 4 beyond the eastern boundary of the site. This extension of development in the lowland areas would impact views traveling westbound on SR 4.

Both the Bailey Estates and the San Marco developments have the potential to impact views of the Los Medanos Hills from the site and surrounding area. However, either alternative would restrict development of the Los Medanos Hills in Concord above 30

percent slope; this would preserve views of the western slopes and would not contribute to the visual impacts of development on local ridgelines and hillsides within Concord.

Visual impacts associated with the urban development that would result from either alternative, when combined with the visual impacts of other developments, particularly Willow Pass Business Park, and the Bailey Estates and the San Marco developments, would result in potentially significant cumulative impacts that could not be reduced to a less than significant level, even with mitigation.

17.1.8 Earth Resources

The region of influence for the cumulative assessment of earth resources is the area shown on Figure 17-1. This area comprises the location in which potential impacts from either alternative, in combination with the impacts of these other projects, could combine in space and time to result in cumulative impacts to earth resources. As discussed in Chapter 6, Earth Resources, all potential direct or indirect impacts to earth resources from implementing either alternative could be mitigated to a less than significant level.

Although the region of influence boundary for earth resources does not cross a portion of an Alquist-Priolo Earthquake Fault Zone, the general area of the development that would result from either alternative or the other potentially cumulative projects could be subject to strong ground shaking from any of several major, active faults, as shown on Figure 6-4. Seismically induced ground failure, including liquefaction, lateral spreading, and seismic slope instability, has the potential to undermine foundations, cause distortion and distress to overlying structures, and displace or destroy structures. The City's General Plan includes suggested policies intended to reduce adverse effects of seismic hazards. The analysis of the two alternatives in Chapter 6 incorporates mitigation measures that would reduce impacts to earth resources to a level that is less than significant, and therefore would not contribute to cumulative impacts that could occur from the other projects.

In addition, both alternatives would result in a riparian buffer along Mt. Diablo Creek and would preserve the areas of the Los Medanos Hills above a 30 percent grade, thereby setting aside substantial areas in which development would not occur. For those areas that would be developed, the development review process would include a thorough evaluation of geologic-seismic and soils conditions and risks prior to approving construction to ensure that all new development is designed and constructed pursuant to applicable State and local codes. In addition, the two alternatives avoid hillside development with slopes greater than 30 percent—areas that are more susceptible to seismically induced ground failure.

It is assumed that if other municipalities and responsible jurisdictions incorporate similar policies into their project design and review procedures of subsequent site-specific development proposals, the likelihood of seismic hazard could be prevented or minimized. It is also assumed that other proposed development projects considered in the cumulative impact analysis would also comply with relevant regulations and guidelines for construction in seismic areas and, therefore, the less than significant impacts from either alternative in combination with the impacts of the other projects is not expected to result in significant cumulative impacts to earth resources.

17.1.9 Hydrology and Water Quality

The region of influence for the cumulative assessment of hydrology and water quality is comprised of three primary watersheds: the Mt. Diablo Creek watershed, the Concord watershed, and the Willow Creek watershed, as shown on Figure 7-1. This area comprises the location in which potential impacts from either alternative, in combination with the impacts of the other projects identified on Figure 17-1, could combine in space and time to result in cumulative impacts to hydrology and water quality. As discussed in Chapter 7, Hydrology and Water Quality, all potential direct or indirect impacts to hydrology and water quality from implementing either of the alternatives, including potential impacts resulting from climate change, are less than significant.

New development, whether associated with either alternative or other potentially cumulative projects, has the potential to contribute new sources of runoff. The Preferred Alternative, with a potential to develop 1,742 acres for residential, commercial, institutional, and community uses, has a greater potential to contribute more runoff that the 1,339 acres of development that could result from the Concentration and Conservation Alternative. Project-level details, such as the increase in impervious surfaces, materials usage during construction or operation (including hazardous materials or transportation-related runoff), and proximity to open waters, would influence the potential magnitude of project-specific impacts. Likewise, construction activities associated with either alternative or other potentially cumulative projects near waterways could increase the amount of erosion of fine sediment that could degrade water quality in downstream waters. Measures to mitigate such hydrology and water quality impacts include preparing a Stormwater Pollution Prevention Plan (SWPPP) and Stormwater Management Plan (SWMP) in compliance with the Clean Water Act (CWA) National Pollution Discharge Elimination System (NPDES) permit system requirements. These measures would reduce the individual impacts to a less than significant level and consequently reduce or eliminate the potential for cumulative effects of runoff from multiple projects. Furthermore, conservation measures introduced in the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) (ECCC, 2006) and the City's General Plan provide for additional water quality protection by establishing vegetative buffers around streams, wetlands, and uplands. Cumulative activities that are covered in the ECCC HCP/NCCP that could require permitting or approval from the U.S. Fish and Wildlife Service or the California Department of Fish and Game would be required to comply with these conservation measures.

Certain cumulative projects, including John Muir Medical Center, Port Chicago Plaza, and residential development southwest of the site are located within the Federal Emergency Management Agency (FEMA)-mapped 100-year floodplain (see Figure 7-2). Flood control measures enforceable at each project site would minimize the effects and hazards associated with flooding, resulting in no cumulative flooding impacts.

As introduced in Chapter 7, the potential impact to either alternative as a result of changes in sea level due to climate change has been assumed to be minimal. However, the potential change in sea level could impact existing and future development in Concord and adjacent areas, and the potential consequences of change in water levels due to climate change will need to comply with the requirements of the Bay Conservation and Development Commission's Climate Change Planning Project.

The cumulative effects of water supply are addressed in Section 17.1.17.

17.1.10 Biological Resources

The region of influence for the biological resources cumulative assessment includes the area shown on Figure 17-1, as well as areas farther east and south in Contra Costa County that provide habitat types similar to those in the project area. This area comprises the location in which potential impacts from either alternative, in combination with the impacts of the other projects, could combine in space and time to result in cumulative impacts to biological resources. As discussed in Chapter 8, all potential direct or indirect impacts to biological resources from implementing either of the alternatives will be mitigated to a less than significant level. Development in most of the remainder of the region of influence for the biological resources cumulative assessment is described in the ECCC HCP/NCCP, and the impacts of that development (as well as of the beneficial conservation measures employed by the HCP/NCCP) have been described in the HCP/NCCP and its EIR/EIS.

New development, whether associated with either alternative or other potentially cumulative projects, has the potential to result in a substantial loss of habitat that, in the absence of mitigation measures, would comprise a significant effect on various special-status plant and animal species and could result in a substantial loss of sensitive habitats. Conversion of natural habitats to urban land uses would result in a direct loss of important habitats, and urban-associated factors such as new roads, increased traffic and noise, pets and urban-associated predators, and non-native plants may indirectly affect natural lands abutting new urban development. Construction activities can result in ground disturbance, noise, runoff, and particulate emissions that can temporarily affect habitat quality. These effects could result in the injury or mortality of special-status species and the loss of these species' habitats. However, on the CCRP site, such effects would be mitigated by a number of measures, including avoidance and minimization of impacts during the project design phase, implementation of measures such as pre-construction surveys to avoid impacts to individuals of these species during construction, and, where appropriate, compensatory habitat mitigation to offset permanent habitat losses.

Either alternative, in addition to other projects considered in this cumulative analysis, has the potential to result in a loss of wetlands, aquatic habitat, and riparian habitat. Placement of fill, crossings, alterations of drainage, and other activities required for construction of infrastructure on the CCRP site and at other project sites could result in impacts to these sensitive habitats and the species that use them. Measures to mitigate such impacts on the CCRP site include avoidance and minimization of these habitats during the design phase, implementation of water-quality protection measures to minimize impacts during construction, and compensatory mitigation via creation or restoration of these habitats to offset project-related losses.

As described in Chapter 8, impacts to most special-status species using the CCRP site, and to all sensitive habitat types on the site, are considered potentially significant, and mitigation measures are prescribed for these impacts. As a result, this EIR includes measures to mitigate all project impacts to biological resources to less than significant levels. Likewise, the ECCC HCP/NCCP mitigates impacts to sensitive biological resources, including many of

the same species and sensitive habitats that will be impacted on the CCRP site, over a much broader area of eastern Contra Costa County. Together, the CCRP EIR and the HCP/NCCP and its EIR/EIS are expected to prevent impacts to special-status species and sensitive habitats from becoming cumulatively significant.

Project impacts to several biological resources are considered less than significant, and thus no mitigation of these impacts is proposed in this EIR. As described in Biological Resources Impacts 20 and 43, the project will result in the loss or conversion of several regionally abundant land use and vegetation types, including California annual grassland, developed areas, coyote brush/coastal sage scrub, golf course/recreational areas, orchards, and tree plantations. As a result, a number of regionally common wildlife species associated with these habitats will also be affected, with some declining in or being displaced from development areas on the site. However, all of these habitats and species are regionally common, and conservation measures associated with mitigation of impacts to sensitive habitats and special-status species for the CCRP and for development activities covered by the HCP/NCCP will offset much of the potential impact to these resources. As a result, impacts to these common habitat types and species are not cumulatively significant, and the CCRP will thus not contribute to a significant cumulative impact to these species.

As described in Biological Resources Impacts 21 and 44, the CCRP will also result in the loss or conversion of habitats that are used by several special-status wildlife species that occur on the site only as occasional nonbreeding visitors, foragers, or migrants. These species are not expected to breed on the site, occur on the site regularly, or occur on the site in large numbers. As a result, project development is not expected to result in appreciable effects on regional populations of these species that occur only as occasional nonbreeding visitors or foragers. Conservation measures associated with mitigation of impacts to sensitive habitats and special-status species for the CCRP and for development activities covered by the HCP/NCCP will offset much of the potential impact to these species. As a result, impacts to these species are not cumulatively significant, and the CCRP will thus not contribute to a significant cumulative impact to these species.

Biological Resources Impacts 22 and 45 describe the effects of the CCRP on wildlife movement. Although the project will result in localized impacts to the ability of wildlife to move through the site, these impacts are less than significant for reasons described in those impact sections. Furthermore, any impacts to wildlife movement on the site do not contribute to regional impacts to connectivity or reduce regional wildlife movements. The site is located at the northwestern end of a long, broad swath of natural habitat, and development proposed by this project will not inhibit any regionally important wildlife movements. Rather, because of existing development to the west of the site and approved development (e.g., the Bailey Estates and San Marco developments) to the east, the preservation and management of open space and the riparian corridor along Mt. Diablo Creek included with either alternative (2,565 acres with the Preferred Alternative and 3,222 acres with the Concentration and Conservation Alternative) would maintain existing landscape linkages between the site and natural areas to the southeast. The preservation of this wildlife linkage could be positive compared with the development proposed by adjacent projects, and would reduce the impacts from those other projects. In addition, the restoration of Mt. Diablo Creek proposed by this project will enhance the ability of aquatic

species to move through the on-site reach of creek. Thus, the project will not contribute to cumulative impacts to wildlife movement. For reasons discussed in Biological Resources Impacts 23 and 46, the San Joaquin kit fox is not expected to occur on the site, and thus the project will not contribute to cumulative impacts to this or other species that are absent from the site.

The General Plan policies and conservation measures that provide planning coordination and cumulative mitigation to reduce impacts on natural resources, as discussed in Chapter 8 of this EIR, will be updated and amended to further reduce the potential for cumulative biological resources impacts as a result of either alternative. Specifically, these policies will be updated to include some of the planning/design-phase impact avoidance and minimization measures described in Chapter 8.~~The region of influence for the biological resources cumulative assessment is the area shown on Figure 17-1. This area comprises the location in which potential impacts from either alternative, in combination with the impacts of the other projects shown on the figure, could combine in space and time to result in cumulative impacts to biological resources. As discussed in Chapter 8, all potential direct or indirect impacts to biological resources from implementing either of the alternatives could be mitigated to a less than significant level.~~

~~New development, whether associated with either alternative or other potentially cumulative projects, has the potential to result in a substantial loss in habitat that would comprise a significant effect on various special-status plant and animal species. Conversion of open space or wetlands that would result from either alternative or as a result of the other projects shown on Figure 17-1 eliminates potentially critical and unique habitat. Construction activities can result in ground disturbance, noise, runoff, and particulate emissions that can temporarily affect habitat quality. Depending on the eventual development scenario implemented at a site-specific design and construction level, these impacts could be mitigated to a less than significant level by site-specific species surveys, avoidance, and conservation or off-site measures.~~

~~Either alternative, in addition to other projects considered in this cumulative analysis, has the potential to result in a loss or conversion of wetlands. Placement of fill, crossings, alterations of drainage, and other activities required for construction of the new development could result in impacts to wetlands species and habitat. Implementing mitigation measures, including the preparation of plans to identify vulnerable resources and developing a monitoring plan, is the first step in addressing these impacts. Additional mitigation measures include creating new wetlands based on the results of these plans. These mitigations would potentially reduce the impact to a less than significant level. Impacts attributable to the other projects considered in this cumulative analysis (such as development and redevelopment, roadway improvements, and conversion of open space and wetlands habitats) have the potential to combine with either alternative to result in potential constraints to wildlife movement and linkages. Much of the area surrounding the site has been extensively developed, including much of the land immediately adjacent to the site in Concord and Pittsburg. Furthermore, additional development, such as the approved construction of the Bailey Estates and San Marco developments, is anticipated to allow development up to the fence line of the site. Impacts to species movement and linkages could be mitigated by removing fences to facilitate species movement, although doing so could result in indirect~~

~~impacts attributable to predation from domestic pets. In addition, the preservation of open space and the riparian corridor along Mt. Diablo Creek included with either alternative (2,565 acres with the Preferred Alternative and 3,222 acres with the Concentration and Conservation Alternative) would maintain existing landscape linkages and a variety of habitat types, including grassland, special-status species habitats, and oak woodlands. The potential preservation of these wildlife linkages could be positive compared with the other development proposed by adjacent projects, and could minimize potential impacts from other projects.~~

~~The General Plan policies and conservation measures that provide planning coordination and cumulative mitigation to reduce impacts on natural resources, as discussed in Chapter 8 of this EIR, will be updated and amended to further reduce the potential for cumulative biological resources impacts as a result of either alternative.~~

17.1.11 Cultural Resources

The region of influence for the cultural resources cumulative assessment is the potentially developed or disturbed area of the site and the areas affected by the other cumulative projects in the City of Concord. This area comprises the location in which potential impacts from either alternative, in combination with the other projects' impacts, could combine in space and time to result in cumulative impacts to cultural resources. As discussed in Chapter 9, all potential direct or indirect impacts to cultural resources from implementing either alternative could be mitigated to a less than significant level.

The Preferred Alternative preserves 2,565 acres of riparian corridor and open space, and the Concentration and Conservation Alternative preserves 3,222 acres of these lands, including eligible archaeological resources and areas with a high potential for the occurrence of archaeological resources. Preservation of open space and the establishment of a riparian buffer along Mt. Diablo Creek as result of either alternative would not only protect the known cultural resources in these areas but would also preserve the context of potential cultural resources that have not been discovered.

Even though the site has been highly disturbed by prior homesteading and by military use in the 20th and 21st centuries, potential development that would occur as a result of either alternative has some potential for the loss of important previously unknown historic and archaeological resources or disturbance of human remains. Section 1.2 of the General Plan discusses the cultural setting of the City, stating that there are several archaeological sites present within the city limits, the most extensive of which is on the site north of Willow Pass Road. The avoidance and preservation measures discussed in Chapter 9 would minimize adverse effects on cultural resources. Discovery of resources during development would result in the suspension of work and notification requirements if either archaeological resources or human remains were discovered. These mitigations are common to any of the other projects considered in this cumulative analysis, and therefore cumulative effects would not occur.

In addition, the General Plan will be amended prior to any future development at the site. The amended General Plan will include requirements for conservation actions and policies

to preserve and protect historic and archaeological resources that will be applicable to the site.

17.1.12 Hazardous Materials

The region of influence for the hazardous materials cumulative assessment is shown on Figure 17-1. This area comprises the location in which potential impacts from either of the alternatives, in combination with the impacts of the other projects shown on the figure, could combine in space and time to result in hazardous materials cumulative impacts. As discussed in Chapter 10, all potential direct or indirect impacts associated with hazardous materials from implementing either of the alternatives could be mitigated to a less than significant level. In addition, less than significant impacts would result from either alternative because it is assumed that before development would be allowed at the site, federal, State, and local requirements with respect to remediation and restoration of contaminated areas at the site would be complied with to protect public health and the environment. Regulatory compliance, including remediation, would also preclude the possibility of off-site contaminant migration.

Each of the other projects considered in the cumulative analysis has the potential to use, store, transport, and/or dispose of hazardous materials or waste during construction, operation, and maintenance. It is assumed that these activities would be conducted in accordance with regulatory requirements, and the application of relevant and applicable use practices and best management practices (BMPs) for handling hazardous materials and waste generating would be implemented, resulting in a less than significant effect on public health and the environment. Therefore, no cumulative impact would occur.

17.1.13 Noise and Vibration

The region considered in the noise cumulative impact assessment is shown on Figure 12-3. This area comprises the location in which potential impacts from the Preferred Alternative, which has the largest potential development footprint (1,742 acres), in combination with the impacts of the other projects shown on Figure 17-1, could combine in space and time to result in cumulative noise impacts. As discussed in Chapter 12, not all potential direct or indirect impacts associated with noise from implementing either of the two alternatives would be mitigated to a less than significant level.

The noise impact assessment in Chapter 12 uses the traffic volumes generated using the CCTA Decennial Model, which incorporates approved, proposed, and buildout projects, as described in Section 17.2.4 above. Similar to the traffic cumulative analysis, the noise assessment in Chapter 12 is cumulative in nature because it considers impacts from other future projects. As discussed in Chapter 12, one potentially significant impact cannot be mitigated to a less than significant level. This impact is associated with the extension of West Street and Denkinger Road as a result of the Preferred Alternative, resulting in a significant increase in traffic volumes and associated traffic noise along West Street and Denkinger Road. Potential mitigation measures to address this impact include using low-noise road surfaces, using grading and barriers to screen noise, and providing grants to noise-sensitive receptors to install acoustic insulation. Even with these mitigation measures,

however, the increase in traffic noise will remain significant and unavoidable. This impact is a project-specific impact since it is directly related to the development of the site. The noise assessment in Chapter 12 did not identify any other significant effects; therefore, it can be concluded that there are no additional cumulative impacts.

17.1.14 Population, Housing, and Employment

The projects considered in the population, housing, and employment cumulative assessment are shown on Figure 17-1 and detailed in Appendix 17A. The potential impacts from these projects, in combination with impacts from implementing either alternative, could combine in space and time to result in cumulative impacts. As discussed in Chapter 13, all potential direct or indirect impacts to population, housing, and employment from implementing either of the alternatives could be mitigated to a less than significant level.

The selected projects detailed in Appendix 17A correspond with the long-range planning policies detailed in the General Plans of the City of Concord, City of Pittsburg, and Contra Costa County, and contribute to achieving population, housing, and employment targets as set forth by ABAG. Additional ABAG policies support this development framework within the existing suburban area to increase densities and provide “a better balance of jobs and housing than is typical of existing or planned new suburbs” (ABAG, 2002).

The total housing need projected by ABAG in Contra Costa County is approximately 27,072 units for 2035. The combined residential unit count for either alternative as well as other projects meets approximately two-thirds of this requirement, providing approximately 17,800 units, assuming approximately 4,800 units for the selected projects, 12,272 units for the Preferred Alternative, and 10,203 units for the Concentration and Conservation Alternative.

Considering both local and regional long-range planning, these projects, including either of the alternatives, would not result in the inducement of substantial population growth in the area, either directly or indirectly, and therefore, cumulative impacts would not occur. The housing planned as part of these projects complements the projected increases in population and employment in Concord and the Bay Area region, which, as indicated in Table 13-2, is expected to have 1.55 jobs for every one housing unit by 2035.

It is assumed that provision of housing by the other projects would conform to affordable housing guidelines set forth by each respective jurisdiction. It is also assumed that because the majority of residential development is taking place on currently undeveloped land, it would not displace substantial numbers of existing housing or people, who would require replacement housing elsewhere. In addition, project phasing would be appropriately staged over the long-term horizon, ensuring adequate local workforce and competition. Overall, these other projects combined with either of the alternatives would provide greater job opportunities for a greater number of people within urban service limits, and cumulative impacts would not occur.

17.1.15 Public Services

The other projects considered in this cumulative assessment are shown on Figure 17-1 and described in Appendix 17A. The potential impacts from these other projects in combination

with impacts from either of the alternatives could combine in space and time to result in cumulative impacts to public services. As discussed in Chapter 14, all potential direct or indirect impacts to public services from implementing either of the alternatives could be mitigated to a less than significant level.

Either alternative, in combination with the other projects in Appendix 17A, would not have a significant cumulative impact on public services. The city and regional regulations that address the provision of public services (e.g., police, fire and emergency medical services (EMS), schools, and community facilities) require that these services be funded. This includes the provision and acquisition of new facilities and equipment, such as police and fire stations. All planned development within the county must conform to the guidelines set forth within these local planning documents and fall within existing services limits and the County urban limits for development. Both alternatives comply with these planning requirements, and it is anticipated that the other projects, before they could be approved by the respective jurisdiction, would also have to comply with the applicable requirements. As a result of this compliance, no cumulative impacts associated with public services would occur.

17.1.16 Recreation

The other parks and recreation projects considered in this cumulative assessment are shown on Figure 17-1 and described in Appendix 17A. The potential impacts from these other projects in addition to impacts from either alternative could combine in space and time to result in cumulative impacts to recreation. As discussed in Chapter 15, all potential direct or indirect impacts to recreation from implementing either of the alternatives could be mitigated to a less than significant level.

The other projects in Appendix 17A would be required to provide areas of recreation. The City of Concord, the City of Pittsburg, and Contra Costa County have guidelines in place to address impacts to parks and recreational services. These guidelines include the provision and acquisition of new facilities and equipment as a condition for approving residential development.

The City of Concord sets a goal of 6 acres of public parkland per 1,000 residents. As reported in Chapter 15, both alternatives would result in the dedication of parklands that exceeds the Concord goal of 6 acres per 1,000 residents.

To comply with relevant guidelines for parks and recreational services, all the other projects would be required to include portions of green space in accordance with local policies, and these would contribute to recreational opportunities on a regional level. In addition, either alternative would contribute to the regional network of recreation facilities in the County, and therefore, cumulative impacts would not occur.

17.1.17 Utilities

The other projects considered in this cumulative assessment of utilities are shown on Figure 17-1 and described in Appendix 17A. The potential impacts from these other projects, in

combination with impacts from either alternative, could combine in space and time to result in cumulative impacts to utilities.

Implementation of either alternative in combination with cumulative regional development would result in increased demand for utilities in the City of Concord and the surrounding areas (water supply, wastewater management including recycled water, stormwater management, solid waste management, electrical supply, natural gas supply, and information technology/communications (IT/COMM)). The service areas for the other projects and the two alternatives include service areas for water supply (Contra Costa Water District), wastewater management (Central Contra Costa Sanitary District), stormwater management (City of Concord and Contra Costa County Flood Control and Water Conservation District), solid waste management (Concord Disposal Service), electricity and natural gas supply (Pacific Gas & Electric Company), and IT/COMM (through various franchise suppliers). These service areas comprise the location in which potential impacts from either alternative, in combination with the impacts of the other projects shown on Figure 17-1, could combine in space and time to result in cumulative impacts to utilities. As discussed in Chapter 16, all potential direct or indirect impacts to utilities from implementing either of the alternatives could be mitigated to a level that is less than significant.

With respect to provision of water to supply for either of the alternatives and cumulative development, there could be shortages that result from increased demand and changes in supply, to which climate change may be a contributing factor. The provisions set forth in Chapter 16 require a Water Supply Assessment (WSA) to be performed to ensure adequacy of supply prior to development approval. The WSA will include growth projections that include additional known projects, and will consider additional supply sources such as raw and recycled water. Future projects that are not considered in the project WSA should be required to provide additional WSAs to ensure adequate water supplies, prior to development approvals.

In addition to water supply, the increased regional demand for other utilities could require construction of new and expanded systems and upgrades to existing infrastructure. Construction of utility systems and facilities to serve regional growth and development would proceed under the direction of the utility providers and would have to occur before the City of Concord or other jurisdictions would grant approval of the proposed projects.

17.1.18 Air Quality

17.1.18.1 Regional Impacts

As introduced previously, most of the potential air quality cumulative impacts are subregional in nature. Air quality impacts, however, have the potential to result in cumulative regional impacts and in global impacts from climate change. This section discusses the regional cumulative impacts for air quality, and that they are largely related greenhouse gas (GHG) emissions. These GHG emissions are largely attributed to the generation of energy for use in heating and cooling structures, fueling transportation systems, and other

purposes. Therefore, much of the discussion related to cumulative air quality impacts in this chapter is related to energy use.

The region of influence for this cumulative assessment of regional air quality varies depending on the significance criteria; it ranges from the Bay Area Air Quality Management District (BAAQMD) (as described in the final paragraph of Section 11.1.2) to the area immediately surrounding the site within the City of Concord. This comprises the area in which potential impacts from either alternative, in combination with the impacts of the projects shown on Figure 17-1, could combine in space and time to result in cumulative regional impacts to air quality. As discussed in Chapter 11, not all potential direct or indirect impacts to air quality from implementing either alternative could be mitigated to a less than significant level. Some of the potential impacts would remain significant and unavoidable after mitigation.

Both alternatives would result in unavoidable significant air quality impacts associated with population growth, as discussed in Section 11.3.2.1. This impact is due to a strict interpretation of the impact threshold set forth by BAAQMD (BAAQMD, 1999):

> In a jurisdiction with a general plan consistent with the Clean Air Plan, a project may be proposed that is not consistent with that general plan because it requires a general plan amendment (GPA)." [This is the case with either alternative.] "In such instances, the cumulative impact analysis should consider difference(s) between the project and the original (pre-GPA) land use designation for the site. . . . A project would not have a significant cumulative impact if Vehicles Miles Traveled (VMT) from the project would not be greater than the VMT that would be anticipated under the original land use designation.

Both alternatives would generate VMTs greater than those anticipated under the existing land use designation for the site.

Either alternative, when considered cumulatively with other projects detailed in Appendix 17A, would result in the population of Concord in 2030 exceeding the maximum levels specified in the BAAQMD Ozone Plan. This is a significant cumulative impact because it violates the BAAQMD threshold since it results in population growth that would exceed the values included in the air quality portion of the jurisdiction's current General Plan that is consistent with the existing Bay Area Ozone Strategy (BAAQMD, 2005).

A number of mitigation measures have been proposed to reduce air quality impacts. These are described in Chapter 11 and include numerous measures to reduce the length and frequency of trips taken by residents of the site. Examples of these measures include transit-oriented development (TOD), provision of shuttle services, local-serving retail, and bike lanes and sidewalks. Although these reductions would increase the efficiency of mobility within the site, the total population would still increase beyond the levels in the Bay Area Ozone Strategy (BAAQMD, 2005). Therefore, cumulative impacts will remain significant until the Clean Air Plan is updated with the new forecast population that takes into account the proposed mitigation measures related to air quality impacts and increased efficiencies that would result from implementation of either alternative.

17.1.18.2 Global Impacts/Climate Change

Climate Change Background

Some gases have a natural warming effect on the atmosphere known as the "greenhouse effect." These gases absorb heat from the sun that would otherwise be reflected back into space and trap the heat within the lower atmosphere. The concentration of these gases in the atmosphere is closely linked to atmospheric temperature, and without these gases, the Earth's surface would be approximately 60 degrees Fahrenheit colder than it is today. Therefore, this natural greenhouse effect has been beneficial for the development of life systems on Earth.

Concentrations of these heat-absorbing gases have fluctuated naturally over long time periods (many thousands of years), and these fluctuations can be closely correlated with periods of warmer global temperatures and cooler global temperatures (e.g., ice ages). However, it is now widely accepted that human activity over the past few centuries, particularly the burning of fossil fuels, has rapidly and substantially increased the concentration of GHGs in the atmosphere beyond normal levels to the extent that many natural systems are becoming imbalanced (IPCC, 2007). The concentrations of GHGs in the atmosphere are continuing to increase at a rate not experienced for millions of years. This is resulting in increased rates of absorption of the sun's heat by the lower atmosphere ("global warming"), which, in turn, is leading to significant disruption of global climate patterns ("climate change") (IPCC, 2007).

There are many uncertainties in predicting the effects of global warming, but it is widely accepted that increased temperatures in the lower atmosphere will change global climate patterns (CCCC, 2006). Increased global temperatures are predicted to result in sea level rise, increased hurricane intensity, glacier decline, increased drought, spread of disease, shifts in the timing of seasons, increased flooding, changes in freshwater supply, and an increase in extreme weather events. Many ecosystems could collapse and many species could become extinct.

In order to avoid the worst climate change scenarios, there is now a broad scientific consensus that global annual average temperatures should be prevented from rising by more than 3.6 degrees Fahrenheit this century. For this to occur, concentrations of carbon dioxide in the atmosphere would need to stabilize within the range of 450 to 550 parts per million by volume (ppmv) (IPCC, 2001). Currently, the concentration of carbon dioxide in the atmosphere is approximately 379ppmv (IPCC, 2007), up from pre-industrial concentrations of approximately 280 ppmv.

Sinks and Storage

In addition to natural and anthropogenic processes that emit GHGs, other natural processes remove these gases from the atmosphere and store the resulting carbon in vegetation, oceans, soils, and geological systems.

Uncertainties

While it is widely recognized among the scientific community that climate change is occurring as a result of anthropogenic GHG emissions (CCCC, 2006), there remains

considerable uncertainty regarding the effects of climate change at a global and regional scale (IPCC, 2007). The interaction between positive and negative influences (feedbacks) on global climate patterns is highly complex and makes predicting future climate change difficult. In particular, there are key uncertainties related to carbon cycle feedbacks, cloud feedbacks, oceanic heat uptake, large-scale oceanic circulation changes, aerosol impacts on temperature, clouds and precipitation, and long-term projections beyond 2050 (IPCC, 2007). Notably, the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (IPCC, 2007) states that "difficulties remain in reliably simulating and attributing observed temperature changes to natural or human causes at smaller than continental scales."

California Impacts

In California, global warming is likely to result in annual average temperatures increases of between 3 degrees Fahrenheit to 10.5 degrees Fahrenheit by the end of the century (CCCC, 2006). Total annual precipitation levels are not predicted to change significantly, but summer water shortages are expected to increase in intensity as a result of decreasing Sierra Nevada snowpack. The increased temperatures are also predicted to result in a worsening of air quality across the State, more severe heat events, increased agricultural threats from pests and pathogens, and increased frequency of wildfires. Sea level is predicted to rise by between 22 inches and 35 inches by the end of the century, inundating low-lying areas and increasing the frequency and intensity of coastal flooding events and coastal erosion in California.

Greenhouse Gases

There are a number of natural and anthropogenic gases that contribute to global warming, including carbon dioxide, methane, water vapor, ozone, and fluorinated gases. Some gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing toward climate change for the long term.

In 1997, the Kyoto Protocol sought to reduce global emissions of six gases that are widely seen as the principal contributors to global climate change, as follows:

- Carbon dioxide
- Methane
- Nitrous oxide
- Hydrofluorocarbons
- Perfluorocarbons
- Sulfur Hexafluoride

Water vapor is excluded from this list because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this EIR, the term "GHGs" will refer collectively to the above six gases only.

All of the above are long-lived in the atmosphere, and so have a long-term influence on global climate. These gases vary considerably in terms of global warming potential (GWP): the relative effectiveness of a gas to absorb infrared radiation, remain in the atmosphere,

and contribute toward global warming. The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG. Table 17-10 shows the GWPs for each type of GHG. So, for example, sulfur hexafluoride is 23,900 times more effective at contributing toward global warming than carbon dioxide.

Table 17-10: Global Warming Potentials over 100 Years of Greenhouse Gases

Gas	Global Warming Potential (100 years)
Carbon dioxide	1
Methane	21
Nitrous oxide	310
Hydrofluorocarbons	650 to 11,700
Perfluorocarbons	6,500 to 9,200
Sulfur Hexafluoride	23,900

Source: IPCC, 1995

Carbon Dioxide

Carbon dioxide is the most important anthropogenic GHG. Its annual emissions grew by about 80 percent between 1970 and 2004. Global increases in carbon dioxide concentrations are due primarily to fossil fuel use, with land use change (e.g., forest clearing) providing another significant but smaller contribution. Cement production is also a significant source of carbon dioxide.

Methane

Methane is 21 times more potent as a GHG than carbon dioxide, but it is emitted in lower volumes. Some of the primary activities that result in methane emissions are landfill off-gassing, natural gas production and distribution, livestock production, rice cultivation, and fossil fuel combustion.

Nitrous Oxide

Nitrous oxide is 310 times more potent as a GHG than carbon dioxide, but it is emitted to the atmosphere in significantly lower volumes. Some of the primary activities that result in nitrous oxide emissions are fossil fuel combustion, fertilizer production, and nylon manufacturing.

Hydrofluorocarbons

Hydrofluorocarbons are a group of gases that are 650 to 11,700 times more potent as GHGs than carbon dioxide. These gases are emitted from a limited number of processes, including refrigeration, aluminum smelting, and semiconductor manufacturing.

Perfluorocarbons

Perfluorocarbons are a group of gases that are 6,500 to 9,200 times more potent as GHGs than carbon dioxide. These gases are emitted from only a limited number of processes, including aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur hexafluoride is 23,900 times more potent as a GHG than carbon dioxide. This gas is emitted from only a limited number of processes, including electrical transmission and distribution, circuit breakers, and magnesium production.

Units of Measurement of GHG Emissions

The metric used to measure the emissions from various GHGs based upon their GWP is carbon dioxide equivalent (CO_2-e). Carbon dioxide equivalents are commonly expressed in million metric tons of carbon dioxide equivalent ($MMTCO_2$-e). It is calculated as follows:

Carbon dioxide equivalent equals the mass of a GHG emitted multiplied by GWP of the GHG.

So, for example, the GWP for methane is 21. This means that emissions of 1 million metric tons of methane are equivalent to emissions of 21 million metric tons of carbon dioxide (21 $MMTCO_2$-e).

Regulatory Setting

There are currently no international regulations governing the emissions of GHGs. Furthermore, other than a *proposed* mandatory reporting rule, there are no formal federal regulations governing the emission of GHGs in the U.S. However, regulations do exist at the State level in California, and these are described below.

Executive Order S-3-05

Executive Order S-3-05 was signed by the Governor of California on June 1, 2005. The Executive Order established statewide GHG targets as follows:

- By 2010, reduce to 2000 emission levels.
- By 2020, reduce to 1990 emission levels.
- By 2050, reduce to 80 percent below 1990 levels.

As a result of Executive Order S-3-05, a Climate Action Team was formed. The Climate Action Team includes representatives from the California Environmental Protection Agency; the Business, Transportation, and Housing Agency; the Department of Food and Agriculture; the Resources Agency; the Air Resources Board (ARB); the Energy Commission; and the Public Utilities Commission. The Climate Action Team is charged with implementing global warming emission reduction programs and reporting on the progress made toward meeting the statewide GHG targets that were established in the executive order.

Assembly Bill 32: The Global Warming Solutions Act (2006)

The Global Warming Solutions Act, Assembly Bill (AB) 32, was signed into State law in November 2006, and introduced a legally binding GHG emissions cap for California. This is the first such legally binding emissions cap in the world.

As required by AB 32, the State of California must reduce its GHG emissions to 1990 levels by 2020. AB 32 requires a statewide program of regulatory and market mechanisms to be established to achieve real, quantifiable, cost-effective reductions of GHG emissions.

Under AB 32, the ARB is responsible for monitoring and reducing GHG emissions. AB 32 requires ARB to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions, by January 1, 2008 (completed)
- Adopt mandatory reporting rules for significant sources of GHGs by January 1, 2008 (completed)
- Adopt a plan by January 1, 2009, indicating how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms, and other actions (completed)
- Adopt regulations by January 1, 2011, to achieve the maximum technologically feasible and cost-effective reductions in GHGs, including provisions for using both market mechanisms and alternative compliance mechanisms
- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise ARB (completed)
- Ensure public notice and opportunity for comment for all ARB actions
- Prior to imposing any mandates or authorizing market mechanisms, evaluate several factors, including but not limited to impacts on California's economy, the environment, and public health; equity between regulated entities; electricity reliability; and conformance with other environmental laws; and ensure that the rules do not disproportionately impact low-income communities
- Adopt a list of discrete, early action measures by July 1, 2007 that can be implemented before January 1, 2010, and adopt such measures (completed)

The ARB has established the statewide GHG emissions cap for 2020 and adopted mandatory reporting rules for significant sources of GHGs. The ARB has also adopted a list of early action measures for implementation before 2010, and a Climate Action Team had been established to develop a comprehensive program of regulations and market-based mechanisms to achieve the AB 32 targets. The Scoping Plan setting out how emission reductions will be achieved from significant GHG sources, via regulations and market mechanisms, has also been issued in final format.

AB 32 Emission Reduction Requirements

The ARB has determined that the total statewide aggregated GHG 1990 emissions level is 427 million metric tons carbon dioxide equivalent (MMTCO2-e). The ARB has also determined that the 2020 "business-as-usual" estimate is approximately 600 MMTCO2-e. The AB 32 emission reduction targets require that statewide emissions be reduced to 1990 levels by 2020. In effect, this requires statewide emissions to be reduced from the 2020 business-as-usual level of 600 MMTCO2-e to the 1990 level of 427 MMTCO2-e. This is

equivalent to a statewide decrease of 173 MMTCO2-e, a 29 percent GHG emissions reduction by 2020.

Existing GHG Emissions

Global Emissions

In 2004, annual global emissions of GHGs were 49,000 MMTCO2-e. Of these emissions, carbon dioxide comprised 77 percent, methane comprised 14 percent, nitrous oxide comprised 8 percent, and fluorinated gases comprised 1 percent.

On a per capita basis, total global GHG emissions were approximately 7.7 metric ton CO_2-e per person (TCO_2-e/person).[1] The principal sources of these emissions, by sector, are described on Figure 17-2.

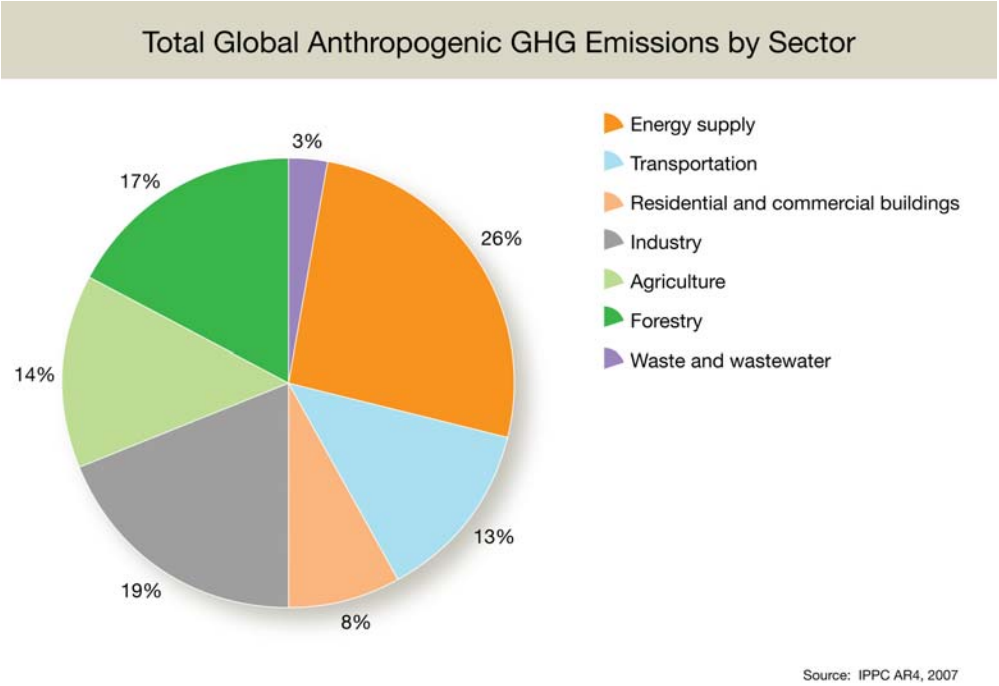


Figure 17-2: Global Emissions – Total Anthropogenic Greenhouse Gas Emissions (2004) by Sector in Terms of Carbon Dioxide Equivalents

Note: Forestry includes deforestation.

U.S. Emissions

The U.S. is one of the world's largest emitters of GHGs. In 2007, the U.S. total GHG emissions were 7,150 $MMTCO_2$-e (EPA, 2009). Carbon dioxide made up 85 percent of these emissions.

On a per capita basis, U.S. total GHG emissions in 2005 were approximately 23.7 TCO_2-e/person.[2] U.S. emissions, by sector, are shown on Figure 17-3.

[1] This is based on the world population for 2004, provided by the U.S. Census Bureau.

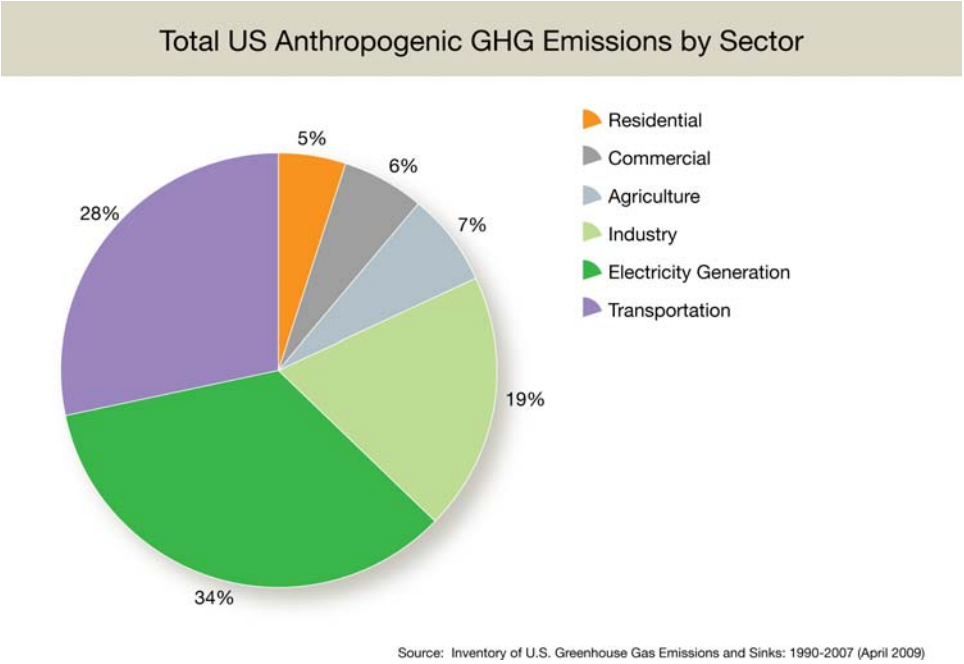


Figure 17-3: U.S. Emissions – Total Anthropogenic Greenhouse Gas Emissions (2007) by Sector in Terms of Carbon Dioxide Equivalents

California Emissions

Current Emissions

California is the 2nd largest emitter of GHG emissions in the U.S. and 12th to 16th largest in the world. In 2006, California's overall GHG emissions were 484 $MMTCO_2$-e (ARB, 2009), including imported electricity and excluding combustion of international fuels and carbon sinks or storage. This was an increase on the 1990 emissions of 57 $MMTCO_2$-e.

Most of California's emissions (81 percent) are carbon dioxide produced from fossil fuel combustion. As shown on Figure 17-4, the transportation sector is the single largest category of California's GHG emissions, producing 38 percent of the State's total emissions in 2004. Electricity generation is the second largest category of GHG emissions.

[2] Based on U.S. population for 2007, provided by the U.S. Census Bureau.

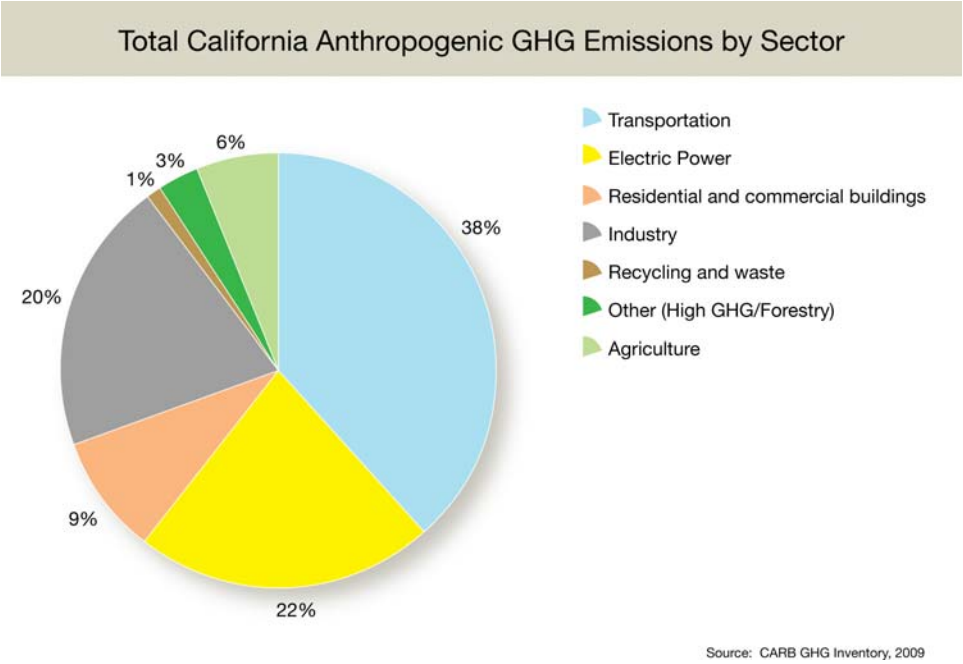


Figure 17-4: California Emissions – Total Anthropogenic Greenhouse Gas Emissions (2006) by Sector in Terms of Carbon Dioxide Equivalents

Per capita (normalized across the resident population) statewide emissions for 2006 were approximately 13.4 TCO_2-e/person.[3] This is considerably lower than average per capita emissions for the U.S. as a whole (23.7 tCO_2-e/person) due to the mild Californian climate, the type of industry that operates in California, and the higher energy efficiency standards that are enforced for buildings and appliances.

Contra Costa County Emissions

Contra Costa County has conducted an inventory of its GHG emissions (Contra Costa County, 2008). In 2005, total gross countywide emissions were 12.3 $MMTCO_2$-e. As indicated on Figure 17-5, energy use accounted for 62 percent of these emissions and transportation 37 percent. Per capita countywide emissions for 2005 were estimated within the county's emission inventory report to be 12.0 TCO_2-e/person.

[3] This is based on the California state population for 2006, provided by the U.S. Census Bureau.

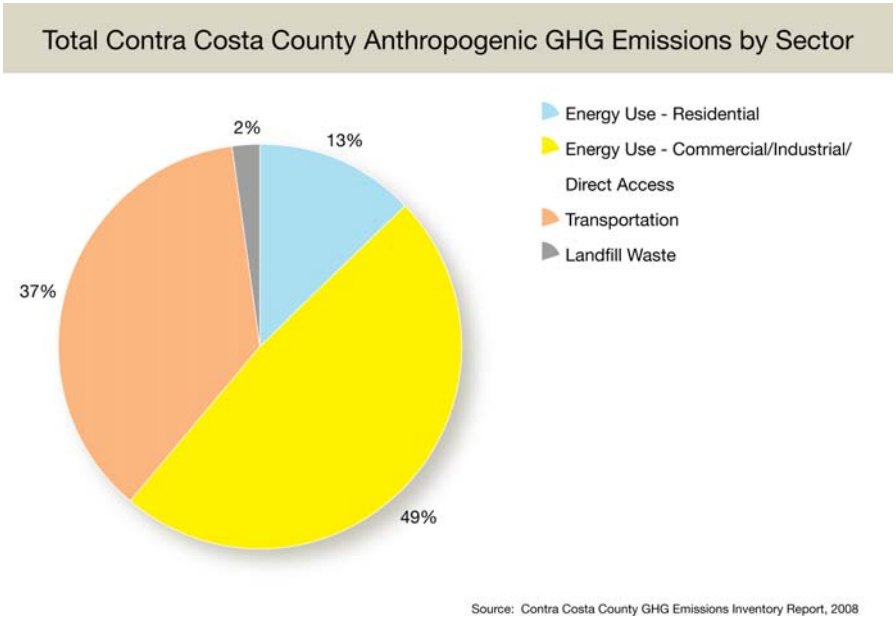


Figure 17-5: Contra Costa County Emissions – Total Anthropogenic Greenhouse Gas Emissions by Sector (2005) in Terms of Carbon Dioxide Equivalent

City of Concord

Currently no data is available regarding annual GHG emissions from the City of Concord.

Concord Naval Weapons Station

Currently, only three buildings on the Inland Area of the Concord Naval Weapons Station (CNWS) are in active use. These buildings and their approximate square footage are summarized in Table 17-11.

Table 17-11:
Existing Program of Active Land Uses at the Concord Naval Weapons Station – Inland Area Site

Building	Area (square feet)
Administration Building	10,700
Fire House	4,750
Security Office	2,288

Source: City of Concord, 2008

Using the urban emissions model known as the URBEMIS model, annual vehicle emissions associated with the current activities on the site (excluding through traffic traveling on Willow Pass Road, Bailey Road, and SR 4) are estimated to be 840 tons of carbon dioxide per year.

Emissions Summary

Table 17-3 summarizes the total gross annual GHG emissions and the per capita emission rates at global, national, State, and County level, and compares these emission levels to key AB 32 emission milestones.

Table 17-12:
Comparison of Baseline Greenhouse Gas Emissions at Different Geographic Scales and Greenhouse Gas Emissions Estimates for California with and without AB 32 Mandates

	Total Gross GHG Emissions ($MMTCO_2$-e)	Total Gross per Capita GHG Emissions (TCO_2-e/person)
Most Recent Baseline Data Available		
Global (2004)	49,000	7.7
United States (2005)	7,150	23.7
California (2004)	484	13.4
Contra Costa County	12	17.6
City of Concord	Not available	Not available
Concord Naval Weapons Station - Inland Area	0.000840	Not available
AB 32 Key Milestones		
California (1990)	427	14.3[1]
California (2020 business-as-usual - predicted)	600	13.6[2]
California (2020 with AB32 mandates - predicted)	427	9.7[2]
California (2050 with AB32 mandates - predicted)	85.4	1.4[3]

[1] Per capita estimate based on U.S. Census Bureau data—1990 population of California is 29,811,000.

[2] Per capita 2020 estimates based on California Department of Finance data (2007)—2020 population of California is 44,136,000. Available at: http://www.dof.ca.gov/research/demographic/reports/projections/p-3/documents/CALIFORNIA.XLS.

[3] Per capita 2050 estimates based on California Department of Finance data (2007)—2050 population of California is 59,508,000.

Source: IPCC, 2007; EPA, 2007; CARB, 2007; Contra Costa County, 2007

17.1.18.3 Standards of Significance

The impacts of GHG emissions from a plan or project on climate change are cumulative and global in nature. Taken in isolation, the GHG emissions of any regional or city plan or project would not have any measurable effect upon global climate. However, the cumulative

effects cannot be discounted when considered alongside all other human activities that result in GHG emissions to the atmosphere because there is clear evidence that the combined effect of these activities on global climate is significant. It is recognized that atmospheric concentrations of GHGs can only be stabilized with action across all sectors and societies. As such, considerable effort has been made to assess the cumulative impacts of both alternatives as part of the CEQA process and to provide a judgment as to the significance of these impacts. However, there are many difficulties associated with such an assessment, particularly with regard to the following:

- Uncertainty within climate change prediction models: There is considerable uncertainty associated with assessing the impacts of a plan or project on climate change, particularly at the less-than-continental scale, not least because of the uncertainties within the field of climate change science.
- Absence of published CEQA guidance and Standards of Significance: At the time of this assessment, no guidance on how to adequately address the potential climate change impacts of plans and projects under CEQA had been issued by either the ARB or the BAAQMD. Further, no air district in California had yet published Standards of Significance for use during such assessments. The BAAQMD is currently in the process of designating Thresholds of Significance for GHGs; however, these Thresholds are currently in draft form, and the BAAQMD is still soliciting feedback from the public. The thresholds are expected to be adopted in early 2010.

  In April 2009, the California Office of Planning and Research (OPR) submitted proposed CEQA guideline amendments for GHG analysis to the Secretary for Natural Resources. These proposed guidelines do not establish Standards of Significance.

- ~~Identifying which emissions are "new and additional": Since the effects of GHG emissions occur at a global scale, it makes no difference where the GHG emissions occur. This is different from a traditional air quality assessment where the impacts of emissions are generally local in nature. The difficulty in assessing the impact of a plan or project on climate change is how to identify which emissions are new and additional to those that would have occurred somewhere else anyway if the project did not go ahead. For example, a redevelopment project may result in a doubling of the number of people living on a particular site compared to the pre-development situation, and this may result in a doubling of the residential electricity use at the site and associated GHG emissions. However, had the project not been built, these new residents would have lived somewhere else and used electricity somewhere else, and the associated GHG emissions would have occurred somewhere else. So the increased GHG emissions occurring at the site are not new and additional, but have instead just been displaced from occurring elsewhere. The net effect on global climate change from these emissions would be the same wherever they occur, regardless of whether the project goes ahead or not. Notwithstanding the above, the population and economy of California is predicted to increase over the next 40 years, and so some new and additional emissions will necessarily be accommodated by new development projects.~~

The signing of AB 32 into State law has set legally binding emissions reductions targets for California. The ARB has determined the statewide emissions reductions required, and this

translates to a 29 percent reduction on the 2020 business-as-usual emissions estimates, or the equivalent to a reduction of 173 $MMTCO_2$-e.

Appendix G of the CEQA Guidelines states that a project may have a significant impact if it conflicts with or obstructs implementation of the applicable air quality plan. The relevant air quality plans for the site are the BAAQMD 2001 Ozone Attainment Plan, the 2005 Bay Area Ozone Strategy (which is currently being updated as the 2009 Clean Air Plan), and the 1996 Carbon Monoxide Redesignation and Maintenance Plan for Ten Federal Planning Areas. With the exception of the 2009 Clean Air Plan (which is currently in development), none of these documents refer to GHG emissions.

In the absence of concrete guidance in the local air quality plan, a threshold of zero is used as the basis of setting a significance threshold for both alternatives. Therefore, assessment of significance is based on whether or not either alternative will contribute to an increase in any GHG emissions. This assessment has adopted an approach that is in accordance with accepted approaches outlined in the "CEQA and Climate Change" white paper issued by the California Air Pollution Control Officers Association (CAPCOA) (CAPCOA, 2008).

Due to projected population growth in California, GHGs will increase whether they occur at the site or elsewhere in the state. That being the case, there will be an increase in GHG emissions on site. This works in accordance with the CAPCOA guidance related to analyzing "CEQA with a GHG Threshold of Zero."

Using the concepts described above, the following Standards of Significance have been derived for this assessment:

- If the project contributes no increase in GHGs, then the project's GHG emissions are less than cumulatively considerable.
- If the project contributes an increase in GHG emissions, then the project's GHG emissions would be cumulatively considerable, and mitigation would be required where feasible.

17.1.18.4 Methodology for GHG Analysis

Emissions Sources

Both alternatives will result in GHG emissions from both stationary and mobile sources. The quantitative outputs of this GHG assessment will be limited to the outputs calculated using the URBEMIS model. This includes:

- Direct carbon dioxide emissions from mobile source combustion
- Direct carbon dioxide emissions from area sources
- Direct carbon dioxide emissions from construction impacts

Table 17-13 indicates the emissions sources to be evaluated in this chapter with regard to the two alternatives. All other emissions sources that cannot be quantified by the URBEMIS model will be qualitatively discussed.

Table 17-13: Emissions Sources and Method of Assessment for the Two Alternatives

Type of Emissions Source	Method of Assessment
Mobile source	URBEMIS
Stationary source—area emissions	URBEMIS
Construction impacts	URBEMIS
Stationary source—indirect emissions	Qualitative assessment using the California Climate Action Registry methodology
Wastewater treatment	Qualitative assessment
Landfill	Qualitative assessment with comparisons to Contra Costa County emissions

Quantitative Assessment from URBEMIS

Estimating Mobile Source Emissions

In order to calculate the emissions generated by mobile sources, the URBEMIS model was employed to calculate the direct carbon dioxide emissions outputs from mobile sources. URBEMIS is a publicly available tool, and approved for use in California by the ARB. URBEMIS uses data from Emfac (a California Emissions Factor database) in order to derive the outputs of carbon dioxide. Under the Operational Data category within the model, there are several fields that contribute to the overall output. These fields consist of year of vehicle manufacture and vehicle fleet percentages (which are provided by Emfac), trip characteristics, temperature data, variable starts, road dust, pass-by trips, and double counting. The Operational Data category also allows the user to select mitigation measures that would apply to a project.

For both alternatives, five of these mitigation measures were selected. The mitigations that were incorporated in the model are: mix of uses, local serving retail, transit service, bike and pedestrian measures, and affordable housing inputs. This helped lower the overall emissions from the alternatives. Table 17-14 displays the outputs for mobile sources in each alternative. For a complete summary of all URBEMIS output sources, please refer to Appendices 17B, 17C, and 17D.

According to the CAPCOA white paper from January 2008, the biggest issue with URBEMIS is that it fails to internalize trips and thus relies on generalized trip generation rates from the Institute of Transportation Engineers (ITE). The best way to correct this issue is to use URBEMIS in conjunction with a traffic study that has been conducted for the project area. A project-specific traffic study shows what trip rates and VMT rates will be expected from the project. In the cases of the Preferred Alternative and the Concentration and Conservation Alternative, traffic studies, as reported in Chapter 4, were conducted.

The CAPCOA white paper allows overwriting the trip details within URBEMIS if a traffic study is available. While the analysis conducted in this EIR does not overwrite the trip details, the traffic studies were used to double check and compare the URBEMIS model

outputs for accuracy. After inputting land uses in the URBEMIS units and site acreage fields, the VMT and daily trip rates generated by the model were similar to those from the traffic studies.

Table 17-14: Summary of Carbon Dioxide Outputs from Mobile Sources

Alternative	Short Tons of Carbon Dioxide Emissions per Year
Preferred Alternative	237,482
Concentration and Conservation Alternative	195,257
No Project Alternative	814

Estimating Area Source Emissions

One of the category outputs in URBEMIS is area source emissions. The emissions that are calculated in this category include the natural gas fuel combustion in residential and non-residential buildings; hearth fuel combustion from wood stoves, wood fireplaces, and natural gas fireplaces; and fuel combustion from landscape tools. Table 17-15 shows the amount of tons of carbon dioxide per year from these sources for each alternative.

Table 17-15: Summary of Carbon Dioxide Outputs from Area Source Emissions

Alternative	Short Tons of Carbon Dioxide Emissions per Year
Preferred Alternative	45,578
Concentration and Conservation Alternative	35,518
No Project Alternative	26

Estimating Construction Source Emissions

URBEMIS was also used to estimate emissions from construction impacts on site. It projects emissions on an annual basis, for the projected buildout period. For the purposes of the modeling effort, it was assumed that both alternatives have a projected construction timeline of 2010 through 2040. URBEMIS does not have the capacity to compute emissions after 2040. The outputs for individual years are included in Appendix 11A. The average annual emissions of each alternative can be found in Table 17-16.

Table 17-16: Summary of Carbon Dioxide Outputs from Construction Emissions

Alternative	Average Short Tons of Carbon Dioxide Emissions per Year
Preferred Alternative	50,350
Concentration and Conservation Alternative	42,826
No Project Alternative	Not Applicable

Sum of all URBEMIS Emissions

Mobile sources, area sources, and construction emissions represent the three emissions sources estimated by the URBEMIS model. The URBEMIS model provides outputs in units of short tons. Table 17-17 displays a summary of all the carbon dioxide emissions which URBEMIS estimates for each alternative. In order to convert the total of short tons of carbon dioxide emissions for each alternative into metric tons, the sum must be multiplied by a conversion factor of 0.91. The right-most column in Table 17-17 shows the conversion into metric tons.

Table 17-17: Summary of Carbon Dioxide Outputs from URBEMIS Model

Alternative	Short Tons of Carbon Dioxide Emissions per Year from Mobile Sources	Short Tons of Carbon Dioxide Emissions per Year from Area Sources	Average Short Tons of Carbon Dioxide Emissions per Year from Construction	Sum of carbon dioxide emissions from URBEMIS (Short tons)	Sum of carbon dioxide emissions from URBEMIS (Metric tons)
Preferred Alternative	237,482	45,578	50,350	333,410	303,403
Concentration and Conservation Alternative	195,257	35,518	42,826	273,601	248,977
No Project Alternative	814	26	Not Applicable	840	764

Qualitative Supplement or Other Emissions Sources

Indirect Emissions Sources

The electricity generated to power the buildings and infrastructure on site represents an emissions source for both alternatives. Since the power emissions are generated off site, this is referred as an indirect emissions source. While the URBEMIS model is not capable of estimating indirect emissions sources, there are other means to estimate indirect emissions. The California Climate Action Registry (CCAR) has developed a general reporting protocol for this purpose. While the CCAR protocol is more appropriate for building and entity-level emissions analysis, it does provide some useful metrics that help estimate GHG emissions. In the latest version, the General Reporting Protocol 3.1, Chapter 6 offers equations to help estimate total emissions from indirect electricity use. The protocol advises the user to calculate outputs for total carbon dioxide, total methane emissions, and total nitrous oxide emissions. These outputs depend on the electricity emissions factors, which vary per region

and per GHG. According to the eGRID2007 Version 1.1 December 2008, the U.S. is separated into several subregions. The state of California is its own subregion, referred to as CAMX. The calculation equations and relevant emissions factors are shown in Table 17-17.

Table 17-18: Equations to Calculate Indirect Emissions from Electricity Use

Output	Total Emissions from Indirect Electricity Use		
Total carbon dioxide emissions (metric tons)	= electricity use (kWh)	x electricity emissions factor (724.12 lbs CO_2/kWh)	/ 2,204.62 lbs/metric ton
Total CH_4 emissions (metric tons)	= electricity use (kWh)	x electricity emissions factor (0.0302 lbs CH_4/kWh)	/ 2,204.62 lbs/metric ton
Total N_2O emissions (metric tons)	= electricity use (kWh)	x electricity emissions factor (0.0081 lbs N_2O/kWh)	/ 2,204.62 lbs/metric ton

CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; lbs = pounds; kWh = kilowatt hours
Source: CCAR General Reporting Protocol 3.1, Equation III.6b

The CAPCOA white paper suggests an average rate of electrical consumption for both residential buildings (7,000 kilowatt hours [kWh] per year per household) and commercial buildings (16,750 kWh per thousand square feet of commercial floor space). While these numbers would make it possible to calculate a gross estimate of projected emissions for both alternatives, these estimates would be significantly skewed since there is currently no data for the electricity consumption on site. As such, the indirect emissions from electricity use will not be quantified in this EIR.

Landfill and Solid Waste Disposal Facilities Emissions

Another source of indirect emissions comes from landfills or other solid waste disposal facilities. While there are publicly available models to estimate emissions (U.S. Environmental Protection Agency's Landfill Gas Emissions Model called LandGem), it requires significantly detailed inputs that are not available for the either alternative at the present time. However, in order provide a reference point for emissions from landfill waste at the site, one can look at the emissions inventory for Contra Costa County. As identified on Figure 17-5, landfill waste contributes less than 2 percent of GHG emissions to the total emissions inventory in Contra Costa County.

Emissions from Wastewater Treatment Facilities

Similar to landfills, wastewater treatment facilities represent another indirect emissions source. GHG emissions vary by each plant, and there is currently no standard set of emissions factors associated with emissions calculations. Therefore, these indirect emissions sources are not included in this EIR.

17.1.18.5 Potential Cumulative Air Quality Impacts

Land use planning can have a significant effect on the GHG emissions associated with areas of built development, and design decisions made early in the planning and design process can significantly reduce GHG emissions once the project is built out and operational. The Scoping Plan for AB 32 looks beyond AB 32's 2020 targets to the years 2030 and 2050. Many of the strategies that will help achieve reduction goals include land use and transportation policies that will lower VMT, as well as green building efforts that will reduce GHG emissions. Both alternatives incorporate various design characteristics that will result in reduced operational GHG emissions, in particular:

- Transit-oriented development: Clustering higher density development close to transit stops, encouraging more trips to be made by transit, and helping to ease congestion
- Mixed-use development: Mixing different categories of land use so that distances between residential units and workplaces, businesses, and services are reduced, encouraging journeys by foot and bicycle, and easing congestion
- Density: Higher-density development increases the viability of transit and tends to increase the operational energy efficiency of buildings and infrastructure

Cumulative Impact Air Quality 1: Emissions from the Preferred Alternative would result in an increase to global greenhouse gas emissions. This impact is considered to be significant.

The Preferred Alternative will contribute to an increase in GHGs from mobile sources, stationary sources, and other indirect sources. Based on a CEQA threshold of zero, any increase in GHGs would render the impact significant. Due to the increase in GHGs on site, the impact of the Preferred Alternative will be significant.

> **<u>Cumulative Mitigation Measure Air Quality 1</u>: The City of Concord shall require development and implementation of a Climate Action Plan for the project prior to amendment of the General Plan. With implementation of this mitigation measure, this significant impact will still be considered significant and unavoidable.**

The Climate Action Plan will be required and will need to implement a five-step process for the development of the Preferred Alternative at the site. The International Council on Local Environmental Issues (ICLEI) has created a program called Cities for Climate Protection. Through this program, it has established a framework for managing the impacts of climate change and writing climate action plans. Local governments that participate in the Cities for Climate Protection program commit to completing the five steps outlined by ICLEI. The five steps are:

1. Conduct a GHG emissions analysis/inventory.
2. Set a target for emissions reduction.
3. Draft a local action plan for meeting the target/establish a GHG reduction plan.
4. Implement the action plan.
5. Monitor and report on progress.

These five steps provide a framework that can be followed in relation to the Preferred Alternative. Once an inventory has been assessed, reduction targets can be set. This could link back to AB 32 emissions reduction targets (1990 levels by 2020) or some other variation that looks beyond 2020. Executive Order S-3-05 looks to an 80 percent reduction from 1990 levels by 2050. This reduction target can help guide the project's Climate Action Plan. Under step 3, a GHG reduction plan will be established for the project to help achieve necessary reductions. The GHG reduction plan will list required measures and set design standards so that all buildings and infrastructure are designed and constructed to maximize energy efficiency. The plan will also identify appropriate on-site renewable energy technologies. The standards and strategies set out in the plan will reduce GHG emissions associated with the project's energy supply and demand. Once reduction targets have been set and a plan has been mapped out, it will be necessary to monitor the progress of GHG reduction. Monitoring tactics can include surveys, inventory assessments every 2 or 5 years, and other ways of assessing how the reduction plan is functioning.

There is considerable opportunity to make significant and cost-effective GHG emission reductions by implementing strategies to improve energy efficiencies and reduce demand, while supplying clean energy from on-site renewable sources. Appendix F of the CEQA Guidelines suggests several mitigation measures that promote energy conservation. In addition to those mentioned in Appendix F, energy efficiency and conservation strategies that would result in reduced GHG emissions include, but are not limited to:

- Co-generation
- District heating and cooling systems
- Passive solar space heating
- Solar thermal water heating
- Building shading devices to reduce solar loads
- Siting and orientation of buildings
- Daylighting
- Natural ventilation
- High-performance glazing
- Reflective paving and roofs to reduce the heat island effect
- Efficient building equipment, lighting, and appliances

Low-GHG or zero-GHG energy sources include:

- Building-integrated photovoltaic panels
- Wind turbines
- Solar farms
- Anaerobic digestion of organic waste

Water conservation and efficiency efforts include:

- Water-efficient landscapes and irrigation systems
- Water-efficient building design
- Restriction of watering methods and control of stormwater run-off
- On-site education regarding water conservation

Solid waste measures include:

- The reuse and recycling of construction and demolition waste
- Interior and exterior storage containers for recyclables and compost

Transportation and motor vehicle measures include:

- Limiting idling time for construction vehicles and commercial vehicles on site
- Promoting car-share and ride-share programs within the community
- Promoting the use of low-emissions vehicles by providing charging stations on site

Other measures include:

- Promoting local hiring practices during site construction

All measures to reduce VMT associated with the project will also reduce GHG emissions from mobile sources (see Chapter 4, Transportation, and Chapter 11, Air Quality). When combined with the stationary source reductions, the mobile source emissions reductions will reduce the overall GHG emissions associated with the project and help meet the targets that will be established in the Climate Action Plan.

Cumulative Impact Air Quality 2: Emissions from the Concentration and Conservation Alternative would result in an increase to global greenhouse gas emissions. This impact is considered to be significant.

The Concentration and Conservation Alternative will contribute to an increase in GHG emissions from mobile sources, stationary sources, and other indirect sources. Based on a CEQA threshold of zero, any increase in GHGs would render the impact significant. Due to the increase in GHGs on site, the impact of the Concentration and Conservation Alternative will be significant.

> **<u>Cumulative Mitigation Measure Air Quality 2</u>: The City of Concord shall require development and implementation of a Climate Action Plan for the project prior to amendment of the General Plan. With implementation of this mitigation measure, this impact will still be significant and unavoidable.**

Refer to the discussion addressing mitigation of this impact for the Preferred Alternative (Cumulative Mitigation Measure Air Quality 1).

17.2 Growth Inducing Impacts

As required by section 15126.2(d) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to development, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional development. Although growth inducement itself is not considered an environmental effect, it could potentially lead to environmental effects.

In general, a project may foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area, or a change in zoning or general plan amendment approval) or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion, etc.). These circumstances are further described as follows:

- Elimination of obstacles to growth: This refers to the extent to which a proposed project removes infrastructure limitations, provides infrastructure capacity, or removes regulatory constraints that could result in growth unforeseen at the time of project approval.
- Economic effects: This refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include effects such as the “multiplier effect.” A “multiplier” is an economic term used to describe inter-relationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project.

As described in Chapter 13, Population, Housing, and Employment, implementation of either alternative would generate jobs and housing. The projected increases in both jobs and housing, however, are consistent with planned regional growth (ABAG, 2007). The alternatives could accommodate ABAG’s projected population increases, assist in meeting ABAG’s regional housing objectives, and conform with ABAG’s Smart Growth Strategy of providing jobs and housing in close proximity to existing urbanization. In this respect, the implementation of either alternative is growth managing rather than growth inducing by directing urban in-fill within an existing service area, restoring a brownfield site with sources of contamination, and preserving open space.

17.3 Unavoidable Significant Impacts

This section identifies the potential unavoidable significant impacts of the two alternatives for which either no mitigation or only partial mitigation is feasible. These project specific unavoidable significant impacts are in addition to the cumulative unavoidable significant impacts presented previously in Section 17.2. Table 17-19~~8~~ and Table 17-2019~~9~~ summarize the unavoidable significant impacts of the Preferred Alternative and the Concentration and Conservation Alternative respectively. A Statement of Overriding Consideration for these unavoidable significant impacts will be required to explain why the stated economic, social, and other benefits of either alternative override the remaining significant impacts.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Preferred Alternative	
Impact Land Use 1: The Preferred Alternative could introduce short- or long-term land use compatibility conflicts by placing higher-intensity uses and non-residential uses in close proximity to the existing lower-density residential uses in the Sun Terrace and Holbrook neighborhoods and Coast Guard Housing complex along East Olivera Road. This impact is considered to be potentially significant.	**Mitigation Measure Land Use 1**: Prior to approving any specific public or private development that would impact the Sun Terrace or Holbrook neighborhoods or the Coast Guard housing complex, the City of Concord shall require the implementation of the following measures: • Prepare design standards that incorporate measures to transition and integrate new development with adjacent uses. • Incorporate such measures into development plans. • Notify adjacent property owners in the Sun Terrace and Holbrook neighborhoods and the Coast Guard housing complex to review specific plans or proposals for development adjacent to the North Concord/Martinez BART Station. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to the granting of land use entitlements. However, the new development is anticipated to continue to be incompatible with these residential areas. Even with implementation of this mitigation measure, this impact will remain significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 1: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on six freeway segments: 1. SR 4 east of SR 242 westbound (PM peak hour) 2. SR 4 east of Willow Pass Road eastbound (PM peak hour) 3. SR 4 east of Willow Pass Road westbound (AM and PM peak hours) 4. SR 4 east of San Marco Boulevard eastbound (PM peak hour) 5. I-680 north of SR 242 southbound (PM peak hour) 6. I-680 north of SR 4 southbound (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 1**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 2: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on 11 freeway ramps: 1. I-680/Willow Pass Road eastbound-to-southbound on-ramp (AM peak hour) 2. SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour) 3. SR 4/Willow Pass Road westbound off-ramp (AM peak hour) 4. SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour) 5. SR 4/Southbound San Marco Boulevard westbound on-ramp (AM peak hour) 6. SR 4/Northbound San Marco Boulevard westbound on-ramp (AM peak hour) 7. SR 4/Northbound San Marco Boulevard eastbound on-ramp (PM peak hour) 8. SR 4/San Marco Boulevard westbound off-ramp (AM peak hour) 9. SR 4/Southbound Bailey Road eastbound off-ramp (PM peak hour) 10. SR 4/Bailey Road westbound on-ramp (AM peak hour) 11. SR 4/Railroad Avenue westbound on-ramp (AM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 2**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 3: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold on two roadway segments: • Concord Boulevard west of Denkinger Road (AM and PM peak hours) • Port Chicago Highway north of Olivera Road (AM and PM peak hours)	**Mitigation Measure Transportation 3**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.
Impact Transportation 4: The development of the Preferred Alternative would increase traffic volumes and exceed the established performance threshold at 11 intersections: 1. Port Chicago Highway and Panoramic Drive (AM peak hour) 2. Port Chicago Highway and Olivera Road (AM and PM peak hours) 3. Oak Road and Treat Boulevard (PM peak hour) 4. North Main Street and Geary Road (AM and PM peak hours) 5. North Bancroft Road and Treat Boulevard (PM peak hour) 6. Main Street and Sunnyvale Avenue and SB I-680 ramps (AM peak hour) 7. Willow Pass Road and Evora Road (west) (PM peak hour) 8. San Marco Boulevard and West Leland Road (AM peak hour) 9. Railroad Avenue and West Leland Road (AM peak hour)	**Mitigation Measure Transportation 4, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable. **Mitigation Measure Transportation 4, Intersection Impact Location 2**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 4, continued 10. Kirker Pass Road and James Donlon Boulevard Extension (PM peak hour) 11. San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramp (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 4, Intersection Impact Location 3**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 4: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 5: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 6: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 7: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 8: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 9: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's planned improvement at the intersection of Railroad Avenue and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 10: ~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected jurisdiction takes place and agreement reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 4, Intersection Impact Location 11: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at San Marco Boulevard - Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 5: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold on 16 segments of regional routes: 1. I-680 south of Monument Boulevard - southbound PM peak hour (average speed and delay index) 2. I-680 north of Monument Boulevard - southbound PM peak hour (average speed and delay index) 3. I-680 north of SR 242 - southbound PM peak hour (average speed and delay index) 4. SR 242 north of I-680 - southbound PM peak hour (average speed and delay index) 5. SR 4 east of Willow Pass Road - eastbound PM peak hour (average speed and delay index) 6. SR 4 east of Willow Pass Road - westbound AM peak hour (average speed and delay index) 7. SR 4 east of San Marco Boulevard - eastbound PM peak hour (delay index) 8. SR 4 east of San Marco Boulevard - westbound AM peak hour (delay index) 9. SR 4 east of Bailey Road - eastbound PM peak hour (delay index) 10. SR 4 east of Bailey Road - westbound AM peak hour (delay index) 11. Leland Road (proposed) east of San Marco Boulevard - eastbound PM peak hour (delay index) 12. Leland Road (proposed) east of San Marco Boulevard - westbound AM peak hour (delay index) 13. Avila Road (proposed) west of San Marco Boulevard - eastbound PM peak hour (delay index)	**Mitigation Measure Transportation 5**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 5, continued: 14. Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM peak hours (delay index) 15. Willow Pass Road east of Evora Road - eastbound PM peak hour (delay index) 16. Willow Pass Road east of Evora Road - westbound AM peak hour (delay index) This impact is considered to be potentially significant.	

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 10: The development of the Preferred Alternative would increase traffic volumes and contribute to already deficient conditions on one freeway ramp: SR 4/Port Chicago Highway westbound on-ramp (PM peak hour). This impact is considered to be potentially significant.	**Mitigation Measure Transportation 10**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.
Impact Transportation 11: The development of the Preferred Alternative would increase traffic volumes and contribute to already deficient conditions at five intersections:	**Mitigation Measure Transportation 11, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 11, continued 1. Oak Grove Road and Treat Boulevard (AM peak hour) 2. Walnut Boulevard and Ygnacio Valley Road (PM peak hour) 3. Buskirk Avenue - northbound I-680 off-ramp and Treat Boulevard (PM peak hour) 4. Northbound I-680 off-ramp and Ygnacio Valley Road (AM peak hour) 5. Bailey Road and SR 4 eastbound ramps - BART access (PM peak hour) This impact is considered to be potentially significant.	develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable. **Mitigation Measure Transportation 11, Intersection Impact Location 2**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 11, Intersection Impact Location 3: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 11, Intersection Impact Location 4: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 11, Intersection Impact Location 5: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements to the intersection of Bailey Road and SR 4 eastbound ramps. Until future coordination with the affected jurisdiction, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 12: The development of the Preferred Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and contribute to already deficient conditions on 29 segments of regional routes: 1. Kirker Pass Road east of Concord Boulevard - eastbound PM peak hours (average vehicle occupancy) 2. Kirker Pass Road east of Concord Boulevard - westbound PM peak hour (average vehicle occupancy) 3. Treat Boulevard east of Oak Grove Road - eastbound AM peak hour (average vehicle occupancy) 4. Ygnacio Valley Road east of Cowell Road - eastbound AM peak hour (average vehicle occupancy) 5. Ygnacio Valley Road east of Cowell Road - westbound PM peak hour (average vehicle occupancy) 6. I-680 south of Monument Boulevard - southbound AM peak hour (average vehicle occupancy) 7. I-680 north of Monument Boulevard - northbound AM peak hour (average vehicle occupancy) 8. I-680 north of Monument Boulevard - southbound PM peak hour (average vehicle occupancy) 9. I-680 north of Concord Avenue - northbound AM peak hour (average vehicle occupancy) 10. SR 242 north of I-680 - northbound AM peak hour (average vehicle occupancy) 11. SR 242 north of I-680 - southbound AM and PM peak hours (average vehicle occupancy) 12. SR 242 north of Willow Pass Road - northbound AM and PM peak hours (average vehicle occupancy)	**Mitigation Measure Transportation 12**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 12, continued 13. SR 242 north of Willow Pass Road - southbound AM and PM peak hours (average vehicle occupancy) 14. SR 242 north of Concord Avenue - northbound PM peak hours (average vehicle occupancy) 15. SR 242 north of Concord Avenue - southbound PM peak hour (average vehicle occupancy) 16. SR 242 north of Solano Way - northbound PM peak hours (average vehicle occupancy) 17. SR 242 north of Solano Way - southbound PM peak hour (average vehicle occupancy) 18. SR 242 north of Olivera Road - northbound PM peak hour (average vehicle occupancy) 19. SR 242 north of Olivera Road - southbound PM peak hour (average vehicle occupancy) 20. SR 4 east of I-680 - eastbound AM peak hour (average vehicle occupancy) 21. SR 4 east of Solano Way - eastbound AM peak hour (average vehicle occupancy) 22. SR 4 east of Port Chicago Highway - eastbound AM peak hour (average vehicle occupancy) 23. SR 4 east of Port Chicago Highway - westbound PM peak hour (average vehicle occupancy) 24. SR 4 east of Willow Pass Road - eastbound AM peak hour (average vehicle occupancy) 25. SR 4 east of Willow Pass Road - westbound PM peak hour (average vehicle occupancy) 26. SR 4 east of San Marco Boulevard - eastbound AM peak hour (average vehicle occupancy) 27. SR 4 east of San Marco Boulevard - westbound PM peak hour (average vehicle occupancy)	

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 12, continued 28. SR 4 east of Bailey Road - westbound PM peak hour (average vehicle occupancy) 29. SR 4 east of Railroad Avenue - eastbound AM and PM peak hours (average vehicle occupancy) This impact is considered to be potentially significant.	
Impact Visual Resources 1: The Preferred Alternative has the potential to degrade the visual character of the near horizon views of the site from the Sun Terrace Neighborhood and the Coast Guard Housing complex. This impact is considered to be potentially significant.	**Mitigation Measure Visual Resources 1**: Prior to approving any specific public or private development on the site, the City of Concord shall require incorporation of best management practices in any site development plans, with the purpose of minimizing the impacts of urban development as seen from the Sun Terrace Neighborhood and the Coast Guard Housing complex. However, even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.
Impact Air Quality 1: The Preferred Alternative would result in the total ~~vehicular~~ emissions of ozone precursors exceeding the Bay Area Air Quality Management District (BAAQMD) quantitative thresholds.	**Mitigation Measure Air Quality 1**: Prior to approving development at the site, the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. To further reduce particulate matter emissions, wood-burning fireplaces will be banned within the CNWS or required to employ best available control technologies and households with such fireplaces must comply with all applicable Spare the Air Day restrictions. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.
Impact Air Quality 2: As a result of implementing the Preferred Alternative the total population of the City of Concord, including the project, would exceed the maximum population forecast in the General Plan that would be consistent with the current clean air plan.	**Mitigation Measure Air Quality 2**: Prior to approving development at the site the City of Concord shall request updated population projections from the Association of Bay Area Governments (ABAG) and BAAQMD and the City shall coordinate with these agencies to update the applicable clean air plans so that the projections of Concord's 2030 population are updated (increased) by ABAG to reflect the size and scope of the Preferred Alternative. The updated projections shall be such that the additional population due to the implementation of the Preferred Alternative will not exceed the revised 2030 Concord total population. This updated population ceiling shall be incorporated into the applicable clean air plan. Unless ABAG and the BAAQMD revise Concord's 2030 population ceiling, and include it in the applicable clean air plan, this will remain a potential impact that is significant and unavoidable.

Table 17-19: Significant Impacts of the Preferred Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Air Quality 3: The Preferred Alternative could result in increased population and vehicle miles traveled at rates that would be inconsistent with the most current clean air plan.	**Mitigation Measure Air Quality 3**: Prior to approving development at the site the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.
Impact Noise and Vibration 1: Development of the Preferred Alternative would contribute to increases in traffic noise levels on West Street and Denkinger Road.	**Mitigation Measure Noise and Vibration 1**: The City shall require that new extensions of West Street and Denkinger Road shall be constructed using low-noise road surfaces, and to incorporate grading measures such as berms or other barriers to screen noise. The City will also require developers to fund grants that will allow noise-sensitive receptors to install acoustical insulation. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Land Use 5: The Concentration and Conservation Alternative could introduce short- or long-term land use compatibility conflicts by placing higher-intensity uses and non-residential uses in close proximity to the existing lower-density residential uses in the Sun Terrace and Holbrook neighborhoods and Coast Guard Housing complex along East Olivera Road.	**Mitigation Measure Land Use 5**: Prior to approving any specific public or private development that would impact the Sun Terrace or Holbrook neighborhoods or the Coast Guard housing complex, the City of Concord shall require the implementation of the following measures: • Prepare design standards that incorporate measures to transition and integrate new development with adjacent uses. • Incorporate such measures into development plans. • Notify adjacent property owners in the Sun Terrace and Holbrook neighborhoods and the Coast Guard housing complex to review specific plans or proposals for development adjacent to the North Concord/Martinez BART Station. The public or private sponsor of the proposed development shall be responsible for implementation of the required measures prior to the granting of land use entitlements. However, the new development is anticipated to continue to be incompatible with these residential areas. Even with implementation of this mitigation measure, this impact will remain significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 26: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on six freeway segments: 1. SR 4 east of SR 242 westbound (PM peak hour) 2. SR 4 east of Willow Pass Road westbound (AM and PM peak hours) 3. SR 4 east of San Marco Boulevard eastbound (PM peak hour) 4. SR 4 east of Railroad Avenue eastbound (PM peak hour) 5. I-680 north of SR 242 southbound (PM peak hour) 6. I-680 north of SR 4 southbound (AM peak hour)	**Mitigation Measure Transportation 26**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 27: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on 10 freeway ramps: 1. I-680/Willow Pass Road eastbound-to-southbound on-ramp (AM peak hour) 2. SR 242/Concord Avenue eastbound-to-northbound on-ramp (PM peak hour) 3. SR 4/Port Chicago Highway eastbound off-ramp (AM peak hour) 4. SR 4/San Marco Boulevard eastbound off-ramp (PM peak hour) 5. SR 4/southbound San Marco Boulevard westbound on-ramp (AM peak hour) 6. SR 4/northbound San Marco Boulevard westbound on-ramp (AM peak hour) 7. SR 4/northbound San Marco Boulevard eastbound on-ramp (PM peak hour) 8. SR 4/southbound Bailey Road eastbound off-ramp (PM peak hour) 9. SR 4/Bailey Road westbound on-ramp (AM peak hour) 10. SR 4/Railroad Avenue eastbound on-ramp (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 27**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 28: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold on three roadway segments: 1. Ygnacio Valley Road east of Cowell Road (AM peak hour) 2. Concord Boulevard west of Denkinger Road (AM and PM peak hours) 3. Port Chicago Highway north of Olivera Road (AM and PM peak hours) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 28**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.
Impact Transportation 29: The development of the Concentration and Conservation Alternative would increase traffic volumes and exceed the established performance threshold at 11 intersections: 4. Port Chicago Highway and Olivera Road (AM and PM peak hours) 5. Beechwood Drive and Landana Drive (AM peak hour) 6. Oak Road and Treat Boulevard (PM peak hour) 7. Oak Grove Road/~~Ygancio~~Ygnacio Valley Road (AM peak hour) 8. North Main Street and Geary Road (AM peak hour) 9. North Bancroft Road and Treat Boulevard (PM peak hour) 10. Willow Pass Road/Evora Road (East) - SR 4 westbound off-ramp (AM peak hour)	**Mitigation Measure Transportation 29, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable. **Mitigation Measure Transportation 29, Intersection Impact Location 2**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 29, continued 11. Willow Pass Road and Evora Road (west) (AM and PM peak hours) 12. San Marco Boulevard and West Leland Road (AM peak hour) 13. Kirker Pass Road and James Donlon Boulevard Extension (PM peak hour) 14. San Marco Boulevard - Willow Pass Road and SR 4 eastbound ramps (PM peak hour)	**Mitigation Measure Transportation 29, Intersection Impact Location 3**: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 4: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 5: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 6: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 7: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Willow Pass Road and Evora Road (east) – SR 4 westbound ramp. Until future coordination with the affected jurisdiction takes place and agreement reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 8: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of Willow Pass Road and Evora Road (west). This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 9: ~~The City of Concord will coordinate with the City of Pittsburg in good faith prior to the approval of a specific development with the goal of reaching agreement about how to implement Pittsburg's programmed improvement at the intersection of San Marco Boulevard and West Leland Road. This impact would remain significant during the AM peak hour even with Pittsburg's planned improvement. Therefore, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 10: ~~The City of Concord will coordinate in good faith with the City of Pittsburg prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at Kirker Pass Road and James Donlon Boulevard Extension. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 29, Intersection Impact Location 11: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements at San Marco Boulevard – Willow Pass Road and the SR 4 eastbound ramp. Until future coordination with the affected jurisdiction takes place and agreement is reached, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 30: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and exceed the established performance threshold on 16 segments of regional routes: 1. Treat Boulevard east of Oak Grove - westbound PM peak hour (average vehicle occupancy) 2. I-680 south of Monument Boulevard - southbound PM peak hour (average speed and delay index) 3. I-680 north of Monument Boulevard - southbound PM peak hour (average speed and delay index) 4. I-680 north of SR 242 - southbound PM peak hour (average speed and delay index) 5. SR 4 east of Willow Pass Road - eastbound PM peak hour (average speed and delay index) 6. SR 4 east of Willow Pass Road - westbound AM peak hour (average speed and delay index) 7. SR 4 east of San Marco Boulevard - eastbound PM peak hour (delay index) 8. SR 4 east of San Marco Boulevard - westbound AM peak hour (delay index) 9. SR 4 east of Bailey Road - eastbound PM peak hour (delay index) 10. SR 4 east of Bailey Road - westbound AM peak hour (delay index) 11. Leland Road (proposed) east of San Marco Boulevard - eastbound PM peak hour (delay index) 12. Leland Road (proposed) east of San Marco Boulevard - westbound AM peak hour (delay index) 13. Avila Road (proposed) west of San Marco Boulevard - eastbound PM peak hour (delay index)	**Mitigation Measure Transportation 30**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 30, continued: 14. Avila Road (proposed) west of San Marco Boulevard - westbound AM and PM peak hours (delay index) 15. Willow Pass Road east of Evora Road - eastbound PM peak hour (delay index) 16. Willow Pass Road east of Evora Road - westbound AM peak hour (delay index) This impact is considered to be potentially significant.	

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 35: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on one freeway segment: I-680 north of SR 242 northbound during the PM peak hour. This impact is considered to be potentially significant.	**Mitigation Measure Transportation 35**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 36: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on two freeway ramps: 1. I-680/Willow Pass Road northbound off-ramp (PM peak hour) 2. SR 4/Port Chicago Highway westbound on-ramp (PM peak hour) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 36**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 37: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions on one roadway segment: 1. Bailey Road east of Concord Boulevard (AM and PM peak hours) This impact is considered to be potentially significant.	**Mitigation Measure Transportation 37**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this roadway periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.
Impact Transportation 38: The development of the Concentration and Conservation Alternative would increase traffic volumes and contribute to already deficient conditions at five intersections: 1. Oak Grove Road and Treat Boulevard (AM peak hour) 2. Walnut Boulevard and Ygnacio Valley Road (PM peak hour) 3. Buskirk Avenue - Northbound I-680 off-ramp/Treat Boulevard (AM and PM peak hours) 4. Northbound I-680 off-ramp/Ygnacio Valley Road (AM peak hour) 5. Bailey Road/SR 4 eastbound ramps - BART access (PM peak hour)	**Mitigation Measure Transportation 38, Intersection Impact Location 1**: TDM programs will be adopted through an amendment to the Concord General Plan, including bicycle and pedestrian facilities, transit promotion, carpool promotion, and parking management, that support the use of alternative transportation modes and will reduce the use of automobiles, thus lessening traffic impacts. The City will monitor this intersection periodically and will develop updated traffic volume forecasts based on the performance of TDM programs as development occurs in the future. The City of Concord shall select and implement a mechanism to support the funding of transit operations and TDM programs as will be described in the future amendment of the General Plan to address the CCRP area. This mechanism shall apply to new development on the CNWS and shall fund on-going operations. However, this impact is considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 38, Intersection Impact Location 2: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 38, Intersection Impact Location 3: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 38, Intersection Impact Location 4: ~~The City of Concord will coordinate in good faith with the City of Walnut Creek and Caltrans prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Program requirements of the Central County Action Plan for Routes of Regional Significance. However, this impact is considered significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
	Mitigation Measure Transportation 38, Intersection Impact Location 5: ~~The City of Concord will coordinate in good faith with the City of Pittsburg and Caltrans prior to approval of a specific development with the goal of reaching agreement on appropriate improvements to the intersection of Bailey Road and SR 4 eastbound ramps. Until future coordination with the affected jurisdiction, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 39: The development of the Concentration and Conservation Alternative would reduce average vehicle occupancies, increase the delay index, and/or reduce average speeds and contribute to already deficient conditions on 28 segments of regional routes: 1. Kirker Pass Road east of Concord Boulevard - eastbound PM peak hour (average vehicle occupancy) 2. Kirker Pass Road east of Concord Boulevard - westbound PM peak hour (average vehicle occupancy) 3. Treat Boulevard east of Oak Grove Road - eastbound AM peak hour (average vehicle occupancy) 4. Ygnacio Valley Road east of Cowell Road - eastbound AM peak hour (average vehicle occupancy) 5. Ygnacio Valley Road east of Cowell Road - westbound AM and PM peak hours (average vehicle occupancy) 6. I-680 south of Monument Boulevard - northbound AM peak hour (average vehicle occupancy) 7. I-680 north of Monument Boulevard - northbound AM peak hour (average vehicle occupancy) 8. I-680 north of Monument Boulevard - southbound PM peak hour (average vehicle occupancy) 9. I-680 north of Concord Avenue - northbound AM peak hour (average vehicle occupancy) 10. SR 242 north of I-680 - northbound AM and PM peak hours (average vehicle occupancy) 11. SR 242 north of I-680 - southbound PM peak hour (average vehicle occupancy) 12. SR 242 north of Willow Pass Road - northbound AM and PM peak hours (average vehicle occupancy)	**Mitigation Measure Transportation 39**: ~~Prior to approving a specific development, the City of Concord shall require future developers at the site to contribute a fair share of the cost to construct planned improvements on the adjacent freeway system as determined in coordination with Caltrans and the Contra Costa Transportation Authority. An AB 1600 study shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned regional improvements. No development will occur until an AB 1600 study is adopted. Even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.~~ The City of Concord will coordinate in good faith with affected jurisdictions, including neighboring cities, Caltrans, and Contra Costa County, prior to the approval of a specific development with the goal of reaching agreement on the appropriate mitigation measures to address impacts in the respective agencies' jurisdiction. The City of Concord will work collaboratively with affected jurisdictions to identify specific performance criteria to mitigate the impact. Mitigation measures may include capacity increases, Transportation Demand Management (TDM) measures, arterial traffic management tools, and adaptive timing technology upgrades. The Concord Naval Weapons Station Area Plan will include specific TDM measures with corresponding estimates of trip reductions. The City shall require future developers at the site to contribute a traffic impact fee in accordance with the TRANSPAC Subregional Transportation Mitigation Fee Program requirements of the Central County Action Plan for Routes of Regional Significance. All currently existing applicable agreements, including the Bailey Road Traffic Mitigation Measure Inter-Agency Funding Agreement and the East Central Traffic Management Study, may be reviewed and revised through this coordinated process. A Nexus Study, required pursuant to the Mitigation Fee Act ("AB 1600 Study") shall be conducted for the entire site to establish an equitable traffic impact fee rate for each land use category to ensure that future development projects will contribute a fair share of the unfunded cost of planned improvements and mitigation measures determined cooperatively by the City of Concord and the affected jurisdictions. No development will occur until a traffic impact fee is adopted based on an AB 1600 study. Until future coordination with the affected jurisdictions takes place and agreement is reached, this impact is conservatively considered significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 39, continued 13. SR 242 north of Willow Pass Road - southbound PM peak hour (average vehicle occupancy) 14. SR 242 north of Concord Avenue - northbound PM peak hour (average vehicle occupancy) 15. SR 242 north of Concord Avenue - southbound PM peak hour (average vehicle occupancy) 16. SR 242 north of Solano Way - northbound PM peak hour (average vehicle occupancy) 17. SR 242 north of Solano Way - southbound PM peak hour (average vehicle occupancy) 18. SR 242 north of Olivera Road - northbound PM peak hour (average vehicle occupancy) 19. SR 242 north of Olivera Road - southbound PM peak hour (average vehicle occupancy) 20. SR 4 east of I-680 - eastbound AM peak hour (average vehicle occupancy) 21. SR 4 east of Solano Way - eastbound AM peak hour (average vehicle occupancy) 22. SR 4 east of Port Chicago Highway - eastbound AM peak hour (average vehicle occupancy) 23. SR 4 east of Port Chicago Highway - westbound PM peak hour (average vehicle occupancy) 24. SR 4 east of Willow Pass Road - eastbound AM and PM peak hours (average vehicle occupancy) 25. SR 4 east of Willow Pass Road - westbound PM peak hours (average vehicle occupancy)	

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Transportation 39, continued 26. SR 4 east of San Marco Boulevard - eastbound AM peak hour (average vehicle occupancy) 27. SR 4 east of San Marco Boulevard - westbound PM peak hour (average vehicle occupancy) 28. SR 4 east of Railroad Avenue - eastbound AM and PM peak hours (average vehicle occupancy)	
Impact Visual Resources 13: The Concentration and Conservation Alternative has the potential to degrade the visual character of the near horizon views of the site from the Sun Terrace Neighborhood and the Coast Guard Housing complex.	**Mitigation Measure Visual Resources 13**: Prior to approving any specific public or private development on the site, the City of Concord shall require incorporation of best management practices in any site development plans with the purpose of minimizing the impacts of urban development as seen from the Sun Terrace Neighborhood and the Coast Guard Housing complex. However, even with the implementation of this mitigation measure, this impact will remain significant and unavoidable.
Impact Air Quality 8: The Concentration and Conservation Alternative would result in the total vehicular emissions of ozone precursors exceed the BAAQMD quantitative thresholds.	**Mitigation Measure Air Quality 8**: Prior to approving development at the site the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. To further reduce particulate matter emissions, wood-burning fireplaces will be banned within the CNWS or required to employ best available control technologies and households with such fireplaces shall comply with Spare the Air Day restrictions. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.

Table 17-20: Significant Impacts of the Concentration and Conservation Alternative That Cannot Be Mitigated to a Level That Is Less Than Significant

Impact	Mitigation Measure
Impact Air Quality 9: As a result of implementing~~.~~ the Concentration and Conservation Alternative, the total population of the City of Concord, including the project, would exceed the maximum population forecast in the General Plan that would be consistent with the current clean air plan.	**Mitigation Measure Air Quality 9**: Prior to approving development at the site the City of Concord the City shall request updated population projections from ABAG and BAAQMD and the City shall coordinate with these agencies to update the applicable clean air plans so that the projections of Concord's 2030 population are updated (increased) by ABAG to reflect the size and scope of the Concentration and Conservation Alternative. The updated projections shall be such that the additional population due to the implementation of the Concentration and Conservation Alternative will not exceed the revised 2030 Concord total population. This updated population ceiling shall be incorporated into the applicable clean air plan. Unless ABAG and the BAAQMD revise Concord's 2030 population ceiling, and include it in the applicable clean air plan, this will remain a potential impact that is significant and unavoidable.
Impact Air Quality 10: The Concentration and Conservation Alternative could result in increased population and vehicle miles traveled at rates that would be inconsistent with the most current clean air plan.	**Mitigation Measure Air Quality 10**: Prior to approving development at the site the City of Concord shall ensure that the proposed project includes feasible measures for reducing automobile dependence and potential vehicle emissions as part of the basic project design. These measures include providing for a mix of uses, local and regional transit as well as peak-hour shuttle services, bicycle and pedestrian measures such as sidewalks and bike lanes, local serving retail, and 10 percent affordable housing. According to the BAAQMD Guidelines, this will remain a potential impact that is considered to be significant and unavoidable.

17.4 Significant Irreversible Environmental Effects

Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by a proposed project. Section 15126.2(c) states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project
- The project would involve a large commitment of nonrenewable resources
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy)

Long-term development associated with either alternative would result in conversion of existing acreage from a former military site to mixed-use urban development. Part of the irreversible environmental change will include the development of land (ranging between 1,742 acres with the Preferred Alternative and 1,339 acres with the Concentration and Conservation Alternative) to urban use.

Both alternatives are consistent with planned regional and local growth, and have been developed based on the concept of sustainability, as demonstrated by:

- A comprehensive public outreach program, which has informed the planning process and allowed the views of the community in terms of jobs and services, as well as open space, to be considered during the development of both alternatives
- Consideration of ways in which to avoid or minimize environmental impacts for a wide range of environmental impacts, including climate change, associated with either alternative
- Consistency of both alternatives with ABAG's Smart Growth Strategy; creating neighborhoods that provide both housing and jobs in close proximity and directing urban development to some areas that are considered brownfield sites

17.5 Environmentally Superior Alternative

This section discusses and identifies an "environmentally superior alternative" as required by section 15126.6(e)(2) of the CEQA Guidelines. As a basis for making this determination, the section starts with an overview of the planning and environmental review process that resulted in the two alternatives, in addition to the No Project Alternative, under consideration. This section then provides relevant information from each topic analyzed in the EIR chapters. The section then provides an analysis and conclusion regarding the environmental superior alternative.

As described more fully in section 2.1, "Development of the Preferred Alternative," and section 1.6, "Relationship Between The August 2009 Draft Revised EIR and the May 2008 Draft EIR," the City has employed an extensive, community-based process during the development of the Concord Community Reuse Plan (CCRP) that responds to a set of four overall project objectives for the reuse of the CNWS site, including developing a world class project, balancing multiple interests, ensuring an economically viable and sustainable development, and crafting a plan the enhances the quality of life in Concord.

From an environmental perspective, the City's planning approach toward realizing these objectives has been to first avoid and then minimize potential impacts to resources prior to considering mitigation, as discussed in section 2.3.5, "Land Stewardship." Understanding the site's environmental constraints and opportunities, and sharing that information with the community, was an important part of the planning process that resulted in developing the initial seven alternative reuse concepts. The initial environmental analysis of the alternative reuse concepts was then presented at public workshops as part of the overall alternatives evaluation process and in the May 2008 Draft EIR. This information, combined with comments on the May 2008 Draft EIR, was used to develop the two alternatives that were analyzed in the August 2009 Draft Revised EIR. Further, comments on the August 2009 Draft Revised EIR were considered, resulting in revisions that culminated in this Final EIR. The City Council, acting as the Local Reuse Authority, in contemplating adoption of a Reuse Plan, will consider the environmental analysis presented in this Final EIR, including the identification of the environmentally superior alternative as well as mitigations recommended to reduce potential impacts.

The following subsection provides brief summaries of the information presented in this document relevant to identification of the environmentally superior alternative.

Project Description

Tables 2-1, addressing the Preferred Alternative, and 2-2, addressing the Concentration and Conservation Alternative, provide information on the number of acres proposed for development, active parkland, and open space that could result from implementation of the two alternatives at the 5,028-acre site. With the Preferred Alternative 1,742 acres are proposed for development, 899 acres are proposed for active parkland, and 2,587 acres are proposed for open space. With the Concentration and Conservation Alternative 1,339 acres are proposed for development, 645 acres are proposed for active parkland, and 3,044 acres are proposed for open space. The Preferred Alternative could result in 28,800 new residents and 26,530 new jobs at the site, while the Concentration and Conservation Alternative could

result in 23,241 new residents and 21,257 new jobs. Table 2-3 summarizes these and other key differences between the development programs that could result from implementation of either of the two alternatives.

Land Use

The analysis in Chapter 3 concludes that both alternatives would each have two potentially significant impacts, of which one for each alternative could not be mitigated to a level that is less than significant. These unavoidable impacts concern potential land use conflicts with three existing neighborhoods, Sun Terrace, Holbrook, and the Coast Guard Housing, adjacent to areas on the site where development could take place.

Transportation

The analysis in Chapter 4 concludes that the Preferred Alternative would result in 17 potentially significant impacts of which 8 could not be mitigated to a level that is less than significant, while the Conservation and Concentration Alternative would result in 18 potentially significant impacts of which 10 could not be mitigated to a level that is less than significant.

The Preferred Alternative was modeled in the chapter with 24 percent greater population and 16 percent more employment than the Concentration and Conservation Alternative. However, the Preferred Alternative generates only 21 percent more daily vehicle trips and 18 percent more VMT than the Concentration and Conservation Alternative. This demonstrates that the greater percentage of population and jobs that would result from the Preferred Alternative generates VMT at a slower rate when compared to the combination of population and jobs that would result from the Concentration and Conservation Alternative. Therefore the Preferred Alternative results in more efficient travel behavior than the Concentration and Conservation Alternative. The Clustered Villages that would result from the Preferred Alternative, as described in Chapter 2, would also include a high-capacity bus transit service to serve the site, connecting the North Concord/Martinez BART Station area to the villages and linking them to Downtown Concord and existing neighborhoods. In contrast, the Concentration and Conservation Alternative would not feature this transit system.

As shown on Figure 4-8, the Preferred Alternative would result in a more extensive roadway network than that shown on Figure 4-9 for the Concentration and Conservation Alternative. During the planning process, this more extensive roadway network was identified as providing greater connectivity to the existing community and better integration of the site into the rest of Concord. Both alternatives, as shown on Figure 4-12 for the Preferred Alternative and Figure 2-13 for the Concentration and Conservation Alternative would result in similar trail networks and opportunities for pedestrians and bicyclists.

Since the amount of development, the roadway networks, and the transit networks vary between the alternatives, another measure of the differences between the alternatives is the average trip length. The average trip length is calculated by dividing VMT by the number of vehicle trips. While the Preferred Alternative would generate more vehicle trips and total VMT, the average trip length is slightly lower than the Concentration and Conservation

Alternative. The lower trip length for the Preferred Alternative is related to the increased number of destinations available to residents and employees in the vicinity of the site.

As discussed in the chapter, the CCTA Model reflects the density of development, diversity of jobs and housing, and accessibility to other activity destinations. However, the model may not fully quantify the effects of the "smart growth" policies (e.g., mixed use, higher densities, compact development, and pedestrian-oriented design) on trip generation rates and mode choice that would occur as a result of the Preferred Alternative as compared with the Concentration and Conservation Alternative.

Visual Resources

The analysis in Chapter 5 indicates that both alternatives would each have at least three potentially significant impacts to visual resources, of which one for each alternative could not be mitigated to a level that is less than significant. However, the Preferred Alternative, as compared with the Concentration and Conservation Alternative, would potentially impact views of lowland portions of the site from neighborhoods adjacent to the site between Willow Pass Road and Bailey Road.

Earth Resources

The analysis in Chapter 6 indicates that neither alternative would have potentially significant impacts with respect to earth resources.

Hydrology and Water Quality

The analysis in Chapter 7 indicates that neither alternative would have potentially significant impacts with respect to hydrology and water quality. Both alternatives would result in a minimum 300-foot wide buffer along Mt. Diablo Creek that would provide opportunities for restoration of the creek channel for flood control and habitat enhancement purposes.

Biological Resources

The analysis in Chapter 8 indicates that both alternatives would each have 19 potentially significant impacts, all of which could be mitigated to a level that is less than significant. Table 8-6 compares the maximum acreage of vegetated areas that would be affected by potential development: for the Preferred Alternative, the affected acreage would be 2,811 acres, as compared to 2,170 acres for the Concentration and Conservation Alternative. The Concentration and Conservation Alternative would result in marginally less potential impact to wetlands, 10 acres, as compared with 11 acres that could be impacted as a result of the Preferred Alternative.

Cultural Resources

Table 9-7 discusses direct impacts to archaeological resources. Five archaeological resources would be impacted as a result of both alternatives. The analysis in Chapter 9 indicates that both alternatives would each have three potentially significant impacts, all of which could be mitigated to a level that is less than significant.

Hazardous Materials

The analysis in Chapter 10 indicates that both alternatives would each have seven potentially significant impacts, all of which could be mitigated to a level that is less than significant. It is recognized that implementation of either alternative would require remediation of known sources of contamination and that future residential, commercial, institutional, and other uses would only be allowed with compliance to the requirements established by federal and State agencies to protect the environment and public health and safety.

The Preferred Alternative proposes Clustered Villages with mixed use development, including residential uses, in the Bunker City area that would require remediation to an unrestricted use standard. It is likely that the same area would not be subject to further remediation because of the proposed open space uses with the Concentration and Conservation Alternative. It is understood however that the land would be transferred with land use controls potentially restricting general access to that portion of the site. It is unclear if the Concentration and Conservation Alternative would generate sufficient revenues to pay for the remediation of known sources of contamination in Bunker City.

Air Quality

The analysis in Chapter 11 indicates that both alternatives would each have five potentially significant impacts, of which three for each alternative could not be mitigated to a level that is less than significant. Table 11-4 indicates that, as calculated using the URBEMIS model, the Preferred Alternative would have the higher total emissions compared to the Concentration and Conservation Alternative. However, carbon monoxide concentrations at intersections (Table 11-8) and freeways (Table 11-9) would be about equal between the two alternatives.

Noise and Vibration

Table 12-9 lists the predicted traffic noise levels near the reuse site, and Table 12-10 lists the change in noise levels due to the two alternatives. The noise levels are about the same between the two alternatives, except the Preferred Alternative has greater noise predicted at West Street and Denkinger Road, since these two streets would be connected to the reuse site as a result of implementation of this alternative as proposed. Thus, the Preferred Alternative would have six potentially significant noise impacts, one of which would be unavoidable, while the Concentration and Conservation Alternative would have five potentially significant impacts, all of which could be mitigated to a level that is less than significant.

Population, Housing, and Employment

The analysis in Chapter 13 indicates that neither alternative would have potentially significant impacts with respect to population, housing, and employment. As shown in Table 2-3, the Concentration and Conservation Alternative would result in fewer opportunities for new residential units and fewer opportunities for new jobs in Concord as compared with the Preferred Alternative.

Public Services

The analysis in Chapter 14 indicates that neither alternative would have potentially significant impacts with respect to public services.

Recreation

The analysis in Chapter 15 indicates that neither alternative would have potentially significant impacts with respect to recreation. Table 15-2 lists the proposed breakdown of parkland that would result from each alternative. The Preferred Alternative would result in 721 acres of land for active recreation and 2,565 acres for the riparian corridor and open space. The Concentration and Conservation Alternative would result in 467 acres of land for active recreation and 3,689 acres for the riparian corridor and open space. Table 15-3 provides an analysis of how each alternative would compare to the City's current goal of 6 acres of parkland per 1,000 residents. Compared to this standard, the Preferred Alternative could provide 25 acres per 1,000 residents at the site and the Concentration and Conservation Alternative could provide 20 acres per 1,000 residents.

Utilities

The analysis in Chapter 16 indicates that both alternatives would each have 10 potentially significant impacts, all of which could be mitigated to a level that is less than significant. Table 16-2 summarizes anticipated utility demands as a result of implementation of each alternative. The demands with the Preferred Alternative would be higher than those of the Concentration and Conservation Alternative. Either alternative could not be developed until a WSA is completed, including use of recycled water, to identify water demands and how water supply sources will be secured.

Other CEQA Considerations

The analysis in Chapter 17 indicates that both alternatives would each have six potentially significant and unavoidable impacts. Five of these are identified as a result of transportation changes and one is due to increased GHGs resulting from development of the reuse site with either alternative. Table 17-3 summarizes the number of impacted freeway segments, freeway ramps, roadway segments, intersections, and number of exceeded traffic service objectives that would result from development of the alternatives. Generally, the Concentration and Conservation Alternative, in combination with other traffic in 2030, would have significant impacts at slightly more locations, 81, than the Preferred Alternative, 77, because of the concentration of development in a smaller footprint.

With respect to GHGs, Table 17-14 summarizes the predicted annual carbon dioxide emissions from mobile sources for each alternative, Table 17-15 summarizes the predicted carbon dioxide emissions from area sources, and Table 17-16 summarizes the predicted carbon dioxide emissions from construction emissions. The Preferred Alternative, as shown in Table 17-17, is predicted by the URBEMIS Model to generate more total carbon dioxide, 303,403 metric tons per year, from these sources than is predicted for the Concentration and Conservation Alternative, 248,977 metric tons per year.

Analysis and Conclusion

The No Project Alternative is not considered to be the environmentally superior alternative. (See CEQA Guidelines section 15126(e)(2) "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.") While the No Project Alternative may result in fewer physical impacts, maintaining the site in its current caretaker status does not make it suitable for any of the development envisioned following the extensive community planning process that resulted in the Preferred Alternative and the Concentration and Conservation Alternative. Further, leaving the site in its current condition – it is fenced from public access and patrolled and not available for active or passive recreation, it is subject to heavy grazing, the existing structures are aging and not maintained, Mt. Diablo Creek is in a deteriorated state, and continued Navy ownership of the site does not provide a public benefit and a revenue source to the citizens of Concord. Also, the No Project Alternative may not result in the remediation of known sources of contamination in a timely manner or to a level that would allow residential and recreation uses. While the No Project Alternative would result in no land disturbance resulting from new development and the lowest predicted amount of traffic, when compared with the two alternatives and the lowest annual carbon dioxide emissions as presented in Table 17-17, it would not achieve the four goals that were established for the CCRP.

During the planning and environmental review process that resulted in the two alternatives addressed in this Final EIR, considerable effort was made to develop alternatives that achieve the four objectives identified for the CCRP. In a number of respects the two alternatives are similar, for example both provide the opportunity for restoration of Mt. Diablo Creek by establishing a minimum 300 foot buffer and they both provide for transit-oriented development adjacent to the North Concord/Martinez BART Station.

As described in Chapter 2, the Concentration and Conservation Alternative concentrates all of the development onto the northwest portion of the site. This concentration of development provides the greatest amount of open space dedicated to protection of wildlife and habitat, and it leaves undisturbed larger amounts of land fronting the existing residential properties along the western boundary of the site. Most of the development is located in close proximity to the North Concord/Martinez BART Station, providing for transit-oriented/walkable neighborhoods. A smaller development footprint leads to less commercial/retail space, fewer residential units, lower job creation on the site, less connectivity, and fewer acres for neighborhood and community parks. The smaller footprint also leads to higher overall density.

The Preferred Alternative proposes development on a larger percentage of the site. As a regional infill site, it takes advantage of the opportunity to place transit-oriented, sustainable development across the site. Development is arranged around the North Concord/Martinez BART Station and around a series of Transit Villages to provide a vibrant mix of uses and densities that support high-capacity transit and transit choice. It distributes traffic more evenly through the site. The village concept creates pedestrian- and bicycle-friendly neighborhoods that not only serve new residents, but because it has more linkages and connectivity, provides greater access for existing Concord residents to facilities on site. The

Preferred Alternative provides for more improved recreational parkland and balances the provision of open space with an emphasis on a higher number of jobs and housing units.

While the Preferred Alternative results in a larger development footprint it would also result in more land dedicated to recreation and new residential, commercial, and institutional uses based on the principles of smart growth, which would result in more new residents and more new jobs. It also has greater opportunities for funding remediation of the known contamination of the site. While the Preferred Alternative would result in more new traffic and more new GHGs than the Concentration and Conservation Alternative, it would also provide more opportunities for urban infill and would result in more efficient travel behavior. .

As shown in Table 17-21 both alternatives have relatively the same number of significant environmental impacts and the same number that cannot be mitigated to a level that is not significant. Given that the potential significant impacts of the two alternatives are relatively equal, the quantitative and qualitative differences between the two are marginal. Because the Concentration and Concentration Alternative results in a smaller footprint, less traffic, and lower GHG emissions than the Preferred Alternative, however, it is judged to be the environmentally superior alternative.

Table 17-21: Summary of Significant Environmental Impacts

	Preferred Alternative		Concentration and Conservation Alternative	
	Significant Impacts	Impacts that cannot be Mitigated to a level that is less than Significant	Significant Impacts	Impacts that cannot be mitigated to a level that is less than Significant
Land Use	2	1	2	1
Transportation	17	8	18	10
Visual Resources	4	1	3	1
Earth Resources	0	0	0	0
Hydrology and Water Quality	0	0	0	0
Biological Resources	19	0	19	0
Cultural Resources	3	0	3	0
Hazards and Hazardous Materials	7	0	7	0
Air Quality	5	3	5	3
Noise and Vibration	6	1	5	0
Population, Housing, and Employment	0	0	0	0
Public Services	0	0	0	0
Recreation	0	0	0	0
Utilities	10	0	10	0
Cumulative Impacts	6	6	6	6
Total	79	20	78	21

~~17.5~~17.6 References

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Concord
Community Reuse Plan

18.

Document Preparation

18 Document Preparation

18.1 Introduction

This Final Environmental Impact document was prepared for the City of Concord by a consulting team of environmental planners, engineers, and scientists. This chapter provides information about the key members of the City staff in Section 18.2 and consulting team in Section 18.3. The Consulting Team drew upon the August 27, 2009 Draft Revised Environmental Impact Report (EIR) and the May 5, 2008 Draft EIR (SCH# 2007052094). Additional data was also collected and reported for Chapter 4, Transportation, Chapter 7, Hydrology and Water Quality, Chapter 8, Biological Resources, Chapter 9, Cultural Resources, Chapter 10, Hazardous Materials, and Chapter 11, Air Quality. Furthermore, this Final EIR addresses many comments received from the public on both the May 2008 Draft EIR ~~SCH# 2007052094 document issued on May 5, 2008~~ and the ~~Draft Revised Environmental Impact Report (EIR)~~August 2009 Draft Revised EIR ~~issued on August 27, 2009~~. The reports referenced in the previous chapters can be reviewed by accessing the CCRP website at www.concordreuseproject.org.

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